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# Lamp and Ballast Catalog

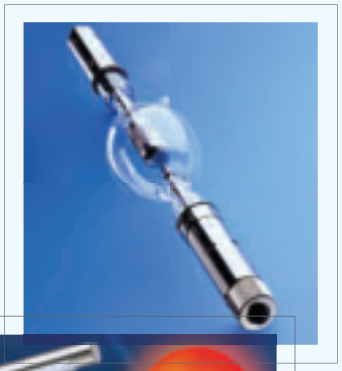
OSRAM

SYLVANIA

# OSRAM SYLVANIA

## SEE THE WORLD IN A NEW LIGHT

For more than 100 years, OSRAM SYLVANIA has been a leader in the development of innovative lighting. This catalog provides specifications on over 3000 SYLVANIA and OSRAM branded products for a variety of lighting applications, each one designed and manufactured to the highest possible standards.



## A Lighting Industry Leader

With over 14,000 employees, OSRAM SYLVANIA is one of the leading lighting systems companies in North America. We are the North American business unit of OSRAM GmbH, one of the world's largest lighting manufacturers. OSRAM SYLVANIA is a member of the SIEMENS worldwide family of companies, which employs over 440,000 people in over 190 countries.

## Meeting Customer Expectations

OSRAM SYLVANIA makes ongoing investments in new and aggressive business practices. With the Total Cycle Time program, we have turned time into a strategic business ally. Our SAP program unites the entire organization with a sophisticated information system that helps serve our customers faster and more efficiently. Our ISO 9000, ISO 14001 and QS 9000 certifications show our achievements in delivering the highest quality lighting products.

## Lighting the World

OSRAM SYLVANIA, together with OSRAM GmbH, is the largest supplier of electronic lighting systems in the world. As leaders in fluorescent, halogen and metal halide technologies, the companies hold numerous international lighting patents and have an extensive engineering and manufacturing network. OSRAM GmbH and OSRAM SYLVANIA literally bring light to the world.

## Lamp Disposal Labeling

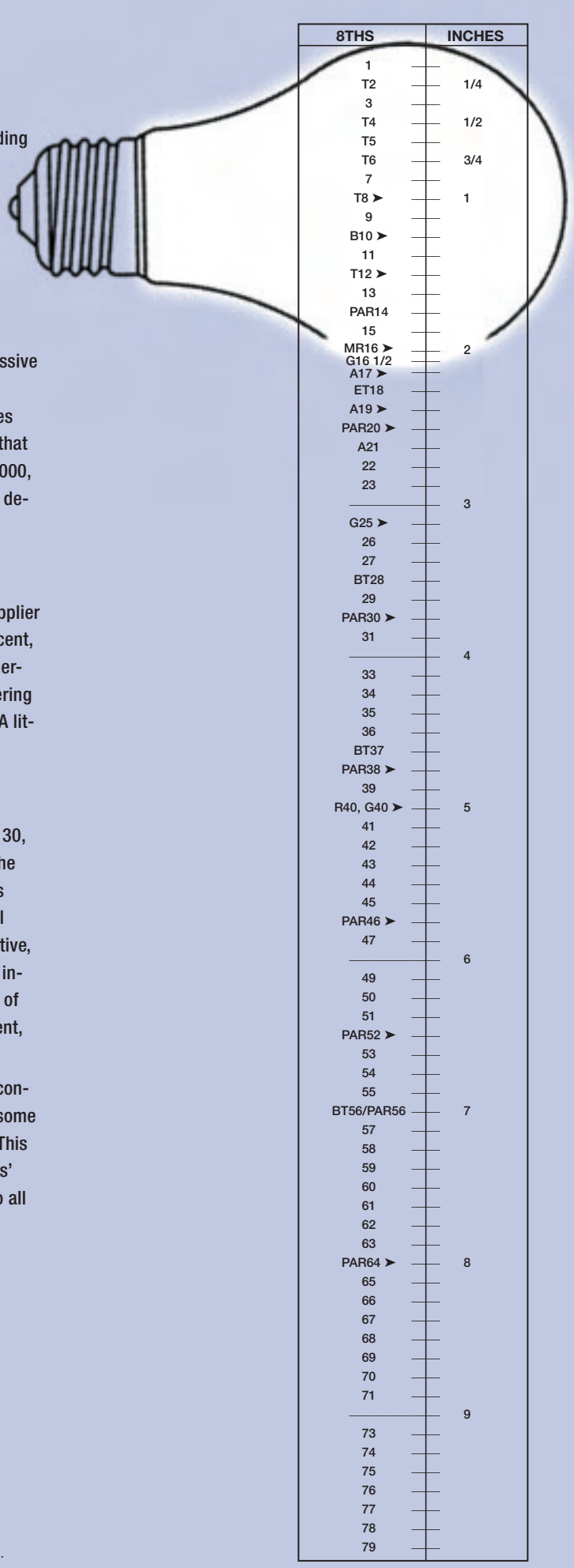
For all mercury-containing lamps manufactured after November 30, 2003, OSRAM SYLVANIA has incorporated the symbol "Hg" into the lamp etch, except for products where size or thermal constraints prevent etching in this manner. This action is part of the National Electrical Manufacturers Association (NEMA) lamp labeling initiative, the purpose of which is to guide users of lighting products—via internet or telephone—to appropriate contacts regarding disposal of spent mercury-containing lamps (fluorescent, compact fluorescent, and most HID).

Disposal labels appear on the inner-most packages of mercury-containing lamps, the outer cartons, or both. For Display-Optic and some other specialized lamp types, labeling is included in the stuffer. This labeling format complies with the requirements of existing states' legislation and has been designed to be universally applicable to all US States.

**Hg LAMP CONTAINS MERCURY**

**Manage in Accordance with Disposal Laws**

See: www.lamprecycle.org or 1-866-666-6850

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## Important Notice

The data and suggested applications contained in this catalog, as well as any additional information our representatives may be able to furnish, are for general information only and are not intended and should not be taken as representations or warranties as to the suitability of a lamp for any particular application or use in any particular equipment, nor are our representatives authorized to make any such representations or give any such warranties. Applications and conditions of use are many and varied and beyond our control. We do not have the same degree of knowledge that the purchaser has with respect to the design of his equipment and the conditions of its use. Therefore, it is up to the purchaser to make his own determination as to the suitability of a lamp for his intended application or use and to assume responsibility for that determination.

OSRAM SYLVANIA claims to supply the best possible products at all times. For this reason, OSRAM SYLVANIA reserves the right to make changes in its products when it believes such changes will improve its products.

The specifications and information shown in this catalog are believed to be accurate. Although OSRAM SYLVANIA believes this information to be correct, no warranty is made or implied as to the accuracy of this information and OSRAM SYLVANIA does not accept or assume responsibility of liability for errors, changes, omissions, or for harm resulting therefrom.

**In accordance with our established policy to consistently improve our products, the specifications contained herein are subject to change without notice.**

The OSRAM SYLVANIA Test and Measurement Laboratory is a participant in the Energy Efficient Lighting (EEL) Program of the National Voluntary Laboratory Accreditation Program (NVLAP-NIST) and is accredited for testing of lighting products according to the guidelines for the EEL Program. OSRAM SYLVANIA lamp and ballast measurements are conducted under laboratory conditions utilizing American National Standards Institute (ANSI), Canadian Standards Association (CSA), Commission Internationale de l'Eclairage (CIE), and Illuminating Engineering Society of North America (IESNA) standards and practices. The OSRAM SYLVANIA Electronic Component and Systems Development Group participate in the Underwriters Laboratories Inc. Client Test Data Program. Ballast designs are tested for conformance to Underwriters Laboratory (UL) safety standards using practices audited, assessed and approved by UL. Actual lamp and ballast performance may vary depending on application and environment (i.e. ambient temperature, input voltage, ballast type, etc.)

OSRAM SYLVANIA designs and manufactures lamps and ballasts to meet American National Standard Institutes (ANSI) and/or IEC (International Electrotechnical Commission) standards of construction and performance through Total Quality Manufacturing (TQM) practices where applicable. In addition, ballasts are designed and manufactured to meet Underwriters Laboratory (UL) and Canadian Standards Association (CSA) safety standards as necessary. Ratings may change as a result of changes made to remain compliant with modified or updated standards. OSRAM SYLVANIA will release new or updated technical bulletins when appropriate. All product data presented in this catalog supersedes all data published before 10/1/07.

Many OSRAM SYLVANIA products listed in this catalog qualify under the North American Free Trade Agreement (NAFTA) as manufactured in Canada, the United States of America or Mexico.

**Luminance Contrast** The relationship between the luminances of an object and its immediate background.

**Luminance Ratio** The ratio between the luminances of any two areas in the visual field.

**Lux (lx)** A unit of illuminance equal to 1 lumen per square meter.

**Maximum Case Temperature** All OSRAM SYLVANIA electronic ballasts have a maximum allowable case temperature of 70°C and 90°C for magnetic fluorescent ballasts. Applications in which the case temperature exceeds this maximum void all warranties.

**Maximum Overall Length (MOL)** The total length of a lamp, from top of bulb to bottom of base.

**Mean Lumens** Lumen output of a light source after the source has been used. Mean lumen values for fluorescent and HID lamps are typically measured at 40% of their rated lives. Most high pressure sodium and mercury lamps are measured at 50% of their rated lives. All measurements are made on ANSI reference ballasts. Mean lumens are not typically measured for incandescent and tungsten halogen lamps.

**Mean Spherical Candela (MSCD)** The average value of the luminous intensity of a light source in all directions. To convert MSCD to Lumens, multiply by $4\pi$ (12.57).

**Mean Time Between Failures (MTBF)** A calculation of ballast life based on thermal conditions, component values, and circuit characteristics used to develop relative predictions of ballast life. OSRAM SYLVANIA uses methodology that typically provides a 1:10 actual life prediction based on MTBF calculations.

**NAED** A five-digit number used to identify a specific OSRAM SYLVANIA lamp. This NAED number in this catalog is labeled Product Number and should be used when ordering OSRAM SYLVANIA products. NAED is the abbreviation for National Association of Electrical Distributors.

**Nanometer (nm)** A unit of length equal to $10^{-9}$ meters; commonly used as a unit of wavelength.

**Nominal Watts** Wattage used to describe a lamp. Also see Power and Watt.

**OFR** Abbreviation for "ozone free" technology. Lamps with the designation OFR do not generate ozone during operation.

**Operating Position** Some lamps are specified/designed to be operated in certain positions, i.e., horizontal or base up.

**Ordering Abbreviation** Provides a shorthand description of the lamp, using a unique code which can be used when ordering a lamp if the Product Number is not known. An example would be: CF15EL/R30/830/MED, which translates to a 15-watt Soft White DULUX® EL reflector electronic self-ballasted compact fluorescent lamp with an R30 reflector, 82CRI, 3000K color temperature and a medium screw base.

**PAR Lamps** Pressed aluminized reflector lamp, with the outer bulb formed from two pressed glass parts that are fused or sealed together. PAR lamps may be incandescent, halogen, or HID types.

**Parallel vs. Series** Wiring configurations for ballasts. Ballasts with parallel lamp circuitry have the benefit of companion lamps remaining lit, even if one of the lamps operated by the ballast should fail. Systems with series lamp wiring (magnetic ballasts and many rapid start electronic types) result in all lamps operated on the ballast going out if one should fail.

**Photo-Optic Specialty Lamps** Photo-Optic specialty lamps employ a variety of technologies to meet the very precise levels of performance required by the entertainment industry, science, medical and other high-tech fields.

**Power** The rate at which energy is taken from an electrical system or dissipated by a load, expressed in watts (W); power that is generated by a utility is typically expressed in volt-amperes (VA).

**Power Factor** A measure of the effectiveness with which an electrical device converts volt-amperes to watts; devices with power factors (>0.90) are "high power factor" devices.

**Preheat** A class of fluorescents requiring a starter, which allows the lamp and filaments to be properly heated before allowing the ballast to supply the correct current flow.

**Product Number** (See NAED.)

**Programmed Rapid Start (PS)** A method of starting fluorescent lamps where cathode heat is applied prior to lamp ignition, then removed or reduced once the lamp has ignited. PROStart® ballasts maximize the number of lamp starting cycles while maintaining energy efficiency. This is the preferred mode of lamp starting for applications with occupancy sensors and several on/off cycles per day. Additionally, the lamps will strike reliably in cold conditions down to 0°F.

**Rapid Start (RS)** Rapid start ballasts apply a low filament voltage to preheat the cathodes. Simultaneously, a starting voltage (lower than that used in instant start) is also applied to strike the arc. When the cathodes are hot enough, the lamp will strike. The filament voltage continues to be applied throughout the operation of the lamp. Rapid start ballasts appear to have a slight turn on delay compared to instant start. They will typically not be able to start lamps reliably under 50°F.

**Reference Ballast** A ballast specially constructed to have certain prescribed characteristics for use in testing electric-discharge lamps and other ballasts. Reference ballasts are typically defined by ANSI.

**Reflector** A device used to redirect the light by the process of reflection. Photo-Optic reflector lamps utilize ellipsoidal (converging light rays) or parabolic (collimating light rays) reflectors. Dichroic coated reflectors are designed to reflect visible light and pass through unwanted infrared wavelengths.

**Resistance (R)** A measure of resistance to flow of current, expressed in ohms ($\Omega$).

**Safety** Ballasts should be installed and operated in compliance with the National Electric Code (NEC), Underwriters Laboratories Inc. (UL) requirements, and all applicable codes and regulations. Since it is possible to come in contact with potentially hazardous voltages, only qualified personnel should perform ballast installation. All installation, inspection, and maintenance of lighting fixtures should be done with the power to the fixture turned off.

**Shielding** A general term to include all devices used to block, diffuse or redirect light rays, including baffles, louvers, shades, diffusers and lenses.

**Single-Ended** Lamps having a single lamp base or point of electrical connection.

**Spectral Power Distribution (SPD)** A curve illustrating the distribution of radiant power produced by the lamp, at each wavelength across the spectrum.

**Spotlight** A luminaire using halogen/incandescent or a high intensity discharge (HID) lamp that produces a narrow beam angle designed to illuminate a specifically defined area. It can also be called a reflector lamp.

**TCLP Test (Toxicity Characteristic Leaching Procedure)** Federal EPA regulations (RCRA of 1990) have defined a TCLP test to determine whether wastes are to be treated as hazardous or non-hazardous.

**Total Harmonic Distortion (THD)** A measure of the distortion of an electrical wave form. Excessive THD (defined by ANSI as greater than 32%) may cause adverse effects to the electrical system. <20% THD ballasts are fine for most applications. However, in buildings with neutral problems caused by high THD loads such as computers, printers, DC supplies, etc., the <10% THD products can help reduce the overall % of Total Harmonic Distortion.

**Transient Protection** OSRAM SYLVANIA ballasts meet ANSI 62.41 Category A. This helps ensure immunity to electrical disturbances such as power line transients, and temporary line voltage dropouts, surges and sags.

**Trigger Start** A circuit used to eliminate the starter and start the preheat lamp almost instantly. In this circuit each electrode is connected to a separate winding in the ballast so that the electrode is continuously heated.

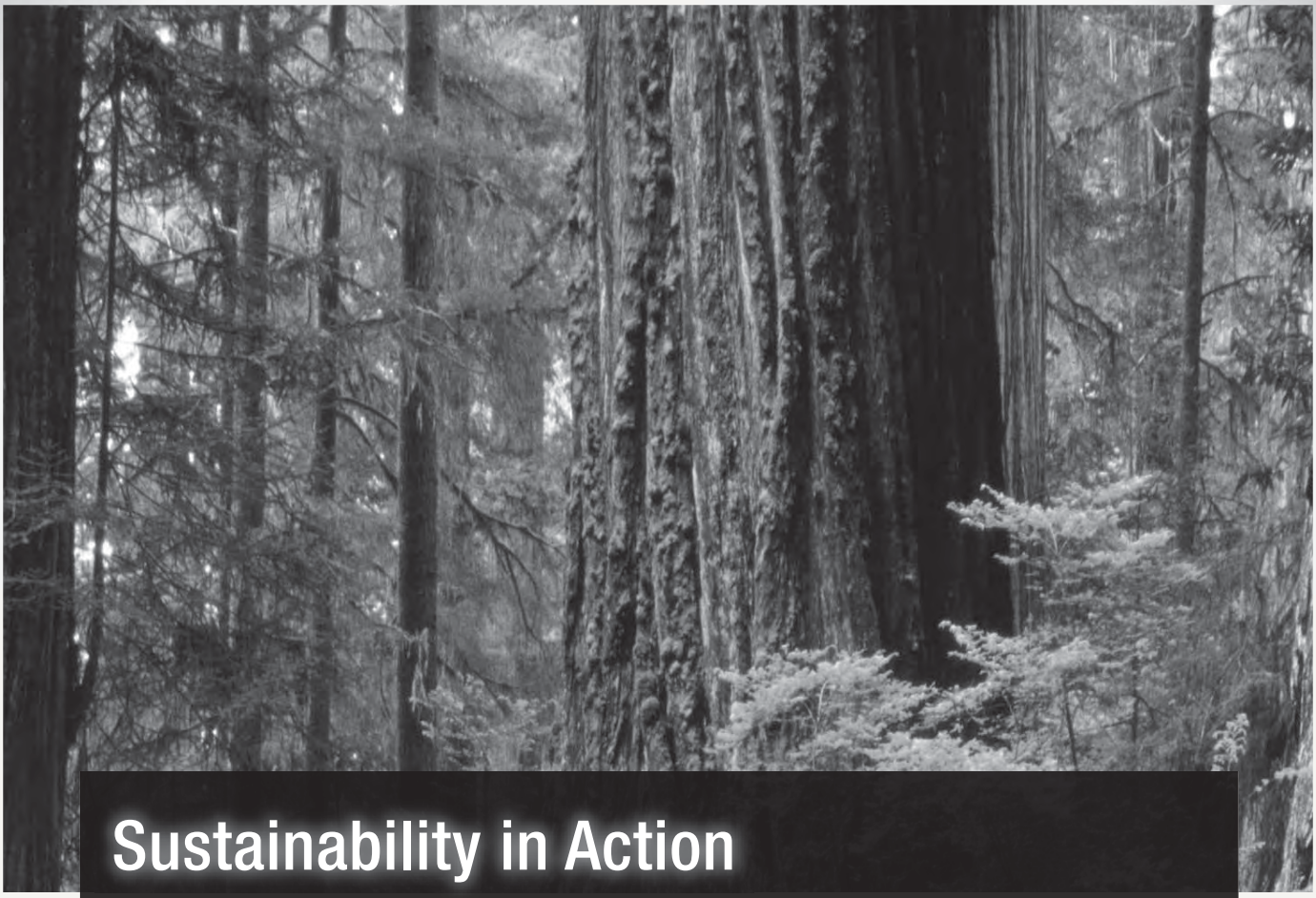
**Tungsten Halogen Cycle** A regenerative cycle of tungsten and halogen atoms, which, when incorporated into the design of halogen light sources, prevents blackening of the lamp envelope during life.

**Voltage (V)** A measure of electrical potential, expressed in volts (V). Voltage is the "force" that pushes electrical current through a conductor.

**Watt (W)** A unit of electrical power equal to 1 joule per second. Lamps are rated in watts to indicate power consumption. Also see Nominal watts.

**Wavelength ($\lambda$)** Distance between two successive points of a periodic wave; the wavelengths of light are typically expressed in nanometers (nm), or billionths of a meter.

**Working Distance** (See Focal Distance.)



# Sustainability in Action

**Meeting our needs today without compromising the resources future generations will need — touches everything we do as a company. It's all about reducing environmental impact, a commitment that goes beyond our products to include how the products are manufactured, how they are used and how they are distributed and disposed. It even extends to the design of "greener" buildings.**

**Sustainability is everybody's business.**
When we can do more with less, everyone wins. Businesses need to find ways to grow without adding to our environmental footprint — and the good news is, we're making steady progress. Advanced technologies are helping us to be more efficient. We're using less energy and fewer resources, and generating less waste.

At a personal, corporate or national level, lighting plays an important role in any sustainability strategy. Whether you're interested in lowering your energy consumption, avoiding unnecessary maintenance, identifying options for lamp and ballast recycling, or finding products with fewer hazardous materials, OSRAM SYLVANIA can help.

ENERGY STAR AWARD 2007
SUSTAINED EXCELLENCE

**Global Care:**
Global Care represents our commitment to corporate responsibility. This initiative is designed to drive positive results to the triple bottom line addressing social, economic and environmental needs. Furthermore, we are dedicated to meeting our customers' lighting needs with a sustainable approach to product design, development, manufacturing and distribution.

We integrate environmental responsibility into every area of our company. As a result, we are using fewer natural resources, saving energy for our customers, reducing power plant emissions, and recycling lamps and other materials to avoid millions of pounds of waste in landfills.

GLOBAL CARE™

# ECOLOGIC® products are the industry's most comprehensive line of environmentally preferable lighting solutions.

Our lamps designated as ECOLOGIC pass the U.S. EPA's Toxic Characteristic Leaching Procedure (TCLP) test for hazardous waste determination. Products meeting the TCLP test may be declared "universal waste" in many states, easing the administrative, storage and transportation burdens for these products. (Check your state and local governments for the most accurate regulations.)

ECOLOGIC lamps have little or no lead in their glass or bases, and little or no mercury in the HID and fluorescent lamp types. Many of these products also offer additional "green" features such as energy efficiency and long life, and are packaged using recycled and/or recyclable materials.

With more than 800 products meeting our strict ECOLOGIC guidelines and bearing the distinct "ECO®" designation, we offer more environmentally preferable lamp types than any other manufacturer.

In 2006, the ECOLOGIC program celebrated its 10-year anniversary. In those 10 years, we've avoided the use of over 580 tons of lead from our soldering production, and we've reduced the amount of mercury used in many of our lamps by up to 92%.

ECOLOGIC®

# Energy and the Cost of Lighting

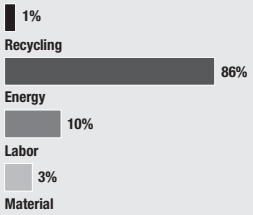
**According to the U.S. Department of Energy, we consume about one-quarter of our electricity for lighting, at a cost of more than $37 billion annually. Lighting accounts for the single largest portion of electric bills for commercial users, as much as 30% — and it can be a prime opportunity for reducing energy costs.**

**Where does the cost of the average lighting system come from?**

- Materials — the initial investment in fixtures, lamps, wires and ballasts
- Labor — the cost to install the lighting and maintain it day-to-day
- Electricity — the energy consumed to illuminate the lamps
- Recycling — removing and disposing of spent lamps in a way that does not negatively impact the environment

Figure 1

## Cost of Maintaining the Average Lighting System




*As Figure 1 shows, the material cost of a lighting system: bulbs, ballasts and wiring, is small in relation to the cost of the energy to light it.*

Advances in lighting technology have improved the energy efficiency of lighting by 30-60%, improvements that reduce environmental impacts while increasing the bottom line. Energy-efficient lighting requires less energy, which lowers electricity demand. With less demand, power plants burn less fossil fuel, reducing emissions of mercury and other air pollutants. So everybody profits.

the system solution®

### Energy-efficient systems

An important direction in lighting technology is the move toward systems. OSRAM SYLVANIA started the trend with THE SYSTEM SOLUTION,® a family of optimally balanced energy-saving lamps and electronic ballast combinations. By bringing lamp and ballast development under an integrated system concept, we have been able to design innovative SYLVANIA lighting systems that optimize energy savings without sacrificing other elements of performance.

OSRAM SYLVANIA has the competitive advantage, with years of experience in designing, developing and supporting integrated systems — both in ballasts and lamps. Our global network of design and manufacturing brings ballast and lamp knowledge together to produce innovative, cost-effective, energy saving systems.

### Saving energy, saving money

Energy costs represent your biggest and best opportunity for savings. Even seemingly minor energy efficiency improvements can have a major positive impact on operating expenses — long-term savings that can quickly repay the minimal capital investment.

For example, here are some things you can do right now:

- Upgrade to SYLVANIA Energy Saving lighting products to significantly reduce total energy usage and operating costs.
- Replace traditional T12 fluorescent systems with SYLVANIA OCTRON® T8 fluorescent lamps and SYLVANIA QUICKTRONIC® electronic ballasts for up to 50% energy savings.* You'll also get the added assurance of QUICK 60+®, the industry's first and most comprehensive lighting system warranty.
- Implement a lighting maintenance and retrofit strategy to maintain safety, security, aesthetics and productivity, as well as to reduce labor costs. Our own SYLVANIA Lighting Services can help.
- Install dimmers and lighting control systems to save additional energy and add lighting design flexibility.

### OCTRON T8 fluorescent lamps—savings the world can live with

In 1981, OSRAM SYLVANIA invented the OCTRON T8 fluorescent lamp, ushering in a new era of energy efficiency in lighting. Since we introduced the SYLVANIA OCTRON family, we've saved our customers more than $27 billion in electricity costs*. We've avoided 4 tons of airborne mercury discharged from power plants**, and saved enough electricity to run the Las Vegas Strip for 156 years!

### Rebates and tax benefits

As a way to reduce overall electricity demand, many utilities offer rebates to commercial customers who upgrade the efficiency of their lighting systems. Check with your local utility or ESCO to learn more about these additional savings opportunities. In addition, the Federal Energy Policy Act of 2005 (EPAct 2005) offers tax benefits for energy-efficiency upgrades in commercial buildings undertaken in 2006 and 2007. (For more information, please visit www.sylvania.com/EPACT).

* Based on $.10/kWh

** U.S. Department of Energy emissions conversion calculations

# SYLVANIA Products and the IESNA Progress Report
# A Proud Legacy of Achievement

Each year, The Progress Committee of the Illuminating Engineering Society of North America (IESNA) solicits the lighting industry for product submissions which, if accepted by the committee, are featured in the committee's Progress Report, which is published in the IESNA's publication "Lighting Design & Application". The mandate of the Progress Committee is "to keep in touch with developments in the art and science of lighting throughout the world and prepare a yearly review of achievements for the Illuminating Engineering Society of North America." Submissions are organized into one of seven categories: light source, accessory, luminaire, research, application, publication and design tool. They are evaluated for their design, engineering characteristics, installation features and overall uniqueness. The 30-member committee of industry experts votes on up to 200 product submissions annually.

Over the years many SYLVANIA and OSRAM branded products have been accepted for the Progress Report. An itemized list of these products and their significant features, are listed in the tables that follow.

### 2007 Progress Report

| OSRAM SYLVANIA submissions accepted by the IESNA Progress Report | Significance to the Lighting Industry |
|---|---|
| OPTOTRONIC® 3W/350 mA LED Power Supply | Smallest constant current power supply – lower than 5W for max power flexibility. |
| OPTOTRONIC 96W/24V LED Power Supply | Only 96w power supply that contains fittings and junction boxes. IP66 rated. Universal voltage. |
| OPTOTRONIC 240W/24V LED Power Supply | Only 240W power supply that contains fittings and junction boxes. IP66 rated. Universal voltage. 3 independently switchable channels. |
| QUICKTRONIC® QHE2x59/UNV-ISL-SC Ballasts | First high efficiency, low ballast factor, universal input voltage, instant start ballast for 8 foot T8 lamps. |
| QUICKTRONIC QHE2x59/UNV-ISH-SC Ballasts | First high efficiency, high ballast factor, universal input voltage, instant start ballast for 8 foot T8 lamps |
| QUICKTRONIC QHE2x86WT8HO/UNV-PSN-HT Ballasts | First high efficiency, normal ballast factor, universal input voltage, programmed start ballast for 8 foot T8/HO lamps |
| QUICKTRONIC QHE 3 & 4 32T8/347V ISH HT Ballasts | First high efficiency, 347V, high ballast factor, instant start ballasts for 4 foot T8 lamps |
| QUICKTRONIC QHE 3 & 4 32W T8 480V Ballasts | First high efficiency, 480V, high ballast factor, instant start ballasts for 4 foot T8 lamps |
| QUICKTRONIC QHE 2x40DL UNV ISN SC Ballasts | First high efficiency, 2-lamp universal voltage ballasts for DULUX L SUPERSAVER 40W and 28W lamps |
| QUICKTRONIC QHE 2,3,4 32T8 UNV PSH – HT Ballasts | First high efficiency, programmed start, 90°C rated ballasts for T8 lamps |
| QUICKTRONIC QHE 1,2,3,4 x32T8 UNV Type CC and Anti-Striation Control Ballasts | First high efficiency T8 ballasts that operate more lamp types than any other type CC ballast. -20°F starting temperature |
| QUICKTRONIC QTP2x54T5HO UNV PS80 SC Ballasts | First high efficiency T5HO ballast with 0.80 ballast factor for 20% energy savings |
| QUICKTRONIC QS2X54T5HO UNVPS80SC Ballasts | First high efficiency T5HO ballast with 0.80 ballast factor for 20% energy savings with bi level switching |
| QUICKTRONIC POWERSENSE T5 Dimming Ballasts | First high efficiency dimming ballasts for T5 lamps – dual control (0-10V & line voltage), universal voltage |
| QUICKTRONIC Helios 0-10V T8 Dimming Ballasts | First high efficiency dimming ballasts for T8 lamps with up to 1.2 ballast factor, auto start & restart technology 277V |
| METALARC® POWERBALL® 250W Ceramic Metal Halide Lamps | Smallest 250W single-ended ceramic metal halide in the industry. |
| 20, 39, 70W METALARC POWERBALL Ceramic lamps with secure-fit G8.5 base design | Industry's first formed press G8.5 base low wattage CMH lamp. |
| OCTRON® SKYWHITE T8 Fluorescent Lamps | Industry's first 8000K T8 lamp |
| PENTRON® PREMIER ECOLOGIC® T8 Fluorescent Lamps | Industry's highest lumen 28W lamps. |

## 2006 Progress Report

| OSRAM SYLVANIA submissions accepted by the IESNA Progress Report | Significance to the Lighting Industry |
|---|---|
| 20W METALARC® POWERBALL® Ceramic Metal Halide PAR 30 Lamp | Highest lamp life for 20W PAR 30 CMH. |
| 39W METALARC POWERBALL Ceramic Metal Halide PAR 20 or PAR 30 Lamp | Highest CRI PAR 20 or PAR30 CMH – 5% improvement. |
| 750W SUPER METALARC® Pulse Start | First base down 750w MH Pulse Start lamp. |
| 54W PENTRON® HO Primary Colors T5 Fluorescent Lamps | First T5 HO single phosphor lamps. |
| aluPAR™ – Lighter, brighter, cooler PAR 56 Stage & Entertainment Lamp | First lightweight, aluminum reflector PAR 56. Lamp can be disassembled for recycling. Up to 50% lighter and 10% brighter. |
| QUICKTRONIC® QHE High Efficiency Family of 347V 4 – Lamp T8 Ballasts | First high efficiency T8 Instant Start low ballast factor ballast for 347V systems. |
| QUICKTRONIC QHE High efficiency Family of 347V T8 Instant Start Ballasts | First high efficiency T8 Instant start normal ballast factor ballast for 347V systems. |
| QUICKTRONIC QHE 3X40DL UNV IS T5 Ballasts | First high efficiency universal voltage ballast that can operate 3 DL40W or 3 DL40/28W SS lamps. |
| OCTRON® FBO29/800XP/SS/ECO 29W T8 Fluorescent Lamp | First 29W 1-5/8" leg U-bent lamp. |
| DRAGONstick | Expansion of DRAGON product family, includes heatsinks and available in 3300K. |
| DRAGONpuck Warm White | Expanded DRAGONpuck product family – 3300K version. |
| DRAGONtape Warm White | Expanded DRAGONtape product family – 3300K version. |
| $HF^2$ Linear LED module | First integrated LED strip with heat sink and optics. Increases accessibility of LED to non LED manufacturers. |
| $HF^2$ Eye LED module | First integrated LED point source with heat sink and optics. Increases accessibility of LED to non LED manufacturers. IP65 rated. |
| $HF^2$X LED Module | Smallest 6 LED array with high luminance LEDs with optics. |
| OStar® Lighting LED component | Smallest 6 LED array with high luminance LEDs. |

## 2005 Progress Report

| OSRAM SYLVANIA submissions accepted by the IESNA Progress Report | Significance to the Lighting Industry |
|---|---|
| MINISTAR® Lamp | Smallest low voltage bi-pin halogen reflector lamp. |
| 70W METALARC® POWERBALL® PLUS Ceramic Metal Halide Lamps (3000K, 95 CRI) | Highest CRI of 3000K CMH lamps. |
| 320W METALARC POWERBALL Ceramic Metal Halide Lamp | HIghest initial LPW (117LPW) for a 320W CMH lamp. |
| 70W METALARC POWERBALL PAR30 Ceramic Metal Halide Lamp | First CMH lamp with neodymium glass. |
| 70 and 100W LUMALUX® PLUS High Pressure Sodium Lamps | First non-cycling medium based HPS lamp. |
| 39W METALARC POWERBALL Ceramic Metal Halide Lamp | Longest life 4000K 39W CMH lamp (12,000 hrs) |
| 920W SUPER METALARC® Metal Halide Lamp | First 920W metal halide lamp direct retrofit for 1000W. |
| PENTRON® Constant HO ECOLOGIC® T5 Fluorescent Lamp | First T5 HO lamp with amalgam technology. |
| ICETRON® Reflector ECOLOGIC Inductively Coupled Electrodeless Fluorescent Lamp | First induction lamp with an internal reflector. |
| OCTRON® FBO29/800XP/SS/ECO 29Watt T8 Fluorescent Lamp | First 29W 1-5/8" leg u-bent lamp. |
| OPTOTRONIC® Constant Current Dimmable LED Power Supply for DRAGONtape and DRAGONpuck | First LED driver for DRAGONtape and DRAGONpuck module. |
| OPTOTRONIC Dimmable LED power supply for DRAGONtape and DRAGONpuck | First dimmable LED driver for DRAGONtape and DRAGONpuck. |
| DRAGONpuck LED Module | First high brightness LED with integrated optics. |
| DRAGONtape LED Module | Modular, high brightness configurable LED strip. |
| OPTOTRONIC LED power supply, 24V, 75W | First 75W universal voltage LED power supply. |
| OPTOTRONIC OTO50/120-277/10E LED Power Supply | First 50W universal voltage LED power supply. |

# Product Catalog Glossary of Terms

**Ampere** A unit expressing the rate of flow of electric current.

**ANSI (American National Standards Institute)** The organization that develops voluntary guidelines and produces performance standards for the electrical and other industries.

**Audible Noise (Sound)** All fluorescent lamp ballasts produce some noise. Most OSRAM SYLVANIA brand ballasts are sound rated A (up to 75% quieter than magnetic types) and are acceptable for most applications. Care should be taken when mounting the ballast to reduce vibration.

**Average Rated Life** An average rating, in hours, indicating when 50% of a large group of lamps have failed, when operated at nominal lamp voltage and current; manufacturers use 3 hours per start for fluorescent lamps and 10 hours per start for HID lamps when performing lamp life testing procedures; every lamp type has a unique mortality curve that depicts its average rated life. For Photo-Optic specialty lamps, average rated life refers to the operating period after which on statistical average, 50% of the lamps will perform within their specified values.

**Ballast** A device used with an electric discharge lamp to obtain the necessary circuit conditions (voltage, current and waveform) for starting and operating; all fluorescent and HID light sources require a ballast for proper operation. Dimming ballasts are special ballasts which, when used together with a dimmer, will vary the light output of a lamp. OSRAM Photo-Optic discharge lamps are either designed for AC operation (sine wave and/or square wave with recommended operational frequencies below 1KHz) or DC operation (current regulated or power regulated). Please see OSRAM lamp specifications for correct ballast or electronic control gear selection.

**Ballast Basics** Ballasts have two primary functions: 1) start the lamp and 2) control operation of the lamp once it has started. High frequency electronic ballasts operate lamps more efficiently and eliminate the hum and visible flicker normally associated with standard magnetic ballasts. Electronic ballasts also typically have better power quality than magnetic ballasts.

**Ballast Efficacy Factor (BEF)** Ballast factor (as a whole number) divided by input power (watts). Used to measure the level of efficiency of similar ballast models. For example, the OSRAM SYLVANIA QT2X32IS which has a ballast factor of 0.90 and input watts of 59 (BEF= 90/59 = 1.53), is more efficient than electronic ballasts with ballast factor of 0.875 and input watts of 62 (BEF=1.41).

**Ballast Factor (BF)** The measured ability of a particular ballast to produce light from the lamp(s) it powers; ballast factor is derived by dividing the lumen output of a particular lamp/ballast combination by the lumen output of the same lamp(s) on a reference ballast.

**Ballast Fusing** (See Fusing.)

**Ballast Life** OSRAM SYLVANIA ballasts are designed to have an average life expectancy of 60,000 hours. To maximize life, ambient temperature should be kept as low as possible. It is also important to maintain effective dissipation of heat using the lighting fixture as a heatsink for the ballast enclosure.

**Ballast Losses** Power consumed by a ballast that dissipates as heat instead of being converted into light. Electronic ballasts operate more efficiently than magnetic or hybrid ballasts. A typical ballast loss for a standard two lamp energy saving magnetic ballast is 12 watts, where an electronic equivalent would only be 7 watts.

**Ballast Types** There are three types of lighting ballasts: 1) Magnetic: an inefficient device that uses a core and coil assembly transformer to perform the minimum functions required to start and operate the lamp; 2) Hybrid or "low frequency electronic": essentially a magnetic ballast with a few electronic components that switch off voltage to the lamp coil once the lamp has started. A minimal increase in efficiency is obtained via more expensive magnetic core material and the absence of power to the lamp coils during operation; 3) High frequency electronic: a ballast that operates lamps at frequencies above 20,000 Hz. Maximum efficiency is obtained through the use of electronic circuitry and optimum lamp operating characteristics.

**Base** The lamp base mechanically holds the lamp in place in the application. The lamp base directly or indirectly (via a cable or lead-in wires) conducts electricity from the circuit to the lamp and can be designed to dissipate heat. Lamp bases should be operated within specified temperature ranges.

**Beam Angle** The angle between the two directions for which the intensity (candlepower) is 50% of the maximum intensity as measured in a plane through the nominal beam centerline (center beam candlepower).

**Beam Spread** In any plane, the angle between the two directions in the plane in which the candlepower is equal to a stated percent of the maximum candlepower in the beam.

**Black Body (Planckian radiator)** An ideal thermal radiator whose SPD curve is defined by its temperature in Kelvin and whose color coordinates lie exactly on the Planckian curve.

**Brightness** (See Luminance.)

**Bulb** Hard, soft or quartz glass enclosure, which can contain a vacuum, elemental inert gas or metal and a means of light generation (filament or electrodes).

**Candela (cd)** The unit of measure indicating the luminous intensity (candlepower) of a light source in a specific direction; any given light source will have many different intensities, depending upon the direction considered.

**Candlepower Distribution** A curve that represents the variation in luminous intensity (expressed in candelas) in a plane through the light center of a lamp or luminaire; each lamp or lamp/luminaire combination has a unique set of candlepower distributions that indicate how light will be spread.

**Center Beam Candlepower (CBCP)** The intensity of light produced at the center of a reflector lamp beam, expressed in candelas.

**Chromaticity** The aspect of color that includes consideration of its dominant wavelength and purity.

**Color Rendering Index (CRI)** The Color Rendering Index (CRI) measures the effect a light source has on the perceived color of objects and surfaces. High CRI light makes virtually all colors look natural and vibrant. Low CRI causes some colors to appear washed out or even to take on a completely different hue.

**Color Temperature (CT)** Color temperature, which is measured in Kelvin, indicates whether a lamp has a warm, midrange or cool color appearance. "Warm" light sources have a low color temperature (2000-3000K) and feature more light in the red/orange/yellow range. Light with a higher color temperature (>5000K) features more blue light and is referred to as "cool."

**Compact Fluorescent Lamps** Compact fluorescent lamps employ small diameter tubes that are bent so they begin and end in a single base. This allows them to be produced in a wide variety of configurations, greatly extending the applications for fluorescent lighting.

**Correlated Color Temperature (CCT)** A specification of the color appearance of a lamp, relating its color to that of a reference source, black body radiator, heated to a particular temperature, measured in degrees Kelvin (K); CCT generally measures the "warmth" or "coolness" of light source appearance.

**Current** A measure of the rate of flow of electricity, expressed in amperes (A).

**Description** (See Ordering Abbreviation.)

**Design Amperes** The approximate current which the lamp will draw at design volts.

**Directional Lighting** Illumination on the workplane or on an object predominantly from a single direction.

**Double-Ended** Lamps that have two bases opposite one another for series electrical connection, mechanical mounting and heat dissipation.

**Efficacy** The rate at which a lamp is able to convert power (watts) into light (lumens), expressed in lumens per watt (LPW or lm/W). See also LPW Performance.

**Electronic Control Systems** (See Ballast.)

**EMI/RFI** Electronic Ballasts contain circuits that limit electrical noise conducted onto the power line or radiated through the air, otherwise referred to as EMI/RFI. OSRAM SYLVANIA ballasts comply with FCC 47 CFR Part 18, non-consumer limits for commercial applications. Ballasts for residential application must meet consumer limits. OSRAM SYLVANIA has a complete line of magnetic ballasts for residential use.

**Energy** A measure of work done by an electrical system over a given period of time, often expressed in kilowatt-hours (kWh).

**Filament** A tungsten wire purposely positioned inside a lamp bulb, that when heated electrically generates radiation in the visible, infrared and ultraviolet ranges. Tungsten material is most often used, as it has great tensile strength, is very durable, and can be heated very near its melting point without evaporating rapidly. Lamp filaments are offered in a variety of designs optimized for specific applications.

**Fixture** (See Luminaire.)

**Floodlight** A reflector lamp with a relatively wide beam pattern. Also a luminaire consisting of lamp and reflector at fixed distance providing a wide field of illumination.

**Fluorescent Lamp** A low pressure mercury vapor discharge light source. The electric discharge generates ultra-violet (UV) energy, which is absorbed by a phosphor and converted to visible light.

**Focal Distance** The distance between a lamp (light producing element) and the focal point of the reflector surrounding it. Lamp alignment can be adjusted to influence both illumination and color quality. Sometimes referred to as "working distance".

**Footcandle (fc)** A unit of illuminance equal to 1 lumen per square foot.

**Frequency** The number of times per second that an alternating current system reverses from positive to negative and back to positive, expressed in cycles per second or hertz (Hz).

**Fusing** All QUICKTRONIC® ballasts contain inherent electrical protection. Although there is no need to externally fuse the ballast, should code or regulation require one, 3 amp slow blow fuses are recommended.

**Glow to Arc Transition** In order to achieve full rated lamp life, a ballast should start a lamp so that the time from when the lamp begins to glow to the time the lamp arc strikes should be as short as possible. OSRAM SYLVANIA instant start ballasts typically accomplish this task within 50 msec.

**Grounding** The ballast case and fixture must always be grounded. The grounding helps assure safety, proper lamp starting, and acceptable EMI/RFI performance. Install ballast in accordance with national and local electric codes.

**Halogen Lamps** High pressure tungsten filament lamps containing halogen gases. The halogen gases allow the filaments to operate at higher efficacies than incandescent lamps. Halogen lamps also provide brighter, whiter light with better color characteristics, longer service life and improved energy efficiency.

**Harmonic** An electrical frequency that is an integer multiple of the fundamental frequency; for example, if 60 Hz is the fundamental frequency, then 120 Hz is the second harmonic and 180 Hz is the third harmonic. Some electronic devices, such as ballasts or power supplies, can cause harmonic distortion, directly affecting power quality.

**Hertz (Hz)** A unit of frequency equal to one cycle per second; see frequency.

**High-Intensity Discharge (HID) Lamps** Lamps in which an arc passing between two electrodes in a pressurized tube causes various metallic additives to vaporize and release large amounts of light. All HID lamps offer outstanding energy efficiency and service life. Metal halide lamps also offer good to excellent color rendering index (CRI).

**Hot Ignition** The restarting of a previously operating lamp shortly after turn-off. Hot ignition is a high performance feature in many OSRAM SYLVANIA discharge lamp types.

**Illuminance** Light arriving at a surface, expressed in lumens per unit area; 1 lumen per square foot equals 1 footcandle, while 1 lumen per square meter equals 1 lux.

**Incandescent Lamp** A light source using the principle of incandescence. When an electric current passes through a filament wire (usually tungsten), the heated wire glows. Filaments of standard incandescent lamps are enclosed in a vacuum or gas-filled bulb. They provide low initial cost, good color rendition and excellent optical control.

**Instant Start (IS)** Instant start ballasts apply high voltage across the lamp with no preheating of the cathode. This is the most energy efficient starting method for fluorescent lamp ballasting. IS ballasts use 1.5 to 2 watts less per lamp than rapid start ballast. Other IS ballast benefits typically include parallel lamp circuitry, longer remote wiring distance, easier installation due to less complicated wiring, and capability to start lamps at 0 degrees (versus 50 degrees F for rapid start).

**K-Factor** A measurement that quantifies the effect of non-linear equipment, such as lighting ballasts, on an electrical system. Lighting systems should be designed so that the transformer rating is sufficient for the ballast used (typically K-factor <4). All OSRAM SYLVANIA ballasts meet this specification.

**Lamp** Manufactured light source, synonymous with light bulb; the three broad categories of electric lamps are incandescent, fluorescent and high-intensity discharge.

**Lamp Current Crest Factor (LCCF)** The ratio of peak lamp current to the RMS (average) lamp current. Lamp manufacturers require a LCCF of less than 1.70 in order to achieve full lamp life.

**Lamp Disposal** When disposing of spent lamps, always consult federal, state, local and/or provincial hazardous waste disposal rules and regulations to ensure proper disposal.

**Lamp Flicker** Cyclic variation in output of a light source. High frequency electronic ballasts provide a minimal level of lamp flicker. Lamp flicker from magnetic ballasts may cause eye fatigue for some people.

**Lamp Fuse** Wire or device designed to protect a lamp from over-voltage or over-current conditions. OSRAM requires that all Photo-Optic lamps be fused in their applications to prevent lamp overpowering. Certain lamps contain their own internal fuse. Please ensure lamps in your specific application are fused with respect to their power source.

**Lamp Lumen Depreciation Factor (LLDF)** The multiplier to be used in illumination calculations to relate the initial rated output of light sources to the anticipated minimum rated output based on the relamping program to be used. (See Lumen Depreciation and Mean Lumens.)

**Lens** A glass or plastic element used in luminaires to change the direction and control the distribution of light rays.

**Light** Radiant energy that is capable of producing a visual sensation.

**Light Center Length (LCL)** The distance from a specified reference point on a lamp base to its light center.

**Light Loss Factor (LLF)** A factor used in calculating illuminance after a given period of time and under given conditions. It takes into account temperature and voltage variations, dirt accumulation on luminaire and room surfaces, lamp depreciation, maintenance procedures and atmosphere conditions. Formerly called maintenance factor.

**Low Temperature Starting** QUICKTRONIC® instant start and programmed rapid start electronic ballasts have the capability to start fluorescent lamps at temperatures down to 0°F providing the following conditions are met: 1. The ballast is operated at rated nominal line voltage; 2. Ballast cannot be tandem/remote wired for low temperature starting applications. Please note, starting time may increase at 0°F ambient temperatures. Enclosed fixtures are recommended as fluorescent lamps have reduced light output at cooler ambient temperatures. (See specifications for each model's starting temperature rating.)

**LPW Performance** Lumens Per Watt. The number of lumens produced by a light source for each watt of electrical power supplied to the light source. Also see Efficacy.

**Lumen Depreciation** The decrease in lumen output of a light source over time; every lamp type has a unique lumen depreciation curve (sometimes called a lumen maintenance curve) depicting the pattern of decreasing light output. See Lamp Lumen Depreciation Factor, LLDF and Mean Lumens.

**Lumen Maintenance** (See Lumen Depreciation.)

**Lumens (lm)** A unit of luminous flux; overall light output; quantity of light, expressed in lumens. For example, a dinner candle provides about 12 lumens and a 60-watt soft white incandescent lamp provides about 840 lumens.

**Luminaire** A light fixture; the complete lighting unit, including lamp, reflector, ballast, socket, wiring, diffuser and housing.

**Luminaire Efficiency** The ratio of luminous flux (lumens) emitted by a luminaire to that emitted by the lamp or lamps used therein.

**Luminance (L)** Light reflected in a particular direction; the photometric quantity most closely associated with brightness perception, measured in units of luminous intensity (candelas) per unit area (square feet or square meters).

# INCANDESCENT LIGHTING

The incandescent lamp consists of a wire filament on a suitable mount enclosed in a glass bulb containing a gas or a vacuum. When the lamp is connected to an electrical circuit, the current passing through the wire must overcome the filament's resistance, and the power consumed heats the filament to incandescence (causes it to glow).

## QUALITY LIGHT

Incandescent bulbs are still the standard choice when the quality of light really counts. The different shapes, coatings and features provide a variety of options for many lighting applications. With warm color temperatures and superior color rendering, nothing sets the mood like incandescent lighting.

**THE BEST QUALITY OF LIGHT FOR:**

***Atmosphere***

***Romance***

***Warmth***

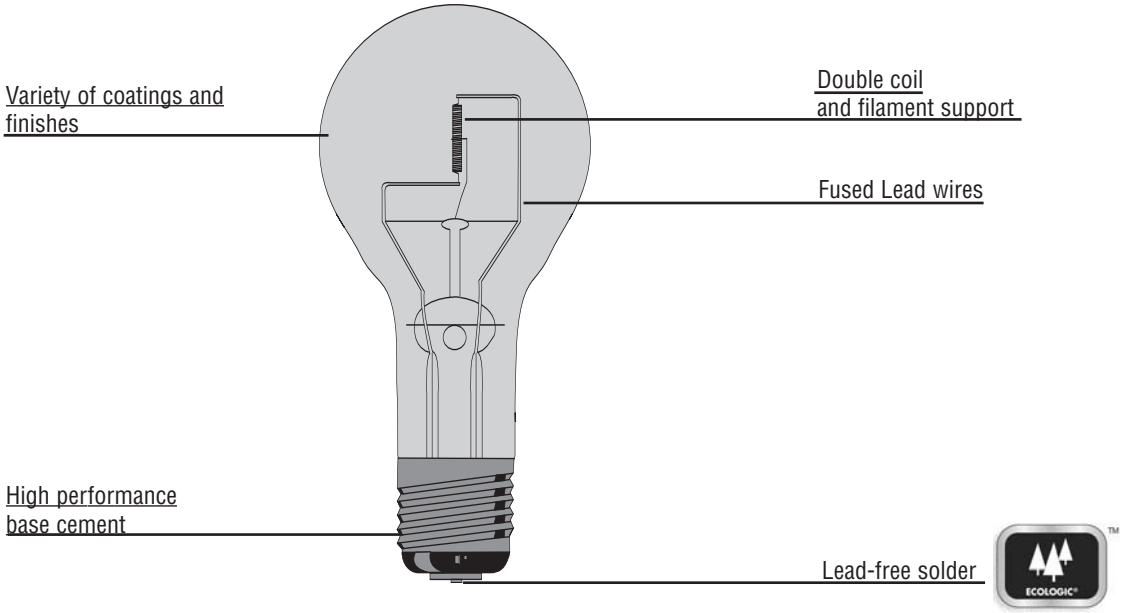
***Beauty***

***Comfort***

***Elegance***

## QUALITY CONSTRUCTION

*SYLVANIA uses the highest quality components designed to offer superior performance on every lamp.*



# LAMP CATEGORIES

SYLVANIA offers a wide assortment of premium lighting products that add value through superior performance, long life, beautiful light and rugged durability.

## Double Life

*Our long-life line of premium light bulbs*

Long Life without compromising brightness and light quality
- Lasts up to twice the life of a regular light bulb with almost the same light output
- Available in many different shapes and sizes

Perfect for hard to reach applications

## Daylight®

*Our most pleasing light*

Unique coating that simulates natural light
- Delivers whiter, more natural light
- Enhances color performance, vivid colors

The best choice to bring more natural light indoors

## Rough Service

*Our toughest line of light bulbs*

Able to withstand knocks and bumps
- Extra support
- Most durable construction

Ideal for applications where lamp may be subject to vibration

## Safeline®

*Our safest light bulbs*

Shatter resistant, weather resistant
- Safely contains glass in case of breakage
- Provides weather protection
- Provides weather and moisture resistance making bulbs ideal for indoor and outdoor applications.

Appropriate when safety comes first

## Specialty

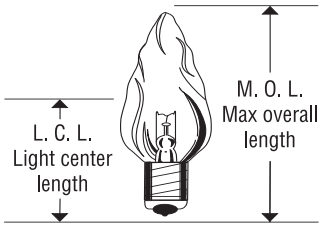
*Our complete assortment of specialized light bulbs*

Diverse line of light bulbs for specific uses
- SPOT-GRO®
- Night Lights
- Appliance Lamps
- Heat Lamps
- Colored Lamps
- Street lighting

High quality lamps for multiple applications

## BULB IDENTIFICATION

**Light Center Length (L.C.L.)** is the distance from the center of the light source to the following point for the base used: Screw bases...bottom base contact; Bayonet candelabra and medium bayonet...top of base pins.




Bulb size - Max. Diameter (Divide by 8)

A-21 - 21⁄8 = 2 5⁄8" Dia.

G-40 - 40⁄8 = 5" Dia.

T-12 - 12⁄8 = 1 1⁄2" Dia.

PS-30 - 30⁄8 = 3 3⁄4" Dia.

## BASE IDENTIFICATION

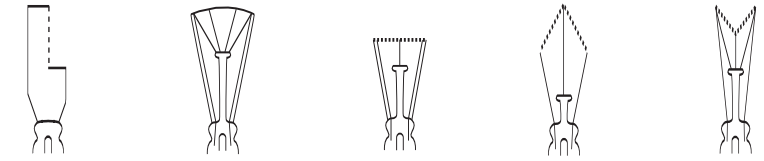
Typical bases are shown. One lead-in wire is soldered to the center contact and the other soldered or welded to the upper rim of the base shell. Base shells are typically made of brass or aluminum. ANSI designations are in parentheses.

Candelabra cand. (E12) | Intermediate Inter. (E17) | Medium (E26) & Medium Brass (E26) | 3 Contact Medium 3 C Med (E26D) | Medium Skirted Med. Skirt (E26/50x39)

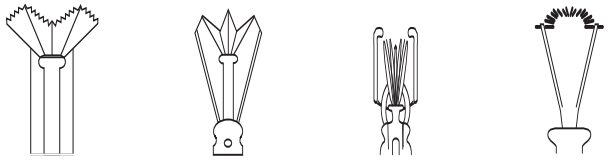
Mogul Screw | 3 Contact Mogul | Double Contact Bayonet D.C. Bay (BA15D) | S14s | Ext. Mogul End Prong GX16d / Mogul End Prong | Med Side Pr. | Screw Terminal G53

## FILAMENT IDENTIFICATION

A FILAMENT designation consists of a prefix letter to indicate whether the wire is straight or coiled, and a number to indicate the arrangement of the filament on the supports. Prefix letters include: C (coiled) --wire is wound into a helical coil or it may be deeply fluted; CC (coiled coil)--wire is wound into a helical coil and this coiled wire again wound into a helical coil.



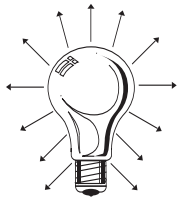
C-8 CC-8 | C-9 CC-9 | C-6 CC-6 | C-2V CC-2V | C-7A CC-7A



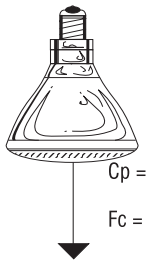
C-11V | C-11 CC-11 | C-5 | C-2R

## ADDITIONAL INFORMATION

**Lamps Listed** 115-125 volts (design voltage 120), 120-130 volts (design voltage 125), 125-130 volts (design voltage 130) and 230-250 volts (design voltage 240) are intended for use on circuits normally varying within these voltage limits.



LUMENS
total lamp light output



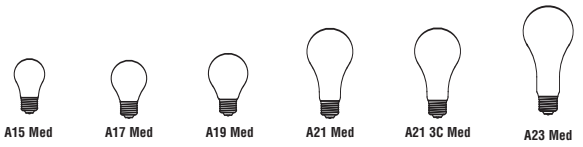
Candle Power
Cp = Ray of Light in one direction

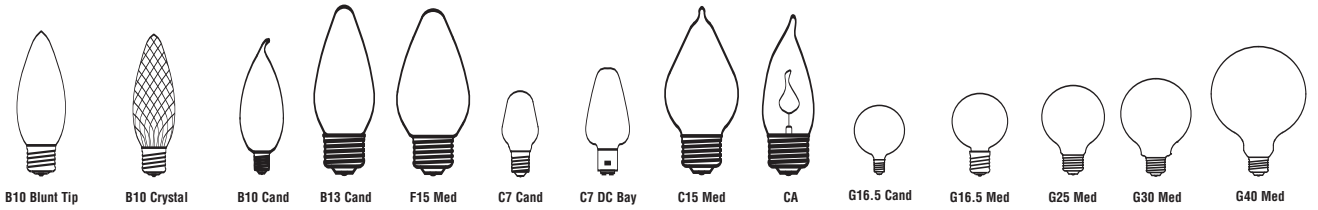
$$Fc = \frac{\text{Max Beam Cp}}{D^2}$$

**Finishes**
W or SW - Soft White
DAY - Daylight®
Y - Yellow
B - Blue
R - Red
G - Green
A - Amber
IC - Iridescent clear
FL - Flood
SP - Spot
IF - Inside frost
AIC - Amber iridescent clear

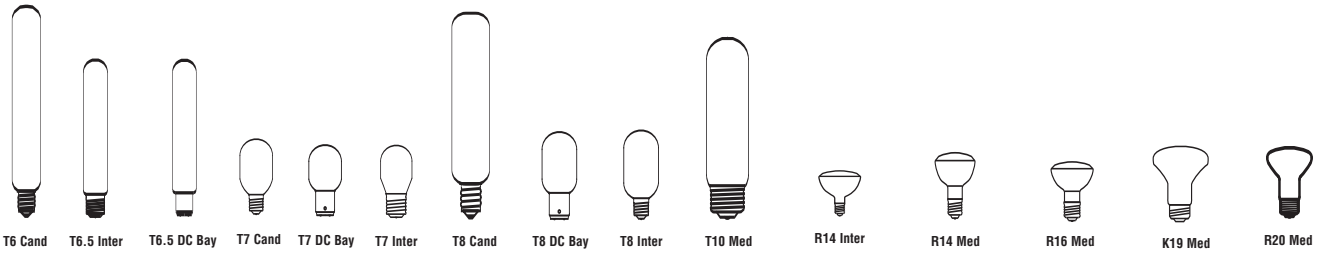
## INCANDESCENT LAMP SHAPES

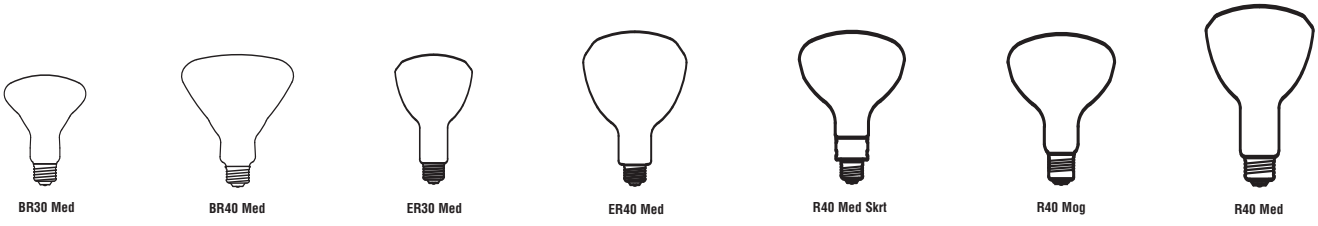
A bulb designation consists of a letter(s) to indicate the shape and a figure(s) to indicate the approximate major diameter in eighths of in inch. For example, an F-15 bulb is a flame-shape, 15/8 of an inch or 1-7/8 inches in diameter.

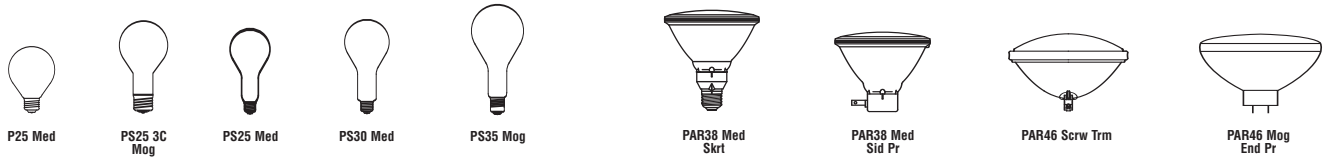


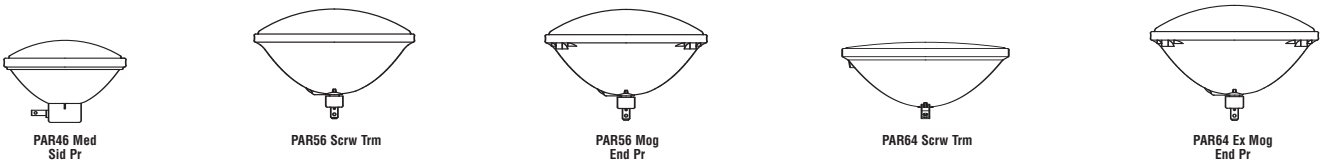







## HOW TO READ PRODUCT INFORMATION - INCANDESCENT

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | |
|---|---|
| **Bulb** | Describes the shape of the envelope followed by the lamp's major diameter given in eighths of an inch. See page 4: Incandescent Lamps. |
| **Base** | See page 3: Base Identification. |
| **Symbols & Footnotes** | All symbols and footnotes that apply to a specific product will appear in this space. The explanations of the symbols and foot notes are at the end of the incandescent section. |
| **Ordering Abbreviation** | A text description of the lamp. See below for several examples and explanations of some of the codes. |
| **Class & Filament** | The class is either B (vacuum) or C (gas filled). The filament designation describes the shape and mount structure of the filament. See page 3: Filament Identification. |
| **Lumens, Beam Angle, CBCP** | This column may contain data for any of these values. Lumen values are followed by the designation 'lm'. Beam angles are indicated by either a '°' or the designation 'V x H' for non-symmetric beams. CBCP values are followed by the designation 'cd'. |

## HOW TO READ ORDERING ABBREVIATIONS

| 40B10C/CRYSTAL/DL/BL/2PK | | 60A/DL/SW/2PK/RP | | 65BR30/DL/FL/RP | |
|---|---|---|---|---|---|
| **40** | Nominal lamp wattage | **60** | Nominal lamp wattage | **65** | Nominal lamp wattage |
| **B** | Bulb shape | **A** | Bulb shape | **BR** | Bulb shape |
| **10** | Bulb size in 8th's of an inch | **DL** | Double life lamp | **30** | Bulb size in 8th's of an inch |
| **C** | Candelabra base | **SW** | Soft white | **DL** | Double life lamp |
| **CRYSTAL** | Crystal texture on bulb glass | **2PK** | 2 lamps per package | **FL** | Flood beam pattern |
| **DL** | Double Life Lamp | **RP** | Retail pack | **RP** | Retail pack |
| **BL** | Blister pack | | | | |
| **2PK** | 2 lamps per package | | | | |

## INCANDESCENT BRAND NAME GUIDE

NOTE: These tables are intended only as a guide and may represent another lamp company's closest competitive type rather than an identical match. Individual manufacturers' performance values should be consulted. Environmental conditions, ballast type, and other auxillary equipment may affect lamp performance.

### INCANDESCENT

| SYLVANIA | GE* | PHILIPS** |
|---|---|---|
| Bug-Light | Bug-Lite | Bug-A-Way |
| Double Life | Long Life | Dura-Max |
| Double Life Soft White | Long Life Soft White | Dura-Max Soft White |
| Daylight® | Reveal | Natural |
| elogic™ | - | - |
| Energy Saver Soft White | Soft White Miser | Econ-O-Watt |
| EXCEL-LINE® | Extended Service | Extended Service |
| LINESTRA® | Lumiline | |
| RHINO COAT® SAFELINE® | COV-R-GUARD | Silicone Coated |
| Rough Service | | Rough Service |
| Rough Service XL | Survivor | |
| Soft Pink | Soft Pink | Softone Pastels |
| Spot-GRO® | House Garden - Plant Light | Agro-Lite |
| SUPERSAVER® | Watt-Miser | Econo-o-Watt |
| SUPERSAVER EXCEL-LINE | Watt-Miser Plus | Extended Service |
| SUPERSAVER PAR | Watt-Miser PAR | Econo-o-PAR |

*Trademark and or registered trademark of General Electric Company. **Trademark and or registered trademark of Philips.

## NOTES:

## ELOGIC™ LAMPS
**Small Bulb. Big Difference**

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | A17 | Med | 10825 | ● | **38A17/W/ELOGIC/4/48/RP** | 120 | 48 | Soft White | C, CC-8 | 2250 | 410 | 2.88 | 3.75 |
| 57 | A17 | Med | 11721 | ● | **57A17/W/ELOGIC/4/48/RP** | 120 | 48 | Soft White | C, CC-8 | 1500 | 740 | 2.88 | 3.75 |
| 71 | A17 | Med | 10826 | ● | **71A17/W/ELOGIC/4/48/RP** | 120 | 48 | Soft White | C, CC-8 | 1125 | 1020 | 2.88 | 3.75 |
| 95 | A17 | Med | 12953 | ● | **95A17/W/ELOGIC/4/48/RP** | 120 | 48 | Soft White | C, CC-8 | 1125 | 1500 | 2.88 | 3.75 |

## DAYLIGHT® LAMPS
**White & Natural**

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | G16.5 | Candelabra | 10221 | ● ▼ | **25G16.5C/DAY/2PK/BL** | 120 | 12 | Daylight Globe | C, C-7A | 1500 | | | 3.00 |
| 30<br>70<br>100 | A21 | 3 CONTACT Med | 19395 | ● ▼ ▼ | **30/100/DAYLIGHT/1/12** | 120 | 12 | Daylight 3-Way | C, CC-8 | 1200 | 220lm<br>700lm<br>920lm | 3.38 | 5.31 |
| 40 | A15 | Med | 10181 | ● ▼ | **40A15/DAY/FAN/BL/2/24** | 120 | 24 | Daylight Fan | C, C-9 | 1000 | 340 | 2.38 | 3.50 |
| | A19 | Med | 10897 | ● ▼ | **40A/DAY/4/160/RP** | 120 | 160 | Daylight | C, CC-8 | 1500 | 350 | 3.13 | 4.44 |
| | | | 10864 | ● ▼ | **40A/DAY/RP/4/48** | 120 | 48 | Daylight | C, CC-8 | 1500 | 350 | 3.13 | 4.44 |
| | | | 11100 | ● ▼ | **40A/DAY/RP/2/24** | 120 | 24 | Daylight | C, CC-8 | 1500 | 350 | 3.13 | 4.44 |
| | | | 10829 | ● ▼ 99,136 | **40A/DAY/RP/4/48** | 130 | 48 | Daylight | C, CC-8 | 1500 | 350 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 33 watts, 270 lumens, 3750 hours.* | | | | | | | | | | |
| | B10 | Candelabra | 13751 | ● ▼ | **40B10C/DAY/2PK/BL** | 120 | 12 | Daylight Decor Bent Tip | C, C-7A | 1500 | | | 3.88 |
| | | Med | 15354 | ● ▼ | **40B10/DAY/2PK/BL** | 120 | 12 | Daylight Decor Bent Tip | C, C-7A | 1000 | | | 3.88 |
| | G16.5 | Candelabra | 10367 | ● ▼ | **40G16.5C/DAY/2PK/BL** | 120 | 12 | Daylight Globe | C, C-7A | 1500 | | | 3.00 |
| | G25 | Med | 15350 | ● | **40G25/CL/DAY/1/6** | 120 | 6 | Daylight Clear Globe | C, C-9 | 1500 | | | 4.44 |
| | | | 13966 | ● | **40G25/DAY/1/6** | 120 | 6 | Daylight Globe | C, C-9 | 1500 | | | 4.44 |
| 45 | R20 | Med | 15677 | ● 2,46,68,155 | **45R20/DAY/1/6/RP** | 120 | 6 | Daylight Reflector | C, C-9 | 2000 | | | 3.94 |
| 50<br>100<br>150 | A21 | 3 CONTACT Med | 18110 | ● ▼ | **50/150/DAY/1/12** | 120 | 12 | Daylight 3-way | C, CC-8 | 1200 | 460lm<br>1170lm<br>1630lm | 3.38 | 5.31 |
| 50 | R20 | Med | 15231 | ● 2,46,68,107, 155 | **50R20/DAY/1/6/RP** | 120 | 6 | Daylight Reflector | C, C-9 | 2000 | | | 3.94 |
| 60 | A15 | Med | 10162 | ● | **60A15/DAY/FAN/BL/2/24** | 120 | 24 | Daylight Fan | C, C-9 | 1000 | 340 | 2.38 | 3.50 |
| | A19 | Med | 11509 | ● | **60A/DAY/4/160/RP** | 120 | 160 | Daylight | C, CC-8 | 1000 | 640 | 3.13 | 4.44 |
| | | | 11463 | ● | **60A/DAY/RP/4/48** | 120 | 48 | Daylight | C, CC-8 | 1000 | 640 | 3.13 | 4.44 |
| | | | 11101 | ● | **60A/DAY/RP/2/24** | 120 | 24 | Daylight | C, CC-8 | 1000 | 640 | 3.13 | 4.44 |
| | | | 11602 | ● 101,136 | **60A/DAY/RP/4/48** | 130 | 48 | Daylight | C, CC-8 | 1000 | 640 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 53 watts, 490 lumens, 2500 hours.* | | | | | | | | | | |
| | B10 | Candelabra | 13750 | ● ▼ | **60B10C/DAY/2PK/BL** | 120 | 12 | Daylight Decor Bent Tip | C, C-7A | 1500 | | | 3.88 |
| | G25 | Med | 15351 | ● | **60G25/CL/DAY/1/6** | 120 | 6 | Daylight Clear Globe | C, C-9 | 1500 | | | 4.44 |
| | | | 13967 | ● | **60G25/DAY/1/6** | 120 | 6 | Daylight Globe | C, C-9 | 1500 | | | 4.44 |
| 65 | BR30 | Med | 15223 | ● 2,46,57, 155 | **65BR30/DAY/1/6/RP** | 120 | 6 | Daylight Reflector | C, CC-6 | 2000 | | | 5.38 |
| | BR40 | Med | 15487 | ● 46,57,155 | **65BR40/FL/DAY/1/6/RP** | 120 | 6 | Daylight Reflector | C, CC-6 | 2000 | | | 6.50 |
| 75 | A19 | Med | 10863 | ● | **75A/DAY/4/160/RP** | 120 | 160 | Daylight | C, CC-8 | 750 | 850 | 3.13 | 4.44 |
| | | | 10865 | ● | **75A/DAY/RP/4/48** | 120 | 48 | Daylight | C, CC-8 | 750 | 850 | 3.13 | 4.44 |


A19


BR40


C7 Candelabra


B10


G25


A21


A15



## DAYLIGHT® LAMPS
**White & Natural**

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75 | A19 | Med | 11102 | ● | **75A/DAY/RP/2/24** | 120 | 24 | Daylight | C, CC-8 | 750 | 850 | 3.13 | 4.44 |
| | | | 10776 | ● 102,136 | **75A/DAY/RP/4/48** | 130 | 48 | Daylight | C, CC-8 | 750 | 850 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 66 watts, 650 lumens, 1875 hours.* | | | | | | | | | | |
| | BR40 | Med | 15349 | ● 46,57,107, 155 | **75BR40/FL/DAY/1/6/RP** | 120 | 6 | Daylight Reflector Flood | C, CC-6 | 2000 | | | 6.50 |
| 100 | A19 | Med | 12948 | ● | **100A/DAY/4/160/RP** | 120 | 160 | Daylight | C, CC-8 | 750 | 1270 | 3.13 | 4.44 |
| | | | 12587 | ● | **100A/DAY/RP/4/48** | 120 | 48 | Daylight | C, CC-8 | 750 | 1270 | 3.13 | 4.44 |
| | | | 12952 | ● | **100A/DAY/RP/2/24** | 120 | 24 | Daylight | C, CC-8 | 750 | 1270 | 3.13 | 4.44 |
| | | | 12538 | ● 103,136 | **100A/DAY/RP/4/48** | 130 | 48 | Daylight | C, CC-8 | 750 | 1270 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 88 watts, 970 lumens, 1875 hours.* | | | | | | | | | | |

## DOUBLE LIFE LAMPS
**Lasts 2X longer than ordinary Soft White lamps**

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | C7 | Candelabra | 13523 | ● | **4C7/DL/BL/4PK** | 120 | 48 | Double Life Night Light | B, C-9 | 6000 | 14 | | 2.13 |
| 15 | B10 | Candelabra | 13315 | ●▼ | **15B10C/DL/BL** | 120 | 12 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | | | 3.88 |
| 25 | B10 | Candelabra | 13306 | ●▼ | **25B10C/DL/BL/4PK** | 120 | 24 | Clear Double Life Decor Bent Tip | C, C-7A | 3000 | | | 3.88 |
| | | | 13316 | ●▼ | **25B10C/DL/BL** | 120 | 12 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | | | 3.88 |
| | | | 13743 | ●▼ | **25B10C/CRYSTAL/DL/BL/2PK** | 120 | 12 | Double Life Crystal Bent Tip | C, C-7A | 3000 | | | 3.88 |
| | | | 13308 | ●▼ | **25B10C/DLF/BL/4PK** | 120 | 24 | Frosted Double Life Décor Bent Tip | C, C-7A | 3000 | | | 3.88 |
| | | | 13317 | ●▼ | **25B10C/DLF/BL** | 120 | 12 | Frosted Double Life Decor Bent Tip | C, C-2V | 3000 | | | 3.88 |
| | | Med | 13331 | ●▼ 94 | **25B10/DL/BL/4PK** | 120 | 24 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | | | 3.81 |
| | | | 13318 | ●▼ 94 | **25B10/DL/BL** | 120 | 12 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | | | 3.81 |
| | G25 | Med | 14105 | ● | **25G25/DL/RP/48** | 120 | 48 | Clear Double Life Globe | C, C-9 | 3000 | | | 4.44 |
| | | | 14145 | ● | **25G25/DL/RP** | 120 | 6 | Clear Double Life Globe | C, C-9 | 3000 | | | 4.44 |
| | | | 14103 | ● | **25G25/DL/SW/RP/48** | 120 | 48 | Soft White Double Life Globe | C, C-9 | 3000 | | | 4.44 |
| | | | 14146 | ● | **25G25/DL/SW/RP** | 120 | 6 | Soft White Double Life Globe | C, C-9 | 3000 | | | 4.44 |
| 30 70 100 | A21 | 3 CONTACT Med | 19345 | ●▼ 118 | **30/100A21/DL/SW/1/48** | 120 | 48 | Soft White Double Life 3-Way | C, CC-8 | 2400 | 270lm 860lm 1130lm | 3.38 | 5.31 |
| | | | 19380 | ●▼ | **30/100A21/DL/SW/RP** | 120 | 12 | Soft White Double Life 3-way | C, CC-8 | 2400 | 270lm 860lm 1130lm | 3.38 | 5.31 |
| 32 | B10 | Candelabra | 13737 | ●▼ | **32B10C/CRYSTAL/DL/BL/2PK** | 120 | 12 | Double Life Crystal Bent Tip | C, C-7A | 4000 | | | 3.88 |
| 40 | A15 | Med | 10023 | ● | **40A15/CL/DL/FAN/BL/2/24** | 120 | 24 | Clear Double Life Ceiling Fan Light | C, C-9 | 2000 | 350 | 2.38 | 3.50 |

# DOUBLE LIFE LAMPS

## Lasts 2X longer than ordinary Soft White lamps

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | A15 | Med | 10046 | ● | **40A15/CL/DL/FAN** | 120 | 24 | Clear Double Life Fan Light | C, C-9 | 2000 | 350 | 2.38 | 3.50 |
| | | | 10133 | ● | **40A15/CL/DL/BL** | 120 | 12 | Clear Double Life Appliance | C, C-9 | 2000 | 350 | 2.38 | 3.50 |
| | | | 11664 | ● | **40A15/DL/SW/BL/2/24** | 120 | 24 | Soft White Double Life Fan | C, C-9 | 2000 | 310 | 2.38 | 3.50 |
| | A19 | Med | 11646 | ● | **40A/CL/DL/2PK/RP** | 120 | 24 | Clear Double Life | C, CC-8 | 3000 | 385 | 3.13 | 4.44 |
| | | | 10939 | ● | **40A/DL/SW/4PK/RP** | 120 | 48 | Soft White Double Life | C, CC-8 | 3000 | 390 | 3.13 | 4.44 |
| | | | 11645 | ● | **40A/DL/SW/2PK/RP** | 120 | 24 | Soft White Double Life | C, CC-8 | 3000 | 390 | 3.13 | 4.44 |
| | B10 | Candelabra | 13328 | ● | **40B10C/DL/BL/4PK** | 120 | 24 | Clear Double Life Decor Bent Tip | C, C-7A | 3000 | | | 3.88 |
| | | | 13319 | ● | **40B10C/DL/BL/2PK** | 120 | 12 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | | | 3.88 |
| | | | 13714 | ● | **40B10C/CRYSTAL/DL/BL/4/24** | 120 | 24 | Double Life Crystal Bent Tip | C, C-7A | 3000 | | | 3.88 |
| | | | 13741 | ● | **40B10C/CRYSTAL/DL/BL/2PK** | 120 | 12 | Double Life Crystal Bent Tip | C, C-7A | 3000 | | | 3.88 |
| | | | 13309 | ● | **40B10C/DL/F/BL/4PK** | 120 | 24 | Frosted Double Life Décor Bent Tip | C, C-7A | 3000 | | | 3.88 |
| | | | 13320 | ● | **40B10C/DL/F/BL/2PK** | 120 | 12 | Frosted Double Life Décor Bent Tip | C, C-7A | 3000 | | | 3.88 |
| | | Med | 13321 | ● 94 | **40B10/DL/BL/2PK** | 120 | 12 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | | | 3.81 |
| | | | 13723 | ● 94 | **40B10/CRYSTAL/DL/BL/4PK** | 120 | 24 | Double Life Crystal Bent Tip | C, C-7A | 3000 | | | 3.81 |
| | | | 13740 | ● 94 | **40B10/CRYSTAL/DL/BL/2PK** | 120 | 12 | Double Life Crystal Bent Tip | C, C-7A | 3000 | | | 3.81 |
| | | | 13322 | ● 94 | **40B10/DL/F/BL/2PK** | 120 | 12 | Frosted Double Life Décor Bent Tip | C, C-7A | 3000 | | | 3.81 |
| | B13 | Med | 13366 | ● | **40B13/DL/FAN/2/60/BL** | 120 | 60 | Clear Double Life Ceiling Fan | C, C-9 | 3000 | 455 | | 4.63 |
| | | | 13369 | ● | **40B13/DL/FAN/BL/2PK** | 120 | 12 | Clear Double Life Ceiling Fan | C, C-9 | 3000 | 455 | | 4.63 |
| | G25 | Med | 14174 | ● | **40G25/DL/1/48** | 120 | 48 | Clear Double Life Globe | C, C-9 | 3000 | | | 4.44 |
| | | | 14147 | ● | **40G25/DL/RP** | 120 | 6 | Clear Double Life Globe | C, C-9 | 3000 | | | 4.44 |
| | | | 14148 | ● | **40G25/DL/SW/RP** | 120 | 6 | Soft White Double Life Globe | C, C-9 | 3000 | | | 4.44 |
| 45 | R20 | Med Brass | 15698 | 2,46,68,155 | **45R20/DL/RP** | 120 | 6 | Double Life Reflector Flood | C, C-9 | 4000 | 260 | | 3.94 |
| 50 100 150 | A21 | 3 CONTACT Med | 18168 | ● | **50150A21DL/SW/1/48** | 120 | 48 | Soft White Double Life 3-way | C, CC-8 | 2400 | 540lm 1400lm 1940lm | 3.38 | 5.31 |
| | | | 18044 | ● | **50/150A21/DL/SW/RP** | 120 | 12 | Soft White Double Life 3-way | C, CC-8 | 2400 | 540lm 1400lm 1940lm | 3.38 | 5.31 |
| 50 | R20 | Med Brass | 15346 | 2,46,68,107,155 | **50R20/DL/1/48** | 120 | 48 | Double Life Reflector Flood | C, C-9 | 4000 | 290 | | 3.94 |
| | | | 14943 | 2,46,68,107,155 | **50R20/DL/RP** | 120 | 6 | Double Life Reflector Flood | C, C-9 | 4000 | 290 | | 3.94 |




# DOUBLE LIFE LAMPS

**Lasts 2X longer than ordinary Soft White lamps**

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 60 | A15 | Med | 10024 | ● | **60A15/CL/DL/FAN/BL/2/24** | 120 | 24 | Clear Double Life Fan Light | C, C-9 | 2000 | 530 | 2.38 | 3.50 |
| | | | 10048 | ● | **60A15/CL/DL/FAN/RP** | 120 | 24 | Clear Double Life Fan Light | C, C-9 | 2000 | 530 | 2.38 | 3.50 |
| | | | 10868 | ● | **60A15/DL/SW/BL/2/24** | 120 | 24 | Soft White Double Life Fan Light | C, C-9 | 2000 | 510 | 2.38 | 3.50 |
| | A19 | Med | 11260 | ● | **60A/CL/DL/RP** | 120 | 24 | Clear Double Life | C, CC-8 | 2000 | 790 | 3.13 | 4.44 |
| | | | 11204 | ● | **60A/DL/SW/4PK/RP** | 120 | 48 | Soft White Double Life | C, CC-8 | 2000 | 770 | 3.13 | 4.44 |
| | | | 11227 | ● | **60A/DL/SW/2PK/RP** | 120 | 24 | Soft White Double Life | C, CC-8 | 2000 | 770 | 3.13 | 4.44 |
| | B10 | Candelabra | 13705 | ● | **60B10C/DL/BL/4PK** | 120 | 24 | Clear Double Life Decor Bent Tip | C, C-7A | 3000 | | | 3.88 |
| | | | 13777 | ● | **60B10C/DL/BL/2PK** | 120 | 12 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | | | 3.88 |
| | | | 13749 | ● | **60B10C/CRYSTAL/DL/BL/4/24** | 120 | 24 | Double Life Crystal Bent Tip | C, C-7A | 3000 | | | 3.88 |
| | | | 13754 | ● | **60B10C/DL/F/BL/4PK** | 120 | 24 | Frosted Double Life Décor Bent Tip | C, C-7A | 3000 | | | 3.88 |
| | | | 13778 | ● | **60B10C/DL/F/BL/2PK** | 120 | 12 | Frosted Double Life Décor Bent Tip | C, C-7A | 3000 | | | 3.88 |
| | | Med | 13323 | ● | **60B10/DL/BL/2PK** | 120 | 12 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | | | 3.81 |
| | | | 13324 | ● | **60B10/DL/F/BL/2PK** | 120 | 12 | Frosted Double Life Décor Bent Tip | C, C-7A | 3000 | | | 3.81 |
| | B13 | Med | 13370 | ● | **60B13/DL/FAN/BL/2PK** | 120 | 12 | Clear Double Life Fan Lamp | C, C-9 | 3000 | 650 | | 4.63 |
| | G25 | Med | 14106 | ● | **60G25/DL/RP/48** | 120 | 48 | Clear Double Life Globe | C, C-9 | 3000 | | | 4.44 |
| | | | 14149 | ● | **60G25/DL/RP** | 120 | 6 | Clear Double Life Globe | C, C-9 | 3000 | | | 4.44 |
| | | | 14104 | ● | **60G25/DL/SW/RP/48** | 120 | 48 | Soft White Double Life Globe | C, C-9 | 3000 | | | 4.44 |
| | | | 14150 | ● | **60G25/DL/SW/RP** | 120 | 6 | Soft White Double Life Globe | C, C-9 | 3000 | | | 4.44 |
| 65 | BR30 | Med Brass | 15266 | | **65BR30/DL/2/24** | 120 | 24 | Double Life Reflector Flood | C, CC-6 | 4000 | 510 | | 5.38 |
| | | | 15177 | 2,46,57,155 | **65BR30/DL/FL/RP** | 120 | 6 | Double Life Reflector Flood | C, CC-6 | 4000 | 510 | | 5.38 |
| | BR40 | Med Brass | 15332 | 46,57,155 | **65BR/DL/FL/RP** | 120 | 6 | Double Life Reflector Flood | C, CC-6 | 4000 | 510 | | 6.50 |
| 75 | A19 | Med | 11175 | ● | **75A/CL/DL/RP** | 120 | 24 | Clear Double Life | C, CC-8 | 1500 | 1085 | 3.13 | 4.44 |
| | | | 11331 | ● | **75A/W/DL/SW/4PK/RP** | 120 | 48 | Soft White Double Life | C, CC-8 | 1500 | 1055 | 3.13 | 4.44 |
| | | | 11337 | ● | **75A/DL/SW/2PK/RP** | 120 | 24 | Soft White Double Life | C, CC-8 | 1500 | 1055 | 3.13 | 4.44 |
| | BR40 | Med Brass | 15213 | 46,57,107,155 | **75BR40/DL/FL/1/24** | 120 | 24 | Double Life Reflector Flood | C, CC-6 | 4000 | 610 | | 6.50 |
| | | | 15144 | 46,57,107,155 | **75BR/DL/FL/RP** | 120 | 6 | Double Life Reflector Flood | C, CC-6 | 4000 | 610 | | 6.50 |
| 100 | A19 | Med | 11176 | ● 108 | **100A/CL/DL/RP** | 120 | 24 | Clear Double Life | C, CC-8 | 1500 | 1550 | 3.13 | 4.44 |
| | | | 11660 | ● | **100A/CL/DL/PLUS/2PK/RP** | 120 | 24 | Clear Double Life | C, CC-8 | 1500 | 1590 | 3.13 | 4.44 |
| | | | 16868 | ● | **100A/DL/SW/PLUS/4PK/RP/160** | 120 | 160 | Soft White Double Life | C, CC-8 | 1500 | 1560 | 3.13 | 4.44 |
| | | | 16864 | ● | **100A/DL/SW/PLUS/4PK/RP** | 120 | 48 | Soft White Double Life | C, CC-8 | 1500 | 1560 | 3.13 | 4.44 |


A19


BR40


S6


C7 Candelabra


S14


S11



# DOUBLE LIFE LAMPS

**Lasts 2X longer than ordinary Soft White lamps**

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100 | A19 | Med | 11332 | 108 | **100A/DL/SW/4PK/RP** | 120 | 48 | Soft White Double Life | C, CC-8 | 1500 | 1530 | 3.13 | 4.44 |
| | | | 12480 | | **100A/DL/SW/PLUS/2PK/RP** | 120 | 24 | Soft White Double Life | C, CC-8 | 1500 | 1560 | 3.13 | 4.44 |
| | | | 12805 | 108 | **100A/DL/SW/2PK/RP** | 120 | 24 | Soft White Double Life | C, CC-8 | 1500 | 1530 | 3.13 | 4.44 |
| 120 | BR40 | Med Brass | 14915 | 2,46,57,107, 155 | **120BR/DL/FL/RP** | 120 | 6 | Double Life Reflector Flood | C, CC-6 | 4000 | 960 | | 6.50 |

# GENERAL PURPOSE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | S6 | Candelabra | 16757 | | **3S6/5** | 120 | 240 | Clear Indicator | B, C-7A | 3000 | 10 | 1.44 | 1.88 |
| | | | 16759 | 138 | **3S6/5** | 130 | 240 | Clear Indicator | B, C-7A | 3000 | 12 | 1.44 | 1.88 |
| 4 | C7 | Candelabra | 13523 | | **4C7/DL/BL/4PK** | 120 | 48 | Double Life Night Light | B, C-9 | 6000 | 14 | | 2.13 |
| | | | 13549 | | **4C7/BL/4PK** | 120 | 48 | Clear Night Light | B, C-9 | 3000 | 16 | | 2.13 |
| | | | 13542 | | **4C7/BL/2PK** | 120 | 24 | Clear Night Light | B, C-9 | 3000 | 16 | | 2.13 |
| | | | 13553 | | **4C7/W/BL/4PK** | 120 | 48 | White Night Light | B, C-7 | 3000 | 16 | | 2.13 |
| | | | 13538 | | **4C7/W/BL/2PK** | 120 | 24 | White Night Light | B, C-9 | 3000 | 16 | | 2.13 |
| | | | 13556 | | **4C7/BLUE/2PK** | 120 | 24 | Blue Nightlight | B, C-7A | 3000 | | | 2.13 |
| | | | 13557 | | **4C7/PINK/2PK** | 120 | 24 | Pink Nightlight | B, C-7A | 3000 | | | 2.13 |
| 6 | S6 | Candelabra | 16927 | | **6S6/CL12V** | 12 | 120 | Clear Indicator | B, C-2R | 1500 | 47 | 1.44 | 1.88 |
| | | | 16929 | | **6S6/CL24V** | 24 | 120 | Clear Indicator | B, C-7A | 1500 | 48 | 1.44 | 1.88 |
| | | | 16930 | | **6S6/CL30V** | 30 | 120 | Clear Casino | B, C-7A | 1500 | 46 | 1.44 | 1.88 |
| | | | 16960 | | **6S6/CL** | 120 | 120 | Clear Indicator | B, C-7A | 1500 | 41 | 1.44 | 1.88 |
| | | | 16938 | | **6S6/CL** | 130 | 120 | Clear Indicator | B, C-7A | 1500 | 37 | 1.44 | 1.88 |
| | | | 16942 | | **6S6/CL145V** | 145 | 120 | Clear Indicator | B, C-7A | 1500 | 33 | 1.44 | 1.88 |
| | | | 16943 | | **6S6/CL155V** | 155 | 120 | Clear Indicator | B, C-7A | 1500 | 36 | 1.44 | 1.88 |
| | | DC Bayonet | 16782 | | **6S6DC** | 120 | 120 | Clear Indicator | B, C-9 | 1500 | 41 | 1.44 | 1.81 |
| | | | 16784 | | **6S6DC** | 130 | 120 | Clear Indicator | B, C-9 | 1500 | 37 | 1.44 | 1.81 |
| | | | 16790 | | **6S6DC145V** | 145 | 120 | Clear Indicator | B, C-9 | 1500 | 37 | 1.44 | 1.72 |
| | S14 | Med Brass | 17314 | | **6S14** | 120 | 120 | Clear | B, C-9 | 1500 | 40 | 2.50 | 3.50 |
| 7 | C7 | Candelabra | 13608 | | **7C7** | 120 | 120 | Clear Night Light | B, C-9 | 3000 | 43 | | 2.13 |
| | | | 13545 | | **7C7/BL/4PK** | 120 | 48 | Clear Night Light | B, C-9 | 3000 | 43 | | 2.13 |
| | | | 13543 | | **7C7/BL/2PK** | 120 | 24 | Clear Night Light | B, C-9 | 3000 | 43 | | 2.13 |
| | | | 13609 | | **7C7** | 130 | 120 | Clear Night Light | B, C-9 | 3000 | 42 | | 2.13 |
| | | | 13623 | | **7C7/CW** | 120 | 120 | White Night Light | B, C-9 | 3000 | 33 | | 2.13 |
| | | | 13544 | | **7C7/W/BL/4PK** | 120 | 48 | White Night Light | B, C-9 | 3000 | 33 | | 2.13 |
| | | | 13540 | | **7C7/W/BL/2PK** | 120 | 24 | White Night Light | B, C-9 | 3000 | 33 | | 2.13 |
| 7.5 | S11 | Med | 19353 | | **7.5S** | 120 | 120 | Clear | B, C-9 | 1400 | 47 | 1.56 | 2.25 |
| | | | 19355 | | **7.5S** | 130 | 120 | Clear | B, C-9 | 1400 | 45 | 1.56 | 2.25 |
| | | | 19420 | | **7.5S/CW** | 120 | 120 | Ceramic White | B, C-9 | 1400 | 32 | | 2.25 |
| | | | 19433 | | **7.5S/CW/BL** | 120 | 12 | Ceramic White Utility Light | B, C-9 | 1400 | 32 | | 2.25 |
| | | | 19421 | | **7.5S/CW/BL/1/6** | 120 | 6 | Ceramic White Utility Light | B, C-9 | 1400 | 32 | | 2.25 |


# GENERAL PURPOSE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7.5 | S11 | Med | 19423 | ●◓ | **7.5S/CR** | 120 | 120 | Ceramic Red | B, C-9 | 1400 | | | 2.25 |
| 10 | C7 | Candelabra | 13636 | ●◓1 | **10C7/CL** | 120 | 240 | Clear Pilot Light Vibration Resistant | B, C-7A | | 38 | | 2.13 |
| | S6 | Candelabra | 16726 | ●◓ | **10S6** | 120 | 240 | Clear Indicator | B, C-7A | 1500 | 71 | 1.44 | 1.88 |
| | | | 16717 | ●◓138 | **10S6230V** | 230 | 240 | Clear Indicator | B, CC-7A | 1500 | 65 | 1.44 | 1.88 |
| | S11 | Intermediate | 16917 | ◓ | **10S11N/CL** | 120 | 120 | Clear Vibration Resistant | B, C-7A | 1500 | 74 | 1.63 | 2.31 |
| | | | 16919 | ◓ | **10S11N/CL** | 130 | 120 | Clear Vibration Resistant | B, C-7A | 1500 | 74 | 1.63 | 2.31 |
| | S14 | Med Brass | 17406 | ◓ | **10S14** | 120 | 120 | Clear Vibration Resistant | B, C-9 | 1500 | 76 | 2.50 | 3.50 |
| 11 | S14 | Med Brass | 17448 | ◓ | **11S14** | 120 | 120 | Clear Vibration Resistant | B, C-9 | 3000 | 74 | 2.50 | 3.50 |
| | | | 17450 | ◓ | **11S14** | 130 | 120 | Clear Vibration Resistant | B, C-9 | 3000 | 72 | 2.50 | 3.50 |
| | | | 17453 | ◓ | **11S14/IF** | 130 | 120 | Inside Frost Vibration Resistant | B, C-9 | 3000 | 68 | 2.50 | 3.50 |
| | | | 17487 | ◓ | **11S14/TR** | 130 | 120 | Transparent Red | B, C-9 | 3000 | | 2.50 | 3.50 |
| 12 | S6 | Candelabra | 16718 | ●◓ | **12S6/250V** | 250 | 240 | Clear Indicator | B, CC-7A | 1500 | 61 | 1.44 | 1.88 |
| 15 | A15 | Med | 10015 | ● | **15A15/W/RP** | 120 | 24 | White Utility Light | C, C-9 | 2500 | 65 | 2.38 | 3.50 |
| | | | 10018 | ● | **15A15/CL** | 120 | 120 | Clear Utility Light | B, C-9 | 2500 | 105 | 2.38 | 3.50 |
| | | | 10028 | ● | **15A15/CL/RP** | 120 | 24 | Clear Utility Light | B, C-9 | 2500 | 105 | 2.38 | 3.50 |
| | | | 10019 | ● | **15A15/CL** | 130 | 120 | Clear Utility Light | B, C-9 | 2500 | 105 | 2.38 | 3.50 |
| | | | *@ 120 _volts, approximate 13 watts, 80 lumens, 6250 hours.* | | | | | | | | | | |
| | | | 10037 | ● | **15A15** | 120 | 120 | Inside Frost | B, C-9 | 2500 | 100 | 2.38 | 3.50 |
| | | | 10031 | ● | **15A15/RP** | 120 | 24 | Inside Frost | B, C-9 | 2500 | 100 | 2.38 | 3.50 |
| | | | 10038 | ● | **15A15** | 130 | 120 | Inside Frost | B, C-9 | 2500 | 100 | 2.38 | 3.50 |
| | | | *@ 120 _volts, approximate 13 watts, 76 lumens, 6250 hours.* | | | | | | | | | | |
| 15 135 150 | A21 | 3 CONTACT Med | 18009 | ●▼ | **15/150A/SECURITYLIGHT** | 120 | 12 | Soft White Security 3-way | C, CC-8 | 1200 | 800m 2070lm 2150lm | 3.38 | 5.31 |
| 15 | S11 | Med | 17079 | ●◓ | **15S11/102/IF** | 120 | 120 | Inside Frost Refrigerator | B, C-7A | 400 | 138 | 1.56 | 2.25 |
| | S14 | Med Brass | 17240 | ◓ | **15S14/CL** | 130 | 120 | Clear Vibration Resistant Sign | B, C-9 | 3000 | 106 | 2.50 | 3.50 |
| | T6 | Candelabra | 18037 | ●◓ | **15T6** | 120 | 60 | Clear Tubular | B, C-7A | 2000 | 111 | | 3.06 |
| | | | 18038 | ●◓ | **15T6** | 130 | 60 | Clear Tubular | B, C-7A | 2000 | 105 | | 3.06 |
| | | | 18078 | ●◓ | **15T6/145V** | 145 | 60 | Clear Tubular | B, C-7A | 2000 | 112 | | 3.06 |
| | | | 18036 | ●◓ | **15T6/BL** | 145 | 12 | Clear Tubular | B, C-7A | 2000 | 112 | | 3.06 |
| | T7 | Candelabra | 18185 | ●◓ | **15T7C** | 120 | 60 | Clear | B, C-7A | 1000 | 111 | 1.50 | 2.25 |
| | | DC Bayonet | 18208 | ◓111 | **15T7DC** | 120 | 60 | Clear | B, C-7A | 1000 | 111 | 1.31 | 2.25 |
| | | | 18200 | ◓111 | **15T7DC/BL** | 120 | 12 | Clear Carded | B, C-7A | 1000 | 111 | 1.31 | 2.25 |
| | | | 18201 | ◓111 | **15T7DC/BL/1/6** | 120 | 6 | Clear Carded | B, C-7A | 1000 | 111 | 1.31 | 2.25 |
| | | Intermediate | 18173 | ◓111 | **15T7N** | 120 | 60 | Clear | B, C-7A | 1000 | 115 | 1.56 | 2.25 |
| | | | 18174 | ◓ | **15T7N/BL** | 120 | 12 | Clear | B, C-7A | 1000 | 115 | 1.56 | 2.25 |
| | T10 | Med | 18501 | ●◓138 | **15T10/CL** | 120 | 60 | Clear Tubular | B, C-8 | 2500 | 112 | | 5.63 |




# GENERAL PURPOSE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | T6.5 | DC Bayonet | 18144 | 1 | **20T6.5DC/IF** | 120 | 60 | Inside Frost Exit Lamp | B, C-8 | 10000 | 92 | | 5.56 |
| | | Intermediate | 18143 | 1 | **20T6.5/IF** | 120 | 60 | Inside Frost Exit Lamp | B, C-8 | 10000 | 92 | | 5.50 |
| 25 | A19 | Med | 11090 | ● | **25A/RS** | 120 | 120 | Inside Frost Rough Service | B, C-17 | 1000 | 210 | 2.50 | 3.94 |
| | | | 11092 | ● | **25A/RS** | 130 | 120 | Inside Frost Rough Service | B, C-17 | 1000 | 210 | 2.50 | 3.94 |
| | | | 10562 | ● | **25A/W/RP** | 120 | 24 | Soft White | C, C-9 | 2500 | 160 | 2.50 | 3.94 |
| | | | 10644 | ● | **25A** | 120 | 120 | Standard Frost | B, C-9 | 2500 | 190 | 2.50 | 3.94 |
| | | | 10634 | ● | **25A/RP** | 120 | 24 | Standard Frost | B, C-9 | 2500 | 190 | 2.50 | 3.94 |
| | | | 10645 | ●136,146 | **25A** | 130 | 120 | Standard Frost | B, C-9 | 2500 | 180 | 2.50 | 3.94 |
| | | | *@120 _volts, approximate 22 watts, 130 lumens, 6250 hours* | | | | | | | | | | |
| | | | 11285 | ● | **25A** | 230 | 120 | Standard Frost | B, C-17 | 1000 | 205 | 2.50 | 3.94 |
| | | | 11289 | ● | **25A** | 277 | 120 | Standard Frost | B, C-17 | 1000 | 187 | 2.50 | 3.94 |
| | | Med Brass | 10693 | | **25A/CL** | 120 | 120 | Clear | B, C-9 | 2500 | 190 | 2.50 | 3.94 |
| | | | 10683 | | **25A/CL/RP** | 120 | 24 | Clear | B, C-9 | 2500 | 190 | 2.50 | 3.94 |
| | | | 10694 | 136,146 | **25A/CL** | 130 | 120 | Clear | B, C-9 | 2500 | 180 | 2.50 | 3.94 |
| | | | *@120 _volts, approximate 22 watts, 130 lumens, 6250 hours* | | | | | | | | | | |
| | | | 11710 | | **25A19/TB/RP** | 125 | 6 | Transparent Blue | B, C-9 | 3000 | | 2.50 | 3.94 |
| | | | 11714 | | **25A19/TG/RP** | 125 | 6 | Transparent Green | B, C-9 | 3000 | | 2.50 | 3.94 |
| | | | 11711 | | **25A19/TO/RP** | 125 | 6 | Transparent Orange | B, C-9 | 3000 | | 2.50 | 3.94 |
| | | | 11712 | | **25A19/TR/RP** | 125 | 6 | Transparent Red | B, C-9 | 3000 | | 2.50 | 3.94 |
| | | | 11713 | | **25A19/TY/RP** | 125 | 6 | Transparent Yellow | B, C-9 | 3000 | | 2.50 | 3.94 |
| | | | 10449 | ⌀ | **25A** | 12 | 120 | Standard Frost | B, C-6 | 1000 | 385 | 2.50 | 3.94 |
| | R14 | Intermediate | 14793 | ● | **25R14N** | 120 | 60 | Reflector Mini Flood | B, CC-2V | 1500 | 132 | | 2.56 |
| | | | 14784 | ● | **25R14N/RP** | 120 | 6 | Reflector Mini Flood | B, CC-2V | 1500 | 132 | | 2.56 |
| | | Med | 14818 | ● | **25R14/RP** | 120 | 6 | Reflector Mini Flood | C, CC-2V | 1500 | 132 | | 2.25 |
| | T6.5 | DC Bayonet | 18129 | | **25T6.5/DC** | 120 | 60 | Clear Scale Illuminator | B, C-8 | 1000 | 242 | | 5.56 |
| | | | 18106 | | **25T6.5/DC** | 130 | 60 | Clear Scale Illuminator | B, C-8 | 1000 | 242 | | 5.56 |
| | | | 18117 | | **25T6.5/DC/IF** | 120 | 60 | Inside Frost Scale Illuminator | B, C-8 | 1000 | 225 | | 5.56 |
| | | Intermediate | 18125 | | **25T6.5** | 120 | 60 | Clear | B, C-8 | 1000 | 242 | | 5.50 |
| | | | 18496 | | **25T6.5/CL/BL/10PK** | 120 | 10 | Clear | B, C-8 | 1000 | 242 | | 5.50 |
| | | | 18495 | | **25T6.5/BL/6PK** | 120 | 6 | Clear | B, C-8 | 1000 | 242 | | 5.50 |
| | | | 18128 | | **25T6.5** | 130 | 60 | Clear | B, C-8 | 1000 | 242 | | 5.50 |
| | | | 18113 | | **25T6.5/IF** | 120 | 60 | Inside Frost | B, C-8 | 1000 | 225 | | 5.50 |
| | | | 18111 | | **25T6.5/IF** | 130 | 60 | Inside Frost | B, C-8 | 1000 | 225 | | 5.50 |
| | T8 | Candelabra | 18289 | ●111 | **25T8C** | 120 | 60 | Clear Home Appliance | B, C-7A | 1000 | 230 | 1.50 | 2.63 |
| | | DC Bayonet | 18310 | 111 | **25T8DC** | 120 | 60 | Clear Home Appliance | B, C-7A | 1000 | 230 | 1.31 | 2.63 |
| | | | 18321 | 111 | **25T8DC/BL** | 120 | 12 | Clear Home Appliance | B, C-7A | 1000 | 230 | 1.31 | 2.63 |
| | | | 18316 | 111 | **25T8DC** | 130 | 60 | Clear Home Appliance | B, C-7A | 1000 | 215 | 1.31 | 2.63 |
| | | Intermediate | 18359 | 111 | **25T8N** | 120 | 60 | Clear Home Appliance | B, C-7A | 1000 | 230 | 1.31 | 2.63 |
| | | | 18365 | 111 | **25T8N/BL** | 120 | 12 | Clear Home Appliance | B, C-7A | 1000 | 230 | 1.31 | 2.63 |
| | | | 18360 | 111 | **25T8N/BL/1/6** | 120 | 6 | Clear Home Appliance | B, C-7A | 1000 | 230 | 1.31 | 2.63 |
| | T10 | Med | 18510 | ● | **25T10** | 120 | 60 | Clear | B, C-8 | 1000 | 232 | | 5.63 |




# GENERAL PURPOSE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | T10 | Med | 18491 | ●▬ | **25T10/CL/BL/6PK** | 120 | 6 | Clear | B, C-8 | 1000 | 232 | | 5.63 |
| | | | 18512 | ●▬ | **25T10** | 130 | 60 | Clear | B, C-8 | 1000 | 232 | | 5.63 |
| | | | 18503 | ●▬ | **25T10/IF** | 120 | 60 | Inside Frost | B, C-8 | 1000 | 230 | | 5.63 |
| | | | 18492 | ●▬ | **25T10/IF/BL/6PK** | 120 | 6 | Inside Frost | B, C-8 | 1000 | 230 | | 5.63 |
| | | | 18505 | ●▬ | **25T10/IF** | 130 | 60 | Inside Frost | B, C-8 | 1000 | 230 | | 5.63 |
| 30 | A15 | Med Brass | 10122 | 77 | **30A15** | 130 | 120 | Inside Frost | C, C-9 | 2000 | 200 | 2.38 | 3.50 |
| | | | *@ 120 _volts, approximate 26 watts, 150 lumens, 5000 hours.* | | | | | | | | | | |
| 30<br>70<br>100 | A21 | 3 CONTACT Med | 19395 | ●▼ | **30/100/DAYLIGHT/1/12** | 120 | 12 | Daylight 3-Way | C, CC-8 | 1200 | 220lm<br>700lm<br>920lm | 3.38 | 5.31 |
| | | | 19345 | ●▼118 | **30/100A21/DL/SW/1/48** | 120 | 48 | Soft White Double Life 3-Way | C, CC-8 | 2400 | 270lm<br>860lm<br>1130lm | 3.38 | 5.31 |
| | | | 19380 | ●▼ | **30/100A21/DL/SW/RP** | 120 | 12 | Soft White Double Life 3-way | C, CC-8 | 2400 | 270lm<br>860lm<br>1130lm | 3.38 | 5.31 |
| | | | 18029 | ●▼118 | **30/100A/W/DIYPACK** | 120 | 48 | Soft White 3-way | C, CC-8 | 1200 | 300lm<br>945lm<br>1245lm | 3.38 | 5.31 |
| | | | 19385 | ●▼118 | **30/100A21/W/RP** | 120 | 12 | Soft White 3-way | C, CC-8 | 1200 | 300lm<br>945lm<br>1245lm | 3.38 | 5.31 |
| 30 | R20 | Med Brass | 14794 | 68,118 | **30R20** | 120 | 60 | Reflector Flood | C, C-9 | 2000 | 140<br>40˚ | | 3.94 |
| | | | 14836 | 68,118 | **30R20/RP** | 120 | 6 | Reflector Flood | C, C-9 | 2000 | 140<br>40˚ | | 3.94 |
| | | | 14802 | 136,147 | **30R20** | 130 | 60 | Reflector Flood | C, C-9 | 2000 | 140<br>40˚ | | 3.94 |
| | | | *@ 120 _volts, approximate 26 watts, 100 lumens, 5000 hours* | | | | | | | | | | |
| | S11 | DC Bayonet | 10765 | ▬ | **30S11/DC/75V** | 75 | 120 | Clear Train Marker | C, C-7A | 500 | 284 | 1.50 | 2.38 |
| 32 | A19 | Med Brass | 10983 | ●79 | **32A19/49** | 130 | 120 | Clear Street Lighting Group Replacement | C, C-9 | 3000 | 258 | 2.88 | 4.25 |
| | | | *@ 120 _volts, approximate 28 watts, 200 lumens, 7500 hours.* | | | | | | | | | | |
| 34 | A19 | Med | 11391 | ● | **40A/34/W/ES/4PK** | 120 | 48 | Soft White Energy Saver | C, CC-8 | 1500 | 375 | 3.13 | 4.44 |
| | | | 11058 | ●▬ | **40A/34/SS** | 120 | 48 | Standard Frost SuperSaver | C, CC-8 | 1500 | 375 | 3.13 | 4.44 |
| | | | 11379 | ●▬136,150 | **40A/34/SS** | 130 | 48 | Standard Frost SuperSaver | C, CC-8 | 1500 | 380 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 30 watts, 290 lumens, 3750 hours* | | | | | | | | | | |
| | | Med Brass | 11383 | ▬ | **40A/34/SS/XL** | 120 | 48 | Standard Frost SuperSaver XL | C, CC-8 | 2500 | 310 | 3.13 | 4.44 |
| | | | 11387 | ▬136,149 | **40A/34/SS/XL** | 130 | 48 | Standard Frost SuperSaver XL | C, CC-8 | 2500 | 310 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 30 watts, 240 lumens, 6250 hours* | | | | | | | | | | |
| 40 | A15 | Candelabra | 11534 | | **40A15C/SW/FAN/2/12/BL** | 120 | 12 | Soft White Ceiling Fan Light | C, C-9 | 1000 | 300 | 1.94 | 3.38 |
| | | | 10029 | | **40A15C/CL/FAN/2/12/BL** | 120 | 12 | Clear Ceiling Fan | C, C-9 | 1000 | 330 | 1.94 | 3.38 |
| | | Med | 10181 | ● | **40A15/DAY/FAN/BL/2/24** | 120 | 24 | Daylight Fan | C, C-9 | 1000 | 340 | 2.38 | 3.50 |
| | | | 11664 | ● | **40A15/DL/SW/FAN/BL/2/24** | 120 | 24 | Soft White Double Life Fan | C, C-9 | 2000 | 310 | 2.38 | 3.50 |
| | | | 10061 | ● | **40A15/CL/DL/APPL/2/12/BL** | 120 | 12 | Clear Double Life Appliance | C, C-9 | 2000 | 350 | 2.38 | 3.50 |


A15


A19


K19


R14 Inter



# GENERAL PURPOSE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | A15 | Med | 10023 | ● | **40A15/CL/DL/FAN/BL/2/24** | 120 | 24 | Clear Double Life Ceiling Fan Light | C, C-9 | 2000 | 350 | 2.38 | 3.50 |
| | | | 10046 | ● | **40A15/CL/DL/FAN** | 120 | 24 | Clear Double Life Fan Light | C, C-9 | 2000 | 350 | 2.38 | 3.50 |
| | | | 10034 | ● | **40A15/CL/DL/FAN/2/12/BL** | 120 | 12 | Clear Double Life Fan Light | C, C-9 | 2000 | 350 | 2.38 | 3.50 |
| | | | 10133 | ● | **40A15/CL/DL/BL** | 120 | 12 | Clear Double Life Appliance | C, C-9 | 2000 | 350 | 2.38 | 3.50 |
| | | | 10082 | ● | **40A15/SL** | 120 | 120 | Safeline Appliance | C, C-9 | 1000 | 420 | 2.38 | 3.50 |
| | | | 11111 | ● | **40A15/SW/FAN/BL/2/24** | 120 | 24 | Soft White Ceiling Fan Light | C, C-9 | 1000 | 405 | 2.38 | 3.50 |
| | | | 11533 | ● | **40A15/SW/FAN/2/12/BL** | 120 | 12 | Soft White Ceiling Fan | C, C-9 | 1000 | 405 | 2.38 | 3.50 |
| | | | 10042 | ● | **40A15/CL/FAN** | 120 | 24 | Clear Ceiling Fan Light | C, C-9 | 1000 | 430 | 2.38 | 3.50 |
| | | | 10022 | ● | **40A15/CL/FAN/BL/2/24** | 120 | 24 | Clear Ceiling Fan Light | C, C-9 | 1000 | 430 | 2.38 | 3.50 |
| | | | 10036 | ● | **40A15/CL/FAN/2/12/BL** | 120 | 12 | Clear Ceiling Fan Light | C, C-9 | 1000 | 420 | 2.38 | 3.50 |
| | | | 10141 | ● | **40A15/2PK/RP** | 120 | 24 | Clear Appliance | C, C-9 | 1000 | 430 | 2.38 | 3.50 |
| | | | 10169 | ● | **40A15/CL/BL/2/24** | 120 | 24 | Clear Appliance | C, C-9 | 1000 | 430 | 2.38 | 3.50 |
| | | | 10066 | ● | **40A15/CL/APPL/2/12/BL** | 120 | 12 | Clear Appliance | C, C-9 | 1000 | 420 | 2.38 | 3.50 |
| | | | 10129 | ● | **40A15/CL/BL** | 120 | 12 | Clear Appliance | C, C-9 | 1000 | 430 | 2.38 | 3.50 |
| | | | 10119 | ● | **40A15** | 120 | 120 | Inside Frost Appliance | C, C-9 | 1000 | 420 | 2.38 | 3.50 |
| | | | 10117 | ● | **40A15/IF/BL** | 120 | 12 | Inside Frost Appliance | C, C-9 | 1000 | 420 | 2.38 | 3.50 |
| | | Med Brass | 10365 | | **40A15/1** | 250 | 120 | Inside Frost Appliance | B, C-9 | 1000 | 330 | 2.50 | 3.50 |
| | | | 10370 | | **40A15/NEO** | 250 | 120 | Neodymium Doped Appliance Lamp | B, C-9 | 1000 | 320 | 2.50 | 3.50 |
| | A19 | Med | 10897 | ●▲ | **40A/DAY/4/160/RP** | 120 | 160 | Daylight | C, CC-8 | 1500 | 350 | 3.13 | 4.44 |
| | | | 10864 | ●▲ | **40A/DAY/RP/4/48** | 120 | 48 | Daylight | C, CC-8 | 1500 | 350 | 3.13 | 4.44 |
| | | | 11100 | ●▲ | **40A/DAY/RP/2/24** | 120 | 24 | Daylight | C, CC-8 | 1500 | 350 | 3.13 | 4.44 |
| | | | 10829 | ●▲99,136 | **40A/DAY/RP/4/48** | 130 | 48 | Daylight | C, CC-8 | 1500 | 350 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 33 watts, 270 lumens, 3750 hours.* | | | | | | | | | | |
| | | | 10939 | ●▲ | **40A/DL/SW/4PK/RP** | 120 | 48 | Soft White Double Life | C, CC-8 | 3000 | 390 | 3.13 | 4.44 |
| | | | 11645 | ●▲ | **40A/DL/SW/2PK/RP** | 120 | 24 | Soft White Double Life | C, CC-8 | 3000 | 390 | 3.13 | 4.44 |
| | | | 11646 | ●▲ | **40AC/DL/2PK/RP** | 120 | 24 | Clear Double Life | C, CC-8 | 3000 | 385 | 3.13 | 4.44 |
| | | | 10996 | ●▲ | **40A/W/4/RP** | 120 | 48 | Soft White | C, CC-8 | 1500 | 465 | 3.13 | 4.44 |
| | | | 10977 | ●▲ | **40A/W/RP** | 120 | 24 | Soft White | C, CC-8 | 1500 | 465 | 3.13 | 4.44 |
| | | | 11223 | ●▲ | **40A/CL/RP** | 120 | 24 | Clear | C, CC-8 | 1500 | 480 | 3.13 | 4.44 |
| | | | 11036 | ●▲136,153 | **40A/CL** | 130 | 120 | Clear | C, CC-8 | 1500 | 460 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 35 watts, 350 lumens, 3750 hours* | | | | | | | | | | |
| | | | 11060 | ●▲ | **40A/4/RP** | 120 | 48 | Standard Frost | C, CC-8 | 1500 | 470 | 3.13 | 4.44 |
| | | | 11010 | ●▲ | **40A/RP** | 120 | 24 | Standard Frost | C, CC-8 | 1500 | 470 | 3.13 | 4.44 |
| | | | 11059 | ●▲136,153 | **40A** | 130 | 48 | Standard Frost | C, CC-8 | 1500 | 460 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 35 watts, 350 lumens, 3750 hours* | | | | | | | | | | |
| | | | 11011 | ●▲136,153 | **40A/CVP** | 130 | 24 | Standard Frost | C, CC-8 | 1500 | 460 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 35 watts, 350 lumens, 3750 hours* | | | | | | | | | | |
| | K19 | Med | 10471 | ● | **40K19/DR** | 120 | 24 | Inside Frost Directional Reflector | C, CC-6 | 1150 | 385 | | 4.13 |
| | R14 | Intermediate | 14820 | ● | **40R14N/RP** | 120 | 6 | Reflector Mini Flood | C, CC-2V | 1500 | | | 2.56 |




## GENERAL PURPOSE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | R14 | Med | 14819 | ● | **40R14/RP** | 120 | 6 | Reflector Mini Flood | C, C-9 | 1500 | 185 | | 2.25 |
| | R16 | Med | 14821 | ● | **40R16/FL/RP** | 120 | 6 | Reflector Mini Flood | C, C-9 | 1500 | | | 3.88 |
| | S11 | Intermediate | 13595 | ●◓ | **40S11N** | 120 | 120 | Clear Hi Intensity | C, C-7A | 500 | 440 | 1.63 | 2.31 |
| | | | 13607 | ●◓ | **40S11N/BL** | 120 | 12 | Clear Hi Intensity | C, C-7A | 500 | 440 | 1.63 | 2.31 |
| | | | 13644 | ●◓ | **40S11N/BL/2/12** | 120 | 12 | Clear Hi Intensity | C, C-7A | 500 | 440 | 1.63 | 2.31 |
| | | | 13640 | ●◓ | **40S11N/NEO/BULK** | 120 | 6000 | Neodymium doped Hi Intensity | C, C-7A | 500 | | 1.63 | 2.31 |
| | T6.5 | Intermediate | 18096 | ◓130 | **40T6.5/2** | 120 | 60 | Clear Appliance | C, C-8 | 1000 | 365 | | 5.50 |
| | | | 18497 | ◓ | **40T6.5/CL/BL/10PK** | 120 | 10 | Clear Appliance | C, C-8 | 1000 | 365 | | 5.50 |
| | | | 18152 | ◓ | **40T6.5/CL/BL/6PK** | 120 | 6 | Clear Appliance | C, C-8 | 1000 | 365 | | 5.50 |
| | T8 | Intermediate | 18358 | ◓ | **40T8N/NEODYMIUM** | 120 | 6000 | Neodymium Doped Appliance | B, C-7A | 1000 | 300 | 1.31 | 2.63 |
| | T10 | Med | 18650 | ●◓ | **40T10** | 120 | 60 | Clear | B, C-8 | 1000 | 420 | | 5.63 |
| | | | 18493 | ●◓ | **40T10/CL/BL/6PK** | 120 | 6 | Clear | B, C-8 | 1000 | 420 | | 5.63 |
| | | | 18652 | ●◓ | **40T10** | 130 | 60 | Clear | B, C-8 | 1000 | 420 | | 5.63 |
| | | | 18494 | ●◓ | **40T10/IF/BL/6PK** | 120 | 6 | Inside Frost | B, C-8 | 1000 | 415 | | 5.63 |
| | | | 18669 | ●◓ | **40T10/IF** | 130 | 60 | Inside Frost | B, C-8 | 1000 | 415 | | 5.63 |
| 45<br>95<br>140 | A21 | 3 CONTACT Med | 18048 | ●▼ | **45/140A21/W/ES/RP** | 120 | 12 | Soft White 3-way Energy Saver | C, CC-8 | 1200 | 540lm<br>1300lm<br>1840lm | 3.38 | 5.31 |
| 45 | BR30 | Med | 15103 | ●◓2,46,57,155 | **45BR30/FL/RP** | 120 | 6 | Reflector Flood | C, CC-6 | 2000 | 350lm<br>170 cd<br>60˚ | | 5.38 |
| | R20 | Med | 15677 | ●2,46,68,155 | **45R20/DAY/1/6/RP** | 120 | 6 | Daylight Reflector | C, C-9 | 2000 | 215lm<br>360 cd<br>45˚ | | 3.94 |
| | | | 15697 | ●2,46,68,155 | **45R20** | 120 | 60 | Reflector Flood | C, C-9 | 2000 | 295lm<br>490 cd<br>45˚ | | 3.94 |
| | | | 14997 | ●2,46,68,155 | **45R20/RP/2/12** | 120 | 12 | Reflector Flood | C, C-9 | 2000 | 295lm<br>490 cd<br>45˚ | | 3.94 |
| | | | 15670 | ●2,46,68,155 | **45R20/RP** | 120 | 6 | Reflector Flood | C, C-9 | 2000 | 295lm<br>490 cd<br>45˚ | | 3.94 |
| | | | 15699 | ●2,46,68,105,136,155 | **45R20** | 130 | 60 | Reflector Flood | C, C-9 | 2000 | 490 cd<br>45˚ | | 3.94 |
| | | | *@ 120 _volts, approximate 40 watts, 220 lumens, 5000 hours.* | | | | | | | | | | |
| | | | 15676 | ●2,46,68,105,136,155 | **45R20/CVP** | 130 | 6 | Reflector Flood | C, C-9 | 2000 | 490 cd<br>45˚ | | 3.94 |
| | | | *@ 120 _volts, approximate 40 watts, 220 lumens, 5000 hours.* | | | | | | | | | | |
| | | Med Brass | 15698 | 2,46,68,155 | **45R20/DL/RP** | 120 | 6 | Double Life Reflector Flood | C, C-9 | 4000 | 260<br>430 cd<br>45˚ | | 3.94 |
| 50 | A19 | Med | 11096 | ● | **50A/RS/4/144/RP** | 120 | 144 | Inside Frost Rough Service | C | 1000 | 510 | | |
| | | | 14070 | ● | **50A/RS/2/RP** | 120 | 24 | Inside Frost Rough Service | C | 1000 | 510 | | |
| | | | 11393 | ● | **50A/RS** | 250 | 120 | Inside Frost Rough Service | C, C-22 | 1000 | 450 | 2.50 | 4.44 |


A19


A21


ER30


R20



## GENERAL PURPOSE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | A19 | Med | 11397 | ● | **50A** | 250 | 120 | Inside Frost | B, CC-7A | 1000 | 490 | 2.50 | 4.44 |
| | | | 11428 | ● | **50A** | 277 | 120 | Inside Frost | B, CC-7A | 1000 | 475 | 2.50 | 4.44 |
| | | Med Brass | 11118 | 116 | **50A/RS/SL** | 120 | 120 | Safeline Rough Service | C, C-9 | 1000 | 490 | 2.50 | 3.94 |
| | | | 11068 | ⌀133 | **50A19/RS** | 75 | 120 | Inside Frost Rough Service Train | C, C-9 | 1000 | 505 | 2.50 | 3.94 |
| 50<br>100<br>150 | A21 | 3 CONTACT Med | 18110 | ●▼ | **50/150/DAY/1/12** | 120 | 12 | Daylight 3-way | C, CC-8 | 1200 | 460lm<br>1170lm<br>1630lm | 3.38 | 5.31 |
| | | | 18168 | ●▼ | **50/150A21DL/SW/1/48** | 120 | 48 | Soft White Double Life 3-way | C, CC-8 | 2400 | 540lm<br>1400lm<br>1940lm | 3.38 | 5.31 |
| | | | 18044 | ●▼ | **50/150A21/DL/SW/RP** | 120 | 12 | Soft White Double Life 3-way | C, CC-8 | 2400 | 540lm<br>1400lm<br>1940lm | 3.38 | 5.31 |
| | | | 18457 | ●▼ | **50/150A21/W/2/48** | 120 | 48 | Soft White 3-Way | C, CC-8 | 1200 | 640lm<br>1570lm<br>2210lm | 3.38 | 5.31 |
| | | | 18028 | ●▼ | **50/150A/W/DIYPACK** | 120 | 48 | Soft White 3-way | C, CC-8 | 1200 | 640lm<br>1570lm<br>2210lm | 3.38 | 5.31 |
| | | | 18458 | ●▼ | **50/150A21/W/2PK/12** | 120 | 12 | Soft White 3-Way | C, CC-8 | 1200 | 640lm<br>1570lm<br>2210lm | 3.38 | 5.31 |
| | | | 18060 | ●▼ | **50/150A21/W/RP** | 120 | 12 | Soft White 3-way | C, CC-8 | 1200 | 640lm<br>1570lm<br>2210lm | 3.38 | 5.31 |
| | | | 18726 | ●▼ | **50/150A21/SPK/RP** | 120 | 12 | Soft Pink 3-way | C, CC-8 | 1200 | | 3.38 | 5.31 |
| | | | 19404 | ●▼ | **50/250A21/W/RP** | 120 | 12 | Soft White Reading Light 3-way | C, CC-8 | 1200 | 640lm<br>3300lm<br>3940lm | 3.38 | 5.31 |
| 50 | A21 | Med Brass | 11572 | ⌀ | **50A21** | 12 | 24 | Inside Frost RV-Marine | C, C-6 | 1000 | 865 | 3.88 | 4.94 |
| | | | 11567 | ⌀ | **50A21/RP** | 12 | 12 | Inside Frost RV-Marine | C, C-6 | 1000 | 865 | 3.88 | 4.94 |
| | | | 11603 | ⌀ | **50A21** | 34 | 12 | Inside Frost Train | C, C-9 | 1000 | 800 | 3.44 | 4.94 |
| | ER30 | Med | 15102 | ●2,155 | **50ER30** | 120 | 24 | Elliptical Reflector Flood | C, CC-6 | 2000 | 350lm<br>800 cd<br>30˚ | | 6.38 |
| | | | 15110 | ●2,155 | **50ER30/RP** | 120 | 6 | Elliptical Reflector Flood | C, CC-6 | 2000 | 350lm<br>800 cd<br>30˚ | | 6.38 |
| | | | 15107 | ●2,136,155,159 | **50ER30** | 130 | 24 | Elliptical Reflector Flood | C, CC-6 | 2000 | 320lm<br>730 cd<br>30˚ | | 6.38 |
| | | | *@ 120 _volts, approximate 44 watts, 240 lumens, 5000 hours* | | | | | | | | | | |
| | R20 | Med | 15231 | ●2,46,68,107, 155 | **50R20/DAY/1/6/RP** | 120 | 6 | Daylight Reflector | C, C-9 | 2000 | 240lm<br>400 cd<br>45˚ | | 3.94 |
| | | | 14831 | ●2,46,68,107, 155 | **50R20** | 120 | 60 | Reflector Flood | C, C-9 | 2000 | 330lm<br>550 cd<br>45˚ | | 3.94 |
| | | | 14914 | ●2,46,68,107, 155 | **50R20/2PK** | 120 | 48 | Reflector Flood | C, C-9 | 2000 | 330lm<br>550 cd<br>45˚ | | 3.94 |
| | | | 14998 | ●107 | **50R20/RP/2/12** | 120 | 12 | Reflector Flood | C, C-9 | 2000 | 330lm<br>550 cd<br>45˚ | | 3.94 |


# GENERAL PURPOSE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | R20 | Med | 14833 | ●2,46,68,107, 155 | **50R20/RP** | 120 | 6 | Reflector Flood | C, C-9 | 2000 | 330lm 550 cd 45˚ | | 3.94 |
| | | | 14832 | ●2,46,68,107, 136,155,158 | **50R20** | 130 | 60 | Reflector Flood | C, C-9 | 2000 | 330lm 550 cd 45˚ | | 3.94 |
| | | | | *@ 120 _volts, approximate 44 watts, 250 lumens, 5000 hours* | | | | | | | | | |
| | | | 14844 | ●2,46,68,107, 136,155,158 | **50R20/CVP** | 130 | 6 | Reflector Flood | C, C-9 | 2000 | 330lm 550 cd 45˚ | | 3.94 |
| | | | | *@ 120 _volts, approximate 44 watts, 250 lumens, 5000 hours* | | | | | | | | | |
| | | | 14846 | ●2,46,68,136, 155 | **50R20/PINK** | 130 | 60 | Pink Reflector | C, C-9 | 2000 | 420lm | | 3.94 |
| | | Med Brass | 15346 | 2,46,68,107,155 | **50R20/DL/1/48** | 120 | 48 | Double Life Reflector Flood | C, C-9 | 4000 | 290lm 480 cd 45˚ | | 3.94 |
| | | | 14943 | 2,46,68,107,155 | **50R20/DL/RP** | 120 | 6 | Double Life Reflector Flood | C, C-9 | 4000 | 290lm 480 cd 45˚ | | 3.94 |
| | | | 14834 | 2,46,68,155 | **50R20/PINK** | 120 | 60 | Pink Reflector | C, C-9 | 2000 | | | 3.94 |
| | | | 14842 | 2,46,68,155 | **50R20/GRO** | 120 | 6 | Spot-GRO Reflector | C, C-9 | 2000 | | | 3.94 |
| 52 | A19 | Med | 11392 | ●◠ | **60A/52/W/ES/4PK** | 120 | 48 | Soft White Energy Saver | C, CC-8 | 1000 | 715 | 3.13 | 4.44 |
| | | | 10893 | ●◠104,136 | **60A/52/CL/SS** | 130 | 48 | Clear SuperSaver | C, CC-8 | 1000 | 740 | 3.13 | 4.44 |
| | | | | *@ 120 _volts, approximate 46 watts, 560 lumens, 2500 hours.* | | | | | | | | | |
| | | | 11376 | ●◠ | **60A/52/SS** | 120 | 48 | Standard Frost SuperSaver | C, CC-8 | 1000 | 750 | 3.13 | 4.44 |
| | | | 11380 | ●◠136,164 | **60A/52/SS** | 130 | 48 | Standard Frost SuperSaver | C, CC-8 | 1000 | 710 | 3.13 | 4.44 |
| | | | | *@ 120 _volts, approximate 46 watts, 540 lumens, 2500 hours* | | | | | | | | | |
| | | Med Brass | 11384 | ◠ | **60A/52/SS/XL** | 120 | 48 | Standard SuperSaver XL | C, CC-8 | 2500 | 620 | 3.13 | 4.44 |
| | | | 11388 | ◠136,163 | **60A/52/SS/XL** | 130 | 48 | Standard SuperSaver XL | C, CC-8 | 2500 | 610 | 3.13 | 4.44 |
| | | | | *@ 120 _volts, approximate 46 watts, 460 lumens, 6250 hours* | | | | | | | | | |
| 58 | A19 | Med Brass | 11149 | ◠ | **58A19/62** | 120 | 120 | Clear Street Lighting Group Replacement | C, C-9 | 3000 | 630 | 2.88 | 4.25 |
| 60 | A15 | Candelabra | 10777 | | **60A15C/SW/FAN/2/12/BL** | 120 | 12 | Soft White Ceiling Fan Light | C, C-9 | 1000 | 510 | 1.94 | 3.38 |
| | | | 10894 | | **60A15C/CL/FAN/2/12/BL** | 120 | 12 | Clear Ceiling Fan Light | C, C-9 | 1000 | 560 | 1.94 | 3.38 |
| | | Med | 10162 | ● | **60A15/DAY/FAN/BL/2/24** | 120 | 24 | Daylight Fan | C, C-9 | 1000 | 340 | 2.38 | 3.50 |
| | | | 10868 | ● | **60A15/DL/SW/BL/2/24** | 120 | 24 | Soft White Double Life Fan Light | C, C-9 | 2000 | 510 | 2.38 | 3.50 |
| | | | 10885 | ● | **60A15/SW/FAN/2/12/BL** | 120 | 12 | Soft White Double Life Fan Light | C, C-9 | 1000 | 680 | 2.38 | 3.50 |
| | | | 10048 | ● | **60A15/CL/DL/FAN/RP** | 120 | 24 | Clear Double Life Fan Light | C, C-9 | 2000 | 530 | 2.38 | 3.50 |
| | | | 10024 | ● | **60A15/CL/DL/FAN/BL/2/24** | 120 | 24 | Clear Double Life Fan Light | C, C-9 | 2000 | 530 | 2.38 | 3.50 |
| | | | 10040 | ● | **60A15/CL/DL/FAN/2/12/BL** | 120 | 12 | Clear Double Life Fan Light | C, C-9 | 2000 | 530 | 2.38 | 3.50 |
| | | | 11005 | ● | **60A15/SW/FAN/2PK** | 120 | 24 | Soft White Ceiling Fan | C, C-9 | 1000 | 680 | 2.38 | 3.50 |
| | | | 10842 | ● | **60A15/SW/FAN/BL/2/24** | 120 | 24 | Soft White Ceiling Fan | C, C-9 | 1000 | 680 | 2.38 | 3.50 |
| | | | 10841 | ● | **60A15/CL/FAN/BL/2/24** | 120 | 24 | Clear Ceiling Fan Light | C, C-9 | 1000 | 700 | 2.38 | 3.50 |


A15


A19



# GENERAL PURPOSE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 60 | A15 | Med | 11007 | ● | **60A15/CL/FAN/RP** | 120 | 24 | Clear Ceiling Fan Light | C, C-9 | 1000 | 700 | 2.38 | 3.50 |
| | | | 10884 | ● | **60A15CL/FAN/2/12/BL** | 120 | 12 | Clear Ceiling Fan Light | C, C-9 | 1000 | 700 | 2.38 | 3.50 |
| | | Med Brass | 10886 | | **60A15/GARAGE/2/12/BL** | 120 | 12 | Clear Garage Light | C, C-9 | 1000 | 690 | 2.38 | 3.50 |
| | | | 11008 | | **60A15/GARAGE/RP** | 120 | 24 | Inside Frost Garage Door | C, C-9 | 1000 | 690 | 2.38 | 3.50 |
| | A19 | Med | 11509 | ●🧢 | **60A/DAY/4/160/RP** | 120 | 160 | Daylight | C, CC-8 | 1000 | 640 | 3.13 | 4.44 |
| | | | 11463 | ●🧢 | **60A/DAY/RP/4/48** | 120 | 48 | Daylight | C, CC-8 | 1000 | 640 | 3.13 | 4.44 |
| | | | 11101 | ●🧢 | **60A/DAY/RP/2/24** | 120 | 24 | Daylight | C, CC-8 | 1000 | 640 | 3.13 | 4.44 |
| | | | 11602 | ●🧢101,136 | **60A/DAY/RP/4/48** | 130 | 48 | Daylight | C, CC-8 | 1000 | 640 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 53 watts, 490 lumens, 2500 hours.* | | | | | | | | | | |
| | | | 11204 | ●🧢 | **60A/DL/SW/4PK/RP** | 120 | 48 | Soft White Double Life | C, CC-8 | 2000 | 770 | 3.13 | 4.44 |
| | | | 11227 | ●🧢 | **60A/DL/SW/2PK/RP** | 120 | 24 | Soft White Double Life | C, CC-8 | 2000 | 770 | 3.13 | 4.44 |
| | | | 11260 | ●🧢 | **60A/CL/DL/RP** | 120 | 24 | Clear Double Life | C, CC-8 | 2000 | 790 | 3.13 | 4.44 |
| | | | 10503 | ●🧢 | **60A/RS/SL/RP** | 120 | 12 | Safeline Rough Service Inside Frost | C, C-9 | 1000 | 555 | 3.13 | 4.44 |
| | | | 13000 | ●🧢 | **60A/RS/2/RP** | 120 | 24 | Inside Frost Rough Service | C, C-9 | 1000 | 555 | 2.88 | 4.44 |
| | | | 12977 | ●🧢 | **60A/RS/RP/1** | 120 | 12 | Inside Frost Rough Service | C, C-9 | 1000 | 555 | 2.88 | 4.44 |
| | | | 12420 | ●🧢136,168 | **60A/RS/2/RP** | 130 | 24 | Inside Frost Rough Service | C, C-9 | 1000 | 555 | 2.88 | 4.44 |
| | | | *@ 120 _volts, approximate 53 watts, 420 lumens, 2500 hours* | | | | | | | | | | |
| | | | 11205 | ●🧢 | **60A/W/4/RP** | 120 | 48 | Soft White | C, CC-8 | 1000 | 850 | 3.13 | 4.44 |
| | | | 11208 | ●🧢 | **60A/W/RP** | 120 | 24 | Soft White | C, CC-8 | 1000 | 850 | 3.13 | 4.44 |
| | | | 10553 | ●🧢 | **60A/CL** | 120 | 120 | Clear | C, CC-8 | 1000 | 880 | 3.13 | 4.44 |
| | | | 11224 | ●🧢 | **60A/CL/RP** | 120 | 24 | Clear | C, CC-8 | 1000 | 880 | 3.13 | 4.44 |
| | | | 10555 | ●🧢136,170 | **60A/CL** | 130 | 120 | Clear | C, CC-8 | 1000 | 855 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 53 watts, 650 lumens, 2500 hours* | | | | | | | | | | |
| | | | 10558 | ●🧢170 | **60A/CL/CVP** | 130 | 24 | Clear | C, CC-8 | 1000 | 855 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 53 watts, 650 lumens, 2500 hours* | | | | | | | | | | |
| | | | 11180 | ●🧢 | **60A/4/RP** | 120 | 48 | Standard Frost | C, CC-8 | 1000 | 870 | 3.13 | 4.44 |
| | | | 11214 | ●🧢 | **60A/RP** | 120 | 24 | Standard Frost | C, CC-8 | 1000 | 870 | 3.13 | 4.44 |
| | | | 11373 | ●🧢136,170 | **60A** | 130 | 48 | Standard Frost | C, CC-8 | 1000 | 855 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 53 watts, 650 lumens, 2500 hours* | | | | | | | | | | |
| | | | 10489 | ●🧢136,170 | **60A/CVP** | 130 | 24 | Standard Frost | C, CC-8 | 1000 | 855 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 53 watts, 650 lumens, 2500 hours* | | | | | | | | | | |
| | | | 11715 | ● | **60A/BLACKLIGHT/RP** | 120 | 6 | Blacklight | C, CC-8 | 1000 | | 3.13 | 4.44 |
| | | | 10390 | ● | **60A/Y/RP** | 120 | 24 | Yellow Bug Light | C, CC-8 | 1000 | | 3.13 | 4.44 |
| | | | 10386 | ● | **60A/Y/RP** | 130 | 24 | Yellow Bug Light | C, CC-8 | 1000 | | 3.13 | 4.44 |
| | | | 10576 | ● | **60A/SPK** | 120 | 24 | Soft Pink | C, CC-8 | 1000 | | 3.13 | 4.44 |
| | | | 12280 | ● | **60A/GRO** | 120 | 6 | Spot-GRO | C, C-9 | 1000 | | 3.13 | 4.44 |
| | | Med Brass | 13021 | | **60A/RS/XL** | 120 | 24 | Inside Frost Rough Service XL | C, C-9 | 5000 | 450 | 2.88 | 4.44 |
| | | | 12455 | 80 | **60A/RS/XL** | 130 | 24 | Inside Frost Rough Service XL | C, C-9 | 5000 | 450 | 2.88 | 4.44 |
| | | | *@ 120 _volts, approximate 53 watts, 340 lumens, 12500 hours.* | | | | | | | | | | |
| | | | 10640 | ⌀ | **60A** | 24 | 120 | Inside Frost Dental Spot | C, C-9 | 1000 | 1010 | 3.13 | 4.44 |




# GENERAL PURPOSE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 60 | C15 | Med Brass | 14200 | | **60C15/FAN/2PK** | 120 | 12 | Clear Ceiling Fan Light | C, C-9 | 4000 | 528 | | 4.50 |
| | K19 | Med | 10483 | ● | **60K19/DR** | 120 | 24 | Inside Frost Directional Reflector | C, CC-6 | 1150 | 630 | | 4.13 |
| | T10 | Med | 18710 | ●▼▲ | **60T10/64** | 120 | 60 | Clear | C, C-8 | 1000 | 655 | | 5.63 |
| | | | 18712 | ●▼▲ | **60T1064BL** | 120 | 6 | Clear | C, C-8 | 1000 | 655 | | 5.63 |
| | | | 18711 | ●▼▲ | **60T10/CF** | 120 | 60 | Inside Frost Showcase | C, C-8 | 1000 | 630 | | 5.63 |
| | | S14s | 19675 | ▼▲ | **LN60 125-130V** | 125 | 25 | Opal White LINESTRA 1605 | B, C-8 | 1000 | 460 | | 19.69 |
| 65 | BR30 | Med | 15223 | ●▲ 2,46,57, 155 | **65BR30/DAY/1/6/RP** | 120 | 6 | Daylight Reflector | C, CC-6 | 2000 | 420lm 250 cd 60˚ | | 5.38 |
| | | | 15167 | ●▲ 2,46,57, 155 | **65BR30/FL/SL/RP** | 130 | 6 | Reflector Safeline Flood | C, CC-6 | 2000 | 620lm 370 cd 60˚ | | 5.38 |
| | | | *@ 120 _volts, approximate 57 watts, 470 lumens, 5000 hours.* | | | | | | | | | | |
| | | | 15148 | ●▲ 2,46,57, 155 | **65BR30/TRAY** | 120 | 48 | Reflector Flood | C, CC-6 | 2000 | 620lm 370 cd 60˚ | | 5.38 |
| | | | 15165 | ●▲ 2,46,57, 155 | **65BR30/FL** | 120 | 24 | Reflector Flood | C, CC-6 | 2000 | 620lm 370 cd 60˚ | | 5.38 |
| | | | 15246 | ●▲ 2,46,57, 155 | **65BR30/2/24/RP** | 120 | 24 | Reflector Flood | C, CC-6 | 2000 | 620lm 370 cd 60˚ | | 5.38 |
| | | | 15160 | ●▲ 2,46,57, 155 | **65BR30/FL/RP** | 120 | 6 | Reflector Flood | C, CC-6 | 2000 | 620lm 370 cd 60˚ | | 5.38 |
| | | | 15149 | ●▲ 2,46,57, 155 | **65BR30/SP/RP** | 120 | 6 | Reflector Spot | C, CC-6 | 2000 | 620lm 580 cd 30˚ | | 5.38 |
| | | | 13129 | ●▲ 2,46,57, 155 | **65BR30/FL** | 130 | 24 | Reflector Flood | C, CC-6 | 2000 | 620lm 370 cd 60˚ | | 5.38 |
| | | | *@ 120 _volts, approximate 57 watts, 470 lumens, 5000 hours.* | | | | | | | | | | |
| | | | 15172 | ●▲ 2,46,57, 155 | **65BR30/FL/CVP** | 130 | 6 | Reflector Flood | C, CC-6 | 2000 | 620lm 370 cd 60˚ | | 5.38 |
| | | | *@ 120 _volts, approximate 57 watts, 470 lumens, 5000 hours.* | | | | | | | | | | |
| | | | 15150 | ●▲ 2,46,57, 155 | **65BR30/A/RP** | 120 | 6 | Amber Reflector Flood | C, CC-6 | 2000 | | | 5.38 |
| | | | 15151 | ●▲ 2,46,57, 155 | **65BR30/B/RP** | 120 | 6 | Blue Reflector Flood | C, CC-6 | 2000 | | | 5.38 |
| | | | 15152 | ●▲ 2,46,57, 155 | **65BR30/G/RP** | 120 | 6 | Green Reflector Flood | C, CC-6 | 2000 | | | 5.38 |
| | | | 15153 | ●▲ 2,46,57, 155 | **65BR30/PK/RP** | 120 | 6 | Pink Reflector Flood | C, CC-6 | 2000 | | | 5.38 |
| | | | 15161 | ●▲ 2,46,57, 155 | **65BR30/R/RP** | 120 | 6 | Red Reflector Flood | C, CC-6 | 2000 | | | 5.38 |
| | | | 15154 | ●▲ 2,46,57, 155 | **65BR30/Y/RP** | 120 | 6 | Yellow Reflector Flood | C, CC-6 | 2000 | | | 5.38 |
| | | | 15156 | ●▲ 2,46,57, 155 | **65BR30/GRO/RP** | 120 | 6 | Spot-GRO Reflector | C, CC-6 | 2000 | | | 5.38 |
| | | Med Brass | 15266 | ▲ | **65BR30/DL/2/24** | 120 | 24 | Double Life Reflector Flood | C, CC-6 | 4000 | 510lm 300 cd 60˚ | | 5.38 |


BR30, BR40


PAR38


A19



## GENERAL PURPOSE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 65 | BR30 | Med Brass | 15177 | 2,46,57,155 | **65BR30/DL/FL/RP** | 120 | 6 | Double Life Reflector Flood | C, CC-6 | 4000 | 510lm 300 cd 60˚ | | 5.38 |
| | BR40 | Med | 15360 | 46,57,155 | **65BR/FL/24** | 120 | 24 | Reflector Flood | C, CC-6 | 2000 | 580lm 390 cd 60˚ | | 6.50 |
| | | | 15678 | 46,57,155 | **65BR/FL/RP** | 120 | 6 | Reflector Flood | C, CC-6 | 2000 | 580lm 390 cd 60˚ | | 6.50 |
| | | | 15679 | 46,57,106, 136,155 | **65BR/CVP** | 130 | 6 | Reflector Flood | C, CC-6 | 2000 | 540lm 390 cd 60˚ | | 6.50 |
| | | | *@ 120 _volts, approximate 57 watts, 410 lumens, 5000 hours.* | | | | | | | | | | |
| | | Med Brass | 15332 | 46,57,155 | **65BR/DL/FL/RP** | 120 | 6 | Double Life Reflector Flood | C, CC-6 | 4000 | 510lm 335 cd 60˚ | | 6.50 |
| | PAR38 | Med Skt | 13804 | I/O E | **65PAR/SP** | 120 | 15 | Spot Super Saver | C, CC-6 | 1750 | 715lm 5500 cd 12˚ | | 5.31 |
| | | | 13802 | I/O E | **65PAR/FL** | 120 | 15 | Flood Super Saver | C, CC-6 | 1750 | 715lm 1700 cd 30˚ | | 5.31 |
| | | | 13805 | I/O E 136,173 | **65PAR/FL** | 130 | 15 | Flood Super Saver | C, CC-6 | 1750 | 715lm 1700 cd 30˚ | | 5.31 |
| | | | *@ 120 _volts, approximate 57 watts, 540 lumens, 4375 hours* | | | | | | | | | | |
| 67 | A19 | Med | 11394 | | **75A/67/W/ES/4PK** | 120 | 48 | Soft White Energy Saver | C, CC-8 | 750 | 1040 | 3.13 | 4.44 |
| | | | 11377 | | **75A/67/SS** | 120 | 48 | Standard Frost SuperSaver | C, CC-8 | 750 | 1050 | 3.13 | 4.44 |
| | | | 11381 | 136,175 | **75A/67/SS** | 130 | 48 | Standard Frost SuperSaver | C, CC-8 | 750 | 1020 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 59 watts, 780 lumens, 1875 hours* | | | | | | | | | | |
| | | Med Brass | 11385 | 108 | **75A/67/SSXL** | 120 | 48 | Standard Frost SuperSaver XL | C, CC-8 | 2500 | 880 | 3.13 | 4.44 |
| | | | 11389 | 108,136,174 | **75A/67/SSXL** | 130 | 48 | Standard Frost SuperSaver XL | C, CC-8 | 2500 | 860 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 59 watts, 660 lumens, 6250 hours* | | | | | | | | | | |
| 75 | A19 | Med | 10863 | | **75A/DAY/4/160/RP** | 120 | 160 | Daylight | C, CC-8 | 750 | 850 | 3.13 | 4.44 |
| | | | 10865 | | **75A/DAY/RP/4/48** | 120 | 48 | Daylight | C, CC-8 | 750 | 850 | 3.13 | 4.44 |
| | | | 11102 | | **75A/DAY/RP/2/24** | 120 | 24 | Daylight | C, CC-8 | 750 | 850 | 3.13 | 4.44 |
| | | | 10776 | 102,136 | **75A/DAY/RP/4/48** | 130 | 48 | Daylight | C, CC-8 | 750 | 850 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 66 watts, 650 lumens, 1875 hours.* | | | | | | | | | | |
| | | | 11331 | | **75A/W/DL/SW/4PK/RP** | 120 | 48 | Soft White Double Life | C, CC-8 | 1500 | 1055 | 3.13 | 4.44 |
| | | | 11337 | | **75A/DL/SW/2PK/RP** | 120 | 24 | Soft White Double Life | C, CC-8 | 1500 | 1055 | 3.13 | 4.44 |
| | | | 11175 | | **75A/CL/DL/RP** | 120 | 24 | Clear Double Life | C, CC-8 | 1500 | 1085 | 3.13 | 4.44 |
| | | | 13001 | | **75A/RS/2/RP** | 120 | 24 | Inside Frost Rough Service | C, C-9 | 1000 | 818 | 2.88 | 4.44 |
| | | | 12579 | | **75A/RS/RP/1** | 120 | 12 | Inside Frost Rough Service | C, C-9 | 1000 | 818 | 2.88 | 4.44 |
| | | | 12586 | 136,179 | **75A/RS/RP/1** | 130 | 24 | Inside Frost Rough Service | C, C-9 | 1000 | 818 | 2.88 | 4.44 |
| | | | *@ 120 _volts, approximate 66 watts, 620 lumens, 2500 hours* | | | | | | | | | | |




# GENERAL PURPOSE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75 | A19 | Med | 10970 | ●▬ | **75A/W/4/RP** | 120 | 48 | Soft White | C, CC-8 | 750 | 1170 | 3.13 | 4.44 |
| | | | 10967 | ●▬ | **75A/W/RP** | 120 | 24 | Soft White | C, CC-8 | 750 | 1170 | 3.13 | 4.44 |
| | | | 12500 | ●▬ | **75A/CL** | 120 | 120 | Clear | C, CC-8 | 750 | 1200 | 3.13 | 4.44 |
| | | | 11225 | ●▬ | **75A/CL/RP** | 120 | 24 | Clear | C, CC-8 | 750 | 1200 | 3.13 | 4.44 |
| | | | 12502 | ●▬136,183 | **75A/CL** | 130 | 120 | Clear | C, CC-8 | 750 | 1190 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 66 watts, 910 lumens, 1875 hours* | | | | | | | | | | |
| | | | 12525 | ●▬ | **75A/4/RP** | 120 | 48 | Standard Frost | C, CC-8 | 750 | 1190 | 3.13 | 4.44 |
| | | | 12521 | ●▬ | **75A/RP** | 120 | 24 | Standard Frost | C, CC-8 | 750 | 1190 | 3.13 | 4.44 |
| | | | 11374 | ●▬136,183 | **75A** | 130 | 48 | Standard Frost | C, CC-8 | 750 | 1190 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 66 watts, 910 lumens, 1875 hours* | | | | | | | | | | |
| | | | 12510 | ●▬183 | **75A/CVP** | 130 | 24 | Standard Frost | C, CC-8 | 750 | 1190 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 66 watts, 910 lumens, 1875 hours* | | | | | | | | | | |
| | | Med Brass | 13022 | ▬ | **75A/RS/XL** | 120 | 24 | Inside Frost Rough Service XL | C, C-9 | 5000 | 650 | 2.88 | 4.44 |
| | | | 12528 | ▬81 | **75A/RS/XL** | 130 | 24 | Inside Frost Rough Service XL | C, C-9 | 5000 | 700 | 2.88 | 4.44 |
| | | | *@ 120 _volts, approximate 66 watts, 500 lumens, 12500 hours.* | | | | | | | | | | |
| | A21 | Med | 12554 | ●116 | **75A21/RS/SL/RP** | 120 | 12 | Safeline Rough Service Inside Frost | C, C-9 | 1000 | 800 | 3.13 | 4.44 |
| | | Med Brass | 11566 | ⊘ | **75A21** | 12 | 24 | Inside Frost RV-Marine | C, C-6 | 1000 | 1420 | 3.88 | 5.31 |
| | BR38 | Med | 15620 | ★I/O2,155 | **75/OPAR/BUG/RP** | 120 | 6 | Outdoor Bug Light | C, CC-6 | 2000 | | | 5.31 |
| | | Med Brass | 15607 | ★I/O2,107,119,155 | **75/OPAR/FL** | 120 | 12 | Outdoor Reflector Economy Flood | C, CC-6 | 2000 | 650lm 45˚ | | 5.31 |
| | BR40 | Med | 15349 | ●▬46,57,107,155 | **75BR40/FL/DAY/1/6/RP** | 120 | 6 | Daylight Reflector Flood | C, CC-6 | 2000 | 680lm 310 cd 60˚ | | 6.50 |
| | | | 15126 | ●▬46,57,107,155 | **75BR/FL** | 120 | 24 | Reflector Flood | C, CC-6 | 2000 | 680lm 460 cd 60˚ | | 6.50 |
| | | | 15128 | ●▬46,57,107,155 | **75BR/FL/RP** | 120 | 6 | Reflector Flood | C, CC-6 | 2000 | 680lm 460 cd 60˚ | | 6.50 |
| | | | 15125 | ●▬46,57,107,136,155,184 | **75BR/FL** | 130 | 24 | Reflector Flood | C, CC-6 | 2000 | 680lm 460 cd 60˚ | | 6.50 |
| | | | *@ 120 _volts, approximate 66 watts, 520 lumens, 5000 hours* | | | | | | | | | | |
| | | Med Brass | 15213 | ▬46,57,107,155 | **75BR40/DL/FL/1/24** | 120 | 24 | Double Life Reflector Flood | C, CC-6 | 4000 | 610lm 400 cd 60˚ | | 6.50 |
| | | | 15144 | ▬46,57,107,155 | **75BR/DL/FL/RP** | 120 | 6 | Double Life Reflector Flood | C, CC-6 | 4000 | 610lm 400 cd 60˚ | | 6.50 |
| | ER30 | Med | 15100 | ●2,46,57,107,155 | **75ER30** | 120 | 24 | Elliptical Reflector Flood | C, CC-6 | 2000 | 580lm 1500 cd 30˚ | | 6.38 |
| | | | 15109 | ●2,46,57,107,155 | **75ER30/RP** | 120 | 6 | Elliptical Reflector Flood | C, CC-6 | 2000 | 580lm 1500 cd 30˚ | | 6.38 |
| | | | 15101 | ●2,46,57,107,136,155,178 | **75ER30** | 130 | 24 | Elliptical Reflector Flood | C, CC-6 | 2000 | 580lm 1500 cd 30˚ | | 6.38 |
| | | | *@ 120 _volts, approximate 66 watts, 425 lumens, 4125 hours* | | | | | | | | | | |


K19


PAR38 Side Prong


R20


A19



# GENERAL PURPOSE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75 | K19 | Med | 12583 | ● | **75K19/DR** | 120 | 24 | Inside Frost Directional Reflector | C, CC-6 | 1150 | 855lm | | 4.13 |
| | PAR38 | Med Side Prong | 13850 | ★ I/O | **75PAR/3FL** | 120 | 12 | Compact Flood | C, CC-6 | 2000 | 1040lm 1800 cd 30˚ | | 4.31 |
| | R20 | Med | 14840 | ● 68,107,118 | **75R20/RP** | 120 | 6 | Reflector Flood | C, CC-9 | 2000 | 500lm 500 cd 45˚ | | 3.94 |
| | R30 | Med | 15146 | ● | **75R30/BLACKLIGHT/RP** | 120 | 6 | Blacklight | C, CC-6 | 1000 | | | 6.50 |
| 90 | A19 | Med | 11396 | ● | **100A/90/W/ES/4PK** | 120 | 48 | Soft White Energy Saver | C, CC-8 | 750 | 1450 | 3.13 | 4.44 |
| | | | 11378 | ● | **100A/90/SS** | 120 | 48 | Standard Frost SuperSaver | C, CC-8 | 750 | 1480 | 3.13 | 4.44 |
| | | | 11382 | ● 136,189 | **100A/90/SS** | 130 | 48 | Standard Frost SuperSaver | C, CC-8 | 750 | 1480 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 79 watts, 1130 lumens, 1875 hours* | | | | | | | | | | |
| | | Med Brass | 11386 | 108 | **100A/90/SSXL** | 120 | 48 | Standard Frost SuperSaver XL | C, CC-8 | 2500 | 1220 | 3.13 | 4.44 |
| | | | 11390 | 108,136,186 | **100A/90/SSXL** | 130 | 48 | Standard Frost SuperSaver XL | C, CC-8 | 2500 | 1230 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 79 watts, 940 lumens, 6250 hours* | | | | | | | | | | |
| 100 | A19 | Med | 12948 | ● | **100A/DAY/4/160/RP** | 120 | 160 | Daylight | C, CC-8 | 750 | 1270 | 3.13 | 4.44 |
| | | | 12587 | ● | **100A/DAY/RP/4/48** | 120 | 48 | Daylight | C, CC-8 | 750 | 1270 | 3.13 | 4.44 |
| | | | 12952 | ● | **100A/DAY/RP/2/24** | 120 | 24 | Daylight | C, CC-8 | 750 | 1270 | 3.13 | 4.44 |
| | | | 12538 | ● 103,136 | **100A/DAY/RP/4/48** | 130 | 48 | Daylight | C, CC-8 | 750 | 1270 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 88 watts, 970 lumens, 1875 hours.* | | | | | | | | | | |
| | | | 16868 | ● | **100A/DL/SW/PLUS/4PK/RP/160** | 120 | 160 | Soft White Double Life | C, CC-8 | 1500 | 1560 | 3.13 | 4.44 |
| | | | 16864 | ● | **100A/DL/SW/PLUS/4PK/RP** | 120 | 48 | Soft White Double Life | C, CC-8 | 1500 | 1560 | 3.13 | 4.44 |
| | | | 11332 | ● 108 | **100A/DL/SW/4PK/RP** | 120 | 48 | Soft White Double Life | C, CC-8 | 1500 | 1530 | 3.13 | 4.44 |
| | | | 12480 | ● | **100A/DL/SW/PLUS/2PK/RP** | 120 | 24 | Soft White Double Life | C, CC-8 | 1500 | 1560 | 3.13 | 4.44 |
| | | | 12805 | ● 108 | **100A/DL/SW/2PK/RP** | 120 | 24 | Soft White Double Life | C, CC-8 | 1500 | 1530 | 3.13 | 4.44 |
| | | | 11660 | ● | **100A/CL/DL/PLUS/2PK/RP** | 120 | 24 | Clear Double Life | C, CC-8 | 1500 | 1590 | 3.13 | 4.44 |
| | | | 11176 | ● 108 | **100A/CL/DL/RP** | 120 | 24 | Clear Double Life | C, CC-8 | 1500 | 1550 | 3.13 | 4.44 |
| | | | 13002 | ● | **100A/RS/2/RP** | 120 | 24 | Inside Frost Rough Service | C, C-9 | 1000 | 1260 | 2.88 | 4.44 |
| | | | 12997 | ● | **100A/RS/RP/1** | 120 | 12 | Inside Frost Rough Service | C, C-9 | 1000 | 1260 | 2.88 | 4.44 |
| | | | 12998 | ● 136,190 | **100A/RS/2/RP** | 130 | 24 | Inside Frost Rough Service | C, C-9 | 1000 | 1260 | 2.88 | 4.44 |
| | | | *@ 120 _volts, approximate 88 watts, 960 lumens, 2500 hours* | | | | | | | | | | |
| | | | 12770 | ● | **100A/W/4/RP** | 120 | 48 | Soft White | C, CC-8 | 750 | 1690 | 3.13 | 4.44 |
| | | | 12752 | ● | **100A/W/RP** | 120 | 24 | Soft White | C, CC-8 | 750 | 1690 | 3.13 | 4.44 |
| | | | 12529 | ● | **100A/CL** | 120 | 120 | Clear | C, CC-8 | 750 | 1720 | 3.13 | 4.44 |
| | | | 11226 | ● | **100A/CL/RP** | 120 | 24 | Clear | C, CC-8 | 750 | 1720 | 3.13 | 4.44 |
| | | | 12531 | ● 136,193 | **100A/CL** | 130 | 120 | Clear | C, CC-8 | 750 | 1700 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 88 watts, 1290 lumens, 1875 hours* | | | | | | | | | | |
| | | | 12750 | ● | **100A/4/RP** | 120 | 48 | Standard Frost | C, CC-8 | 750 | 1710 | 3.13 | 4.44 |
| | | | 12735 | ● | **100A/RP** | 120 | 24 | Standard Frost | C, CC-8 | 750 | 1710 | 3.13 | 4.44 |
| | | | 11375 | ● 136,193 | **100A** | 130 | 48 | Standard Frost | C, CC-8 | 750 | 1700 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 88 watts, 1290 lumens, 1875 hours* | | | | | | | | | | |


A19


A21


A23


BR38


BR40


K19



# GENERAL PURPOSE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100 | A19 | Med | 12709 | ●136,193 | **100A/CVP** | 130 | 24 | Standard Frost | C, CC-8 | 750 | 1700 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 88 watts, 1290 lumens, 1875 hours* | | | | | | | | | | |
| | | | 12530 | ● | **100A/LHT** | 120 | 120 | Standard Frost Left Hand Thread | C, CC-8 | 750 | 1710 | 3.13 | 4.44 |
| | | | 12763 | ● | **100A/Y/RP** | 120 | 24 | Yellow Bug Light | C, CC-8 | 1000 | | 3.13 | 4.44 |
| | | | 12766 | ● | **100A/SPK/RP** | 120 | 24 | Soft Pink | C, CC-8 | 1000 | | 3.13 | 4.44 |
| | | Med Brass | 13023 | | **100A/RS/XL** | 120 | 24 | Inside Frost Rough Service XL | C, C-9 | 5000 | 840 | 2.88 | 4.44 |
| | | | 12559 | 82,136 | **100A/RS/XL** | 130 | 24 | Inside Frost Rough Service XL | C, C-9 | 5000 | 1040 | 2.88 | 4.44 |
| | | | *@ 120 _volts, approximate 88 watts, 765 lumens, 12500 hours.* | | | | | | | | | | |
| | A21 | Med | 13218 | ●83 | **100A21/VS** | 130 | 48 | Inside Frost Vibration Service | C, C-9 | 1000 | 1340 | 3.88 | 5.31 |
| | | | *@ 120 _volts, approximate 88 watts, 1020 lumens, 2500 hours.* | | | | | | | | | | |
| | | | 12866 | ● | **100A21** | 120 | 48 | Standard Frost | C, CC-8 | 750 | 1675 | 3.88 | 5.31 |
| | | | 12883 | ●136,192 | **100A21** | 130 | 48 | Standard Frost | C, CC-8 | 750 | 1650 | 3.88 | 5.31 |
| | | | *@ 120 _volts, approximate 88 watts, 1260 lumens, 1875 hours* | | | | | | | | | | |
| | | | 13404 | ● | **100A21** | 230 | 24 | Standard Frost | C, C-9 | 1000 | 1260 | 3.88 | 5.31 |
| | | | 13406 | ● | **100A21** | 250 | 24 | Standard Frost | C, C-9 | 1000 | 1230 | 3.88 | 5.31 |
| | | | 13397 | ● | **100A21** | 277 | 24 | Standard Frost | C, C-7A | 1000 | 1042 | 3.88 | 5.31 |
| | | | 12909 | ● | **100A21/LHT** | 120 | 48 | Standard Frost Left Hand Thread | C, CC-8 | 750 | 1675 | 3.88 | 5.31 |
| | | Med Brass | 12834 | 116 | **100A21/SL** | 120 | 48 | Safeline Rhinocoat (Shatter Protected) | C, CC-8 | 750 | 1675 | 3.88 | 5.31 |
| | | | 12992 | 116 | **100A21/RS/SL/RP** | 120 | 12 | Safeline Rough Service | C, C-9 | 1000 | 1260 | 3.13 | 4.44 |
| | | | 12906 | 108 | **100A21/99/XL** | 120 | 48 | Standard Frost Excel | C, CC-8 | 2500 | 1400 | 3.88 | 5.31 |
| | | | 12946 | 108,136,191 | **100A21/99/XL** | 130 | 48 | Standard Frost Excel | C, CC-8 | 2500 | 1440 | 3.88 | 5.31 |
| | | | *@ 120 _volts, approximate 88 watts, 1100 lumens, 6250 hours* | | | | | | | | | | |
| | A23 | Med | 12859 | ● | **100A23** | 34 | 12 | Inside Frost | C, C-9 | 1000 | 1800 | 4.38 | 6.06 |
| | | Med Brass | 13280 | 108 | **100A23/20** | 120 | 24 | Clear Oven | C, C-9 | 750 | 1390 | 4.38 | 6.06 |
| | BR38 | Med Brass | 15626 | ★ 2,46,57,155 | **100/OPAR/FL/B/RP** | 120 | 6 | Blue Reflector Flood | C, CC-6 | 2000 | | | 5.31 |
| | | | 15627 | ★ 2,46,57,155 | **100/OPAR/FL/G/RP** | 120 | 6 | Green Reflector Flood | C, CC-6 | 2000 | | | 5.31 |
| | | | 15623 | ★ 2,46,57,155 | **100/OPAR/FL/R/RP** | 120 | 6 | Red Reflector Flood | C, CC-6 | 2000 | | | 5.31 |
| | | | 15622 | ★ 2,46,57,155 | **100/OPAR/FL/Y/RP** | 120 | 6 | Yellow Reflector Flood | C, CC-6 | 2000 | | | 5.31 |
| | BR40 | Med | 14851 | ● 57,107,155 | **100BR/FL** | 120 | 24 | Reflector Flood | C, CC-6 | 2000 | 935lm 900 cd 60˚ | | 6.50 |
| | | | 14871 | ● 57,107,155 | **100BR/FL/RP** | 120 | 6 | Reflector Flood | C, CC-6 | 2000 | 935lm 900 cd 60˚ | | 6.50 |
| | | | 14847 | ● 57,107,136,155,194 | **100BR/FL** | 130 | 24 | Reflector Flood | C, CC-6 | 2000 | 935lm 900 cd 60˚ | | 6.50 |
| | | | *@ 120 _volts, approximate 88 watts, 710 lumens, 5000 hours* | | | | | | | | | | |
| | K19 | Med | 12298 | ● | **100K19/DR** | 120 | 24 | Inside Frost Directional Reflector | C, CC-6 | 1150 | 1235 | | 4.13 |


PAR38


PS25


A23


BR40


ER40


A19


A21



# GENERAL PURPOSE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100 | PAR38 | Med Skt | 13849 | ★ 24,46,155 | **100PAR38/HEAT/RED** | 120 | 15 | Hard Glass PAR Heat Lamp with Red Lens | C | 5000 | | | |
| 100<br>200<br>300 | PS25 | 3 CONTACT Med | 14374 | ●▼ | **100/300PS25/RP** | 120 | 12 | Inside Frost 3-way 100/300W | C, CC-8 | 1200 | 1385lm<br>3540lm<br>4925lm | 4.25 | 6.75 |
| 105 | A23 | Med Brass | 13364 | 57,108 | **K105A23/CL** | 125 | 24 | Clear Krypton Filled ST Ltg | C, C-9 | 12000 | 1120 | 4.38 | 6.06 |
| 120 | BR40 | Med | 15074 | ● 2,46,57, 107,155 | **120BR40/FL/SL** | 130 | 24 | RHINOCOAT Safeline Flood | C, CC-6 | 2000 | 1150lm<br>1000 cd<br>60˚ | | 6.50 |
| | | | *@ 120 _volts, approximate 105 watts, 850 lumens, 5000 hours* | | | | | | | | | | |
| | | | 14903 | ● 2,46,57, 107,155 | **120BR/FL** | 120 | 24 | Reflector Flood | C, CC-6 | 2000 | 1150lm<br>1000 cd<br>60˚ | | 6.50 |
| | | | 14896 | ● 2,46,57, 107,155 | **120BR/FL/RP** | 120 | 6 | Reflector Flood | C, CC-6 | 2000 | 1150lm<br>1000 cd<br>60˚ | | 6.50 |
| | | | 14899 | ● 2,107,136, 155,196 | **120BR/FL** | 130 | 24 | Reflector Flood | C, CC-6 | 2000 | 1150lm<br>1000 cd<br>60˚ | | 6.50 |
| | | | *@ 120 _volts, approximate 105 watts, 850 lumens, 5000 hours* | | | | | | | | | | |
| | | | 14888 | ● 2,46,57, 107,136,155,196 | **120BR/FL/CVP** | 130 | 6 | Reflector Flood | C, CC-6 | 2000 | 1150lm<br>1000 cd<br>60˚ | | 6.50 |
| | | | *@ 120 _volts, approximate 105 watts, 850 lumens, 5000 hours* | | | | | | | | | | |
| | | | 14911 | ● 2,46,57, 107,155 | **120BR/SP** | 120 | 24 | Reflector Spot | C, CC-6 | 2000 | 1150lm<br>3300 cd<br>25˚ | | 6.50 |
| | | | 14897 | ● 2,46,57, 107,155 | **120BR/SP/RP** | 120 | 6 | Reflector Spot | C, CC-6 | 2000 | 1150lm<br>3300 cd<br>25˚ | | 6.50 |
| | | | 14909 | ● 2,46,57, 107,136,155,196 | **120BR/SP** | 130 | 24 | Reflector Spot | C, CC-6 | 2000 | 1150lm<br>3300 cd<br>25˚ | | 6.50 |
| | | | *@ 120 _volts, approximate 105 watts, 850 lumens, 5000 hours* | | | | | | | | | | |
| | | | 14898 | ● 2,46,57, 155 | **120BR/GRO** | 120 | 6 | Spot-GRO Reflector | C, CC-6 | 2000 | | | 6.50 |
| | | Med Brass | 14915 | 2,46,57,107, 155 | **120BR/DL/FL/RP** | 120 | 6 | Double Life Reflector Flood | C, CC-6 | 4000 | 960lm<br>835 cd<br>60˚ | | 6.50 |
| | ER40 | Med | 15166 | ● 2,46,57,107, 155 | **120ER40** | 120 | 24 | Elliptical Reflector Flood | C, CC-6 | 2000 | 1370lm<br>2350 cd<br>30˚ | | 7.38 |
| 125 | BR40 | Med | 15451 | 57,155 | **125BR40/HEAT/24PK** | 120 | 24 | Reflector Infrared Heat Lamp | C, C-9 | 4000 | | | 6.50 |
| | | | 14952 | 57,155 | **125BR40/1/RP** | 120 | 6 | Reflector Infrared Brooder Bulb | C, CC-6 | 5000 | | | 6.50 |
| 135 | A19 | Med Brass | 12831 | 3,108,136 | **150A/135/SS/XL** | 130 | 120 | Standard Frost SuperSaver XL | C, CC-8 | 2500 | 2050 | 3.13 | 4.44 |
| | | | *@ 120 _volts, approximate 119 watts, 1560 lumens, 6250 hours* | | | | | | | | | | |
| | A21 | Med | 12820 | ● | **150A21/135/SS** | 120 | 48 | Standard Frost SuperSaver | C, CC-8 | 750 | 2450 | 3.88 | 5.50 |
| | | | 12863 | ● 4,136 | **150A21/135/SS** | 130 | 48 | Standard Frost SuperSaver | C, CC-8 | 750 | 2450 | 3.88 | 5.50 |
| | | | *@ 120 _volts, approximate 119 watts, 1870 lumens, 1875 hours* | | | | | | | | | | |

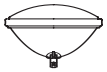

A21


A23


BR38


PAR38


PAR38 Side Prong


PAR46


PS25


T10



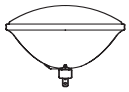
# GENERAL PURPOSE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 150 | A21 | Med | 13101 | ● | **150A21/W/RP** | 120 | 12 | Soft White | C, CC-8 | 750 | 2640 | 3.88 | 5.31 |
| | | | 13125 | ● | **150A21/CL/RP** | 120 | 12 | Clear Utility Light | C, CC-8 | 750 | 2780 | 3.88 | 5.31 |
| | | | 13148 | ●12,136 | **150A21/CL** | 130 | 48 | Clear | C, CC-8 | 750 | 2730 | 3.88 | 5.31 |
| | | | | | *@ 120 _volts, approximate 132 watts, 2030 lumens, 1875 hours* | | | | | | | | |
| | | | 13141 | ● | **150A21** | 120 | 48 | Standard Frost | C, CC-8 | 750 | 2740 | 3.88 | 5.31 |
| | | | 13165 | ● | **150A21/IF/RP** | 120 | 12 | Standard Frost Utility Light | C, CC-8 | 750 | 2740 | 3.88 | 5.31 |
| | | | 13153 | ●12,136 | **150A21** | 130 | 48 | Standard Frost | C, CC-8 | 750 | 2670 | 3.88 | 5.31 |
| | | | | | *@ 120 _volts, approximate 132 watts, 2030 lumens, 1875 hours* | | | | | | | | |
| | | Med Brass | 13177 | 108 | **150A21/99/XL** | 120 | 48 | Standard Frost Excel | C, CC-8 | 2500 | 2225 | 3.88 | 5.31 |
| | | | 13178 | 10,108,136 | **150A21/99/XL** | 130 | 48 | Standard Frost Excel | C, CC-8 | 2500 | 2225 | 3.88 | 5.31 |
| | | | | | *@ 120 _volts, approximate 132 watts, 1690 lumens, 6250 hours* | | | | | | | | |
| | A23 | Med | 15241 | ● | **150A23/RS** | 120 | 48 | Inside Frost Rough Service | C, C-17 | 1000 | 2090 | 4.38 | 6.06 |
| | | | 15243 | ●7,136 | **150A23/RS** | 130 | 48 | Inside Frost Rough Service | C, C-17 | 1000 | 2090 | 4.38 | 6.06 |
| | | | | | *@ 120 _volts, approximate 132 watts, 1590 lumens, 2500 hours* | | | | | | | | |
| | | | 13041 | ● | **150A23** | 120 | 48 | Inside Frost | C, CC-8 | 750 | 2810 | 4.63 | 6.06 |
| | BR38 | Med Brass | 15608 | ★I/O2,107, 119,155 | **150/OPAR/FL** | 120 | 12 | Outdoor Reflector Economy Flood | C, CC-6 | 2000 | 1350lm 45˚ | | 5.31 |
| | PAR38 | Med Skt | 13921 | ★I/O8,119 | **150PAR/SP** | 130 | 15 | Spot | C, CC-6 | 750 | 2175lm 18000 cd 12˚ | | 5.31 |
| | | | | | *@ 120 _volts, approximate 132 watts, 1660 lumens, 1875 hours* | | | | | | | | |
| | | | 13922 | ★I/O8,119 | **150PAR/FL** | 130 | 15 | Flood | C, CC-6 | 750 | 2175lm 4500 cd 30˚ | | 5.31 |
| | | | | | *@ 120 _volts, approximate 132 watts, 1660 lumens, 1875 hours* | | | | | | | | |
| | | Med Side Prong | 13853 | ★I/O188 | **150PAR/3FL** | 120 | 12 | Compact Flood | C, CC-6 | 2000 | 2175lm 4000 cd 30˚ | | 4.31 |
| | PAR46 | Med Side Prong | 15375 | ★I/O57,117,188 | **150PAR46/3NSP 125-** | 125 | 12 | Narrow Spot | C, CC-2V | 2000 | 1500lm 17500 cd 8x12 VH | | 4.00 |
| | | Screw Term | 15190 | ★I/O57,188 | **150PAR46** | 130 | 12 | Clear Mine Headlamp | C, C-13 | 1000 | 1250lm 8x15 VH | | 3.75 |
| | PS25 | Med | 15276 | ●108 | **150PS25/IF** | 120 | 60 | Inside Frost | C, C-9 | 1000 | 2340 | 5.25 | 6.94 |
| | | | 15282 | ●9,108,136 | **150PS25** | 130 | 60 | Inside Frost | C, C-9 | 750 | 2330 | 5.25 | 6.94 |
| | | | | | *@ 120 _volts, approximate 132 watts, 1770 lumens, 1875 hours* | | | | | | | | |
| | | Med Brass | 15293 | 116 | **150PS25/SL** | 120 | 60 | Safeline Rhinocoat (Shatter Protected) | C, C-9 | 1000 | 2200 | 5.25 | 6.94 |
| | | | 15300 | 116 | **150PS25/RS/SL** | 120 | 60 | Safeline Rough Service | C, C-17 | 1000 | 2145 | 4.38 | 5.94 |
| | | | 15431 | 5,108,136 | **150PS25/99/XL** | 130 | 60 | Inside Frost Excel-Line | C, C-9 | 2500 | 1870 | 5.25 | 6.94 |
| | | | | | *@ 120 _volts, approximate 132 watts, 1420 lumens, 6250 hours* | | | | | | | | |
| | T10 | S14s | 19690 | ▼ | **LN150 125-130** | 125 | 16 | Opal White LINESTRA 1604 | B, C-8 | 1000 | 930 | | 39.38 |
| 175 | PAR38 | Med Skt | 13836 | ★24,46,155 | **175W/PAR38/HEAT** | 120 | 15 | Hard Glass PAR Heat Lamp | C, CC-6 | 5000 | | | 5.31 |
| | | | 13840 | ★24,46,155 | **175 PAR38/HEAT/RED** | 120 | 15 | Hard Glass PAR Heat Lamp with Red Lens | C | 5000 | | | |
| 200 | A21 | Med | 13103 | ● | **200A21/W/1RP** | 120 | 12 | Soft White | C, CC-8 | 750 | 3650 | 3.88 | 5.31 |


A21


A23


PAR46


PAR56


PS25


PS30


BR38


BR40

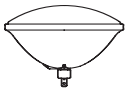


# GENERAL PURPOSE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 200 | A21 | Med | 13107 | ●Ø | **200A21** | 120 | 24 | Soft White Recessed Ceiling | C, CC-8 | 750 | 3650 | 3.88 | 5.31 |
| | | | 15476 | ● | **200A21/CL/RP** | 120 | 12 | Clear Utility Light | C, CC-8 | 750 | 3880 | 3.88 | 5.31 |
| | | | 15491 | ●21,136 | **200A21/CL** | 130 | 48 | Clear | C, CC-8 | 750 | 3880 | 3.88 | 5.31 |
| | | | *@ 120 _volts, approximate 176 watts, 2860 lumens, 1875 hours* | | | | | | | | | | |
| | | | 15499 | ● | **200A21/RP** | 120 | 12 | Standard Frost Utility Light | C, CC-8 | 750 | 3850 | 3.88 | 5.31 |
| | | | 15543 | ●21,136 | **200A21** | 130 | 48 | Standard Frost | C, CC-8 | 750 | 3760 | 3.88 | 5.31 |
| | | | *@ 120 _volts, approximate 176 watts, 2860 lumens, 1875 hours* | | | | | | | | | | |
| | | Med Brass | 15555 | 22,136 | **200A21/99/XL** | 125 | 48 | Standard Frost Excel | C, CC-8 | 2500 | 2910 | 3.88 | 5.31 |
| | | | *@ 120 _volts, approximate 176 watts, 2220 lumens, 6750 hours* | | | | | | | | | | |
| | A23 | Med | 15458 | ●15,136 | **200A23/RS** | 130 | 48 | Inside Frost Rough Service | C, C-17 | 1000 | 2920 | 4.38 | 5.88 |
| | | | *@ 120 _volts, approximate 176 watts, 2220 lumens, 2500 hours* | | | | | | | | | | |
| | | | 15505 | ●Ø | **200A23** | 120 | 48 | Inside Frost | C, CC-8 | 750 | 3930 | 4.63 | 6.06 |
| | PAR46 | Med Side Prong | 15191 | ★I/O57,117,188 | **200PAR46/3NSP** | 120 | 12 | Narrow Spot | C, CC-13 | 2000 | 2270lm 31000 cd 8x12 VH | | 4.00 |
| | | | 15194 | ★I/O57,117,188 | **200PAR46/3MFL** | 120 | 12 | Med Flood | C, CC-13 | 2000 | 2270lm 11500 cd 15x25 VH | | 4.00 |
| | | | 15196 | ★I/O57,117,188 | **200PAR46/3MFL 125-** | 125 | 12 | Med Flood | C, CC-13 | 2000 | 2270lm 11500 cd 15x25 VH | | 4.00 |
| | PAR56 | Mog End Prong | 15007 | ★57,117,188 | **200PAR56/MFL** | 120 | 12 | Med Flood Clear | C, CC-13 | 2000 | 2270lm 15000 cd 15x20 VH | | 5.00 |
| | | Screw Term | 14968 | ★ | **200PAR56** | 30 | 12 | Locomotive Headlamp | C, CC-8 | 500 | 3700lm 27000 cd 9x9 VH | | 4.50 |
| | PS25 | Med | 15600 | ●20,136 | **200PS25** | 130 | 60 | Inside Frost | C, CC-6 | 750 | 3700 | 5.25 | 6.94 |
| | | | *@ 120 _volts, approximate 176 watts, 2820 lumens, 1875 hours* | | | | | | | | | | |
| | | Med Brass | 15818 | 17,136 | **200PS25/99/XL** | 130 | 60 | Inside Frost Excel-Line | C, CC-6 | 2500 | 3000 | 5.25 | 6.94 |
| | | | *@ 120 _volts, approximate 176 watts, 2360 lumens, 6250 hours* | | | | | | | | | | |
| | PS30 | Med | 15675 | ●16,136 | **200PS/23** | 130 | 60 | Inside Frost Rough Service | C, C-9 | 1000 | 3080 | 6.00 | 8.06 |
| | | | *@ 120 _volts, approximate 176 watts, 2350 lumens, 2500 hours* | | | | | | | | | | |
| | | | 15653 | ●18,136 | **200PS/IF** | 130 | 60 | Inside Frost | C, C-9 | 750 | 3560 | 6.00 | 8.06 |
| | | | *@ 120 _volts, approximate 176 watts, 2710 lumens, 1875 hours* | | | | | | | | | | |
| | | | 15820 | ● | **200/CL** | 277 | 60 | Clear | C, C-9 | 1000 | 2360 | 6.00 | 8.06 |
| | | Med Brass | 15687 | 116 | **200PS/23/SL** | 120 | 60 | Safeline Rough Service | C, C-9 | 1000 | 3080 | 6.00 | 8.06 |
| | | | 15648 | 116 | **200PS/SL** | 120 | 60 | Safeline | C, C-9 | 1000 | 3080 | 6.00 | 8.06 |
| | | | 15725 | 14,136 | **200PS/CL/99/XL** | 130 | 60 | Clear Excel-Line | C, C-9 | 2500 | 2875 | 6.00 | 8.06 |
| | | | *@ 120 _volts, approximate 176 watts, 2190 lumens, 6250 hours* | | | | | | | | | | |
| 202 | PS25 | Med Brass | 15581 | 57 | **202PS25/CL** | 125 | 60 | Clear Street Lighting Group Replacement | C, C-9 | 6000 | 2750 | 5.25 | 6.94 |
| 250 | BR38 | Med Brass | 14661 | ★25,46,136 | **250K/BR38/FL** | 125 | 12 | Reflector Flood Krypton | C, CC-6 | 4000 | 3100 | | 5.81 |
| | | | *@ 120 _volts, approximate 220 watts, 2360 lumens, 10000 hours* | | | | | | | | | | |
| | BR40 | Med | 14665 | ●24,46,57,155 | **250BR40** | 120 | 12 | Reflector IR Heat Lamp Clear | C, CC-6 | 5000 | | | 6.50 |
| | | | 14664 | ●24,46,57,155 | **250BR40/1** | 120 | 6 | Reflector IR Heat Lamp Clear | C, CC-6 | 5000 | | | 6.50 |


R40


BR40


PAR56

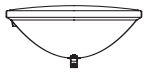

PS30


PS35



## GENERAL PURPOSE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 250 | R40 | Med | 14663 | ★24,46,57,155 | **250R40/10** | 120 | 6 | Red Bowl IR Heat Lamp Reflector Hard Glass | C, C-6 | 5000 | | | 6.88 |
| 300 | BR40 | Med Brass | 14779 | 2,46,57,155 | **300BR/FL** | 120 | 24 | Reflector Flood | C, CC-2V | 2000 | 3030lm 2900 cd 60˚ | | 6.50 |
| | PAR56 | Mog End Prong | 14947 | ★117,188 | **300PAR56/NSP** | 120 | 12 | Narrow Spot | C, CC-13 | 2000 | 3840lm 68000 cd 8x10 VH | | 5.00 |
| | | | 14944 | ★117,188 | **300PAR56/NSP** | 130 | 12 | Narrow Spot | C, CC-13 | 2000 | 3840lm 68000 cd 8x10 VH | | 5.00 |
| | | | 14950 | ★117,188 | **300PAR56/MFL** | 120 | 12 | Med Flood | C, CC-13 | 2000 | 3840lm 24000 cd 11x25 VH | | 5.00 |
| | | | 14946 | ★117,188 | **300PAR56/MFL** | 130 | 12 | Med Flood | C, CC-13 | 2000 | 3840lm 24000 cd 11x25 VH | | 5.00 |
| | | | 14953 | ★117,188 | **300PAR56/WFL** | 120 | 12 | Wide Flood | C, CC-13 | 2000 | 3840lm 11000 cd 20x35 VH | | 5.00 |
| | | | 14945 | ★117,188 | **300PAR56/WFL** | 130 | 12 | Wide Flood | C, CC-13 | 2000 | 3840lm 11000 cd 20x35 VH | | 5.00 |
| | | Screw Term | 14967 | ★ | **25A/PAR56/WFL** | 12 | 12 | Swimming Pool | C, C-6 | 1000 | 6000lm 15x40 VH | | 4.50 |
| | PS30 | Med | 15742 | ● | **300M/CL** | 120 | 60 | Clear Utility Light | C, C-9 | 750 | 5870 | 6.00 | 8.06 |
| | | | 15740 | ● | **300M/CL/RP** | 120 | 12 | Clear Utility Light | C, C-9 | 750 | 5870 | 6.00 | 8.06 |
| | | | 15744 | ●29,136 | **300M/CL** | 130 | 60 | Clear Utility Light | C, C-9 | 750 | 5820 | 6.00 | 8.06 |
| | | | *@ 120 _volts, approximate 264 watts, 4390 lumens, 1875 hours* | | | | | | | | | | |
| | | | 15737 | ● | **300M/IF** | 120 | 60 | Inside Frost Utility Light | C, C-9 | 750 | 5860 | 6.00 | 8.06 |
| | | | 15735 | ● | **300M/IF/RP** | 120 | 12 | Inside Frost Utility Light | C, C-9 | 750 | 5860 | 6.00 | 8.06 |
| | | | 15739 | ●29,136 | **300M/IF** | 130 | 60 | Inside Frost Utility Light | C, C-9 | 750 | 5760 | 6.00 | 8.06 |
| | | | *@ 120 _volts, approximate 264 watts, 4390 lumens, 1875 hours* | | | | | | | | | | |
| | | | 15738 | ●29 | **300M/IF/CVP/6** | 130 | 6 | Inside Frost Utility Light | C, C-9 | 750 | 5760 | 6.00 | 8.06 |
| | | | *@ 120 _volts, approximate 264 watts, 4390 lumens, 1875 hours* | | | | | | | | | | |
| | | Med Brass | 15761 | 27,136 | **300M/IF/99/XL** | 130 | 60 | Inside Frost Excel-Line | C, C-9 | 2500 | 4990 | 6.00 | 8.06 |
| | | | *@ 120 _volts, approximate 264 watts, 3800 lumens, 6250 hours* | | | | | | | | | | |
| | PS35 | Mogul | 15904 | | **300PS35/CL/99/XL** | 120 | 24 | Clear Excel-Line | C, C-9 | 2500 | 5190 | 7.00 | 9.38 |
| | | | 15930 | | **300PS35/99IF/XL** | 130 | 24 | Inside Frost Excel-Line | C, C-9 | 2500 | 5070 | 7.00 | 9.38 |
| | | | 15915 | | **300PS35/CL** | 120 | 24 | Clear Utility Light | C, C-9 | 1000 | 5700 | 7.00 | 9.38 |
| | | | 15917 | | **300PS35/CL** | 130 | 24 | Clear Utility Light | C, C-9 | 1000 | 5250 | 7.00 | 9.38 |
| | | | 15918 | | **300PS35/IF** | 120 | 24 | Inside Frost Utility Light | C, C-9 | 1000 | 5700 | 7.00 | 9.38 |
| | | | 15920 | | **300PS35/IF** | 130 | 24 | Inside Frost Utility Light | C, C-9 | 1000 | 5250 | 7.00 | 9.38 |
| | | | 16068 | | **300PS35/CL** | 277 | 24 | Clear | C, C-7A | 1000 | 4220 | 7.00 | 9.38 |
| 375 | R40 | Med Skirted | 14747 | ★24,46 | **375R40/1** | 120 | 24 | Reflector IR Heat Lamp Clear | C, C-11 | 5000 | | | 7.63 |


PAR64


PS35


CA8, CA10, CA5


B10


F10


G16.5



## GENERAL PURPOSE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Lumens Beam Angle CBCP | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | PAR64 | Ext Mog End Pr | 14938 | ★ 57,117,188 | **500PAR64/NSP** | 120 | 6 | Narrow Spot | C, CC-13 | 2000 | 6500lm 110000 cd 7x12 VH | | 6.00 |
| | | | 14932 | ★ 57,117,188 | **500PAR64/MFL** | 120 | 6 | Med Flood | C, CC-13 | 2000 | 6500lm 37000 cd 11x25 VH | | 6.00 |
| | | | 14935 | ★ 57,117,188 | **500PAR64/WFL** | 120 | 6 | Wide Flood | C, CC-13 | 2000 | 6500lm 13000 cd 20x40 VH | | 6.00 |
| | PS35 | Mogul | 16032 | | **500PS35/CL** | 120 | 24 | Clear | C, CC-8 | 1000 | 10000 | 7.00 | 9.38 |
| | | | 16034 | | **500PS35/CL** | 130 | 24 | Clear | C, CC-8 | 1000 | 10000 | 7.00 | 9.38 |
| | | | 16040 | | **500PS35/IF** | 130 | 24 | Inside Frost | C, CC-8 | 1000 | 10000 | 7.00 | 9.38 |

## DECORATIVE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | CA8 | Candelabra | 11688 | | **3CA8C/CL/FL/BL/1/6** | 120 | 6 | Clear Flicker | B | 1500 | 3.50 |
| | CA10 | Med | 11689 | | **3CA10/CL/FL/BL/1/6** | 120 | 6 | Clear Flicker | B | 1500 | 3.50 |
| 7.5 | CA5 | Candelabra | 11687 | | **7.5CA5C/CL/BL/3/18** | 120 | 18 | Clear Décor Bent Tip | B, C-11V | 3000 | 3.06 |
| 15 | B10 | Candelabra | 13315 | | **15B10C/DL/BL** | 120 | 12 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | 3.88 |
| | | | 13657 | | **15B10C/BAGPK** | 120 | 200 | Clear Décor Bent Tip | C, C-7A | 1500 | 3.88 |
| | | | 13448 | | **15B10C/BL/2PK** | 120 | 12 | Clear Décor Bent Tip | C, C-7A | 1500 | 3.88 |
| | | | 13675 | | **15B10C/T/BL/2PK** | 120 | 12 | Clear Décor Blunt Tip | C, C-7A | 1500 | 3.63 |
| | | Med | 13433 | 94 | **15B10/BL/2PK** | 120 | 12 | Clear Décor Bent Tip | C, C-7A | 1500 | 3.81 |
| | | | 13715 | 94 | **15B10/T/BL/2PK** | 120 | 12 | Clear Décor Blunt Tip | C, C-7A | 1500 | 3.56 |
| | F10 | Candelabra | 13435 | | **15FC/AIC/BL/2PK** | 120 | 12 | Amber Flame Shape Iridescent | B, C-7A | 1500 | 3.06 |
| | | | 13434 | | **15FC/IC/BL/2PK** | 120 | 12 | Clear Iridescent Flame Shape | B, C-7A | 1500 | 3.06 |
| | | | 13436 | | **15FC/W/BL/2PK** | 120 | 12 | White Flame Shape | B, C-7A | 1500 | 3.06 |
| | G16.5 | Candelabra | 13709 | | **15G16.5C/4M** | 120 | 24 | Clear Globe | B, C-7A | 4000 | 3.00 |
| | | | 13616 | | **15G16.5C** | 120 | 24 | Clear Globe | B, C-7A | 1500 | 3.00 |
| | | | 13617 | | **15G16.5C/W** | 120 | 24 | White Globe | B, C-7A | 1500 | 3.00 |
| 25 | B10 | Candelabra | 13306 | | **25B10C/DL/BL/4PK** | 120 | 24 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | 3.88 |
| | | | 13316 | | **25B10C/DL/BL** | 120 | 12 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | 3.88 |
| | | | 13570 | | **25B10C/BAGPK** | 120 | 200 | Clear Décor Bent Tip | C, C-7A | 1500 | 3.88 |
| | | | 13452 | | **25B10C/BL/2PK** | 120 | 12 | Clear Décor Bent Tip | C, C-7A | 1500 | 3.88 |
| | | | 13678 | | **25B10C/T/BL/2PK** | 120 | 12 | Clear Décor Blunt Tip | C, C-7A | 1500 | 3.63 |
| | | | 13743 | | **25B10C/CRYSTAL/DL/BL/2PK** | 120 | 12 | Double Life Crystal Bent Tip | C, C-7A | 3000 | 3.88 |
| | | | 13308 | | **25B10C/DL/F/BL/4PK** | 120 | 24 | Frosted Double Life Décor Bent Tip | C, C-7A | 3000 | 3.88 |
| | | | 13317 | | **25B10C/DL/F/BL** | 120 | 12 | Frosted Double Life Décor Bent Tip | C, C-2V | 3000 | 3.88 |




## DECORATIVE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | B10 | Candelabra | 13453 | ●▼◓ | **25B10C/F/BL/2PK** | 120 | 12 | Frosted Décor Bent Tip | C, C-7A | 1500 | 3.88 |
| | | Med | 13331 | ●▼◓94 | **25B10/DL/BL/4PK** | 120 | 24 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | 3.81 |
| | | | 13318 | ●▼◓94 | **25B10/DL/BL** | 120 | 12 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | 3.81 |
| | | | 13654 | ●▼◓94 | **25B10/BL/4PK** | 120 | 24 | Clear Décor Bent Tip | C, C-7A | 1500 | 3.81 |
| | | | 13438 | ●▼◓94 | **25B10/BL/2PK** | 120 | 12 | Clear Décor Bent Tip | C, C-7A | 1500 | 3.81 |
| | | | 13717 | ●▼◓94 | **25B10/T/BL/2PK** | 120 | 12 | Clear Décor Blunt Tip | C, C-7A | 1500 | 3.56 |
| | | | 13439 | ●▼◓94 | **25B10/F/BL/2PK** | 120 | 12 | Frosted Décor Bent Tip | C, C-7A | 1500 | 3.81 |
| | C11 | Candelabra | 11690 | ◓ | **25C11C/AM/SG/BL/1/6** | 120 | 6 | Spun-Glo Amber Fiber Wrapped | C, C-7A | 1500 | 4.25 |
| | F15 | Med | 13823 | ●◓ | **25F/AIC/BL/2PK** | 120 | 12 | Amber Flame Shape Iridescent | C, C-7A | 1500 | 4.50 |
| | | | 13806 | ●◓ | **25F/CL** | 120 | 24 | Clear Flame Shape | C, C-7A | 1500 | 4.50 |
| | | | 13862 | ●◓ | **25F/CL/BL/2PK** | 120 | 12 | Clear Flame Shape | C, C-7A | 1500 | 4.50 |
| | | | 13821 | ●◓ | **25F/IC/BL/2PK** | 120 | 12 | Iridescent Flame Shape | C, C-7A | 1500 | 4.50 |
| | | | 13820 | ●◓ | **25F/W/BL/2PK** | 120 | 12 | Soft White Flame Shape | C, C-7A | 1500 | 4.50 |
| | G16.5 | Candelabra | 10221 | ●◓ | **25G16.5C/DAY/2PK/BL** | 120 | 12 | Daylight Globe | B, C-7A | 1500 | 3.00 |
| | | | 13704 | ●◓ | **25G16.5C/4M** | 120 | 24 | Clear Globe | B, C-7A | 4000 | 3.00 |
| | | | 13618 | ●◓ | **25G16.5C** | 120 | 24 | Clear Globe | B, C-7A | 1500 | 3.00 |
| | | | 13625 | ●◓ | **25G16.5C/BL** | 120 | 12 | Clear Globe | B, C-7A | 1500 | 3.00 |
| | | | 13622 | ●◓ | **25G16.5C/W/BL** | 120 | 12 | White Globe | B, C-7A | 1500 | 3.00 |
| | | Med | 10298 | ●◓ | **25G16.5/BL** | 120 | 12 | Clear Globe | C, C-7A | 1500 | 3.00 |
| | | | 10297 | ●◓ | **25G16.5/W/BL** | 120 | 12 | White Globe | C, C-7A | 1500 | 3.00 |
| | G25 | Med | 14105 | ●◓ | **25G25/DL/RP/48** | 120 | 48 | Clear Double Life Globe | C, C-9 | 3000 | 4.44 |
| | | | 14145 | ●◓ | **25G25/DL/RP** | 120 | 6 | Clear Double Life Globe | C, C-9 | 3000 | 4.44 |
| | | | 14276 | ●◓ | **25G25/4M** | 120 | 24 | Clear Globe | C, C-9 | 4000 | 4.44 |
| | | | 14210 | ●◓ | **25G25/3PK/RP** | 120 | 24 | Clear Globe | C, C-9 | 1500 | 4.44 |
| | | | 14264 | ●◓ | **25G25** | 120 | 24 | Clear Globe | C, C-9 | 1500 | 4.44 |
| | | | 14282 | ●◓ | **25G25/RP** | 120 | 6 | Clear Globe | C, C-9 | 1500 | 4.44 |
| | | | 14103 | ●◓ | **25G25/DL/SW/RP/48** | 120 | 48 | Soft White Double Life Globe | C, C-9 | 3000 | 4.44 |
| | | | 14146 | ●◓ | **25G25/DL/SW/RP** | 120 | 6 | Soft White Double Life Globe | C, C-9 | 3000 | 4.44 |
| | | | 14277 | ●◓ | **25G25/W/4M** | 120 | 24 | Soft White Globe | C, C-9 | 4000 | 4.44 |
| | | | 14211 | ●◓ | **25G25/W/3PK/RP** | 120 | 24 | Soft White Globe | C, C-9 | 1500 | 4.44 |
| | | | 14265 | ●◓ | **25G25/W** | 120 | 24 | Soft White Globe | C, C-9 | 1500 | 4.44 |
| | | | 14286 | ●◓ | **25G25/W/RP** | 120 | 6 | Soft White Globe | C, C-9 | 1500 | 4.44 |
| | G40 | Med | 14685 | ●◓ | **25G40** | 120 | 6 | Clear Globe | C, C-9 | 2500 | 6.94 |
| 32 | B10 | Candelabra | 13737 | ●▼◓ | **32B10C/CRYSTAL/DL/BL/2PK** | 120 | 12 | Double Life Crystal Bent Tip | C, C-7A | 4000 | 3.88 |
| 40 | B10 | Candelabra | 13751 | ●▼◓ | **40B10C/DAY/2PK/BL** | 120 | 12 | Daylight Décor Bent Tip | C, C-7A | 1500 | 3.88 |
| | | | 13328 | ●▼◓ | **40B10C/DL/BL/4PK** | 120 | 24 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | 3.88 |
| | | | 13319 | ●▼◓ | **40B10C/DL/BL/2PK** | 120 | 12 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | 3.88 |


B10


B13


C15


F15


G16.5



## DECORATIVE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | B10 | Candelabra | 13571 | ●▼▬ | **40B10C/BAGPK** | 120 | 200 | Clear Décor Bent Tip | C, C-7A | 1500 | 3.88 |
| | | | 13648 | ●▼▬ | **40B10C/BL/4PK** | 120 | 24 | Clear Décor Bent Tip | C, C-7A | 1500 | 3.88 |
| | | | 13456 | ●▼▬ | **40B10C/BL/2PK** | 120 | 12 | Clear Décor Bent Tip | C, C-7A | 1500 | 3.88 |
| | | | 13681 | ●▼▬ | **40B10C/T/BL/2PK** | 120 | 12 | Clear Décor Blunt Tip | C, C-7A | 1500 | 3.63 |
| | | | 13714 | ●▼▬ | **40B10C/CRYSTAL/DL/BL/4/24** | 120 | 24 | Double Life Crystal Bent Tip | C, C-7A | 3000 | 3.88 |
| | | | 13741 | ●▼▬ | **40B10C/CRYSTAL/DL/BL/2PK** | 120 | 12 | Double Life Crystal Bent Tip | C, C-7A | 3000 | 3.88 |
| | | | 13309 | ●▼▬ | **40B10C/DL/F/BL/4PK** | 120 | 24 | Frosted Double Life Décor Bent Tip | C, C-7A | 3000 | 3.88 |
| | | | 13320 | ●▼▬ | **40B10C/DL/F/BL/2PK** | 120 | 12 | Frosted Double Life Décor Bent Tip | C, C-7A | 3000 | 3.88 |
| | | | 13457 | ●▼▬ | **40B10C/F/BL/2PK** | 120 | 12 | Frosted Décor Bent Tip | C, C-7A | 1500 | 3.88 |
| | | | 13682 | ●▼▬ | **40B10C/F/T/BL/2PK** | 120 | 12 | Frosted Décor Blunt Tip | C, C-7A | 1500 | 3.63 |
| | | Med | 15354 | ●▼▬ | **40B10/DAY/2PK/BL** | 120 | 12 | Daylight Décor Bent Tip | C, C-7A | 1000 | 3.88 |
| | | | 13321 | ●▼▬94 | **40B10/DL/BL/2PK** | 120 | 12 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | 3.81 |
| | | | 13651 | ●▼▬94 | **40B10/BL/4PK** | 120 | 24 | Clear Décor Bent Tip | C, C-7A | 1500 | 3.81 |
| | | | 13440 | ●▼▬94 | **40B10/BL/2PK** | 120 | 12 | Clear Décor Bent Tip | C, C-7A | 1500 | 3.81 |
| | | | 13719 | ●▼▬94 | **40B10/T/BL/2PK** | 120 | 12 | Clear Décor Blunt Tip | C, C-7A | 1500 | 3.56 |
| | | | 13723 | ●▼▬94 | **40B10/CRYSTAL/DL/BL/4PK** | 120 | 24 | Double Life Crystal Bent Tip | C, C-7A | 3000 | 3.81 |
| | | | 13740 | ●▼▬94 | **40B10/CRYSTAL/DL/BL/2PK** | 120 | 12 | Double Life Crystal Bent Tip | C, C-7A | 3000 | 3.81 |
| | | | 13322 | ●▼▬94 | **40B10/DLF/BL/2PK** | 120 | 12 | Frosted Double Life Décor Bent Tip | C, C-2V | 3000 | 3.81 |
| | | | 13441 | ●▼▬94 | **40B10/F/BL/2PK** | 120 | 12 | Frosted Décor Bent Tip | C, C-7A | 1500 | 3.81 |
| | | | 13720 | ●▼▬94 | **40B10/F/T/BL/2PK** | 120 | 12 | Frosted Décor Blunt Tip | C, C-7A | 1500 | 3.56 |
| | B13 | Candelabra | 13357 | ▬ | **40B13C/CL/FAN/2/12/BL** | 120 | 12 | Clear Ceiling Fan Light | C, C-9 | 1500 | 4.00 |
| | | Med | 13366 | ●▬ | **40B13/DL/FAN/2/60/BL** | 120 | 60 | Clear Double Life Ceiling Fan | C, C-9 | 3000 | 4.63 |
| | | | 13369 | ●▬ | **40B13/DL/FAN/BL/2PK** | 120 | 12 | Clear Double Life Ceiling Fan | C, C-9 | 3000 | 4.63 |
| | | | 13367 | ●▬ | **40B13/FAN/BL/2PK** | 120 | 12 | Clear Fan Lamp | C, C-9 | 1500 | 4.63 |
| | | | 13786 | ●▬ | **40B13/CRYSTAL/FAN/4/72** | 120 | 72 | Crystal Fan Lamp | C, C-9 | 1500 | 4.63 |
| | | | 13785 | ●▬ | **40B13/CRYSTAL/FAN/BL/2PK** | 120 | 12 | Crystal Fan Lamp | C, C-9 | 1500 | 4.63 |
| | C15 | Med | 11691 | | **40C15C/AM/SG/BL/1/6** | 120 | 6 | Spun Glo Amber Fiber Wrap | C, C-9 | 1500 | 4.06 |
| | F15 | Med | 13986 | ●▬ | **40F/AIC/BL/2PK** | 120 | 12 | Amber Flame Shape Iridescent | C, C-7A | 1500 | 4.50 |
| | | | 13974 | ●▬ | **40F/CL** | 120 | 24 | Clear Flame Shape | C, C-7A | 1500 | 4.50 |
| | | | 13985 | ●▬ | **40F/IC/BL/2PK** | 120 | 12 | Iridescent Flame Shape | C, C-7A | 1500 | 4.50 |
| | | | 13984 | ●▬ | **40F/W/BL/2PK** | 120 | 12 | White Flame Shape | C, C-7A | 1500 | 4.50 |
| | G16.5 | Candelabra | 10367 | ●▼▬ | **40G16.5C/DAY/2PK/BL** | 120 | 12 | Daylight Globe | C, C-7A | 1500 | 3.00 |
| | | | 13702 | ●▼▬ | **40G16.5C** | 120 | 24 | Clear Globe | C, C-7A | 1500 | 3.00 |
| | | | 13346 | ●▼▬ | **40G16.5C/4PK/BL** | 120 | 24 | Clear Globe | C, C-7A | 1500 | 3.00 |


G16.5


G25


G30


G40


A19


B10



## DECORATIVE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | G16.5 | Candelabra | 13666 | ●▼◠ | **40G16.5C/BL** | 120 | 12 | Clear Globe | C, C-7A | 1500 | 3.00 |
| | | | 13667 | ●▼◠ | **40G16.5C/W/BL** | 120 | 12 | White Globe | C, C-7A | 1500 | 3.00 |
| | | Med | 10352 | ●▼◠ | **40G16.5/4PK/BL** | 120 | 24 | Clear Globe | C, C-7A | 1500 | 3.00 |
| | | | 10300 | ●▼◠ | **40G16.5/BL** | 120 | 12 | Clear Globe | C, C-7A | 1500 | 3.00 |
| | | | 10299 | ●▼ | **40G16.5/W/BL** | 120 | 12 | White Globe | C, C-7A | 1500 | 3.00 |
| | G25 | Med | 15350 | ●◠ | **40G25/CL/DAY/1/6** | 120 | 6 | Daylight Clear Globe | C, C-9 | 1500 | 4.44 |
| | | | 13966 | ●◠ | **40G25/DAY/1/6** | 120 | 6 | Daylight Globe | C, C-9 | 1500 | 4.44 |
| | | | 14174 | ●◠ | **40G25/DL/1/48** | 120 | 48 | Clear Double Life Globe | C, C-9 | 3000 | 4.44 |
| | | | 14147 | ●◠ | **40G25/DL/RP** | 120 | 6 | Clear Double Life Globe | C, C-9 | 3000 | 4.44 |
| | | | 14212 | ●◠ | **40G25/3PK/RP** | 120 | 24 | Clear Globe | C, C-9 | 1500 | 4.44 |
| | | | 14266 | ●◠ | **40G25** | 120 | 24 | Clear Globe | C, C-9 | 1500 | 4.44 |
| | | | 14283 | ●◠ | **40G25/RP** | 120 | 6 | Clear Globe | C, C-9 | 1500 | 4.44 |
| | | | 14191 | ●◠ | **40G25/CVP** | 130 | 6 | Clear Globe | C, C-9 | 1500 | 4.44 |
| | | | 14148 | ●◠ | **40G25/DL/SW/RP** | 120 | 6 | Soft White Double Life Globe | C, C-9 | 3000 | 4.44 |
| | | | 14213 | ●◠ | **40G25/W/3PK/RP** | 120 | 24 | Soft White Globe | C, C-9 | 1500 | 4.44 |
| | | | 14267 | ●◠ | **40G25/W** | 120 | 24 | Soft White Globe | C, C-9 | 1500 | 4.44 |
| | | | 14287 | ●◠ | **40G25/W/RP** | 120 | 6 | Soft White Globe | C, C-9 | 1500 | 4.44 |
| | | | 14190 | ●◠ | **40G25/W/CVP** | 130 | 6 | Soft White Globe | C, C-9 | 1500 | 4.44 |
| | | | 15638 | ●◠ | **40G25/CT/1/6** | 120 | 6 | Chrome Top Globe | C, C-9 | 1500 | 4.44 |
| | G30 | Med | 14405 | ●◠ | **40G30/W/RP** | 120 | 6 | Soft White Globe | C, C-9 | 2500 | 5.50 |
| | G40 | Med | 14619 | ●◠ | **40G40/RP** | 120 | 6 | Clear Globe | C, C-9 | 2500 | 6.94 |
| | | | 14620 | ●◠ | **40G40/W/RP** | 120 | 6 | Soft White Globe | C, C-9 | 2500 | 6.94 |
| 60 | A19 | Med Brass | 10613 | ◠ | **60A/SB** | 120 | 120 | Silver Bowl | C, CC-8 | 1000 | 4.44 |
| | B10 | Candelabra | 13750 | ●▼◠ | **60B10C/DAY/2PK/BL** | 120 | 12 | Daylight Décor Bent Tip | C, C-7A | 1500 | 3.88 |
| | | | 13705 | ●▼◠ | **60B10C/DL/BL/4PK** | 120 | 24 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | 3.88 |
| | | | 13777 | ●▼◠ | **60B10C/DL/BL/2PK** | 120 | 12 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | 3.88 |
| | | | 13572 | ●▼◠ | **60B10C/BAGPK** | 120 | 200 | Clear Décor Bent Tip | C, C-7A | 1500 | 3.88 |
| | | | 13649 | ●▼◠ | **60B10C/BL/4PK** | 120 | 24 | Clear Décor Bent Tip | C, C-7A | 1500 | 3.88 |
| | | | 13460 | ●▼◠ | **60B10C/BL/2PK** | 120 | 12 | Clear Décor Bent Tip | C, C-7A | 1500 | 3.88 |
| | | | 13684 | ●▼◠ | **60B10C/T/BL/2PK** | 120 | 12 | Clear Décor Blunt Tip | C, C-7A | 1500 | 3.63 |
| | | | 13749 | ●▼◠ | **60B10C/CRYSTAL/DL/BL/4/24** | 120 | 24 | Double Life Crystal Bent Tip | C, C-7A | 3000 | 3.88 |
| | | | 13754 | ●▼◠ | **60B10C/DL/F/BL/4PK** | 120 | 24 | Frosted Double Life Décor Bent Tip | C, C-7A | 3000 | 3.88 |
| | | | 13778 | ●▼◠ | **60B10C/DL/F/BL/2PK** | 120 | 12 | Frosted Double Life Décor Bent Tip | C, C-7A | 3000 | 3.88 |
| | | | 13461 | ●▼◠ | **60B10C/F/BL/2PK** | 120 | 12 | Frosted Décor Bent Tip | C, C-7A | 1500 | 3.88 |
| | | | 13685 | ●▼◠ | **60B10C/F/T/BL/2PK** | 120 | 12 | Frosted Décor Blunt Tip | C, C-7A | 1500 | 3.63 |
| | | Med | 13254 | ●▼◠ | **60B10/DL/BL/4PK** | 120 | 24 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | 3.81 |
| | | | 13323 | ●▼◠ | **60B10/DL/BL/2PK** | 120 | 12 | Clear Double Life Décor Bent Tip | C, C-7A | 3000 | 3.81 |




# DECORATIVE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 60 | B10 | Med | 13650 | ●▼▬ | **60B10/BL/4PK** | 120 | 24 | Clear Décor Bent Tip | C, C-7A | 1500 | 3.81 |
| | | | 13442 | ●▼▬ | **60B10/BL/2PK** | 120 | 12 | Clear Décor Bent Tip | C, C-7A | 1500 | 3.81 |
| | | | 13721 | ●▼▬ | **60B10/T/BL/2PK** | 120 | 12 | Clear Décor Blunt Tip | C, C-7A | 1500 | 3.56 |
| | | | 13324 | ●▼▬ | **60B10/DL/F/BL/2PK** | 120 | 12 | Frosted Double Life Décor Bent Tip | C, C-7A | 3000 | 3.81 |
| | | | 13443 | ●▼▬ | **60B10/F/BL/2PK** | 120 | 12 | Frosted Décor Bent Tip | C, C-2V | 1500 | 3.81 |
| | B13 | Candelabra | 13263 | | **60B13C/CL/FAN/2/12/BL** | 120 | 12 | Clear Ceiling Fan Light | C, C-9 | 1500 | 4.00 |
| | | Med | 13370 | ●▬ | **60B13/DL/FAN/BL/2PK** | 120 | 12 | Clear Double Life Fan Lamp | C, C-9 | 3000 | 4.63 |
| | | | 13368 | ▬ | **60B13/FAN/BL/2PK** | 120 | 12 | Clear Fan Lamp | C, C-9 | 1500 | 4.63 |
| | C15 | Med | 13757 | ● | **60C15/SG/BL** | 120 | 6 | Spun-Glo Clear Fiber Wrapped | C, C-9 | 4000 | 4.50 |
| | F15 | Med | 13993 | ●▬ | **60F/CL** | 120 | 24 | Clear Flame Shape | C, C-7A | 1500 | 4.50 |
| | | | 13992 | ●▬ | **60F/BL** | 120 | 12 | Clear Flame Shape | C, C-7A | 1500 | 4.50 |
| | | | 13982 | ●▬ | **60F/IC/BL/2PK** | 120 | 12 | Iridescent Flame Shape | C, C-7A | 1500 | 4.50 |
| | G16.5 | Candelabra | 13665 | ●▼▬ | **60G16.5C/BL** | 120 | 12 | Clear Globe | C, C-2 | 1500 | 3.00 |
| | | | 13664 | ●▼▬ | **60G16.5C/W/BL** | 120 | 12 | Soft White Globe | C, C-2 | 1500 | 3.00 |
| | | Med | 10382 | ●▼▬ | **60G16.5/4PK/BL** | 120 | 24 | Clear Globe | C, C-7A | 1500 | 3.00 |
| | | | 10302 | ●▼▬ | **60G16.5/BL** | 120 | 12 | Clear Globe | C, C-7A | 1500 | 3.00 |
| | | | 10301 | ●▼▬ | **60G16.5/W/BL** | 120 | 12 | White Globe | C, C-7A | 1500 | 3.00 |
| | G25 | Med | 15351 | ●▬ | **60G25/CL/DAY/1/6** | 120 | 6 | Daylight Clear Globe | C, C-9 | 1500 | 4.44 |
| | | | 13967 | ●▬ | **60G25/DAY/1/6** | 120 | 6 | Daylight Globe | C, C-9 | 1500 | 4.44 |
| | | | 14106 | ●▬ | **60G25/DL/RP/48** | 120 | 48 | Clear Double Life Globe | C, C-9 | 3000 | 4.44 |
| | | | 14149 | ●▬ | **60G25/DL/RP** | 120 | 6 | Clear Double Life Globe | C, C-9 | 3000 | 4.44 |
| | | | 14280 | ●▬ | **60G25** | 120 | 24 | Clear Globe | C, C-9 | 1500 | 4.44 |
| | | | 14214 | ●▬ | **60G25/3PK/RP** | 120 | 24 | Clear Globe | C, C-9 | 1500 | 4.44 |
| | | | 14261 | ●▬ | **60G25/RP** | 120 | 6 | Clear Globe | C, C-9 | 1500 | 4.44 |
| | | | 14104 | ●▬ | **60G25/DL/SW/RP/48** | 120 | 48 | Soft White Double Life Globe | C, C-9 | 3000 | 4.44 |
| | | | 14150 | ●▬ | **60G25/DL/SW/RP** | 120 | 6 | Soft White Double Life Globe | C, C-9 | 3000 | 4.44 |
| | | | 14215 | ●▬ | **60G25/W/3PK/RP** | 120 | 24 | Soft White Globe | C, C-9 | 1500 | 4.44 |
| | | | 14281 | ●▬ | **60G25/W** | 120 | 24 | Soft White Globe | C, C-9 | 1500 | 4.44 |
| | | | 14262 | ●▬ | **60G25/W/RP** | 120 | 6 | Soft White Globe | C, C-9 | 1500 | 4.44 |
| | G30 | Med | 14407 | ●▬ | **60G30/RP** | 120 | 6 | Clear Globe | C, C-9 | 2500 | 5.50 |
| | | | 14406 | ●▬ | **60G30/W/RP** | 120 | 6 | Soft White Globe | C, C-9 | 2500 | 5.50 |
| | G40 | Med | 14621 | ●▬ | **60G40/RP** | 120 | 6 | Clear Globe | C, C-9 | 2500 | 6.94 |
| | | | 14622 | ●▬ | **60G40/W/RP** | 120 | 6 | Soft White Globe | C, C-9 | 2500 | 6.94 |
| 100 | A21 | Med | 13195 | ●46 | **100A21/1SB/IF** | 120 | 24 | Silver Bowl | C, CC-6 | 1000 | 5.31 |
| | G40 | Med | 14623 | ●▬ | **100G40/RP** | 120 | 6 | Clear Globe | C, C-9 | 2500 | 6.94 |
| | | | 14624 | ●▬ | **100G40/W/RP** | 120 | 6 | Soft White Globe | C, C-9 | 2500 | 6.94 |
| 150 | G40 | Med | 14913 | ● | **150G40/W/RP** | 120 | 6 | Soft White Globe | C, C-9 | 2500 | 6.94 |
| | P25 | Med Brass | 15014 | 46 | **150P25/2SB** | 120 | 60 | Silver Bowl Clear Hard Glass Button | C, C-5 | 200 | 4.75 |


## DECORATIVE LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 150 | PS25 | Med | 15271 | ● | **150PS25/SB** | 120 | 60 | Silver Bowl | C, C-9 | 1000 | 6.94 |
| 300 | PS35 | Mogul | 15958 | | **300PS35/SB/IF** | 120 | 24 | Silver Bowl Inside Frost Brass Base | C, C-9 | 1000 | 9.38 |

## TRAFFIC SIGNAL LAMPS

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Description | Class & Filament | Avg Rated Life(hrs) | Approx Lumens | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 54 | A19 | Med Brass | 10441 | ▼96,130 | **54A19TS/8M/SS** | 120 | 120 | Clear Traffic Signal KR Filled w/ Heat Reflector | C, C-11V | 8000 | 515 | 2.44 | 4.44 |
| 60 | A19 | Med Brass | 10442 | ▼96,130 | **60A19TS/8M/SS 120-** | 120 | 120 | Clear Traffic Signal KR Filled w/ Heat Reflector | C, C-11V | 8000 | 595 | 2.44 | 4.44 |
| 67 | A21 | Med Brass | 12570 | ▼96 | **67A21/40/8M** | 120 | 24 | Clear Traffic Signal | C, C-9 | 8000 | 610 | 2.44 | 4.44 |
| | | | 12562 | ▼96 | **67A21/40/8M** | 130 | 120 | Clear Traffic Signal | C, C-9 | 8000 | 610 | 2.44 | 4.44 |
| | | | 12572 | ▼96 | **67A21/40/8M** | 130 | 24 | Clear Traffic Signal | C, C-9 | 8000 | 610 | 2.44 | 4.44 |
| 69 | A21 | Med Brass | 12496 | ▼96 | **69A21/TS/8M** | 120 | 24 | Clear Traffic Signal | C, C-9 | 8000 | 640 | 2.44 | 4.44 |
| | | | 12497 | ▼96 | **69A21/TS/8M** | 125 | 24 | Clear Traffic Signal | C, C-9 | 8000 | 665 | 2.44 | 4.44 |
| | | | 12498 | ▼96 | **69A21/TS/8M** | 130 | 24 | Clear Traffic Signal | C, C-9 | 8000 | 640 | 2.44 | 4.44 |
| 90 | A19 | Med Brass | 12299 | ▼96,130 | **90A19/1/TS/8M/SS 120-** | 120 | 120 | Clear Traffic Signal KR Filled w/ Heat Reflector | C, C-11V | 8000 | 1000 | 3.00 | 4.44 |
| | | | 11151 | ▼★96,130 | **90A19/TS/8M/SS** | 120 | 120 | Clear Traffic Signal KR Filled w/ Heat Reflector | C, C-11V | 8000 | 1000 | 2.44 | 4.44 |
| 101 | A23 | Med Brass | 13305 | ▼96 | **101A23/6M** | 120 | 120 | Inside Frost Traffic Signal | C, C-9 | 6000 | 900 | 4.38 | 6.06 |
| 116 | A21 | Med Brass | 12833 | ▼96 | **116A21/TS/8M** | 120 | 24 | Clear Traffic Signal | C, C-9 | 8000 | 1260 | 2.44 | 4.44 |
| | | | 12817 | ▼96 | **116A21/TS/8M** | 130 | 24 | Clear Traffic Signal | C, C-9 | 8000 | 1260 | 2.44 | 4.44 |
| 135 | A21 | Med Brass | 12843 | ▼96,130 | **135A21/TS/8M/SS 120-** | 120 | 24 | Clear Traffic Signal KR Filled w/ Heat Reflector | C, C-11V | 8000 | 1750 | 3.00 | 4.44 |
| 170 | A23 | Med Brass | 15017 | ▼96 | **1950L/A23/8M** | 120 | 60 | Clear Traffic Signal | C, C-9 | 8000 | 1950 | 3.00 | 4.75 |
| | | | 15021 | ▼96 | **1950L/A23/8M** | 130 | 60 | Clear Traffic Signal | C, C-9 | 8000 | 1950 | 3.00 | 4.75 |

# SYMBOLS & FOOTNOTES FOR INCANDESCENT LAMPS

| Symbol | Description |
|---|---|
|  | New item introduced within the past year. |
|  | Item will be discontinued when inventory is depleted. |
|  | Indicates aluminum base. |
|  | Do not operate in household sockets. |
|  | Operate base down. |
|  | Operate base down to horizontal. |
|  | Heat resistant, hard glass. |
|  | PAR lamps are suitable for indoor and outdoor use. |
|  | Do not operate in paper lined sockets. |
|  | This lamp or ballast meets minimum Federal efficiency standards. |
|  | This ECOLOGIC® lamp was designed to pass the Federal TCLP criteria for classification as non-hazardous waste in most states. Disposal regulations may vary; check local and state regulations. |

| Footnote | Description |
|---|---|
| 1 | Indefinite long life. Designed for life in excess of 10,000 hours. In -service life depends upon burning conditions. |
| 2 | Should not be used in equipment where base temperature will exceed 500 F. |
| 3 | @ 120 volts, approximate 119 watts, 1560 lumens, 6250 hours |
| 4 | @ 120 volts, approximate 119 watts, 1870 lumens, 1875 hours |
| 5 | @ 120 volts, approximate 132 watts, 1420 lumens, 6250 hours |
| 6 | @ 120 volts, approximate 132 watts, 1580 lumens, 2500 hours |
| 7 | @ 120 volts, approximate 132 watts, 1590 lumens, 2500 hours |
| 8 | @ 120 volts, approximate 132 watts, 1660 lumens, 1875 hours |
| 9 | @ 120 volts, approximate 132 watts, 1770 lumens, 1875 hours |
| 10 | @ 120 volts, approximate 132 watts, 1690 lumens, 6250 hours |
| 11 | @ 120 volts, approximate 132 watts, 1880 lumens, 1875 hours |
| 12 | @ 120 volts, approximate 132 watts, 2030 lumens, 1875 hours |
| 13 | High temperature base. Designed to operate in equipment where base te mperature run between 500F - 570F. |
| 14 | @ 120 volts, approximate 176 watts, 2190 lumens, 6250 hours |
| 15 | @ 120 volts, approximate 176 watts, 2220 lumens, 2500 hours |
| 16 | @ 120 volts, approximate 176 watts, 2350 lumens, 2500 hours |
| 17 | @ 120 volts, approximate 176 watts, 2360 lumens, 6250 hours |
| 18 | @ 120 volts, approximate 176 watts, 2710 lumens, 1875 hours |
| 19 | @ 120 volts, approximate 176 watts, 2740 lumens, 1875 hours |
| 20 | @ 120 volts, approximate 176 watts, 2820 lumens, 1875 hours |
| 21 | @ 120 volts, approximate 176 watts, 2860 lumens, 1875 hours |
| 22 | @ 120 volts, approximate 176 watts, 2220 lumens, 6750 hours |
| 23 | @ 120 volts, approximate 188 watts, 3190 lumens, 1125 hours |
| 24 | Designed for service other than illumination. |
| 25 | @ 120 volts, approximate 220 watts, 2360 lumens, 10000 hours |
| 26 | @ 120 volts, approximate 264 watts, 2310 lumens, 5000 hours |
| 27 | @ 120 volts, approximate 264 watts, 3800 lumens, 6250 hours |

## SYMBOLS & FOOTNOTES FOR INCANDESCENT LAMPS

| Footnote | Description |
|---|---|
| 28 | @ 120 volts, approximate 264 watts, 3850 lumens, 6250 hours |
| 29 | @ 120 volts, approximate 264 watts, 4390 lumens, 1875 hours |
| 30 | @ 120 volts, approximate 264 watts, 4305 lumens, 1875 hours |
| 31 | Additional product information can be found in the SYLVANIA Automotive, Miniature and Sealed Beam Lamp Catalog Form 208. |
| 32 | UV Filter capsule with axial filament in dichroic reflector. |
| 33 | UV Filter capsule with axial filament in aluminized reflector. |
| 34 | UV Filter capsule with axial filament in covered aluminized reflector . |
| 35 | 2 3/4" circular window. |
| 36 | UV Filter capsule with axial filament in constant color, hard coated dichroic reflector. |
| 37 | UV Filter capsule with axial filament in constant color, hard coated Dichroic reflector and infrared reflective coating on the lamp capsule. |
| 38 | UV Filter capsule with axial filament in precisely engineered aluminum m reflector. |
| 39 | Suitable for indoor and outdoor use; |
| 40 | For indoor use only; suitable for outdoor use only if not directly exposed to weather |
| 41 | For indoor use only; |
| 42 | UV control capsule with transverse constant color filament in hard dichroic |
| 43 | State of the Art SPL Optics |
| 44 | Inner capsule with Infrared conserving coating and hard glass lens |
| 45 | UV Filter capsule with axial filament in covered dichroic reflector. |
| 46 | Operate only in porcelain sockets. |
| 47 | Infrared lamp technology |
| 48 | Caution: Operates under pressure and may shutter. Use appropriate techniques to protect people and surroundings. Do not operate in close proximity to persons, combustible materials, or substances affected by heat or drying. Do not operate over 110% rated voltage because such operation increases pressure and lamps' tendency to shatter. Ultraviolet output may cause skin and eye irritation with prolonged exposure. Protect bulb from abrasions and scratches. Do not insert lamps when power is on. Follow operation |
| 49 | ECE Approved |
| 50 | Lamp Life B3 @ 13.2 volts. |
| 51 | Universal lamp housings for T2 slide based pilot lamps. |
| 52 | Socket dimensions front to panel to end of terminals. |
| 53 | UL File No. E31557(M) CSA File No.LR20904 |
| 54 | Universal lamp housings for T2.5 and T3.25 miniature bayonet based lamps. |
| 55 | UL File No. E31557(M) CSA File No.LR20904 |
| 56 | MIL-Std. 18236 B-MIL Std. 202B |
| 57 | Should be shielded against moisture falling on bulb. |
| 58 | Material : Black Phenolic |
| 59 | There are two distinctively different lamps with this part number. When ordering T-1 3/4 , #7327, please also specify category and base type. S-11. #7327 discontinued. |
| 60 | MOL = Excluding pins. |
| 61 | Material : Plastic |
| 62 | Max. seal temperature 350 C (662F) |
| 63 | Max. bulb temperature 1000 C (1832F) |
| 64 | Min. bulb temperature 250 C (482F) |
| 65 | UV Filter capsule with axial filament in covered constant color, hard coated dichroic reflector. |
| 66 | UV Filter capsule with axial filament in covered constant color, hard coated dichroic reflector and infrared reflective coating on the lamp capsule. |
| 67 | UV Filter capsule with transverse filament in constant color, hard co ated dichroic reflector . |
| 68 | Not recommended for use in enclosed close-fitting housings. |
| 69 | For Indoor Use only. |
| 70 | Because this bulb radiates considerable heat, do not use in enclosed, close fitting fixtures, or in close proximity to people, combustible materials, or substances adversely affected by heat or drying. |

## SYMBOLS & FOOTNOTES FOR INCANDESCENT LAMPS

| Footnote | Description |
|---|---|
| 71 | Even though this bulb may continue to light after the lens or reflector is cracked or broken, it should be replaced as soon as possible since the pressure filled inner capsule could unexpectedly shatter, creating a risk of personal injury or property damage. In addition, the inner capsule produces ultraviolet radiation that can cause injury to the eyes and skin with prolonged exposure without the blocking effect of the outer glass bulb. |
| 72 | To avoid electric shock and/or skin burns, turn off power and allow bulb to cool before handling or attempting replacement. |
| 73 | For indoor or outdoor use where not directly exposed to weather. Exposure to weather may damage the bulb. |
| 74 | Use only with ceramic/porcelain sockets and in fixtures rated for this bulb type, including voltage and wattage. |
| 75 | Screw bulb firmly but not forcibly into socket to obtain good electrical contact and to avoid damaging bulb and/or socket. Socket condition may affect bulb life. Replace socket if deterioration of socket or bulb contacts is observed. |
| 76 | Due to change from high pressure capsule to low pressure capsule, dimensions have been changed: LCL from 19.5 to 22mm and bulb diameter from 9 to 9.5mm. |
| 77 | @ 120 volts, approximate 26 watts, 150 lumens, 5000 hours. |
| 78 | Recommended operating position any within 60 degrees of vertically base up or base down. |
| 79 | @ 120 volts, approximate 28 watts, 200 lumens, 7500 hours. |
| 80 | @ 120 volts, approximate 53 watts, 340 lumens, 12500 hours. |
| 81 | @ 120 volts, approximate 66 watts, 500 lumens, 12500 hours. |
| 82 | @ 120 volts, approximate 88 watts, 765 lumens, 12500 hours. |
| 83 | @ 120 volts, approximate 88 watts, 1020 lumens, 2500 hours. |
| 84 | UV Filter Quartz |
| 85 | @ 120 volts, approximate 53 watts, 845 lumens, 6000 hours. |
| 86 | Operate only in heat resistant sockets |
| 87 | @ 120 volts, approximate 44 watts, 690 lumens, 6000 hours. |
| 88 | @ 120 volts, approximate 44 watts, 850 lumens, 6000 hours. |
| 89 | For use only in fixtures designed specifically for dichroic Reflector Lamps. |
| 90 | @ 120 volts, approximate 53 watts, 660 lumens, 6000 hours. |
| 91 | Max pin temperature 220 C. |
| 92 | Max pin temperature 250 C. |
| 93 | Max temperature at lens reflector joint 240 C. |
| 94 | Not for use in ceiling fan fixtures |
| 95 | For use where seal temperature does not exceed 662F. |
| 96 | Per Title 20 Section 1605.3(m) of the California Code of Regulations, this lamp may not be sold or offered for sale in the state of California for use in Traffic Signals. |
| 97 | Board Size MFX Base 1.6mm (0.062") Inside of Board |
| 98 | OSRAM Miniwatt lamps for printed circuit boards (the MF series) are designed to work on both inside and outside contact boards and various thickness boards. In order to assure proper electrical contact, be sure to check the thickness of the board and the location of the electrical contacts. |
| 99 | @ 120 volts, approximate 33 watts, 270 lumens, 3750 hours. |
| 100 | Operate within 25 degrees of vertical base up. |
| 101 | @ 120 volts, approximate 53 watts, 490 lumens, 2500 hours. |
| 102 | @ 120 volts, approximate 66 watts, 650 lumens, 1875 hours. |
| 103 | @ 120 volts, approximate 88 watts, 970 lumens, 1875 hours. |
| 104 | @ 120 volts, approximate 46 watts, 560 lumens, 2500 hours. |
| 105 | @ 120 volts, approximate 40 watts, 220 lumens, 5000 hours. |
| 106 | @ 120 volts, approximate 57 watts, 410 lumens, 5000 hours. |
| 107 | Lamps manufactured on or after January 1, 2007 are not for sale in Washington or Oregon. |
| 108 | Per Title 20 Section 1605.3(k) of the California Code of Regulations, this lamp may not be sold or offered for sale in the state of California. |
| 109 | Lamp may not be operated on a dimmer or DC current |
| 110 | Complies with part 15 of FCC rules. |
| 111 | Average laboratory life is 200 hours for vacuum cleaner and 600 hours for sewing machine services. |
| 112 | Life dependent on service conditions. |
| 113 | Operating position 45 degrees base down to horizontal. |

## SYMBOLS & FOOTNOTES FOR INCANDESCENT LAMPS

| Footnote | Description |
|---|---|
| 114 | Use only in fixtures designed to adequately dissipate heat from lamp. |
| 115 | 3" Circular window. |
| 116 | Operation of lamp in any position other than base up may result in some loss of protective coating. |
| 117 | A protective shield must be used external to the lamp. |
| 118 | In base up operation, heat may eventually deteriorate paper-lined or plastic sockets. |
| 119 | Operate only in porcelain or other socket approved for 150 watt PAR lamp. |
| 120 | Metal sleeve with approximately 6 " flexible non-insulated leads. Lea ds not included in maximum overall length (M.O.L.). |
| 121 | High temperature base. Retards seal deterioration where seal temperature exceeds 650F. |
| 122 | Lightly inside frosted and side aluminized; M.O.L. exclusive of spring contact. |
| 123 | For use where seal temperature does not exceed 650F. |
| 124 | Life at rated voltage and at 650F maximum seal temperature. |
| 125 | Usually limited to intermittent burning. |
| 126 | Maximum bulb wall temperature 480F. |
| 127 | Lamp internally fused. |
| 128 | 2 1/2" braided lead with lug. |
| 129 | Nickel sleeve with 11/4" - 11/2" flexible leads with lug. Leads not included in maximum overall length (M.O.L.) |
| 130 | Minimum run. Check nearest OSRAM SYLVANIA Sales Office for details. |
| 131 | This lamp should not be used in a location where water may be splashed on it. |
| 132 | Package quantity may change. See your OSRAM SYLVANIA Lighting Representative for details. |
| 133 | For diesel electric locomotives without voltage regulators. |
| 134 | Retrofit for 65BR30/FL, or 75R30/FL. |
| 135 | Available in bulk pack. |
| 136 | Incandescent lamps operated at less than rated voltage provide a lower light output, longer life, lower color temperature and are less efficient in terms of lumens per watt. |
| 137 | Approximate life for 130 volt tungsten halogen lamps operated at 120 v olts is within the value calculated using the recommended equations for standard incandescent lamps, as set forth in the IES Handbook, 8th edition. Because of the uncertain nature of the halogen cycle on the coil when operated at less than rated voltage, life of tungsten halogen lamps varies considerably and unpredictably. OSRAM SYLVANIA does not recommend operation at other than rated voltage. |
| 138 | Nominal wattage - actual may be slightly higher to achieve required light output. |
| 139 | A suitable protective shield, screening technique, or both must be used to protect people and surroundings from the possibility of a lamp shattering and from possible ultraviolet radiation. |
| 140 | Standard Clear - UV Filter Quartz |
| 141 | Standard Frosted - UV Filter Quartz |
| 142 | Starlite Low Pressure - UV Filter Quartz |
| 143 | Standard Clear - 24V - UV Filter Quartz - Not suitable for use in open fixtures. |
| 144 | Maximum contact to contact tolerance on RSC Base = 1/16" |
| 145 | Suitable for use in unshielded fixtures. Consult most recent luminaire standards for your area to determine luminaire requirements. |
| 146 | @120 volts, approximate 22 watts, 130 lumens, 6250 hours |
| 147 | @ 120 volts, approximate 26 watts, 100 lumens, 5000 hours |
| 148 | @ 120 volts, approximate 28/66/94 watts, 255/800/1060 lumens, 1800 hou rs |
| 149 | @ 120 volts, approximate 30 watts, 240 lumens, 6250 hours |
| 150 | @ 120 volts, approximate 30 watts, 290 lumens, 3750 hours |
| 151 | @ 120 volts, approximate 31 watts, 275 lumens, 5000 hours |
| 152 | @ 120 volts, approximate 35 watts, 320 lumens, 6250 hours |
| 153 | @ 120 volts, approximate 35 watts, 350 lumens, 3750 hours |
| 154 | @ 120 volts, approximate 37 watts, 450 lumens, 7000 hours |
| 155 | May not give satisfactory performance if any accessory lighting equipm ent touches the glass bulb. |
| 156 | @ 120 volts, approximate 38 watts, 380 lumens, 2250 hours |

## SYMBOLS & FOOTNOTES FOR INCANDESCENT LAMPS

| Footnote | Description |
|---|---|
| 157 | @ 120 volts, approximate 40 watts, 425 lumens, 5000 hours |
| 158 | @ 120 volts, approximate 44 watts, 250 lumens, 5000 hours |
| 159 | @ 120 volts, approximate 44 watts, 240 lumens, 5000 hours |
| 160 | @ 120 volts, approximate 44 watts, 400 lumens, 2500 hours |
| 161 | @ 120 volts, approximate 44 watts, 420 lumens, 5000 hours |
| 162 | @ 120 volts, approximate 44 watts, 500 lumens, 5000 hours |
| 163 | @ 120 volts, approximate 46 watts, 460 lumens, 6250 hours |
| 164 | @ 120 volts, approximate 46 watts, 540 lumens, 2500 hours |
| 165 | @ 120 volts, approximate 46 watts, 600 lumens, 7000 hours |
| 166 | When calculations are based on bare lamp lumens, do not use this lumen rating. |
| 167 | @ 120 volts, approximate 47/94/141 watts, 545/1275/1820 lumens, 1800 hours |
| 168 | @ 120 volts, approximate 53 watts, 420 lumens, 2500 hours |
| 169 | @ 120 volts, approximate 53 watts, 495 lumens, 4000 hours |
| 170 | @ 120 volts, approximate 53 watts, 650 lumens, 2500 hours |
| 171 | @ 120 volts, approximate 53 watts, 645 lumens, 6000 hours |
| 172 | @ 120 volts, approximate 56 watts, 725 lumens, 1500 hours |
| 173 | @ 120 volts, approximate 57 watts, 540 lumens, 4375 hours |
| 174 | @ 120 volts, approximate 59 watts, 660 lumens, 6250 hours |
| 175 | @ 120 volts, approximate 59 watts, 780 lumens, 1875 hours |
| 176 | @ 120 volts, approximate 63 watts, 900 lumens, 7000 hours |
| 177 | Average laboratory life in excess of 5000 hours. |
| 178 | @ 120 volts, approximate 66 watts, 425 lumens, 4125 hours |
| 179 | @ 120 volts, approximate 66 watts, 620 lumens, 2500 hours |
| 180 | @ 120 volts, approximate 66 watts, 685 lumens, 4000 hours |
| 181 | @ 120 volts, approximate 66 watts, 805 lumens, 5000 hours |
| 182 | @ 120 volts, approximate 66 watts, 860 lumens, 5000 hours |
| 183 | @ 120 volts, approximate 66 watts, 910 lumens, 1875 hours |
| 184 | @ 120 volts, approximate 66 watts, 520 lumens, 5000 hours |
| 185 | @ 120 volts, approximate 70 watts, 985 lumens, 1125 hours |
| 186 | @ 120 volts, approximate 79 watts, 940 lumens, 6250 hours |
| 187 | @ 120 volts, approximate 79 watts, 1000 lumens, 5000 hours |
| 188 | For use only with heat-resisting connector and with bulb supported by bulb rim or metal shell of base. |
| 189 | @ 120 volts, approximate 79 watts, 1130 lumens, 1875 hours |
| 190 | @ 120 volts, approximate 88 watts, 960 lumens, 2500 hours |
| 191 | @ 120 volts, approximate 88 watts, 1100 lumens, 6250 hours |
| 192 | @ 120 volts, approximate 88 watts, 1260 lumens, 1875 hours |
| 193 | @ 120 volts, approximate 88 watts, 1290 lumens, 1875 hours |
| 194 | @ 120 volts, approximate 88 watts, 710 lumens, 5000 hours |
| 195 | @ 120 volts, approximate 94 watts, 1455 lumens, 1125 hours |
| 196 | @ 120 volts, approximate 105 watts, 850 lumens, 5000 hours |
| 197 | @ 120 volts, approximate 105 watts, 1370 lumens, 6000 hours |
| 198 | @ 120 volts, approximate 106 watts, 1040 lumens, 5000 hours |

# Manufacturers' Cross Reference Guide (continued)

## INCANDESCENT LAMPS

| SYLVANIA | GE | PHILIPS |
|---|---|---|
| 4C7/BL/2PK | 4C7 CARD 2 | BC-4C7 |
| 4C7/W/BL/2PK | 4C7/W CD2 | BC4C7/W |
| 10C7/CL | 10C7 TRAY | 10C7 |
| 10S11N/CL | 10S11N | 10S11N |
| 15B10/BL/2PK | 15CAC/F-CD/2-12 | BC15BA9C/CL/LL |
| 15B10C/DL/BL | --- | 15BA9C/4M |
| 15S14/CL 130V | 15S14/GR/CL 130V | --- |
| 20T6.5DC/IF | 20T61/DC/F | 20T61/2DC/IF |
| 25B10C/DL/BL | 25CAC | --- |
| 25B10/DL/BL | 25CAC/L (120) | BC25B9-1/2/CL/LL |
| 25G16.5C/4M | --- | --- |
| 25G25 | 25G25 | 25G25/C/LL |
| 25G25/DLSW/RP | 25G25/W/L/24 | --- |
| 25G40 | 25G40 | 25G40/4M |
| 25T10 | 25T10 | BC25T10 |
| 30/100A21/W/RP | 30/100 | 30/100A/W |
| 30A15 | 30A15-130 | 30A15 |
| 30R20 | 30R20-120 | 30R20 |
| 40A15/CL/FAN | 40A15/CF CD2 | BC40A15/FAN/CL/LL |
| 40A15/SL | 40A15/CF/STG CD2 | 40A/TF |
| 40A | 40A 48PK | 40A |
| 40A/34/SS | 40A/34WM | 40A-34A/EW |
| 40A/34/SS/XL | 40A/34/WMP/99 | 40A-34A/99/EW |
| 40B10/BL/2PK | 40CAM CD/2 | BC40BA9-1/2/CL/LL |
| 40B10C/DL/BL | 40CAC/LL | 40B101/2/4M |
| 40B10/W/BL/2PK | 40CAM/F CD/2 | BC40B9-1/2/F/LL |
| 40F/CL | 40FM/L | BC40F15/CL/LL |
| 40G161/2C | 40GC-12PK-120 | BC40G16-1/2C/CL/LL |
| 40G25 | 40G25/L | 40G25/CL/LL |
| 40G25/DAY/1/6 | 40G25W/RVL PQ1/6 | 40G25/NTL 6/1 |
| 40G40/W | 40G40/W | 40G40/CL/LL |
| 40S11N/BL | 40S11N/1CARD | BC40S11/N TP |
| 40T10/IF | 40T10/F | BC40T10/IF |
| 50/150A21/DLSW/RP | --- | --- |
| 50/150/PS25 | 50/150 12PK | 50/150A/DL |
| 50A/RS/SL | 50A/RS/CVG 24PK | 50A/RS/TF |
| 60A | 60A | 60A |
| 60A/52SS | 60A/52WM | 60A-52A/EW |
| 60A/52/SS/XL | 60A/52WMP/98 | --- |
| 60A/CL | 60A/CL 24PK | 60A/CL |
| 60A/DLSW/2PK/RP | 60A/W/LL-24PK-120 | 60A/WL |
| 60A/GRO | 60A/PL 6PK | 60A/AGRO |
| 60A/Y/RP | 60A/Y 24PK | 60A/Y |
| 60A21/TS | --- | K60A19/TS/EW |
| 60B10C/BL/2PK | 60CAC CD/2 6PK | BC60BA9C/CL/LL |
| 60B10/DL/BL/2PK | --- | 60BA91/24M |
| 60F/BL | --- | BC60F15/CL/LL |
| 60G25/RP | 60G25 6PK 120V | 60G25/CL/LL |
| 60G25/DLSW/RP | --- | 60G25/W/LL |
| 60K19/DR | --- | 60K19/DL |
| 60T10/CF | 60T10/F 24PK | 60T10/64/IF |
| 65BR30/DL/FL/RP | 65R30/FL/LL 6PK | 65BR30/FL/LL55 |
| 65BR30/FL/SS | 75R30/FL/65WM | 65BR30/FL55 |
| 65BR30/SP/RP | 65R30/SP/LL 6PK | 65BR30/SP20 |
| 65BR30/SP/SS | 75R30/SP/65WM | 65BR30/SP20 |
| 65BR30/PK/RP | 65R30/FL/PK | --- |
| 75A | 75A | 75A |
| 75A/CL | 75A/CL 24PK | 75A/CL |
| 75A21/RS/SL | 75A/RT 6PK | 75A/RH/TF |
| 75A/67/SS | 75A/67WM | 75A-67A/EW |
| 75A/67/SS/XL | 75A/67WMP/99 | 75A-67A/99/EW 120 |
| 75BR/FL | --- | --- |
| 75ER30 | 75ER30 | 75ER30 |
| 75K19/DR | --- | 75K19/DL |

## INCANDESCENT LAMPS

| SYLVANIA | GE | PHILIPS |
|---|---|---|
| 75R20/RP | 75R20 6PK | 75R20/LL |
| 100A/90/W/ES/4PK | 100A/90WM | 100A-90A/EW |
| 100A/90/SS/XL | 100A/90WMP/98 | 100-90A/99EW |
| 100A | 100A | 100A |
| 100A/DL/SW/2PK/RP | --- | 100A/W |
| 100A/RS/XL | 100A/S-130V-24PK | --- |
| 100A21/VS | 100A/RS 12PK-5 | 100A/RS/VS |
| 100A23/20 | 100A23/20 | 100A23/20 |
| 100G40 | --- | 100G40/CL/LL 6/1 |
| 100G40/W | 100G40/W 6PK | 100G40/W/LL 6/1 |
| 120BR/FL | 120R40/FL/MI-6PK | 120BR/FL60 |
| 120BR/SP | 120R40/SP/MI-6PK | 120BR/SP20 |
| 120ER40 | 120ER40 | 120ER40 |
| 125BR40 | 125R40 | 125R40/1 |
| 150A21 | 150A | 150A |
| 150A21/135/SS | 150A/135WM | 150A-135A/EW |
| 150A21/99/XL | 150Q21/99/IF | 150A/99 |
| 150PAR46 | 150PAR46 | --- |
| 175W/PAR38/HEAT | 175PAR38/HEAT | 175PAR38/HEAT/CL |
| 200A21 | 200A 12PK | 200A (A23) |
| 200CL/99/XL | 200/99 | 200/99 |
| 200PS/IF | 200/IF | 200/IF |
| 200PS/CL/99/XL | 200/99 | 200/99 |
| 250BR40 | 250R40/1 | 250R40/1 |
| 250KBR38/FL | --- | K250PAR38/FL |
| 300BR/FL | 300R/FL | 300R/FL |
| 300/M/CL | 300M | 300M |
| 300PAR56/MFL | 300PAR56/MFL | 300PAR56/MFL |
| 300PAR56/NSP | 300PAR56/NSP | 300PAR56/NSP |
| 300PAR56/WFL | 300PAR56/WFL | 300PAR56/WFL |
| 300PS35/99/IF/XL | 300/99IF | 300/99IF |
| 375R40/1 | 375R40/1 | 375R40/1 |
| 500PAR64/NSP | 500PAR64/NSP | 500PAR64/NSP |

# OSRAM SYLVANIA: THE LEADER IN HALOGEN LAMP TECHNOLOGY

Halogen lamps are generally of the 'lamp within a lamp' design. The outer 'lamp' or jacket is made from a heavy walled borosilicate glass. The inner 'lamp' is the tungsten halogen capsule that is made from either glass or quartz and contains a filament, lead wires and a halogen gas mixture.

## CAPSYLITE IR®

Save energy while still making your merchandise stand out from the crowd. Energy efficient SYLVANIA CAPSYLITE IR® lamps use a specially designed halogen light source that actually recycles some of the heat it creates to generate more light for less energy.

## Daylight Plus® PAR

The special blue lenses on these halogen PAR lamps help to fill your space with whiter, more natural light than standard halogen PAR or incandescent lamps.

## CAPSYLITE® Soft White Halogen PAR lamps

SYLVANIA CAPSYLITE Soft White Halogen PAR lamps provide the ultimate meeting point between the efficiency and color of a halogen lamp and the soft, glare free light distribution of an incandescent lamp. They can also be used as energy saving replacements for incandescent reflector lamps, with the 50W PAR30 Long Neck lamp replacing a standard 65W BR30 while maintaining the same light levels.

## CAPSYLITE® A-Line

Replace a standard incandescent lamp with a CAPSYLITE® A-Line lamp to get a crisp, bright, more natural light that really lasts. Average rated life for these lamp types is 3,000 to 3,500 hours - up to four times the ratings of the lamps that they replace!

## Soft Glass Halogen Lamps

SYLVANIA soft glass halogen lamps are an outstanding replacement for standard incandescent lamps in any application. All of the lamps fit standard fixtures, allowing them to be used anywhere to add a new dimension to home or business lighting

.

## OSRAM MINISTAR™

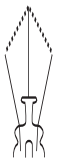
OSRAM MINISTAR lamps represent a revolution in halogen reflector lamp design. Their unique integration of the reflective surface and the halogen capsule creates the world's smallest halogen reflector lamps.

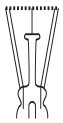
## TRU-AIM® Low Voltage Lamps

SYLVANIA's complete line of TRU-AIM low voltage lamps provides a wide variety of extremely compact and highly directional light sources. Choose from standard MR16s (TRU-AIM), aluminized MR16s (TRU-AIM Brilliant), or top of the line TRU-AIM IR.

## FILAMENTS


CC-8


CC-2V


CC-6


Axial (AX)


Tranverse (TR)


C-8 Double End

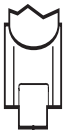
## BASES


E10
Miniature Screw


E11 Mini can

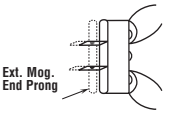

E26 Medium Skt.


E26 Medium


Recessed Single Contact
RSC
R7s

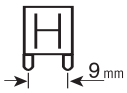

Screw Term.


DC Bayonet
B15d
BA15d

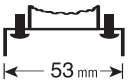


Mogul End Prong

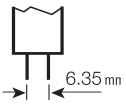
G4



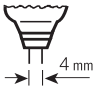
G9



G53

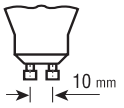


GY 6.35

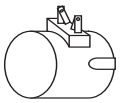


GU4

GU5.3



GU10

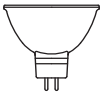

Med Side Pr.

## LAMPS


BT4


BT4T3, T4 BI-PIN


T4 G9.


MR16, MR11


PAR14


PAR16


PAR16 GU10


PAR20

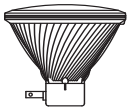

F17


PAR30

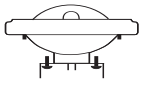

PAR30LN

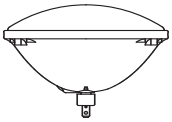

PAR36
Medium Skt.

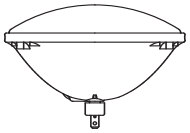

PAR38


PAR38
Medium Side Prong


AR70

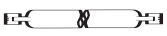

AR111


PAR56 Mog End Pr


PAR64 Mog End Pr


T4 DC Bayonet


T3, T4 Mini Can


T3, T4 RSC Double End


T10


B11


BT15


A19


G25

## HOW TO READ PRODUCT INFORMATION - TUNGSTEN HALOGEN

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Lamp Finish | Beam Type | Class & Filament | Avg Rated Life (hrs) | Approx Lumens | CBCP | Beam Angle | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **40** | T4 | G9 | 57017 | 5,10 | **40T4/G9/F/BL** | 120 | 10 | Frosted | | C, CC-2V | 2000 | 480 | | | 1.00 | 1.88 |
| **60** | PAR38 | E26 Med Skt | 14466 | ★ I/O Ⓔ 10,11 | **60PAR/CAP/IR/FL30** | 120 | 15 | | Flood | CC-8 | 3000 | 1110 | 3600 | 30 | | 5.31 |
| **50** | PAR30LN | E26 Med | 14520 | ★ I/O Ⓔ 10,19,20 | **50PAR30LN/HAL/NFL25** | 120 | 15 | | Narrow Flood | CC-8 | 2500 | 660 | 2300 | 25 | | 4.63 |

| | |
|---|---|
| **Bulb** | Describes the shape of the bulb followed by the bulb's major diameter given in eighths of an inch. See page 42: Halogen Lamps. |
| **Base** | See page 42: Base Identification. |
| **Symbols & Footnotes** | All symbols and footnotes that apply to a specific product will appear in this space. The explanations of the symbols and footnotes are at the end of the halogen section on page 64. |
| **Lamp Finish** | Applies only to non-reflector type lamps, usually either clear or frosted. |
| **Beam Type** | Applies only to reflector type lamps. Describes the beam angle qualitatively as either a spot or a flood, etc. |

### How to Read Ordering Abbreviations

| 40T4/G9/F/BL | | 60PAR/CAP/IR/FL30 | | 50PAR30LN/HAL/NFL25 | |
|---|---|---|---|---|---|
| 40 | Nominal lamp wattage | 60 | Nominal lamp wattage | 50 | Nominal lamp wattage |
| T4/G9 | T4 lamp with G9 base | PAR | Bulb shape PAR38 | PAR30LN | Bulb shape PAR30 Long Neck |
| F | Frosted finish | CAP | CAPSYLITE lamp | HAL | Halogen lamp |
| BL | Blister Card Package | IR | Infrared conserving capsule | NFL25 | Narrow Flood beam 25 degrees |
| | | FL30 | Flood beam 30 degrees | | |

## ANSI BEAM ANGLE DESIGNATION

Beam angles for reflector lamps are designated to conform with ANSI C78.379 -Classification of the Beam Patterns of Reflector Lamps. For beam angles less than 13°, beam angles are rounded to the nearest whole number. For beam angles between 13° and 50°, values are rounded to the nearest 5°. For beam angles 50° and greater, the value is rounded to the nearest 10°. As an example, a family of lamps with an average beam angle of 13° is classified as 15°, and a family of lamps with an average beam angle of 54° would be classified as 50°.

## LIFE RATING

The average rated life for 130V tungsten halogen lamps operated at 120V is conservatively estimated to be approximately 2 times the life when operated at 130V.

## ANSI CODE REFERENCE GUIDE

| ANSI CODE | ITEM NO. | L.L. ORDERING ABBREVIATION (EXCEPT VOLTS) | VOLTS |
|---|---|---|---|
| BAB | 58301 | 20MR16/T/FL35/C | 12 |
| EHM | 58998 | 300T3Q/CL | 120 |
| EHT | 58762 | 250Q/CL/MC | 120 |
| ESL | 58738 | 150Q/CL/MC | 120 |
| ESM | 58763 | 250Q/MC | 120 |
| ESN | 58761 | 100Q/CL/MC | 120 |
| ESP | 58742 | 150Q/CL/DC/1 | 120 |
| ESR | 58755 | 100Q/CL/DC | 120 |
| ESS | 58720 | 250Q/CL/DC | 120 |
| ESX | 58300 | 20MR16/T/SP10/C | 12 |
| ETB | 58753 | 250Q/DC | 120 |
| ETC | 58741 | 150Q/CL/DC | 120 |
| ETD | 58757 | 100Q/DC | 120 |
| ETF | 58737 | 150Q/DC | 120 |
| ETG | 58735 | 150Q/CL/MC/2 | 120 |
| ETH | 58736 | 150Q/MC | 120 |
| EVR | 58766 | 500Q/CL/MC | 120 |
| EXN | 58309 | 50MR16/T/FL35/C | 12 |
| EXT | 58307 | 50MR16/T/SP10/C | 12 |
| EXZ | 58308 | 50MR16/T/NFL25/C | 12 |
| EYV | 58768 | 500Q/MC | 130 |
| EYW | 58756 | 500Q/CL/MC | 130 |
| EYX | 58767 | 500Q/MC | 120 |
| FCL | 58996 | 500T3Q/CL | 120 |
| FMW | 58305 | 35MR16/T/FL35/C | 12 |
| FNV | 58310 | 50MR16/T/WFL60/C | 12 |
| FPA | 58311 | 65MR16/T/SP10/C | 12 |
| FPB | 58313 | 65MR16/T/FL35/C | 12 |
| FPC | 58312 | 65MR16/T/NFL25/C | 12 |
| FRB | 58303 | 35MR16/T/SP10/C | 12 |
| FTB | 55133 | 20MR11/T/SP10/C | 12 |
| FTD | 55134 | 20MR11/T/FL35/C | 12 |
| FTE | 55135 | 35MR11/T/SP10/C | 12 |
| FTH | 55136 | 35MR11/T/FL35/C | 12 |

## TUNGSTEN HALOGEN BRAND NAME GUIDE

| SYLVANIA | GE* | PHILIPS** | OSRAM*** |
|---|---|---|---|
| CAPSYLITE IR® | HIR PAR | Energy Advantage IR | |
| CAPSYLITE® | HALOGEN PLUS / HALOGEN Compact | Halogen WISO Reflector | HALOPAR |
| CAPSYLITE® COOL-LUX | Cool Beam PAR | Cool Beam Reflector | |
| CAPSYLITE® Designer 16 | HALOGEN Compact PAR16 | Halogen PAR16 | HALOPAR16 |
| CAPSYLITE® A-Line | A-Line | | |
| Daylight Plus® PAR | Reveal | Natural | |
| TRU-AIM IR® | PRECISE COVERGLASS IR MR16 | Halogen MR Energy Advantage IR | Decostar 51 IRC |
| TRU-AIM TITAN® | ConstantColor Precise Cover Glass | Halogen MR Long Life | Decostar 51 TITAN |
| TRU-AIM BRILLIANT® | | Halogen MR Aluminum | Decostar 51 ALU |
| TRU-AIM® Standard MR16 | Standard MR16 | Halogen MR | Decostar 51 |
| TRU-AIM® MR11 | STANDARD MR11 | Halogen MRC-11 | Decostar 35 |
| Softwhite Halogen PAR | | | |
| STANDARD Bi-Pin | Quartz Halogen | | HALOSTAR Standard |
| STARLITE Bi-Pin | | Halogen Low Voltage Capsule | HALOSTAR STARLITE |
| Double End | Quartzline | Halogen Double-Ended Linear | HALOLINE |
| SUPER Q | Halogen | Halogen Single-Ended | HALOLUX Ceram |
| Large PAR | Halogen | | |
| Tubular Halogen T10 | T10 | | HALOLUX Ceram |
| AR111 | AR111 | ALU Line PRO 111 | HALOSPOT 111 |
| AR70 | | Closed Aluminum Reflector | HALOSPOT 70 |
| Soft Glass Halogen | A-Line / Decorative | Halogena | HALOLUX BT |
| Softwhite Halogen PAR | | | |
| Osram MINISTAR | | | MINISTAR |

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**For weight and measurement information, please visit www.sylvania.com**

## CAPSYLITE® A-LINE

Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Lamp Finish | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 42 | A19 | E26 Med | 18907 | ★ | **42A/HAL/F** | 120 | 12 | Inside Frost | C,CC-8 | 3500 | 580 2750 | 3.13 | 4.38 |
| | | | 18908 | ★ 137,154 | **42A/HAL/F** | 130 | 12 | Inside Frost | C,CC-8 | 3500 | 580 2750 | 3.13 | 4.38 |
| | | | @ 120 volts, approximate 37 watts, 450 lumens, 7000 hours | | | | | | | | | | |
| 50 | A19 | E26 Med | 18968 | ★ | **50A/HAL/CRYSTAL** | 120 | 12 | Crystal | C,CC-8 | 2500 | 860 2825 | 3.13 | 4.38 |
| 52 | A19 | E26 Med | 18921 | ★ | **52A/HAL/F** | 120 | 12 | Inside Frost | C,CC-8 | 3500 | 770 2775 | 3.13 | 4.38 |
| | | | 18922 | ★ 137,165 | **52A/HAL/F** | 130 | 12 | Inside Frost | C,CC-8 | 3500 | 770 2775 | 3.13 | 4.38 |
| | | | @ 120 volts, approximate 46 watts, 600 lumens, 7000 hours | | | | | | | | | | |
| 60 | A19 | E26 Med | 18998 | ★ | **60A/HAL/CL/CLAM** | 120 | 6 | Clear | C,CC-8 | 3000 | 965 2850 | 3.13 | 4.38 |
| | | | 18942 | ★ | **60A/HAL/CRYSTAL/CLAM** | 120 | 6 | Crystal | C,CC-8 | 3000 | 965 2850 | 3.13 | 4.38 |
| | | | 18960 | ★ | **60A/HAL/F** | 120 | 12 | Inside Frost | C,CC-8 | 3000 | 965 2850 | 3.13 | 4.38 |
| | | | 18999 | ★ | **60A/HAL/F/CLAM** | 120 | 6 | Inside Frost | C,CC-8 | 3000 | 960 2850 | 3.13 | 4.38 |
| 72 | A19 | E26 Med | 18937 | ★ | **72A/HAL/F** | 120 | 12 | Inside Frost | C,CC-8 | 3500 | 1150 2825 | 3.13 | 4.38 |
| | | | 18938 | ★ 137,176 | **72A/HAL/F** | 130 | 12 | Inside Frost | C,CC-8 | 3500 | 1150 2825 | 3.13 | 4.38 |
| | | | @ 120 volts, approximate 63 watts, 900 lumens, 7000 hours | | | | | | | | | | |
| 75 | A19 | E26 Med | 19000 | ★ | **75A/HAL/CL/CLAM** | 120 | 6 | Clear | C,CC-8 | 3000 | 1330 2875 | 3.13 | 4.38 |
| | | | 18969 | ★ | **75A/HAL/CRYSTAL** | 120 | 12 | Crystal | C,CC-8 | 3000 | 1330 2875 | 3.13 | 4.38 |
| | | | 18906 | ★ | **75A/HAL/CRYSTAL/CLAM** | 120 | 6 | Crystal | C,CC-8 | 3000 | 1330 2875 | 3.13 | 4.38 |
| | | | 18965 | ★ | **75A/HAL/F** | 120 | 12 | Inside Frost | C,CC-8 | 3000 | 1315 2875 | 3.13 | 4.38 |
| | | | 18997 | ★ | **75A/HAL/F/CLAM** | 120 | 6 | Inside Frost | C,CC-8 | 3000 | 1315 2875 | 3.13 | 4.38 |
| 100 | A19 | E26 Med | 19003 | ★ | **100A/HAL/CL/CLAM** | 120 | 6 | Clear | C,CC-8 | 3000 | 1800 2900 | 3.13 | 4.38 |
| | | | 18911 | ★ | **100A/HAL/CRYSTAL/CLAM** | 120 | 6 | Crystal | C,CC-8 | 3000 | 1800 2900 | 3.13 | 4.31 |
| | | | 18970 | ★ | **100A/HAL/F** | 120 | 12 | Inside Frost | C,CC-8 | 3000 | 1800 2900 | 3.13 | 4.38 |
| | | | 18905 | ★ | **100A/HAL/F/CLAM** | 120 | 6 | Inside Frost | C,CC-8 | 3000 | 1800 2900 | 3.13 | 4.38 |
| 150 | A19 | E26 Med | 18912 | ★ | **150A/HAL/CLAM** | 120 | 6 | Inside Frost | C,CC-8 | 3000 | 3000 2975 | 3.13 | 4.31 |


BT15


B11


G25


F17


T10



## HALOGEN BT15

Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Lamp Finish | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 60 | BT15 | E26 Med | 18864 | 73,74,84,145 | **60BT15/HAL/CL/BL** | 120 | 10 | Clear | C,CC-8 | 3000 | 820 2900 | 2.94 | 4.63 |
| | | | 18865 | 72,73,74,84,145 | **60BT15/HAL/W/BL** | 120 | 10 | White | C,CC-8 | 3000 | 760 2900 | 2.94 | 4.63 |
| 75 | BT15 | E26 Med | 18866 | 72,73,74,84,145 | **75BT15/HAL/W/BL** | 120 | 10 | White | C,CC-8 | 3000 | 1010 2900 | 2.94 | 4.63 |
| 100 | BT15 | E26 Med | 18867 | 72,73,74,84,145 | **100BT15/HAL/W/BL** | 120 | 10 | White | C,CC-8 | 3000 | 1500 2900 | 2.94 | 4.63 |
| 150 | BT15 | E26 Med | 18868 | 72,73,74,84,145 | **150BT15/HAL/W/BL** | 120 | 10 | White | C,CC-8 | 3000 | 2400 2900 | 2.94 | 4.63 |

## HALOGEN DÉCOR LAMPS

Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Lamp Finish | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | B11 | Candelabra | 13269 | 73,74,145 | **25B11C/T/HAL/BL** | 120 | 6 | Clear | C,CC-2V | 3000 | 180 2900 | 2.60 | 4.69 |
| 40 | B11 | Candelabra | 13334 | 73,74,145 | **40B11C/HAL/BL** | 120 | 6 | Clear | C,CC-2V | 3000 | 380 2900 | 2.60 | 4.56 |
| | G25 | E26 Med | 13998 | 73,74,145 | **40G25/HAL** | 120 | 6 | Clear | C,CC-2V | 3000 | 380 2900 | 3.25 | 4.44 |
| 60 | G25 | E26 Med | 14000 | 73,74,145 | **60G25/HAL** | 120 | 6 | Clear | C,CC-2V | 3000 | 630 2900 | 3.25 | 4.44 |
| | F17 | E26 Med | 13879 | | **60F/HAL/DAY/CLAM** | 120 | 6 | Crystal | C,CC-8 | 3000 | 960 2850 | 3.00 | 4.50 |

## TUBULAR HALOGEN T10

A suitable protective shield, screening technique or both shall be used to protect people and surroundings from the possibility of a lamp shattering.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Lamp Finish | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75 | T10 | E26 Med | 18846 | 139 | **75T10/HAL/CL** | 120 | 12 | Clear | C,CC-2V | 2000 | 1100 2900 | 2.94 | 4.13 |
| | | | 18847 | 139 | **75T10/HAL/F** | 120 | 12 | Frosted | C,CC-2V | 2000 | 1050 2900 | 2.94 | 4.13 |
| 100 | T10 | E26 Med | 18848 | 139 | **100T10/HAL/CL** | 120 | 12 | Clear | C,CC-2V | 2000 | 1500 2900 | 2.94 | 4.13 |
| | | | 18849 | 139 | **100T10/HAL/F** | 120 | 12 | Frosted | C,CC-2V | 2000 | 1430 2900 | 2.94 | 4.13 |
| 150 | T10 | E26 Med | 18850 | 46,139 | **150T10/HAL/CL** | 120 | 12 | Clear | C,CC-2V | 2000 | 2500 2900 | 2.94 | 4.13 |
| | | | 18851 | 46,139 | **150T10/HAL/F** | 120 | 12 | Frosted | C,CC-2V | 2000 | 2400 2900 | 2.94 | 4.13 |
| 230 | T10 | E26 Med | 18852 | 46,139 | **230T10/HAL/CL** | 120 | 12 | Clear | C,CC-2V | 2000 | 4200 2900 | 2.94 | 4.13 |
| | | | 18853 | 46,139 | **230T10/HAL/F** | 120 | 12 | Frosted | C,CC-2V | 2000 | 4000 2900 | 2.94 | 4.13 |


PAR20


PAR30LN


PAR38


PAR14


PAR16 GU10



## DAYLIGHT PLUS® PAR LAMPS

Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | PAR20 | E26 Med | 15226 | ★ I/O 118 | **50PAR20/HAL/DAY/NFL** | 120 | 6 | NFL | C,CC-8 | 2500 | 500 2900 | 1000 | 30 | 3.25 |
| | PAR30LN | E26 Med | 15227 | ★ I/O E 73,118 | **50PAR30LN/HAL/DAY/WFL** | 120 | 6 | WFL | C,CC-8 | 2500 | 550 2900 | 550 | 50 | 4.63 |
| 75 | PAR30LN | E26 Med | 15228 | ★ I/O E 73,118 | **75PAR30LN/HAL/DAY/WFL** | 120 | 6 | WFL | C,CC-8 | 2500 | 1000 3000 | 1000 | 50 | 4.63 |
| 50 | PAR38 | E26 Med Skt | 13973 | ★ I/O E 43,47,72,118 | **50PAR38/CAPIR/DAY/WSP12** | 120 | 15 | WSP | C,CC-8 | 3000 | 700 2925 | 7000 | 12 | 5.31 |
| | | | 15259 | ★ I/O E 43,47,72,118 | **50PAR38/CAPIR/DAY/FL30** | 120 | 15 | FL | C,CC-8 | 3000 | 700 2925 | 1800 | 30 | 5.31 |
| | | | 15229 | ★ I/O E 118 | **50PAR38/HAL/DAY/FL** | 120 | 6 | FL | C,CC-8 | 2500 | 540 2900 | 1550 | 30 | 5.31 |
| 75 | PAR38 | E26 Med Skt | 15230 | ★ I/O E 118 | **75PAR38/HAL/DAY/FL** | 120 | 6 | FL | C,CC-8 | 2500 | 960 3000 | 2800 | 30 | 5.31 |

## SOFTWHITE HALOGEN PAR LAMPS

Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | PAR20 | E26 Med | 13260 | ★ I/O 43,118 | **50PAR20/HAL/SW** | 120 | 6 | FL | C,CC-8 | 2500 | 525 2850 | 525 | 40 | 3.25 |
| | PAR30LN | E26 Med | 13259 | ★ I/O E 43,73,118,134 | **50PAR30LN/HAL/SW** | 120 | 6 | FL | C,CC-8 | 2500 | 600 2850 | 450 | 50 | 4.63 |
| 75 | PAR30LN | E26 Med | 13258 | 43,73,118 | **75PAR30LN/HAL/SW** | 120 | 6 | FL | C,CC-8 | 2500 | 1050 2900 | 700 | 50 | 4.63 |
| 50 | PAR38 | E26 Med Skt | 15236 | ★ E 43,72,118 | **50PAR38/HAL/SW** | 120 | 6 | FL | C,CC-8 | 2500 | 600 2850 | 550 | 50 | 5.31 |
| 75 | PAR38 | E26 Med Skt | 13257 | ★ I/O E 43,72,118 | **75PAR38/HAL/SW** | 120 | 6 | FL | C,CC-8 | 2500 | 980 2900 | 1300 | 50 | 5.31 |

## CAPSYLITE® PAR14 LAMPS

Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 35 | PAR14 | E26 Med | 15364 | 41,118 | **35PAR14/HAL/FL/RP** | 120 | 6 | FL | C,CC-8 | 2000 | 450 2775 | 200 | 50 | 2.44 |

## CAPSYLITE® PAR16 LAMPS

Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 35 | PAR16 | GU10 | 13256 | 72 | **35PAR16/HAL/GU10/FL/BL3** | 120 | 18 | FL | C,CC-8 | 3000 | 280 2750 | 500 | 30 | 2.25 |
| | | | 59076 | 72 | **35PAR16/HAL/GU10/FL/BL** | 120 | 6 | FL | C,CC-8 | 3000 | 280 2750 | 500 | 30 | 2.25 |


PAR16 GU10


PAR16 GU10


PAR20



## CAPSYLITE® PAR16 LAMPS

Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | PAR16 | GU10 | 59061 | 72 | **50PAR16/HAL/GU10/FL/BL3** | 120 | 18 | FL | C,CC-8 | 3000 | 450 2800 | 800 | 30 | 2.25 |
| | | | 59075 | 72 | **50PAR16/HAL/GU10/FL/BL** | 120 | 6 | FL | C,CC-8 | 3000 | 450 2800 | 800 | 30 | 2.25 |
| | | | 59024 | 68 | **50PAR16/HAL/GU10/FL40** | 120 | 10 | FL | C,CC-2V | 1000 | 400 2950 | 640 | 40 | 2.08 |
| | | | 59020 | 68 | **50PAR16/HAL/GU10/FL/CLAM** | 120 | 6 | FL | C,CC-2V | 1000 | 400 2950 | 640 | 40 | 2.08 |
| 60 | PAR16 | E26 Med | 59032 | 69,118 | **60PAR16/HAL/NSP10** | 120 | 15 | NSP | C,CC-8 | 2000 | 650 2850 | 5000 | 10 | 2.88 |
| | | | 59037 | 69,118 | **60PAR16/HAL/NSP10/RP** | 120 | 6 | NSP | C,CC-8 | 2000 | 650 2850 | 5000 | 10 | 2.88 |
| | | | 59040 | 69,118,137, 169 | **60PAR16/HAL/NSP10** | 130 | 15 | NSP | C,CC-8 | 2000 | 650 2850 | 5000 | 10 | 2.88 |
| | | | @ 120 volts, approximate 53 watts, 495 lumens, 4000 hours | | | | | | | | | | | |
| | | | 59030 | 69,118 | **60PAR16/HAL/NFL30** | 120 | 15 | NFL | C,CC-8 | 2000 | 650 2850 | 1300 | 30 | 2.88 |
| | | | 59031 | 69,118 | **60PAR16/HAL/NFL30/RP** | 120 | 6 | NFL | C,CC-8 | 2000 | 650 2850 | 1300 | 30 | 2.88 |
| | | | 59038 | 69,118,137, 169 | **60PAR16/HAL/NFL30** | 130 | 15 | NFL | C,CC-8 | 2000 | 650 2850 | 1300 | 30 | 2.88 |
| | | | @ 120 volts, approximate 53 watts, 495 lumens, 4000 hours | | | | | | | | | | | |
| 75 | PAR16 | E26 Med | 59036 | 69,118 | **75PAR16/HAL/NSP10** | 120 | 15 | NSP | C,CC-8 | 2000 | 900 2900 | 7500 | 10 | 2.88 |
| | | | 59044 | 69,118,137, 180 | **75PAR16/HAL/NSP10** | 130 | 15 | NSP | C,CC-8 | 2000 | 900 2900 | 7500 | 10 | 2.88 |
| | | | @ 120 volts, approximate 66 watts, 685 lumens, 4000 hours | | | | | | | | | | | |
| | | | 59034 | 69,118 | **75PAR16/HAL/NFL30** | 120 | 15 | NFL | C,CC-8 | 2000 | 900 2900 | 1900 | 30 | 2.88 |
| | | | 59033 | 69,118 | **75PAR16/HAL/NFL30/RP** | 120 | 6 | NFL | C,CC-8 | 2000 | 900 2900 | 1900 | 30 | 2.88 |
| | | | 59042 | 69,118,137, 180 | **75PAR16/HAL/NFL30** | 130 | 15 | NFL | C,CC-8 | 2000 | 900 2900 | 1900 | 30 | 2.88 |
| | | | @ 120 volts, approximate 66 watts, 685 lumens, 4000 hours | | | | | | | | | | | |

## CAPSYLITE IR® PAR20

Halogen PAR lamp with infrared reflective coating on the lamp capsule. Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | PAR20 | E26 Med | 14164 | ★ I/O 43,47,118 | **40PAR20/CAPIR/NSP10** | 120 | 15 | NSP | C,CC-8 | 4000 | 510 2750 | 4200 | 10 | 3.25 |
| | | | 14166 | ★ I/O 43,47,118 | **40PAR20/CAPIR/NFL30** | 120 | 15 | NFL | C,CC-8 | 4000 | 510 2750 | 1100 | 30 | 3.25 |
| | | | 14130 | ★ I/O 43,47,118 | **40PAR20/CAPIR/WFL40** | 120 | 15 | WFL | C,CC-8 | 4000 | 510 2750 | 800 | 40 | 3.25 |


PAR20


PAR30

## CAPSYLITE® PAR20

Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 35 | PAR20 | E26 Med | 14467 | ★ I/O 43,118 | **35PAR20/HAL/NSP10** | 120 | 15 | NSP | C,CC-8 | 2500 | 360 2775 | 3000 | 10 | 3.25 |
| | | | 14464 | ★ I/O 43,118 | **35PAR20/HAL/NFL30** | 120 | 15 | NFL | C,CC-8 | 2500 | 360 2775 | 800 | 30 | 3.25 |
| | | | 14459 | ★ I/O 43,118,137,151 | **35PAR20/HAL/NFL30** | 130 | 15 | NFL | C,CC-8 | 2500 | 360 2775 | 800 | 30 | 3.25 |
| | | | @ 120 volts, approximate 31 watts, 275 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14506 | ★ I/O 43,118 | **35PAR20/HAL/WFL40** | 120 | 15 | WFL | C,CC-8 | 2500 | 360 2775 | 500 | 40 | 3.25 |
| | | | 14461 | ★ I/O 43,118,137,151 | **35PAR20/HAL/WFL40** | 130 | 15 | WFL | C,CC-8 | 2500 | 360 2775 | 500 | 40 | 3.25 |
| | | | @ 120 volts, approximate 31 watts, 275 lumens, 5000 hours | | | | | | | | | | | |
| 50 | PAR20 | E26 Med | 14500 | ★ I/O 43,118 | **50PAR20/HAL/NSP10** | 120 | 15 | NSP | C,CC-8 | 2500 | 550 2850 | 4600 | 10 | 3.25 |
| | | | 14528 | ★ I/O 43,118,137,161 | **50PAR20/HAL/NSP10** | 130 | 15 | NSP | C,CC-8 | 2500 | 550 2850 | 4600 | 10 | 3.25 |
| | | | @ 120 volts, approximate 44 watts, 420 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14502 | ★ I/O 43,118 | **50PAR20/HAL/NFL30** | 120 | 15 | NFL | C,CC-8 | 2500 | 550 2850 | 1200 | 30 | 3.25 |
| | | | 14173 | ★ I/O 43,118 | **50PAR20/HAL/NFL30/RP** | 120 | 6 | NFL | C,CC-8 | 2500 | 550 2850 | 1200 | 30 | 3.25 |
| | | | 14529 | ★ I/O 43,118,137,161 | **50PAR20/HAL/NFL30** | 130 | 15 | NFL | C,CC-8 | 2500 | 550 2850 | 1200 | 30 | 3.25 |
| | | | @ 120 volts, approximate 44 watts, 420 lumens, 5000 hours | | | | | | | | | | | |
| | | | 15662 | ★ I/O 43,118,137,161 | **50PAR20/HAL/NFL30/CVP** | 130 | 6 | NFL | C,CC-8 | 2500 | 550 2850 | 1200 | 30 | 3.25 |
| | | | @ 120 volts, approximate 44 watts, 420 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14700 | ★ I/O 43,118 | **50PAR20/HAL/WFL40** | 120 | 15 | WFL | C,CC-8 | 2500 | 550 2850 | 900 | 40 | 3.25 |

## CAPSYLITE IR® PAR30

Halogen PAR lamp with infrared reflective coating on the lamp capsule. Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | PAR30 | E26 Med | 13968 | ★ I/O Ⓔ 43,47,118 | **40PAR30/CAPIR/NSP9** | 120 | 15 | NSP | C,CC-8 | 4000 | 610 2750 | 8100 | 9 | 3.63 |
| | | | 13969 | ★ I/O Ⓔ 43,47,118 | **40PAR30/CAPIR/NFL25** | 120 | 15 | NFL | C,CC-8 | 4000 | 610 2750 | 2100 | 25 | 3.63 |
| | | | 13970 | ★ I/O Ⓔ 43,47,118 | **40PAR30/CAPIR/FL40** | 120 | 15 | FL | C,CC-8 | 4000 | 610 2750 | 1200 | 40 | 3.63 |
| 50 | PAR30 | E26 Med | 14355 | ★ I/O Ⓔ 43,47,118,137 | **50PAR30/CAPIR/NSP9** | 120 | 15 | NSP | C,CC-8 | 3000 | 900 2825 | 13000 | 9 | 3.63 |
| | | | 14354 | ★ I/O Ⓔ 43,47,118 | **50PAR30/CAPIR/NFL25** | 120 | 15 | NFL | C,CC-8 | 3000 | 900 2825 | 2900 | 25 | 3.63 |
| | | | 14132 | ★ I/O Ⓔ 43,47,87,118 | **50PAR30/CAPIR/NFL25** | 130 | 15 | NFL | C,CC-8 | 3000 | 900 2825 | 2900 | 25 | 3.63 |
| | | | @ 120 volts, approximate 44 watts, 690 lumens, 6000 hours. | | | | | | | | | | | |
| | | | 14714 | ★ I/O Ⓔ 43,47,118 | **50PAR30/CAPIR/FL40** | 120 | 15 | FL | C,CC-8 | 3000 | 900 2825 | 1600 | 40 | 3.63 |
| | | | 14131 | ★ I/O Ⓔ 43,47,87,118,137 | **50PAR30/CAPIR/FL40** | 130 | 15 | FL | C,CC-8 | 3000 | 900 2825 | 1600 | 40 | 3.63 |
| | | | @ 120 volts, approximate 44 watts, 690 lumens, 6000 hours. | | | | | | | | | | | |


PAR30


PAR30LN

## CAPSYLITE® PAR30

Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | PAR30 | E26 Med | 14526 | ★ⓁⓄⒺ 43,118 | **50PAR30/HAL/NSP9** | 120 | 15 | NSP | C,CC-8 | 2500 | 660 2850 | 8800 | 9 | 3.63 |
| | | | 14530 | ★ⓁⓄⒺ 43,118,137,162 | **50PAR30/HAL/NSP9** | 130 | 15 | NSP | C,CC-8 | 2500 | 660 2850 | 8800 | 9 | 3.63 |
| | | | @ 120 volts, approximate 44 watts, 500 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14527 | ★ⓁⓄⒺ 43,118 | **50PAR30/HAL/NFL25** | 120 | 15 | NFL | C,CC-8 | 2500 | 660 2850 | 2300 | 25 | 3.63 |
| | | | 14531 | ★ⓁⓄⒺ 43,118,137,162 | **50PAR30/HAL/NFL25** | 130 | 15 | NFL | C,CC-8 | 2500 | 660 2850 | 2300 | 25 | 3.63 |
| | | | @ 120 volts, approximate 44 watts, 500 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14710 | ★ⓁⓄⒺ 43,118 | **50PAR30/HAL/FL40** | 120 | 15 | FL | C,CC-8 | 2500 | 660 2850 | 1300 | 40 | 3.63 |
| | | | 14533 | ★ⓁⓄⒺ 43,118,137,162 | **50PAR30/HAL/FL40** | 130 | 15 | FL | C,CC-8 | 2500 | 660 2850 | 1300 | 40 | 3.63 |
| | | | @ 120 volts, approximate 44 watts, 500 lumens, 5000 hours | | | | | | | | | | | |
| 60 | PAR30 | E26 Med | 14332 | ★ⓁⓄⒺ 43,118 | **60PAR30/HAL/NSP9** | 120 | 15 | NSP | C,CC-8 | 3000 | 860 2875 | 12000 | 9 | 3.63 |
| | | | 14333 | ★ⓁⓄⒺ 43,118 | **60PAR30/HAL/NFL25** | 120 | 15 | NFL | C,CC-8 | 3000 | 860 2875 | 2775 | 25 | 3.63 |
| | | | 14090 | ★ⓁⓄⒺ 43,90,118,137 | **60PAR30/HAL/NFL25** | 130 | 15 | NFL | C,CC-8 | 3000 | 860 2875 | 2775 | 25 | 3.63 |
| | | | @ 120 volts, approximate 53 watts, 660 lumens, 6000 hours. | | | | | | | | | | | |
| | | | 14084 | ★ⓁⓄⒺ 43,90 | **60PAR30/HAL/FL40** | 130 | 15 | FL | C,CC-8 | 3000 | 860 2875 | 1550 | 40 | 3.63 |
| | | | @ 120 volts, approximate 53 watts, 660 lumens, 6000 hours. | | | | | | | | | | | |
| 75 | PAR30 | E26 Med | 14604 | ★ⓁⓄⒺ 43,118 | **75PAR30/HAL/NSP9** | 120 | 15 | NSP | C,CC-8 | 2500 | 1130 2900 | 15400 | 9 | 3.63 |
| | | | 14628 | ★ⓁⓄⒺ 43,118,137,182 | **75PAR30/HAL/NSP9** | 130 | 15 | NSP | C,CC-8 | 2500 | 1130 2900 | 15400 | 9 | 3.63 |
| | | | @ 120 volts, approximate 66 watts, 860 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14603 | ★ⓁⓄⒺ 43,118 | **75PAR30/HAL/NFL25** | 120 | 15 | NFL | C,CC-8 | 2500 | 1130 2900 | 4000 | 25 | 3.63 |
| | | | 14627 | ★ⓁⓄⒺ 43,118,137,182 | **75PAR30/HAL/NFL25** | 130 | 15 | NFL | C,CC-8 | 2500 | 1130 2900 | 4000 | 25 | 3.63 |
| | | | @ 120 volts, approximate 66 watts, 860 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14606 | ★ⓁⓄⒺ 43,118 | **75PAR30/HAL/FL40** | 120 | 15 | FL | C,CC-8 | 2500 | 1130 2900 | 2100 | 40 | 3.63 |
| | | | 14629 | ★ⓁⓄⒺ 43,118,137,182 | **75PAR30/HAL/FL40** | 130 | 15 | FL | C,CC-8 | 2500 | 1130 2900 | 2100 | 40 | 3.63 |
| | | | @ 120 volts, approximate 66 watts, 860 lumens, 5000 hours | | | | | | | | | | | |

## CAPSYLITE® PAR30 LONG NECK

Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 35 | PAR30LN | E26 Med | 14759 | ★ⓁⓄⒺ 43,73,118 | **35PAR30LN/HAL/NSP9** | 120 | 15 | NSP | C,CC-8 | 2500 | 450 2775 | 4500 | 10 | 4.63 |
| | | | 14764 | ★ⓁⓄⒺ 43,73,118 | **35PAR30LN/HAL/WFL50** | 120 | 15 | WFL | C,CC-8 | 2500 | 450 2775 | 450 | 50 | 4.63 |
| 50 | PAR30LN | E26 Med | 14509 | ★ⓁⓄⒺ 43,73,118,134 | **50PAR30LN/HAL/NSP9** | 120 | 15 | NSP | C,CC-8 | 2500 | 660 2850 | 7000 | 10 | 4.63 |


PAR30LN


PAR38



## CAPSYLITE® PAR30 LONG NECK

Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | PAR30LN | E26 Med | 14482 | ★ I/O Ⓔ 43,73,118,134,137,162 | **50PAR30LN/HAL/NSP9** | 130 | 15 | NSP | C,CC-8 | 2500 | 660 2850 | 7000 | 10 | 4.63 |
| | | | @ 120 volts, approximate 44 watts, 500 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14520 | ★ I/O Ⓔ 43,73,118,134 | **50PAR30LN/HAL/NFL25** | 120 | 15 | NFL | C,CC-8 | 2500 | 660 2850 | 2100 | 25 | 4.63 |
| | | | 14822 | ★ I/O Ⓔ 43,73,118,134 | **50PAR30LN/HAL/NFL** | 120 | 6 | NFL | C,CC-8 | 2500 | 660 2850 | 2100 | 25 | 4.63 |
| | | | 14478 | ★ I/O Ⓔ 43,73,118,134,137,162 | **50PAR30LN/HAL/NFL25** | 130 | 15 | NFL | C,CC-8 | 2500 | 660 2850 | 2100 | 25 | 4.63 |
| | | | @ 120 volts, approximate 44 watts, 500 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14537 | ★ I/O Ⓔ 43,73,118,134 | **50PAR30LN/HAL/WFL50** | 120 | 15 | WFL | C,CC-8 | 2500 | 660 2850 | 660 | 50 | 4.63 |
| | | | 14536 | ★ I/O Ⓔ 43,73,118,134 | **50PAR30LN/HAL/WFL** | 120 | 6 | WFL | C,CC-8 | 2500 | 660 2850 | 660 | 50 | 4.63 |
| | | | 14486 | ★ I/O Ⓔ 43,73,118,134,137,162 | **50PAR30LN/HAL/WFL50** | 130 | 15 | WFL | C,CC-8 | 2500 | 660 2850 | 660 | 50 | 4.63 |
| | | | @ 120 volts, approximate 44 watts, 500 lumens, 5000 hours | | | | | | | | | | | |
| | | | 15419 | ★ I/O Ⓔ 43,73,118,134,137,162 | **50PAR30LN/HAL/WFL50/CVP** | 130 | 6 | WFL | C,CC-8 | 2500 | 660 2850 | 660 | 50 | 4.63 |
| | | | @ 120 volts, approximate 44 watts, 500 lumens, 5000 hours | | | | | | | | | | | |
| 75 | PAR30LN | E26 Med | 14786 | ★ I/O Ⓔ 43,73,118 | **75PAR30LN/HAL/NSP9** | 120 | 15 | NSP | C,CC-8 | 2500 | 1130 2950 | 12000 | 10 | 4.63 |
| | | | 14777 | ★ I/O Ⓔ 43,73,118,137,182 | **75PAR30LN/HAL/NSP9** | 130 | 15 | NSP | C,CC-8 | 2500 | 1130 2900 | 12000 | 10 | 4.63 |
| | | | @ 120 volts, approximate 66 watts, 860 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14769 | ★ I/O Ⓔ 43,73,118 | **75PAR30LN/HAL/NFL25** | 120 | 15 | NFL | C,CC-8 | 2500 | 1130 2900 | 3600 | 25 | 4.63 |
| | | | 14824 | ★ I/O Ⓔ 43,73,118 | **75PAR30LN/HAL/NFL** | 120 | 6 | NFL | C,CC-8 | 2500 | 1130 2900 | 3600 | 25 | 4.63 |
| | | | 14778 | ★ I/O Ⓔ 43,73,118,137,182 | **75PAR30LN/HAL/NFL25** | 130 | 15 | NFL | C,CC-8 | 2500 | 1130 2900 | 3600 | 25 | 4.63 |
| | | | @ 120 volts, approximate 66 watts, 860 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14768 | ★ I/O Ⓔ 43,73,118 | **75PAR30LN/HAL/WFL50** | 120 | 15 | WFL | C,CC-8 | 2500 | 1130 2900 | 1100 | 50 | 4.63 |
| | | | 14823 | ★ I/O Ⓔ 43,73,118 | **75PAR30LN/HAL/WFL** | 120 | 6 | WFL | C,CC-8 | 2500 | 1130 2900 | 1100 | 50 | 4.63 |
| | | | 14785 | ★ I/O Ⓔ 43,73,118,137,182 | **75PAR30LN/HAL/WFL50** | 130 | 15 | WFL | C,CC-8 | 2500 | 1130 2900 | 1100 | 50 | 4.63 |
| | | | @ 120 volts, approximate 66 watts, 860 lumens, 5000 hours | | | | | | | | | | | |
| | | | 15418 | ★ I/O Ⓔ 43,73,118,137,182 | **75PAR30LN/HAL/WFL50/CVP** | 130 | 6 | WFL | C,CC-8 | 2500 | 1130 2900 | 1100 | 50 | 4.63 |
| | | | @ 120 volts, approximate 66 watts, 860 lumens, 5000 hours | | | | | | | | | | | |

## CAPSYLITE IR® PAR38

Halogen PAR lamp with infrared reflective coating on the lamp capsule. Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | PAR38 | E26 Med Skt | 13973 | ★ I/O Ⓔ 43,47,72,118 | **50PAR38/CAPIR/DAY/WSP12** | 120 | 15 | WSP | C,CC-8 | 3000 | 700 2875 | 7000 | 12 | 5.31 |
| | | | 15259 | ★ I/O Ⓔ 43,47,72,118 | **50PAR38/CAPIR/DAY/FL30** | 120 | 15 | FL | C,CC-8 | 3000 | 700 2875 | 1800 | 30 | 5.31 |

PAR38



## CAPSYLITE IR® PAR38

Halogen PAR lamp with infrared reflective coating on the lamp capsule. Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | PAR38 | E26 Med Skt | 14136 | ★ I/O Ⓔ 43,47,72,118 | **50PAR38/CAPIR/SP9** | 120 | 15 | SP | C,CC-8 | 3000 | 850 2825 | 14000 | 9 | 5.31 |
| | | | 14124 | ★ I/O Ⓔ 43,47,72,88,118,137 | **50PAR38/CAPIR/SP9** | 130 | 15 | SP | C,CC-8 | 3000 | 850 2825 | 14000 | 9 | 5.31 |
| | | | @ 120 volts, approximate 44 watts, 650 lumens, 6000 hours. | | | | | | | | | | | |
| | | | 14138 | ★ I/O Ⓔ 43,47,72,118 | **50PAR38/CAPIR/NFL25** | 120 | 15 | NFL | C,CC-8 | 3000 | 850 2825 | 3000 | 25 | 5.31 |
| | | | 14125 | ★ I/O Ⓔ 43,47,72,88,118,137 | **50PAR38/CAPIR/NFL25** | 130 | 15 | NFL | C,CC-8 | 3000 | 850 2825 | 3000 | 25 | 5.31 |
| | | | @ 120 volts, approximate 44 watts, 650 lumens, 6000 hours. | | | | | | | | | | | |
| 60 | PAR38 | E26 Med Skt | 14485 | ★ I/O Ⓔ 43,47,72,118 | **60PAR38/CAPIR/SP9** | 120 | 15 | SP | C,CC-8 | 3000 | 1110 2850 | 20000 | 9 | 5.31 |
| | | | 14716 | ★ I/O Ⓔ 43,47,72,85,118,137 | **60PAR38/CAPIR/SP9** | 130 | 15 | SP | C,CC-8 | 3000 | 1110 2850 | 20000 | 9 | 5.31 |
| | | | @ 120 volts, approximate 53 watts, 845 lumens, 6000 hours. | | | | | | | | | | | |
| | | | 14360 | ★ I/O Ⓔ 43,47,72,118 | **60PAR38/CAPIR/WSP12** | 120 | 15 | WSP | C,CC-8 | 3000 | 1110 2850 | 12000 | 12 | 5.31 |
| | | | 14442 | ★ I/O Ⓔ 43,47,72,118 | **60PAR38/CAPIR/NFL25** | 120 | 15 | NFL | C,CC-8 | 3000 | 1110 2850 | 4000 | 25 | 5.31 |
| | | | 14466 | ★ I/O Ⓔ 43,47,72,118 | **60PAR38/CAPIR/FL30** | 120 | 15 | FL | C,CC-8 | 3000 | 1110 2850 | 3600 | 30 | 5.31 |
| | | | 14715 | ★ I/O Ⓔ 43,47,72,85,118,137 | **60PAR38/CAPIR/FL30** | 130 | 15 | FL | C,CC-8 | 3000 | 1110 2850 | 3600 | 30 | 5.31 |
| | | | @ 120 volts, approximate 53 watts, 845 lumens, 6000 hours. | | | | | | | | | | | |
| 80 | PAR38 | E26 Med Skt | 14347 | ★ I/O Ⓔ 47,72,118 | **80PAR38/CAPIR/SP10** | 120 | 12 | SP | C,CC-8 | 3000 | 1500 2900 | 25000 | 10 | 5.31 |
| | | | 14327 | ★ I/O Ⓔ 47,72,118 | **80PAR38/CAPIR/FL25** | 120 | 12 | FL | C,CC-8 | 3000 | 1500 2900 | 5500 | 25 | 5.31 |
| 100 | PAR38 | E26 Med Skt | 14324 | ★ I/O Ⓔ 47,72,118 | **100PAR38/CAPIR/SP10** | 120 | 12 | SP | C,CC-8 | 3000 | 2070 2900 | 29000 | 10 | 5.31 |
| | | | 14319 | ★ I/O Ⓔ 47,72,118 | **100PAR38/CAPIR/NFL25** | 120 | 12 | NFL | C,CC-8 | 3000 | 2070 2900 | 6300 | 25 | 5.31 |
| | | | 14311 | ★ I/O Ⓔ 47,72,118 | **100PAR38/CAPIR/FL40** | 120 | 12 | FL | C,CC-8 | 3000 | 2070 2900 | 3400 | 40 | 5.31 |

## CAPSYLITE® PAR38

Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 | PAR38 | E26 Med Skt | 14590 | ★ I/O Ⓔ 43,72,118 | **45PAR38/HAL/SP9** | 120 | 15 | SP | C,CC-8 | 2500 | 560 2825 | 10000 | 9 | 5.31 |
| | | | 15538 | ★ I/O Ⓔ 43,72,118 | **45PAR38/HAL/SP** | 120 | 6 | SP | C,CC-8 | 2500 | 560 2825 | 10000 | 9 | 5.31 |
| | | | 14593 | ★ I/O Ⓔ 43,72,118,137,157 | **45PAR38/HAL/SP9** | 130 | 15 | SP | C,CC-8 | 2500 | 560 2825 | 10000 | 9 | 5.31 |
| | | | @ 120 volts, approximate 40 watts, 425 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14589 | ★ I/O Ⓔ 43,72,118 | **45PAR38/HAL/WSP12** | 120 | 15 | WSP | C,CC-8 | 2500 | 560 2825 | 6300 | 12 | 5.31 |
| | | | 14592 | ★ I/O Ⓔ 43,72,118,137,157 | **45PAR38/HAL/WSP12** | 130 | 15 | WSP | C,CC-8 | 2500 | 560 2825 | 6300 | 12 | 5.31 |
| | | | @ 120 volts, approximate 40 watts, 425 lumens, 5000 hours | | | | | | | | | | | |

PAR38



## CAPSYLITE® PAR38

Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 | PAR38 | E26 Med Skt | 14588 | ★ I/O Ⓔ 43,72,118 | **45PAR38/HAL/FL30** | 120 | 15 | FL | C,CC-8 | 2500 | 560 2825 | 1500 | 30 | 5.31 |
| | | | 15537 | ★ I/O Ⓔ 43,72,118 | **45PAR38/HAL/FL** | 120 | 6 | FL | C,CC-8 | 2500 | 560 2825 | 1500 | 30 | 5.31 |
| | | | 14591 | ★ I/O Ⓔ 43,72,118,137,157 | **45PAR38/HAL/FL30** | 130 | 15 | FL | C,CC-8 | 2500 | 560 2825 | 1500 | 30 | 5.31 |
| | | | @ 120 volts, approximate 40 watts, 425 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14010 | ★ I/O Ⓔ 43,72,118,137,157 | **45PAR38/HAL/WFL50** | 130 | 15 | WFL | C,CC-8 | 2500 | 560 2825 | 700 | 50 | 5.31 |
| | | | @ 120 volts, approximate 40 watts, 425 lumens, 5000 hours | | | | | | | | | | | |
| 47 | PAR38 | E26 Med Skt | 15404 | ★ I/O Ⓔ 43,72,118,137 | **47PAR38/HAL/DL/SP9** | 120 | 15 | SP | C,CC-8 | 6000 | 570 2750 | 10000 | 9 | 5.31 |
| | | | 15405 | ★ I/O Ⓔ 43,72,118,137 | **47PAR38/HAL/DL/FL30** | 120 | 15 | FL | C,CC-8 | 6000 | 570 2750 | 1500 | 30 | 5.31 |
| 50 | PAR38 | E26 Med Skt | 15521 | ★ I/O Ⓔ 43,72,118,137 | **50PAR38/HAL/SP9** | 120 | 6 | SP | C,CC-8 | 2500 | 650 2850 | 10500 | 9 | 5.31 |
| | | | 15520 | ★ I/O Ⓔ 43,72,118,137 | **50PAR38/HAL/FL30** | 120 | 6 | FL | C,CC-8 | 2500 | 650 2850 | 1850 | 30 | 5.31 |
| 60 | PAR38 | E26 Med Skt | 14469 | ★ I/O Ⓔ 43,72,118 | **60PAR38/HAL/SP9** | 120 | 15 | SP | C,CC-8 | 3000 | 850 2875 | 16000 | 9 | 5.31 |
| | | | 14449 | ★ I/O Ⓔ 43,72,118,137,171 | **60PAR38/HAL/SP9** | 130 | 15 | SP | C,CC-8 | 3000 | 850 2875 | 16000 | 9 | 5.31 |
| | | | @ 120 volts, approximate 53 watts, 645 lumens, 6000 hours | | | | | | | | | | | |
| | | | 14472 | ★ I/O Ⓔ 118 | **60PAR38/HAL/NFL25** | 120 | 15 | NFL | C,CC-8 | 3000 | 850 2875 | 3700 | 25 | 5.31 |
| | | | 14468 | ★ I/O Ⓔ 43,72,118 | **60PAR38/HAL/FL30** | 120 | 15 | FL | C,CC-8 | 3000 | 850 2875 | 2500 | 30 | 5.31 |
| | | | 14448 | ★ I/O Ⓔ 43,72,118,137,171 | **60PAR38/HAL/FL30** | 130 | 15 | FL | C,CC-8 | 3000 | 850 2875 | 2500 | 30 | 5.31 |
| | | | @ 120 volts, approximate 53 watts, 645 lumens, 6000 hours | | | | | | | | | | | |
| 63 | PAR38 | E26 Med Skt | 15421 | ★ I/O Ⓔ 43,72,118 | **63PAR38/HAL/DL/SP9** | 120 | 15 | SP | C,CC-8 | 6000 | 800 2800 | 14000 | 9 | 5.31 |
| 75 | PAR38 | E26 Med Skt | 14514 | ★ I/O Ⓔ 43,72,118 | **75PAR38/HAL/SP9** | 120 | 15 | SP | C,CC-8 | 2500 | 1060 2900 | 19200 | 9 | 5.31 |
| | | | 14854 | ★ I/O Ⓔ 43,72,118 | **75PAR38/HAL/SP/RP** | 120 | 6 | SP | C,CC-8 | 2500 | 1060 2900 | 19200 | 9 | 5.31 |
| | | | 14516 | ★ I/O Ⓔ 43,72,118,137,181 | **75PAR38/HAL/SP9** | 130 | 15 | SP | C,CC-8 | 2500 | 1060 2900 | 19200 | 9 | 5.31 |
| | | | @ 120 volts, approximate 66 watts, 805 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14510 | ★ I/O Ⓔ 43,72,118 | **75PAR38/HAL/WSP12** | 120 | 15 | WSP | C,CC-8 | 2500 | 1060 2900 | 12300 | 12 | 5.31 |
| | | | 14513 | ★ I/O Ⓔ 43,72,118 | **75PAR38/HAL/FL30** | 120 | 15 | FL | C,CC-8 | 2500 | 1060 2900 | 3150 | 30 | 5.31 |
| | | | 14853 | ★ I/O Ⓔ 43,72,118 | **75PAR38/HAL/FL/RP** | 120 | 6 | FL | C,CC-8 | 2500 | 1060 2900 | 3150 | 30 | 5.31 |
| | | | 14515 | ★ I/O Ⓔ 43,72,118,137,181 | **75PAR38/HAL/FL30** | 130 | 15 | FL | C,CC-8 | 2500 | 1060 2900 | 3150 | 30 | 5.31 |
| | | | @ 120 volts, approximate 66 watts, 805 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14446 | ★ I/O Ⓔ 43,72,118,137,181 | **75PAR38/HAL/FL/CVP** | 130 | 6 | FL | C,CC-8 | 2500 | 1060 2900 | 3150 | 30 | 5.31 |
| | | | @ 120 volts, approximate 66 watts, 805 lumens, 5000 hours | | | | | | | | | | | |


PAR38


PAR38 Med Side Prong

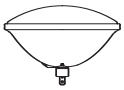


## CAPSYLITE® PAR38

Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75 | PAR38 | E26 Med Skt | 14517 | ★ⓁⓄⒺ 43,72,118,137,181 | **75PAR38/HAL/WFL50** | 130 | 15 | WFL | C,CC-8 | 2500 | 1060 2900 | 1300 | 50 | 5.31 |
| | | | @ 120 volts, approximate 66 watts, 805 lumens, 5000 hours | | | | | | | | | | | |
| 90 | PAR38 | E26 Med Skt | 14586 | ★ⓁⓄⒺ 43,72,118 | **90PAR38/HAL/SP9** | 120 | 15 | SP | C,CC-8 | 2500 | 1310 2925 | 19000 | 9 | 5.31 |
| | | | 15539 | ★ⓁⓄⒺ 43,72,118 | **90PAR38/HAL/SP** | 120 | 6 | SP | C,CC-8 | 2500 | 1310 2925 | 19000 | 9 | 5.31 |
| | | | 14587 | ★ⓁⓄⒺ 43,72,118,137,187 | **90PAR38/HAL/SP9** | 130 | 15 | SP | C,CC-8 | 2500 | 1310 2925 | 19000 | 9 | 5.31 |
| | | | @ 120 volts, approximate 79 watts, 1000 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14580 | ★ⓁⓄⒺ 43,72,118 | **90PAR38/HAL/WSP12** | 120 | 15 | WSP | C,CC-8 | 2500 | 1310 2925 | 14300 | 12 | 5.31 |
| | | | 14578 | ★ⓁⓄⒺ 43,72,118,137,187 | **90PAR38/HAL/WSP12** | 130 | 15 | WSP | C,CC-8 | 2500 | 1310 2925 | 14300 | 12 | 5.31 |
| | | | @ 120 volts, approximate 79 watts, 1000 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14601 | ★ⓁⓄⒺ 43,72,118,137,187 | **90PAR38/HAL/NFL25** | 130 | 15 | NFL | C,CC-8 | 2500 | 1310 2925 | 4700 | 25 | 5.31 |
| | | | @ 120 volts, approximate 79 watts, 1000 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14579 | ★ⓁⓄⒺ 43,72,118 | **90PAR38/HAL/FL30** | 120 | 15 | FL | C,CC-8 | 2500 | 1310 2925 | 3500 | 30 | 5.31 |
| | | | 15545 | ★ⓁⓄⒺ 43,72,118 | **90PAR38/HAL/FL** | 120 | 6 | FL | C,CC-8 | 2500 | 1310 2925 | 3500 | 30 | 5.31 |
| | | | 14577 | ★ⓁⓄⒺ 43,72,118,137,187 | **90PAR38/HAL/FL30** | 130 | 15 | FL | C,CC-8 | 2500 | 1310 2925 | 3500 | 30 | 5.31 |
| | | | @ 120 volts, approximate 79 watts, 1000 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14647 | ★ⓁⓄⒺ 43,72,118,137,187 | **90PAR38/HAL/FL/CVP** | 130 | 6 | FL | C,CC-8 | 2500 | 1310 2925 | 3500 | 30 | 5.31 |
| | | | @ 120 volts, approximate 79 watts, 1000 lumens, 5000 hours | | | | | | | | | | | |
| | | | 14602 | ★ⓁⓄⒺ 43,72,118,137,187 | **90PAR38/HAL/WFL50** | 130 | 15 | WFL | C,CC-8 | 2500 | 1310 2925 | 1600 | 50 | 5.31 |
| | | | @ 120 volts, approximate 79 watts, 1000 lumens, 5000 hours | | | | | | | | | | | |
| | | Med Side Prong | 14630 | ★ⓁⓄⒺ 43,72,118 | **90PAR38/HAL/3WSP12** | 120 | 15 | WSP | C,CC-8 | 2500 | 1310 2925 | 14300 | 12 | 5.31 |
| | | | 14632 | ★ⓁⓄⒺ 43,72,118 | **90PAR38/HAL/3FL30** | 120 | 15 | FL | C,CC-8 | 2500 | 1310 2925 | 3500 | 30 | 5.31 |
| 100 | PAR38 | E26 Med Skt | 15522 | ★ⓁⓄⒺ 43,72,118 | **100PAR38/HAL/SP9** | 120 | 6 | SP | C,CC-8 | 2500 | 1500 2950 | 22000 | 9 | 5.31 |
| | | | 15585 | ★ⓁⓄⒺ 43,72,118 | **100PAR38/HAL/FL30** | 120 | 6 | FL | C,CC-8 | 2500 | 1500 2950 | 4000 | 30 | 5.31 |
| 106 | PAR38 | E26 Med Skt | 15003 | ★ⓁⓄⒺ 43,72,118 | **106PAR38/HAL/SP10** | 120 | 15 | SP | C,CC-8 | 2000 | 1800 2975 | 22500 | 10 | 5.31 |
| | | | 15001 | ★ⓁⓄⒺ 43,72,118 | **106PAR38/HAL/WFL50** | 120 | 15 | WFL | C,CC-8 | 2000 | 1800 2975 | 2000 | 50 | 5.31 |
| 120 | PAR38 | E26 Med Skt | 14856 | ★ⓁⓄⒺ 43,72,118 | **120PAR38/HAL/SP10** | 120 | 15 | SP | C,CC-8 | 3000 | 1800 2950 | 22500 | 10 | 5.31 |
| | | | 14873 | ★ⓁⓄⒺ 43,72,118 | **120PAR38/HAL/SP** | 120 | 6 | SP | C,CC-8 | 3000 | 1800 2950 | 22500 | 10 | 5.31 |
| | | | 14874 | ★ⓁⓄⒺ 43,72,118,137,197 | **120PAR38/HAL/SP10** | 130 | 15 | SP | C,CC-8 | 3000 | 1800 2950 | 22500 | 10 | 5.31 |
| | | | @ 120 volts, approximate 105 watts, 1370 lumens, 6000 hours | | | | | | | | | | | |
| | | | 14855 | ★ⓁⓄⒺ 43,72,118 | **120PAR38/HAL/FL30** | 120 | 15 | FL | C,CC-8 | 3000 | 1800 2950 | 4600 | 30 | 5.31 |


PAR38


PAR56


PAR64



## CAPSYLITE® PAR38

Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 120 | PAR38 | E26 Med Skt | 14576 | ★ I/O Ⓔ 43,72,118 | **120PAR38/HAL/FL** | 120 | 6 | FL | C,CC-8 | 3000 | 1800 2950 | 4600 | 30 | 5.31 |
| | | | 14861 | ★ I/O Ⓔ 43,72,118,137,197 | **120PAR38/HAL/FL30** | 130 | 15 | FL | C,CC-8 | 3000 | 1800 2950 | 4600 | 30 | 5.31 |
| | | | @ 120 volts, approximate 105 watts, 1370 lumens, 6000 hours | | | | | | | | | | | |
| | | | 14594 | ★ I/O Ⓔ 43,72,118 | **120PAR38/HAL/WFL50** | 120 | 15 | WFL | C,CC-8 | 3000 | 1800 2950 | 2000 | 50 | 5.31 |
| 250 | PAR38 | E26 Med Skt | 15526 | ★ I/O 43,70,71,72,73,74 | **250PAR38/HAL/SP10** | 120 | 6 | SP | C,CC-8 | 4500 | 3600 3025 | 46500 | 10 | 5.31 |
| | | | 15558 | ★ I/O 43,70,71,72,73,74 | **250PAR38/HAL/FL30** | 120 | 6 | FL | C,CC-8 | 4500 | 3600 3025 | 9000 | 30 | 5.31 |

## CAPSYLITE® COOL LUX

Halogen PAR lamp with dichroic reflector. Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 90 | PAR38 | E26 Med Skt | 14972 | ★ I/O Ⓔ 72,89,118 | **90PAR38/HAL/2SP12** | 120 | 15 | SP | C,CC-8 | 2500 | 1260 2925 | 12000 | 12 | 5.31 |
| | | | 14971 | ★ I/O Ⓔ 72,89,118 | **90PAR38/HAL/2FL30** | 120 | 15 | FL | C,CC-8 | 2500 | 1260 2925 | 3750 | 30 | 5.31 |
| | | | 14973 | ★ I/O Ⓔ 72,89,118,137,187 | **90PAR38/HAL/2FL30** | 130 | 15 | FL | C,CC-8 | 2500 | 1260 2925 | 3750 | 30 | 5.31 |

## LARGE PAR LAMPS

A suitable protective shield, screening technique or both shall be used to protect people and surroundings from the possibility of a lamp shattering and from possible ultraviolet radiation.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | PAR56 | Ext Mog End Pr | 56210 | ★ I/O 57,139,188 | **500PAR56Q/HAL/NSP** | 120 | 12 | NSP | C,CC-6 | 4000 | 8800 2950 | 78500 | 8x15 | 5.00 |
| | | | 56211 | ★ I/O 57,139,188 | **500PAR56Q/HAL/MFL** | 120 | 12 | MFL | C,CC-6 | 4000 | 8800 2950 | 40000 | 11x30 | 5.00 |
| | | | 56212 | ★ I/O 57,139,188 | **500PAR56Q/HAL/WFL** | 120 | 12 | WFL | C,CC-6 | 4000 | 8800 2950 | 19500 | 20x45 | 5.00 |
| 1000 | PAR64 | Ext Mog End Pr | 56206 | ★ I/O 57,139,188 | **1000PAR64Q/HAL/NSP** | 120 | 6 | NSP | C,CC-6 | 4000 | 19400 2950 | 135000 | 8x20 | 6.00 |
| | | | 56207 | ★ I/O 57,139,188 | **1000PAR64Q/HAL/MFL** | 120 | 6 | MFL | C,CC-6 | 4000 | 19400 2950 | 82000 | 10x30 | 6.00 |
| | | | 56208 | ★ I/O 57,139,188 | **1000PAR64Q/HAL/WFL** | 120 | 6 | WFL | C,CC-6 | 4000 | 19400 2950 | 23000 | 20x60 | 6.00 |


T4


T3, T4


T4



## CAPSYLITE® G9 LAMPS

Suitable for use in unshielded fixtures. Consult most recent luminaire standards for your area to determine luminaire requirements.

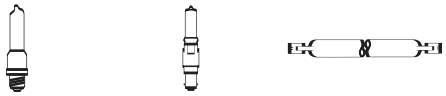
| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Lamp Finish | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | T4 | G9 Bipin | 57020 | 72,84,145 | **25T4/G9/CL** | 120 | 20 | Clear | C,CC-2V | 2000 | 255 2900 | 0.88 | 20x60 |
| | | | 57034 | 72,84,145 | **25T4/G9/CL/BL** | 120 | 10 | Clear | C,CC-2V | 2000 | 255 2900 | 0.88 | 1.69 |
| | | | 57021 | 72,84,145 | **25T4/G9/F** | 120 | 20 | Frosted | C,CC-2V | 2000 | 230 2900 | 0.88 | 1.69 |
| 40 | T4 | G9 Bipin | 57022 | 72,84,145 | **40T4/G9/CL** | 120 | 20 | Clear | C,CC-2V | 2000 | 510 2900 | 0.88 | 1.69 |
| | | | 57033 | 72,84,145 | **40T4G9/CL/BL** | 120 | 10 | Clear | C,CC-2V | 2000 | 510 2900 | 0.88 | 1.69 |
| | | | 57025 | 72,84,145 | **40T4/G9/F** | 120 | 20 | Frosted | C,CC-2V | 2000 | 480 2900 | 0.88 | 1.69 |
| | | | 57017 | 72,84,145 | **40T4/G9/F/BL** | 120 | 10 | Frosted | C,CC-2V | 2000 | 480 2900 | 0.88 | 1.69 |
| 60 | T4 | G9 Bipin | 57023 | 72,84,145 | **60T4/G9/CL** | 120 | 20 | Clear | C,CC-2V | 2000 | 830 2900 | 1.06 | 2.00 |
| | | | 57035 | 72,84,145 | **60T4G9/CL/BL** | 120 | 10 | Clear | C,CC-2V | 2000 | 830 2900 | 1.06 | 2.00 |
| | | | 57024 | 72,84,145 | **60T4/G9/F** | 120 | 20 | Frosted | C,CC-2V | 2000 | 790 2900 | 1.06 | 2.00 |

## SUPERQ SINGLE END HALOGEN LAMPS

A suitable protective shield, screening technique or both shall be used to protect people and surroundings from the possibility of a lamp shattering and from possible ultraviolet radiation.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Lamp Finish | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75 | T3 | Min Can | 58884 | 123,139 | **75Q/CL/MC/RP** | 120 | 6 | Clear | C,CC-8 | 2000 | 1400 2950 | 1.19 | 2.56 |
| 100 | T4 | DC Bayonet | 58755 | 123,139 | **100Q/CL/DC(ESR)** | 120 | 12 | Clear | C,CC-2V | 1000 | 1900 2950 | 1.38 | 2.44 |
| | | | 18845 | 123,139 | **100Q/CL/DC/64475** | 120 | 12 | Clear | C,CC-2V | 2000 | 1600 2950 | 2.19 | 3.38 |
| | | | 58732 | 123,139 | **100Q/CL/DC** | 130 | 12 | Clear | C,CC-2V | 1000 | 1900 2950 | 1.38 | 2.44 |
| | | | 58757 | 123,139 | **100Q/DC(ETD)** | 120 | 12 | Frosted | C,CC-2V | 1000 | 1750 2950 | 1.38 | 2.44 |
| | | Min Can | 58761 | 123,139 | **100Q/CL/MC(ESN)** | 120 | 12 | Clear | C,CC-2V | 1000 | 1800 2950 | 1.38 | 2.75 |
| | | | 58817 | 123,139 | **100Q/CL/MC/RP(ESN)** | 120 | 6 | Clear | C,CC-8 | 1000 | 1800 2950 | 1.38 | 2.56 |
| | | | 58760 | 123,139 | **100Q/CL/MC** | 130 | 12 | Clear | C,CC-2V | 1000 | 1800 2950 | 1.38 | 2.75 |
| 150 | T4 | DC Bayonet | 58741 | 123,139 | **150Q/CL/DC(ETC)** | 120 | 12 | Clear | C,CC-8 | 2000 | 2800 2950 | 1.50 | 2.75 |
| | | | 58742 | 123,139 | **150Q/CL/DC/1(ESP)** | 120 | 12 | Clear | C,CC-2V | 1000 | 2400 2950 | 1.38 | 2.44 |
| | | | 58748 | 123,139 | **150Q/CL/DC** | 130 | 12 | Clear | C,CC-2V | 1000 | 2800 2950 | 1.38 | 2.75 |
| | | | 58737 | 123,139 | **150Q/DC(ETF)** | 120 | 12 | Frosted | C,CC-8 | 2000 | 2700 2950 | 1.50 | 2.75 |


Symbols/Footnotes on page 64-68






## SUPERQ SINGLE END HALOGEN LAMPS

A suitable protective shield, screening technique or both shall be used to protect people and surroundings from the possibility of a lamp shattering and from possible ultraviolet radiation.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Lamp Finish | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 150 | T4 | Min Can | 58738 | 123,139 | **150Q/CL/MC(ESL)** | 120 | 12 | Clear | C,CC-2V | 1000 | 2800 2950 | 1.38 | 2.75 |
| | | | 58735 | 123,139 | **150Q/CL/MC/2(ETG)** | 120 | 12 | Clear | C,CC-8 | 2000 | 2800 2950 | 1.50 | 3.00 |
| | | | 58733 | 123,139 | **150Q/CL/MC** | 130 | 12 | Clear | C,CC-2V | 1000 | 2800 2950 | 1.38 | 2.75 |
| | | | 58736 | 123,139 | **150Q/MC(ETH)** | 120 | 12 | Frosted | C,CC-8 | 2000 | 2700 2950 | 1.50 | 3.00 |
| 250 | T4 | DC Bayonet | 58720 | 123,139 | **250Q/CL/DC(ESS)** | 120 | 12 | Clear | C,CC-8 | 2000 | 5000 2950 | 1.63 | 3.13 |
| | | | 58753 | 123,139 | **250Q/DC(ETB)** | 120 | 12 | Frosted | C,CC-8 | 2000 | 4850 2950 | 1.63 | 3.13 |
| | | | 58754 | 123,139 | **250Q/DC** | 130 | 12 | Frosted | C,CC-8 | 2000 | 4850 2950 | 1.63 | 3.13 |
| | | Min Can | 58762 | 123,139 | **250Q/CL/MC(EHT)** | 120 | 12 | Clear | C,CC-8 | 2000 | 5000 2950 | 1.63 | 3.13 |
| | | | 58764 | 123,139 | **250Q/CL/MC** | 130 | 12 | Clear | C,CC-8 | 2000 | 5000 2950 | 1.63 | 3.13 |
| | | | 58763 | 123,139 | **250Q/MC(ESM)** | 120 | 12 | Frosted | C,CC-8 | 2000 | 4850 2950 | 1.63 | 3.13 |
| | | | 58765 | 123,139 | **250Q/MC** | 130 | 12 | Frosted | C,CC-8 | 2000 | 4850 2950 | 1.63 | 3.13 |
| 500 | T4 | Min Can | 58766 | 123,139 | **500Q/CL/MC(EVR)** | 120 | 12 | Clear | C,CC-8 | 2000 | 10450 2950 | 2.00 | 3.75 |
| | | | 58756 | 123,139 | **500Q/CL/MC(EYW)** | 130 | 12 | Clear | C,CC-8 | 2000 | 10000 2950 | 2.00 | 3.75 |
| | | | 58767 | 123,139 | **500Q/MC(EYX)** | 120 | 12 | Frosted | C,CC-8 | 2000 | 10100 2950 | 2.00 | 3.75 |
| | | | 58768 | 123,139 | **500Q/MC(EYV)** | 130 | 12 | Frosted | C,CC-8 | 2000 | 10000 2950 | 2.00 | 3.75 |

## DOUBLE END QUARTZ LAMPS

A suitable protective shield, screening technique or both shall be used to protect people and surroundings from the possibility of a lamp shattering and from possible ultraviolet radiation.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Lamp Finish | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100 | T3 | RSC | 58999 | 123,139 | **100T3Q/S/CL** | 120 | 20 | Clear | C,C-8 | 2000 | 1600 2950 | | 3.13 |
| | | | 58887 | 123,139 | **100T3Q/S/CL/RP** | 120 | 6 | Clear | C,C-8 | 2000 | 1600 2950 | | 3.13 |
| 150 | T3 | RSC | 59001 | 123,139 | **150T3Q/S/CL** | 120 | 20 | Clear | C,C-8 | 2000 | 2400 2950 | | 3.13 |
| | | | 58886 | 123,139 | **150T3Q/S/CL/RP** | 120 | 6 | Clear | C,C-8 | 2000 | 2400 2950 | | 3.13 |
| | | | 58885 | 123,139 | **150T3Q/CL/RP** | 120 | 6 | Clear | C,C-8 | 1500 | 2250 2950 | | 4.69 |
| 200 | T3 | RSC | 59003 | 123,139 | **200T3Q/CL** | 120 | 20 | Clear | C,C-8 | 2000 | 3350 2950 | | 4.69 |
| 300 | T3 | RSC | 58998 | 123,139 | **300T3Q/CL(EHM)** | 120 | 20 | Clear | C,C-8 | 2000 | 6000 2950 | | 4.69 |

T3


T3


BT4


BT4

## DOUBLE END QUARTZ LAMPS

A suitable protective shield, screening technique or both shall be used to protect people and surroundings from the possibility of a lamp shattering and from possible ultraviolet radiation.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Lamp Finish | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | T3 | RSC | 58920 | 123,139 | **300T3Q/CL/RP(EHM)** | 120 | 6 | Clear | C,C-8 | 2000 | 6000<br>2950 | | 4.69 |
| | | | 59000 | 123,139 | **300T3Q/CL** | 130 | 20 | Clear | C,C-8 | 2000 | 6000<br>2950 | | 4.69 |
| 500 | T3 | RSC | 58996 | 123,139 | **500T3Q/CL(FCL)** | 120 | 20 | Clear | C,C-8 | 2000 | 8750<br>2950 | | 4.69 |
| | | | 58865 | 123,139 | **500T3Q/CL/RP(FCL)** | 120 | 6 | Clear | C,C-8 | 2000 | 8750<br>2950 | | 4.69 |
| | | | 58997 | 123,139 | **500T3Q/CL** | 130 | 20 | Clear | C,C-8 | 2000 | 8750<br>2950 | | 4.69 |
| 1000 | T3 | RSC | 58948 | 123,139 | **1000T3Q/CL** | 240 | 12 | Clear | C,C-8 | 2000 | 21500<br>2950 | | 10.06 |
| 1500 | T3 | RSC | 58859 | 123,139 | **1500T3Q/CL** | 208 | 12 | Clear | C,C-8 | 2000 | 33000<br>2950 | | 10.06 |
| | | | 58857 | 123,139 | **1500T3Q/CL** | 240 | 12 | Clear | C,C-8 | 2000 | 33000<br>2950 | | 10.06 |
| | | | 58858 | 123,139 | **1500T3Q/CL** | 277 | 12 | Clear | C,C-8 | 2000 | 33000<br>2950 | | 10.06 |

## OSRAM MINISTAR LAMPS

Suitable for use in unshielded fixtures. Consult most recent luminaire standards for your area to determine luminaire requirements.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | T3 | G4 Bipin | 58520 | 72,84,123,145 | **10T3Q/MINISTAR/S** | 12 | 40 | FL | C,C-8 | 2000 | 3000 | 80 | 35 x 60 | 1.31 |
| 20 | T3 | G4 Bipin | 58521 | 72,84,123,145 | **20T3Q/MINISTAR/S** | 12 | 40 | FL | C,C-8 | 2000 | 3000 | 120 | 35 x 60 | 1.31 |
| | BT4 | GY6.35 Bipin | 58518 | 72,84,123,145 | **20BT4Q/MINISTAR/AX** | 12 | 40 | FL | C,C-8 | 2000 | 3000 | 800 | 20 | 1.75 |
| 35 | BT4 | GY6.35 Bipin | 58519 | 72,84,123,145 | **35BT4Q/MINISTAR/AX** | 12 | 40 | FL | C,C-8 | 2000 | 3000 | 1000 | 30 | 1.75 |

## BI-PIN IR LAMPS

UV Filter capsule with axial filament and infrared reflective coating. Suitable for use in unshielded fixtures. Consult most recent luminaire standards for your area to determine luminaire requirements.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Lamp Finish | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | BT4 | GY6.35 Bipin | 58897 | 145 | **25BT4Q/IR** | 12 | 40 | Clear | C,AXIAL | 4000 | 450<br>3000 | 1.13 | 1.75 |
| 35 | BT4 | GY6.35 Bipin | 58896 | 145 | **35BT4Q/IR** | 12 | 40 | Clear | C,AXIAL | 4000 | 800<br>3000 | 1.13 | 1.75 |

## STARLITE BI-PIN LAMPS

Suitable for use in unshielded fixtures. Consult most recent luminaire standards for your area to determine luminaire requirements.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Lamp Finish | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | T3 | G4 Bipin | 58692 | 142,145 | **10T3Q/CL/AX** | 6 | 40 | Clear | C,AXIAL | 4000 | 130 3000 | 0.88 | 1.25 |
| | | | 58691 | 142,145 | **10T3Q/CL/AX** | 12 | 40 | Clear | C,AXIAL | 4000 | 130 3000 | 0.88 | 1.25 |
| 20 | T3 | G4 Bipin | 58694 | 142,145 | **20T3Q/CL/AX** | 12 | 40 | Clear | C,AXIAL | 4000 | 320 3000 | 0.88 | 1.25 |
| | T4 | GY6.35 Bipin | 58663 | 142,145 | **20T4Q/CL/AX** | 12 | 40 | Clear | C,AXIAL | 4000 | 320 3000 | 1.13 | 1.75 |
| 35 | T4 | GY6.35 Bipin | 58672 | 142,145 | **35T4Q/CL/AX** | 12 | 40 | Clear | C,AXIAL | 4000 | 600 3000 | 1.13 | 1.75 |
| 50 | T4 | GY6.35 Bipin | 58676 | 142,145 | **50T4Q/CL/AX** | 12 | 40 | Clear | C,AXIAL | 4000 | 910 3000 | 1.13 | 1.75 |
| 75 | T4 | GY6.35 Bipin | 58680 | 142,145 | **75T4Q/CL/AX** | 12 | 40 | Clear | C,AXIAL | 4000 | 1450 3000 | 1.13 | 1.75 |
| 90 | T4 | GY6.35 Bipin | 58684 | 142,145 | **90T4Q/CL/AX** | 12 | 40 | Clear | C,AXIAL | 4000 | 1800 3000 | 1.13 | 1.75 |

## STANDARD BI-PIN LAMPS

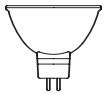
Suitable for use in unshielded fixtures. Consult most recent luminaire standards for your area to determine luminaire requirements.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Lamp Finish | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | T3 | G4 Bipin | 58652 | 123,140,145 | **5T3Q/CL** | 12 | 40 | Clear | C,TR | 2000 | 60 3000 | 0.88 | 1.25 |
| | | | 58651 | 123,141,145 | **5T3Q/F** | 12 | 40 | Frosted | C,TR | 2000 | 55 3000 | 0.88 | 1.25 |
| 10 | T3 | G4 Bipin | 58658 | 123,140,145 | **10T3Q/CL** | 12 | 40 | Clear | C,TR | 2000 | 140 3000 | 0.88 | 1.25 |
| | | | 58650 | 123,140 | **10T3Q/CL/RP** | 12 | 6 | Clear | C,TR | 2000 | 140 3000 | 0.88 | 1.25 |
| | | | 58656 | 123,141,145 | **10T3Q/F** | 12 | 40 | Frosted | C,TR | 2000 | 130 3000 | 0.88 | 1.25 |
| 20 | T3 | G4 Bipin | 58661 | 123,140,145 | **20T3Q/CL** | 12 | 40 | Clear | C,TR | 2000 | 320 3000 | 0.88 | 1.25 |
| | | | 58655 | 123,140 | **20T3Q/CL/RP** | 12 | 6 | Clear | C,TR | 2000 | 320 3000 | 0.88 | 1.25 |
| 50 | T4 | GY6.35 Bipin | 58675 | 123,140 | **50T4Q/CL** | 12 | 40 | Clear | C,TR | 2000 | 910 3000 | 1.13 | 1.75 |
| | | | 58660 | 123,140 | **50T4Q/CL/RP** | 12 | 6 | Clear | C,TR | 2000 | 910 3000 | 1.13 | 1.75 |

## 24V BI-PIN LAMPS

Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Lamp Finish | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | LCL (in) | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | T3 | G4 Bipin | 58662 | 117,143 | **20T3Q/CL** | 24 | 40 | Clear | C,AXIAL | 1000 | 320 3000 | 0.88 | 1.25 |
| 50 | T4 | GY6.35 Bipin | 58678 | 117,143 | **50T4Q/CL/AX** | 24 | 40 | Clear | C,AXIAL | 2000 | 850 3000 | 1.13 | 1.75 |


MR16



## TRU-AIM IR® MR16 LAMPS

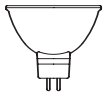
UV Filter capsule with axial filament in covered constant color, hard coated dichroic reflector and infrared reflective coating on the lamp capsule.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | MR16 | GU5.3 Bipin | 58531 | 47,62,66, 91,93 | **20MR16/IR/SP10/C** | 12 | 20 | SP | C,AXIAL | 5000 | 3000 | 6000 | 10 | 1.75 |
| | | | 58532 | 47,62,66, 91,93 | **20MR16/IR/NFL25/C** | 12 | 20 | NFL | C,AXIAL | 5000 | 3000 | 2300 | 25 | 1.75 |
| | | | 58533 | 47,62,66, 91,93 | **20MR16/IR/FL35/C** | 12 | 20 | FL | C,AXIAL | 5000 | 3000 | 1000 | 35 | 1.75 |
| | | | 58838 | 47,62,66, 91,93 | **20MR16/IR/WFL60/C** | 12 | 20 | WFL | C, AXIAL | 5000 | 3000 | 450 | 60 | 1.75 |
| 37 | MR16 | GU5.3 Bipin | 58641 | 37,47,62, 92,93 | **37MR16/IR/SP10/C** | 12 | 20 | SP | C, AXIAL | 5000 | 3000 | 12500 | 10 | 1.75 |
| | | | 58634 | 37,47,62, 92,93 | **37MR16/IR/NFL25/C** | 12 | 20 | NFL | C, AXIAL | 5000 | 3000 | 4400 | 25 | 1.75 |
| | | | 58633 | 37,47,62, 92,93 | **37MR16/IR/FL35/C** | 12 | 20 | FL | C, AXIAL | 5000 | 3000 | 2200 | 35 | 1.75 |
| | | | 58837 | 47,62,66, 92,93 | **37MR16/IR/WFL60/C** | 12 | 20 | WFL | C, AXIAL | 5000 | 3000 | 1100 | 60 | 1.75 |
| 50 | MR16 | GU5.3 Bipin | 54175 | 37,47,62, 92,93 | **50MR16/IR/SP10/C** | 12 | 20 | SP | C, AXIAL | 5000 | 3000 | 15000 | 10 | 1.75 |
| | | | 54174 | 37,47,62, 92,93 | **50MR16/IR/NFL25/C** | 12 | 20 | NFL | C, AXIAL | 5000 | 3000 | 5700 | 25 | 1.75 |
| | | | 54173 | 37,47,62, 92,93 | **50MR16/IR/FL35/C** | 12 | 20 | FL | C, AXIAL | 5000 | 3000 | 2850 | 35 | 1.75 |
| | | | 54237 | 47,62,66, 92,93 | **50MR16/IR/WFL60/C** | 12 | 20 | WFL | C, AXIAL | 5000 | 3000 | 1430 | 60 | 1.75 |

## TRU-AIM TITAN® MR16 LAMPS

UV Filter capsule with axial filament in covered constant color, hard coated dichroic reflector.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | MR16 | GU5.3 Bipin | 58300 | 62,65,91, 145 | **20MR16/T/SP10/C(ESX)** | 12 | 20 | SP | C, AXIAL | 4000 | 3000 | 5000 | 10 | 1.75 |
| | | | 58301 | 62,65,91, 93,145 | **20MR16/T/FL35/C(BAB)** | 12 | 20 | FL | C, AXIAL | 4000 | 3000 | 780 | 35 | 1.75 |
| | | | 58302 | 62,65,91, 93,145 | **20MR16/T/WFL60/C** | 12 | 20 | WFL | C, AXIAL | 4000 | 3000 | 350 | 60 | 1.75 |
| 35 | MR16 | GU5.3 Bipin | 58303 | 62,65,91, 93,145 | **35MR16/T/SP10/C(FRB)** | 12 | 20 | SP | C, AXIAL | 4000 | 3000 | 9100 | 10 | 1.75 |
| | | | 58304 | 62,65,91, 93,145 | **35MR16/T/NFL25/C** | 12 | 20 | NFL | C, AXIAL | 4000 | 3000 | 3100 | 25 | 1.75 |
| | | | 58305 | 62,65,91, 93,145 | **35MR16/T/FL35/C(FMW)** | 12 | 20 | FL | C, AXIAL | 4000 | 3000 | 1500 | 35 | 1.75 |
| | | | 58306 | 62,65,91, 93,145 | **35MR16/T/WFL60/C** | 12 | 20 | WFL | C, AXIAL | 4000 | 3000 | 700 | 60 | 1.75 |
| 50 | MR16 | GU5.3 Bipin | 58307 | 62,65,91, 93,145 | **50MR16/T/SP10/C(EXT)** | 12 | 20 | SP | C, AXIAL | 4000 | 3000 | 11500 | 10 | 1.75 |
| | | | 58308 | 62,65,91, 93,145 | **50MR16/T/NFL25/C(EXZ)** | 12 | 20 | NFL | C, AXIAL | 4000 | 3000 | 4400 | 25 | 1.75 |
| | | | 58309 | 62,65,91, 93,145 | **50MR16/T/FL35/C(EXN)** | 12 | 20 | FL | C, AXIAL | 4000 | 3000 | 2200 | 35 | 1.75 |


MR16



## TRU-AIM TITAN® MR16 LAMPS

UV Filter capsule with axial filament in covered constant color, hard coated dichroic reflector.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | MR16 | GU5.3 Bipin | 58310 | 62,65,91, 93,145 | **50MR16/T/WFL60/C(FNV)** | 12 | 20 | WFL | C, AXIAL | 4000 | 3000 | 1100 | 60 | 1.75 |
| | | | 58500 | 62,65,91, 93,145 | **50MR16/T/DAY/NFL25/C** | 12 | 10 | NFL | C, AXIAL | 4000 | 3050 | 2650 | 25 | 1.75 |
| 65 | MR16 | GU5.3 Bipin | 58311 | 62,65,92, 93 | **65MR16/T/SP10/C(FPA)** | 12 | 20 | SP | C, AXIAL | 4000 | 3000 | 13300 | 10 | 1.75 |
| | | | 58312 | 62,65,92, 93 | **65MR16/T/NFL25/C(FPC)** | 12 | 20 | NFL | C, AXIAL | 4000 | 3000 | 3800 | 25 | 1.75 |
| | | | 58313 | 62,65,92, 93 | **65MR16/T/FL35/C(FPB)** | 12 | 20 | FL | C, AXIAL | 4000 | 3000 | 2000 | 35 | 1.75 |

## TRU-AIM BRILLIANT® MR16 LAMPS

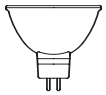
UV Filter capsule with axial filament in constant color, aluminized reflector.
A suitable protective shield, screening technique or both shall be used to protect people and surroundings from the possibility of a lamp shattering.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | MR16 | GU5.3 Bipin | 58314 | 33,62,91, 117 | **20MR16/B/SP10** | 12 | 20 | SP | C, AXIAL | 4000 | 3000 | 5000 | 10 | 1.75 |
| | | | 58315 | 33,62,91, 117 | **20MR16/B/FL35** | 12 | 20 | FL | C, AXIAL | 4000 | 3000 | 780 | 35 | 1.75 |
| 35 | MR16 | GU5.3 Bipin | 58316 | 33,62,92, 117 | **35MR16/B/SP10** | 12 | 20 | SP | C, AXIAL | 4000 | 3000 | 9100 | 10 | 1.75 |
| | | | 58317 | 33,62,92, 117 | **35MR16/B/FL35** | 12 | 20 | FL | C, AXIAL | 4000 | 3000 | 1500 | 35 | 1.75 |
| 50 | MR16 | GU5.3 Bipin | 58319 | 33,62,92, 117 | **50MR16/B/SP10** | 12 | 20 | SP | C, AXIAL | 4000 | 3000 | 12500 | 10 | 1.75 |
| | | | 58320 | 33,62,92, 117 | **50MR16/B/NFL25** | 12 | 20 | NFL | C, AXIAL | 4000 | 3000 | 4400 | 25 | 1.75 |
| | | | 58321 | 33,62,92, 117 | **50MR16/B/FL35** | 12 | 20 | FL | C, AXIAL | 4000 | 3000 | 2200 | 35 | 1.75 |

## TRU-AIM® MR16 LAMPS

UV Filter capsule with axial filament in covered dichroic reflector.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | MR16 | GU5.3 Bipin | 54305 | 45,62,91, 93,145 | **20MR16/SP10/C(ESX)** | 12 | 20 | SP | C, AXIAL | 2000 | 3000 | 3000 | 10 | 1.75 |
| | | | 54306 | 45,62,91, 93,145 | **20MR16/FL35/C(BAB)** | 12 | 20 | FL | C, AXIAL | 2000 | 3000 | 510 | 35 | 1.75 |
| 35 | MR16 | GU5.3 Bipin | 54307 | 45,62,92, 93,145 | **35MR16/SP10/C(FRB)** | 12 | 20 | SP | C, AXIAL | 2000 | 3000 | 6000 | 10 | 1.75 |
| | | | 58322 | 45,62,92, 93,145 | **35MR16/NFL25/C** | 12 | 20 | NFL | C, AXIAL | 2000 | 3000 | 2000 | 25 | 1.75 |
| | | | 58324 | 45,62,92, 93,145 | **35MR16/FL35/C(FMW)** | 12 | 20 | FL | C, AXIAL | 2000 | 3000 | 1000 | 35 | 1.75 |
| 50 | MR16 | GU5.3 Bipin | 58325 | 45,62,92, 93,145 | **50MR16/SP10/C(EXT)** | 12 | 20 | SP | C, AXIAL | 2000 | 3000 | 7800 | 10 | 1.75 |


MR16, MR11, MR16 SIG 64005


PAR36

## TRU-AIM® MR16 LAMPS

UV Filter capsule with axial filament in covered dichroic reflector.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | MR16 | GU5.3 Bipin | 58326 | 45,62,92, 93,145 | **50MR16/NFL25/C(EXZ)** | 12 | 20 | NFL | C, AXIAL | 2000 | 3000 | 2800 | 25 | 1.75 |
| | | | 58327 | 45,62,92, 93,145 | **50MR16/FL35/C(EXN)** | 12 | 20 | FL | C, AXIAL | 2000 | 3000 | 1450 | 35 | 1.75 |
| | | | 58328 | 45,62,92, 93,145 | **50MR16/WFL60/C(FNV)** | 12 | 20 | WFL | C, AXIAL | 2000 | 3000 | 690 | 60 | 1.75 |

## TRU-AIM® MR11 LAMPS

UV Filter capsule with axial filament in covered constant color, hard coated dichroic reflector.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | MR11 | GU4 Bipin | 55133 | 62,65,92, 93 | **20MR11/T/SP10/C(FTB)** | 12 | 10 | SP | C, AXIAL | 4000 | 3000 | 4000 | 10 | 1.50 |
| | | | 55134 | 62,65,92, 93 | **20MR11/T/FL35/C(FTD)** | 12 | 10 | FL | C, AXIAL | 4000 | 3000 | 700 | 35 | 1.50 |
| 35 | MR11 | GU4 Bipin | 55135 | 62,65,92, 93 | **35MR11/T/SP10/C(FTE)** | 12 | 10 | SP | C, AXIAL | 4000 | 3000 | 6200 | 10 | 1.50 |
| | | | 55136 | 62,65,92, 93 | **35MR11/T/FL35/C(FTH)** | 12 | 10 | FL | C, AXIAL | 4000 | 3000 | 1350 | 35 | 1.50 |

## SIRIUS MR16 LAMPS

For traffic signal and other fiber optic applications.

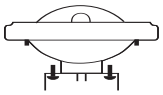
| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | MR16 SIG 64005 | K23D | 58701 | 32,117 | **50SIRIUS/SIG64005** | 10 | 10 | | C, AXIAL | 6000 | 220 3000 | | | 1.88 |

## CAPSYLITE® PAR36 LAMPS

Suitable for use in unshielded fixtures.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | PAR36 | Screw Term | 55100 | ★ 73 | **36PAR36/HAL/VNSP5** | 12 | 12 | VNSP | C, C-8 | 4000 | 500 3000 | 17000 | 5 | 2.75 |
| | | | 55090 | ★ 73 | **36PAR36/HAL/NSP13** | 12 | 12 | NSP | C, C-8 | 4000 | 500 3000 | 3500 | 13 | 2.75 |
| | | | 55091 | ★ 73 | **36PAR36/HAL/WFL32** | 12 | 12 | WFL | C, C-8 | 4000 | 500 3000 | 1000 | 30 | 2.75 |
| 50 | PAR36 | Screw Term | 55118 | ★ 73 | **50PAR36/HAL/NSP6** | 12 | 12 | NSP | C, C-8 | 4000 | 700 3000 | 25000 | 6 | 2.75 |
| | | | 55017 | ★ 73 | **50PAR36/HAL/WFL30** | 12 | 12 | WFL | C, C-8 | 4000 | 700 3000 | 1400 | 30 | 2.75 |


Symbols/Footnotes on page 64-68



AR70, AR111



## AR70 ALUMINUM REFLECTOR LAMPS

UV Filter capsule with axial filament in precisely engineered aluminum reflector.
Suitable for use in unshielded fixtures. Consult most recent luminaire standards for your area to determine luminaire requirements.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | AR70 | DC Bayonet | 59013 | 38,145 | **20AR70/SP8** | 12 | 10 | SP | C, C-8 | 3000 | 3000 | 7700 | 8 | 1.94 |
| | | | 59012 | 38,145 | **20AR70/FL25** | 12 | 10 | FL | C, C-8 | 3000 | 3000 | 900 | 25 | 1.94 |
| 50 | AR70 | DC Bayonet | 59017 | 38,145 | **50AR70/SP8** | 12 | 10 | SP | C, C-8 | 3000 | 3000 | 12500 | 8 | 1.94 |
| | | | 59016 | 38,145 | **50AR70/FL25** | 12 | 10 | FL | C, C-8 | 3000 | 3000 | 2600 | 25 | 1.94 |

## AR111 ALUMINUM REFLECTOR LAMPS

UV Filter capsule with axial filament in precisely engineered aluminum reflector.
Suitable for use in unshielded fixtures. Consult most recent luminaire standards for your area to determine luminaire requirements.

| Watts | Bulb | Base | Product Number | Symbols & Footnotes | Ordering Abbreviation | Volts | Pkg Qty | Beam Type | Class & Filament | Avg Rated Life(hrs) | Lumens CCT | CBCP | Beam Angle | MOL (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 35 | AR111 | Push Screw Term | 55101 | 38,145 | **35AR111/SSP4** | 6 | 6 | SSP | C, C-8 | 3000 | 3000 | 30000 | 4 | 2.38 |
| | | | 55102 | 38,145 | **35AR111/SSP4** | 12 | 6 | SSP | C, C-8 | 3000 | 3000 | 40000 | 4 | 2.38 |
| | | | 55110 | 38,145 | **35AR111/SP8** | 12 | 6 | SP | C, C-8 | 3000 | 3000 | 14000 | 8 | 2.25 |
| | | | 55114 | 38,145 | **35AR111/FL25** | 12 | 6 | FL | C, C-8 | 3000 | 3000 | 2500 | 25 | 2.31 |
| 50 | AR111 | Push Screw Term | 55105 | 38,145 | **50AR111/SSP4** | 12 | 6 | SSP | C, C-8 | 3000 | 3000 | 45000 | 4 | 2.38 |
| | | | 55104 | 38,145 | **50AR111/SP8** | 12 | 6 | SP | C, C-8 | 3000 | 3000 | 20000 | 8 | 2.25 |
| | | | 55103 | 38,145 | **50AR111/FL25** | 12 | 6 | FL | C, C-8 | 3000 | 3000 | 4000 | 25 | 2.31 |
| 75 | AR111 | Push Screw Term | 55125 | 38,145 | **75AR111/SP8** | 12 | 6 | SP | C, C-8 | 3000 | 3000 | 30000 | 8 | 2.25 |
| | | | 55123 | 38,145 | **75AR111/FL25** | 12 | 6 | FL | C, C-8 | 3000 | 3000 | 5300 | 25 | 2.31 |
| | | | 55124 | 38,145 | **75AR111/WFL45** | 12 | 6 | WFL | C, C-8 | 3000 | 3000 | 2000 | 45 | 2.19 |
| 100 | AR111 | Push Screw Term | 55129 | 38,145 | **100AR111/SP8** | 12 | 6 | SP | C, C-8 | 3000 | 3000 | 48000 | 8 | 2.25 |
| | | | 55127 | 38,145 | **100AR111/FL25** | 12 | 6 | FL | C, C-8 | 3000 | 3000 | 8500 | 25 | 2.31 |
| | | | 55128 | 38,145 | **100AR111/WFL45** | 12 | 6 | WFL | C, C-8 | 3000 | 3000 | 2800 | 45 | 2.19 |

## SYMBOLS & FOOTNOTES FOR TUNGSTEN HALOGEN LAMPS

| Symbol | Description |
|---|---|
| ☼ | New item introduced within the past year. |
| | Item will be discontinued when inventory is depleted. |
| ● | Indicates aluminum base. |
| ⌀ | Do not operate in household sockets. |
| ▼ | Operate base down. |
| | Operate base down to horizontal. |
| ★ | Heat resistant, hard glass. |
| I/O | PAR lamps are suitable for indoor and outdoor use. |
| ⌀ PAP | Do not operate in paper lined sockets. |
| Ⓔ | This lamp or ballast meets minimum Federal efficiency standards. |
| | This ECOLOGIC® lamp was designed to pass the Federal TCLP criteria for classification as non-hazardous waste in most states. Disposal regulations may vary; check local and state regulations. |

| Footnote | Description |
|---|---|
| 1 | Indefinite long life. Designed for life in excess of 10,000 hours. In -service life depends upon burning conditions. |
| 2 | Should not be used in equipment where base temperature will exceed 500 F. |
| 3 | @ 120 volts, approximate 119 watts, 1560 lumens, 6250 hours |
| 4 | @ 120 volts, approximate 119 watts, 1870 lumens, 1875 hours |
| 5 | @ 120 volts, approximate 132 watts, 1420 lumens, 6250 hours |
| 6 | @ 120 volts, approximate 132 watts, 1580 lumens, 2500 hours |
| 7 | @ 120 volts, approximate 132 watts, 1590 lumens, 2500 hours |
| 8 | @ 120 volts, approximate 132 watts, 1660 lumens, 1875 hours |
| 9 | @ 120 volts, approximate 132 watts, 1770 lumens, 1875 hours |
| 10 | @ 120 volts, approximate 132 watts, 1690 lumens, 6250 hours |
| 11 | @ 120 volts, approximate 132 watts, 1880 lumens, 1875 hours |
| 12 | @ 120 volts, approximate 132 watts, 2030 lumens, 1875 hours |
| 13 | High temperature base. Designed to operate in equipment where base te mperature run between 500F - 570F. |
| 14 | @ 120 volts, approximate 176 watts, 2190 lumens, 6250 hours |
| 15 | @ 120 volts, approximate 176 watts, 2220 lumens, 2500 hours |
| 16 | @ 120 volts, approximate 176 watts, 2350 lumens, 2500 hours |
| 17 | @ 120 volts, approximate 176 watts, 2360 lumens, 6250 hours |
| 18 | @ 120 volts, approximate 176 watts, 2710 lumens, 1875 hours |
| 19 | @ 120 volts, approximate 176 watts, 2740 lumens, 1875 hours |
| 20 | @ 120 volts, approximate 176 watts, 2820 lumens, 1875 hours |
| 21 | @ 120 volts, approximate 176 watts, 2860 lumens, 1875 hours |
| 22 | @ 120 volts, approximate 176 watts, 2220 lumens, 6750 hours |
| 23 | @ 120 volts, approximate 188 watts, 3190 lumens, 1125 hours |
| 24 | Designed for service other than illumination. |
| 25 | @ 120 volts, approximate 220 watts, 2360 lumens, 10000 hours |
| 26 | @ 120 volts, approximate 264 watts, 2310 lumens, 5000 hours |
| 27 | @ 120 volts, approximate 264 watts, 3800 lumens, 6250 hours |

## SYMBOLS & FOOTNOTES FOR TUNGSTEN HALOGEN LAMPS

| Footnote | Description |
|---|---|
| 28 | @ 120 volts, approximate 264 watts, 3850 lumens, 6250 hours |
| 29 | @ 120 volts, approximate 264 watts, 4390 lumens, 1875 hours |
| 30 | @ 120 volts, approximate 264 watts, 4305 lumens, 1875 hours |
| 31 | Additional product information can be found in the SYLVANIA Automotive, Miniature and Sealed Beam Lamp Catalog Form 208. |
| 32 | UV Filter capsule with axial filament in dichroic reflector. |
| 33 | UV Filter capsule with axial filament in aluminized reflector. |
| 34 | UV Filter capsule with axial filament in covered aluminized reflector . |
| 35 | 2 3/4" circular window. |
| 36 | UV Filter capsule with axial filament in constant color, hard coated dichroic reflector. |
| 37 | UV Filter capsule with axial filament in constant color, hard coated Dichroic reflector and infrared reflective coating on the lamp capsule. |
| 38 | UV Filter capsule with axial filament in precisely engineered aluminum m reflector. |
| 39 | Suitable for indoor and outdoor use; |
| 40 | For indoor use only; suitable for outdoor use only if not directly exposed to weather |
| 41 | For indoor use only; |
| 42 | UV control capsule with transverse constant color filament in hard dichroic |
| 43 | State of the Art SPL Optics |
| 44 | Inner capsule with Infrared conserving coating and hard glass lens |
| 45 | UV Filter capsule with axial filament in covered dichroic reflector. |
| 46 | Operate only in porcelain sockets. |
| 47 | Infrared lamp technology |
| 48 | Caution: Operates under pressure and may shutter. Use appropriate techniques to protect people and surroundings. Do not operate in close proximity to persons, combustible materials, or substances affected by heat or drying. Do not operate over 110% rated voltage because such operation increases pressure and lamps' tendency to shatter. Ultraviolet output may cause skin and eye irritation with prolonged exposure. Protect bulb from abrasions and scratches. Do not insert lamps when power is on. Follow operation |
| 49 | ECE Approved |
| 50 | Lamp Life B3 @ 13.2 volts. |
| 51 | Universal lamp housings for T2 slide based pilot lamps. |
| 52 | Socket dimensions front to panel to end of terminals. |
| 53 | UL File No. E31557(M) CSA File No.LR20904 |
| 54 | Universal lamp housings for T2.5 and T3.25 miniature bayonet based lamps. |
| 55 | UL File No. E31557(M) CSA File No.LR20904 |
| 56 | MIL-Std. 18236 B-MIL Std. 202B |
| 57 | Should be shielded against moisture falling on bulb. |
| 58 | Material : Black Phenolic |
| 59 | There are two distinctively different lamps with this part number. When ordering T-1 3/4 , #7327, please also specify category and base type. S-11. #7327 discontinued. |
| 60 | MOL = Excluding pins. |
| 61 | Material : Plastic |
| 62 | Max. seal temperature 350 C (662F) |
| 63 | Max. bulb temperature 1000 C (1832F) |
| 64 | Min. bulb temperature 250 C (482F) |
| 65 | UV Filter capsule with axial filament in covered constant color, hard coated dichroic reflector. |
| 66 | UV Filter capsule with axial filament in covered constant color, hard coated dichroic reflector and infrared reflective coating on the lamp capsule. |
| 67 | UV Filter capsule with transverse filament in constant color, hard co ated dichroic reflector . |
| 68 | Not recommended for use in enclosed close-fitting housings. |
| 69 | For Indoor Use only. |
| 70 | Because this bulb radiates considerable heat, do not use in enclosed, close fitting fixtures, or in close proximity to people, combustible materials, or substances adversely affected by heat or drying. |

## SYMBOLS & FOOTNOTES FOR TUNGSTEN HALOGEN LAMPS

| Footnote | Description |
|---|---|
| 71 | Even though this bulb may continue to light after the lens or reflector is cracked or broken, it should be replaced as soon as possible since the pressure filled inner capsule could unexpectedly shatter, creating a risk of personal injury or property damage. In addition, the inner capsule produces ultraviolet radiation that can cause injury to the eyes and skin with prolonged exposure without the blocking effect of the outer glass bulb. |
| 72 | To avoid electric shock and/or skin burns, turn off power and allow bulb to cool before handling or attempting replacement. |
| 73 | For indoor or outdoor use where not directly exposed to weather. Exposure to weather may damage the bulb. |
| 74 | Use only with ceramic/porcelain sockets and in fixtures rated for this bulb type, including voltage and wattage. |
| 75 | Screw bulb firmly but not forcibly into socket to obtain good electrical contact and to avoid damaging bulb and/or socket. Socket condition may affect bulb life. Replace socket if deterioration of socket or bulb contacts is observed. |
| 76 | Due to change from high pressure capsule to low pressure capsule, dimensions have been changed: LCL from 19.5 to 22mm and bulb diameter from 9 to 9.5mm. |
| 77 | @ 120 volts, approximate 26 watts, 150 lumens, 5000 hours. |
| 78 | Recommended operating position any within 60 degrees of vertically base up or base down. |
| 79 | @ 120 volts, approximate 28 watts, 200 lumens, 7500 hours. |
| 80 | @ 120 volts, approximate 53 watts, 340 lumens, 12500 hours. |
| 81 | @ 120 volts, approximate 66 watts, 500 lumens, 12500 hours. |
| 82 | @ 120 volts, approximate 88 watts, 765 lumens, 12500 hours. |
| 83 | @ 120 volts, approximate 88 watts, 1020 lumens, 2500 hours. |
| 84 | UV Filter Quartz |
| 85 | @ 120 volts, approximate 53 watts, 845 lumens, 6000 hours. |
| 86 | Operate only in heat resistant sockets |
| 87 | @ 120 volts, approximate 44 watts, 690 lumens, 6000 hours. |
| 88 | @ 120 volts, approximate 44 watts, 850 lumens, 6000 hours. |
| 89 | For use only in fixtures designed specifically for dichroic Reflector Lamps. |
| 90 | @ 120 volts, approximate 53 watts, 660 lumens, 6000 hours. |
| 91 | Max pin temperature 220 C. |
| 92 | Max pin temperature 250 C. |
| 93 | Max temperature at lens reflector joint 240 C. |
| 94 | Not for use in ceiling fan fixtures |
| 95 | For use where seal temperature does not exceed 662F. |
| 96 | Per Title 20 Section 1605.3(m) of the California Code of Regulations, this lamp may not be sold or offered for sale in the state of California for use in Traffic Signals. |
| 97 | Board Size MFX Base 1.6mm (0.062") Inside of Board |
| 98 | OSRAM Miniwatt lamps for printed circuit boards (the MF series) are designed to work on both inside and outside contact boards and various thickness boards. In order to assure proper electrical contact, be sure to check the thickness of the board and the location of the electrical contacts. |
| 99 | @ 120 volts, approximate 33 watts, 270 lumens, 3750 hours. |
| 100 | Operate within 25 degrees of vertical base up. |
| 101 | @ 120 volts, approximate 53 watts, 490 lumens, 2500 hours. |
| 102 | @ 120 volts, approximate 66 watts, 650 lumens, 1875 hours. |
| 103 | @ 120 volts, approximate 88 watts, 970 lumens, 1875 hours. |
| 104 | @ 120 volts, approximate 46 watts, 560 lumens, 2500 hours. |
| 105 | @ 120 volts, approximate 40 watts, 220 lumens, 5000 hours. |
| 106 | @ 120 volts, approximate 57 watts, 410 lumens, 5000 hours. |
| 107 | Lamps manufactured on or after January 1, 2007 are not for sale in Washington or Oregon. |
| 108 | Per Title 20 Section 1605.3(k) of the California Code of Regulations, this lamp may not be sold or offered for sale in the state of California. |
| 109 | Lamp may not be operated on a dimmer or DC current |
| 110 | Complies with part 15 of FCC rules. |
| 111 | Average laboratory life is 200 hours for vacuum cleaner and 600 hours for sewing machine services. |
| 112 | Life dependent on service conditions. |
| 113 | Operating position 45 degrees base down to horizontal. |

## SYMBOLS & FOOTNOTES FOR TUNGSTEN HALOGEN LAMPS

| Footnote | Description |
|---|---|
| 114 | Use only in fixtures designed to adequately dissipate heat from lamp. |
| 115 | 3" Circular window. |
| 116 | Operation of lamp in any position other than base up may result in some loss of protective coating. |
| 117 | A protective shield must be used external to the lamp. |
| 118 | In base up operation, heat may eventually deteriorate paper-lined or plastic sockets. |
| 119 | Operate only in porcelain or other socket approved for 150 watt PAR lamp. |
| 120 | Metal sleeve with approximately 6 " flexible non-insulated leads. Lea ds not included in maximum overall length (M.O.L.). |
| 121 | High temperature base. Retards seal deterioration where seal temperature exceeds 650F. |
| 122 | Lightly inside frosted and side aluminized; M.O.L. exclusive of spring contact. |
| 123 | For use where seal temperature does not exceed 650F. |
| 124 | Life at rated voltage and at 650F maximum seal temperature. |
| 125 | Usually limited to intermittent burning. |
| 126 | Maximum bulb wall temperature 480F. |
| 127 | Lamp internally fused. |
| 128 | 2 1/2" braided lead with lug. |
| 129 | Nickel sleeve with 11/4" - 11/2" flexible leads with lug. Leads not included in maximum overall length (M.O.L.) |
| 130 | Minimum run. Check nearest OSRAM SYLVANIA Sales Office for details. |
| 131 | This lamp should not be used in a location where water may be splashed on it. |
| 132 | Package quantity may change. See your OSRAM SYLVANIA Lighting Representative for details. |
| 133 | For diesel electric locomotives without voltage regulators. |
| 134 | Retrofit for 65BR30/FL, or 75R30/FL. |
| 135 | Available in bulk pack. |
| 136 | Incandescent lamps operated at less than rated voltage provide a lower light output, longer life, lower color temperature and are less efficient in terms of lumens per watt. |
| 137 | Approximate life for 130 volt tungsten halogen lamps operated at 120 v olts is within the value calculated using the recommended equations for standard incandescent lamps, as set forth in the IES Handbook, 8th edition. Because of the uncertain nature of the halogen cycle on the coil when operated at less than rated voltage, life of tungsten halogen lamps varies considerably and unpredictably. OSRAM SYLVANIA does not recommend operation at other than rated voltage. |
| 138 | Nominal wattage - actual may be slightly higher to achieve required light output. |
| 139 | A suitable protective shield, screening technique, or both must be used to protect people and surroundings from the possibility of a lamp shattering and from possible ultraviolet radiation. |
| 140 | Standard Clear - UV Filter Quartz |
| 141 | Standard Frosted - UV Filter Quartz |
| 142 | Starlite Low Pressure - UV Filter Quartz |
| 143 | Standard Clear - 24V - UV Filter Quartz - Not suitable for use in open fixtures. |
| 144 | Maximum contact to contact tolerance on RSC Base = 1/16" |
| 145 | Suitable for use in unshielded fixtures. Consult most recent luminaire standards for your area to determine luminaire requirements. |
| 146 | @120 volts, approximate 22 watts, 130 lumens, 6250 hours |
| 147 | @ 120 volts, approximate 26 watts, 100 lumens, 5000 hours |
| 148 | @ 120 volts, approximate 28/66/94 watts, 255/800/1060 lumens, 1800 hou rs |
| 149 | @ 120 volts, approximate 30 watts, 240 lumens, 6250 hours |
| 150 | @ 120 volts, approximate 30 watts, 290 lumens, 3750 hours |
| 151 | @ 120 volts, approximate 31 watts, 275 lumens, 5000 hours |
| 152 | @ 120 volts, approximate 35 watts, 320 lumens, 6250 hours |
| 153 | @ 120 volts, approximate 35 watts, 350 lumens, 3750 hours |
| 154 | @ 120 volts, approximate 37 watts, 450 lumens, 7000 hours |
| 155 | May not give satisfactory performance if any accessory lighting equipm ent touches the glass bulb. |
| 156 | @ 120 volts, approximate 38 watts, 380 lumens, 2250 hours |

## SYMBOLS & FOOTNOTES FOR TUNGSTEN HALOGEN LAMPS

| Footnote | Description |
|---|---|
| 157 | @ 120 volts, approximate 40 watts, 425 lumens, 5000 hours |
| 158 | @ 120 volts, approximate 44 watts, 250 lumens, 5000 hours |
| 159 | @ 120 volts, approximate 44 watts, 240 lumens, 5000 hours |
| 160 | @ 120 volts, approximate 44 watts, 400 lumens, 2500 hours |
| 161 | @ 120 volts, approximate 44 watts, 420 lumens, 5000 hours |
| 162 | @ 120 volts, approximate 44 watts, 500 lumens, 5000 hours |
| 163 | @ 120 volts, approximate 46 watts, 460 lumens, 6250 hours |
| 164 | @ 120 volts, approximate 46 watts, 540 lumens, 2500 hours |
| 165 | @ 120 volts, approximate 46 watts, 600 lumens, 7000 hours |
| 166 | When calculations are based on bare lamp lumens, do not use this lumen rating. |
| 167 | @ 120 volts, approximate 47/94/141 watts, 545/1275/1820 lumens, 1800 hours |
| 168 | @ 120 volts, approximate 53 watts, 420 lumens, 2500 hours |
| 169 | @ 120 volts, approximate 53 watts, 495 lumens, 4000 hours |
| 170 | @ 120 volts, approximate 53 watts, 650 lumens, 2500 hours |
| 171 | @ 120 volts, approximate 53 watts, 645 lumens, 6000 hours |
| 172 | @ 120 volts, approximate 56 watts, 725 lumens, 1500 hours |
| 173 | @ 120 volts, approximate 57 watts, 540 lumens, 4375 hours |
| 174 | @ 120 volts, approximate 59 watts, 660 lumens, 6250 hours |
| 175 | @ 120 volts, approximate 59 watts, 780 lumens, 1875 hours |
| 176 | @ 120 volts, approximate 63 watts, 900 lumens, 7000 hours |
| 177 | Average laboratory life in excess of 5000 hours. |
| 178 | @ 120 volts, approximate 66 watts, 425 lumens, 4125 hours |
| 179 | @ 120 volts, approximate 66 watts, 620 lumens, 2500 hours |
| 180 | @ 120 volts, approximate 66 watts, 685 lumens, 4000 hours |
| 181 | @ 120 volts, approximate 66 watts, 805 lumens, 5000 hours |
| 182 | @ 120 volts, approximate 66 watts, 860 lumens, 5000 hours |
| 183 | @ 120 volts, approximate 66 watts, 910 lumens, 1875 hours |
| 184 | @ 120 volts, approximate 66 watts, 520 lumens, 5000 hours |
| 185 | @ 120 volts, approximate 70 watts, 985 lumens, 1125 hours |
| 186 | @ 120 volts, approximate 79 watts, 940 lumens, 6250 hours |
| 187 | @ 120 volts, approximate 79 watts, 1000 lumens, 5000 hours |
| 188 | For use only with heat-resisting connector and with bulb supported by bulb rim or metal shell of base. |
| 189 | @ 120 volts, approximate 79 watts, 1130 lumens, 1875 hours |
| 190 | @ 120 volts, approximate 88 watts, 960 lumens, 2500 hours |
| 191 | @ 120 volts, approximate 88 watts, 1100 lumens, 6250 hours |
| 192 | @ 120 volts, approximate 88 watts, 1260 lumens, 1875 hours |
| 193 | @ 120 volts, approximate 88 watts, 1290 lumens, 1875 hours |
| 194 | @ 120 volts, approximate 88 watts, 710 lumens, 5000 hours |
| 195 | @ 120 volts, approximate 94 watts, 1455 lumens, 1125 hours |
| 196 | @ 120 volts, approximate 105 watts, 850 lumens, 5000 hours |
| 197 | @ 120 volts, approximate 105 watts, 1370 lumens, 6000 hours |
| 198 | @ 120 volts, approximate 106 watts, 1040 lumens, 5000 hours |

# Manufacturers' Cross Reference

## HALOGEN LAMPS

| SYLVANIA | GE | PHILIPS | OSRAM |
|---|---|---|---|
| **HALOGEN BT15** | | | |
| 60BT15/HAL/CL/BL | --- | BC60BT15/HAL/CL | --- |
| 60BT15/HAL/W/BL | --- | BC60BT15/HAL/W | --- |
| 75BT15/HAL/W/BL | --- | BC75BT15/HAL/W | --- |
| 100BT15/HAL/W/BL | --- | BC100BT15/HAL/W | --- |
| 150BT15/HAL/W/BL | --- | BC150BT15/HAL/W | --- |
| CAPSYLITE MIDBREAK | | | |
| 52A/CAP | 50A/HAL | --- | --- |
| 60A/HAL/DAY | 60A/HAL | --- | --- |
| 60A/HAL/DAY/CL | 60A/HAL/CL | --- | --- |
| 75A/HAL/DAY | 75A/HAL | --- | --- |
| 100A/HAL/DAY | 90A/HAL | --- | --- |
| **CAPSYLITE PAR** | | | |
| 60PAR16/CAP/NSP10 | 60PAR16/H/SP10 | 60PAR16/HAL/NSP10 | --- |
| 60PAR16/CAP/NFL30 | 60PAR16/H/FL30 | 60PAR16/HAL/NFL27 | --- |
| 75PAR16/CAP/NSP10 | 75PAR16/H/SP10 | --- | --- |
| 75PAR16/CAP/NFL30 | 75PAR16/H/FL30 | --- | --- |
| 50PAR20/HAL/SPL/NFL30 | 50PAR20/H/FL25 | 50PAR20/HAL/NFL30 | --- |
| 50PAR20/HAL/SPL/NSP10 | 50PAR20/H/SP10 | 50PAR20/HAL/NSP9 | --- |
| 50PAR30/CAP/SPL/NFL25 | 50PAR30/H/FL25 | 50PAR30/HAL/NFL30 | --- |
| 50PAR30/CAP/SPL/NSP9 | 50PAR30/H/SP10 | 50PAR30S/HAL/NSP10 | --- |
| 50PAR30/HAL/SPL/FL40 | 50PAR30/H/FL35 | 50PAR30S/HAL/FL40 | --- |
| 50PAR30LN/CAP/SPL/NFL30 | 50PAR30L/H/FL40 | 50PAR30L/HAL/NFL30 | --- |
| 50PAR30LN/CAP/SPL/NSP9 | 50PAR30L/H/SP10 | 50PAR30L/HAL/NSP9 | --- |
| 50PAR30LN/CAP/SPL/WFL50 | 50PAR30L/H/WFL | 50PAR30L/HAL/WFL60 | --- |
| 60PAR30/CAP/SPL/NSP9 | 60PAR30/H/NSP9 | 60PAR30S/HAL/NSP10 | --- |
| 60PAR30/CAP/SPL/NFL25 | 60PAR30/H/FL25 | 60PAR30S/HAL/NFL30 | --- |
| 75PAR30/CAP/SPL/NSP9 | 75PAR30/H/SP10 | 75PAR30S/HAL/SP10 | --- |
| 75PAR30/CAP/SPL/NFL25 | 75PAR30/H/FL25 | 75PAR30S/HAL/NFL30 | --- |
| 75PAR30/CAP/SPL/FL40 | 75PAR20/H/FL35 | 75PAR30S/HAL/FL40 | --- |
| 75PAR30LN/CAP/SPL/NSP9 | 75PAR30L/H/SP10 | 75PAR30L/HAL/NSP9 | --- |
| 75PAR30LN/CAP/SPL/NFL25 | 75PAR30L/H/FL25 | 75PAR30L/HAL/NFL30 | --- |
| 75PAR30LN/CAP/SPL/WFL50 | 75PAR30L/H/WFL | 75PAR30L/HAL/FL40 | --- |
| 36PAR36CAPNSP13 | 35PAR36/H/SP8 | --- | --- |
| 36PAR36CAPVNSP5 | 35PAR36/H/SP5 | --- | --- |
| 36PAR36CAPWFL | 35PAR36/H/FL30 | --- | --- |
| 50PAR36CAPNSP6 | 50PAR36/H/SP5 | --- | --- |
| 45PAR/CAP/SPL/SP9 | 45PAR/H/SP10 | --- | --- |
| 45PAR/CAP/SPL/WSP12 | --- | 45PAR38/HAL/SP12/LL | --- |
| 45PAR/CAP/SPL/FL30 | 45PAR/H/FL25 | 45PAR38/HAL/FL28/LL | --- |
| 60PAR/CAP/SPL/SP9 | 60PAR/H/SP10 | 60PAR38/HAL/NSP10/WLL | --- |
| 60PAR/CAP/SPL/WSP12 | --- | 60PAR38/HAL/SP12/WLL | --- |
| 60PAR/CAP/SPL/NFL25 | 60PAR/H/FL25 | --- | --- |
| 60PAR/CAP/SPL/FL30 | --- | 60PAR38/HAL/FL28/WLL | --- |
| 75PAR/CAP/SPL/SP9 | 75PAR/H/SP9 | 75PAR38/HAL/SP10/WLL | --- |
| 75PAR/CAP/SPL/FL30 | 75PAR/H/FL25 | 75PAR38/H/FL28/WLL | --- |
| 90PAR/CAP/SPL/SP9 | 90PAR/H/SP10 | --- | --- |
| 90PAR/CAP/SPL/WSP12 | --- | 90PAR38/HAL/SP12/LL | --- |
| 90PAR/CAP/SPL/FL30 | 90PAR/H/FL25 | 90PAR38/HAL/FL28/LL | --- |
| 90PAR/CAP/SPL/WFL50 | 90PAR/H/WFL | 90PAR38/HAL/WFL60/WLL | --- |
| 120PAR/CAP/SPL/SP9 | 120PAR/H/SP9 | --- | --- |
| 120PAR/CAP/SPL/FL30 | 120PAR/H/FL30 | --- | --- |
| 250PARCAPSPLSP10 | Q250PAR/SP10 | --- | --- |
| 250PARCAPSPLFL30 | Q250PAR/FL30 | --- | --- |
| 500PAR56QMFL | Q500PAR56MFL | 500PAR56Q/MFL | --- |
| 500PAR56QNSP | Q500PAR56NSP | 500PAR56Q/NSP | --- |
| 500PAR56QWFL | Q500PAR56WFL | 500PAR56Q/WFL | --- |
| 1000PAR64QMFL | Q1000PAR64MFL | 1000PAR64Q/MFL | --- |
| 1000PAR64QNSP | Q1000PAR64NSP | 1000PAR64Q/NSP | --- |
| 1000PAR64QWFL | Q1000PAR64WFL | 1000PAR64Q/WFL | --- |
| **CAPSYLITE IR PAR** | | | |
| 50PAR30/CAP/IR/NSP9 130V | 45PAR30/HIR/SP9XL | --- | --- |
| 50PAR30/CAP/IR/NFL25 130V | 45PAR30/HIR/FL25XL | --- | --- |

# Manufacturers' Cross Reference Guide (continued)

## HALOGEN LAMPS

| SYLVANIA | GE | PHILIPS | OSRAM |
|---|---|---|---|
| **CAPSYLITE IR PAR (continued)** | | | |
| 50PAR30/CAP/IR/FL40 130V | 45PAR30/HIR/FL35XL | --- | --- |
| 50PAR30/CAP/IR/NSP9 | 50PAR30/HIR/SP9 | 50PAR30S/IRC/NSP10 | --- |
| 50PAR30/CAP/IR/NFL25 | 50PAR30/HIR/FL25 | 50PAR30S/IRC/NFL30 | --- |
| 50PAR30/CAP/IR/FL40 | 50PAR30/HIR/FL35 | 50PAR30S/IRC/FL40 | --- |
| 50PAR/CAP/IR/SP10 130V | 45PAR/HIR/SP12/XL | --- | --- |
| 50PAR/CAP/IR/NFL25 130V | 45PAR/HIR/FL40/XL | --- | --- |
| 50PAR/CAP/IR/SP10 | 50PAR/HIR/SP9 | 50PAR38/IRC/SP12 | --- |
| 50PAR/CAP/IR/NFL25 | 50PAR/HIR/FL25 | 50PAR38/IRC/FL25 | --- |
| 55PAR38/CAP/IR/XP/SP9 | 55PAR/HIR/SP12/XL | --- | --- |
| 55PAR38/CAP/IR/XP/FL30 | 55PAR/HIR/FL40/XL | --- | --- |
| 60PAR/CAP/IR/SP10 | 60PAR/HIR/SP10 | 60PAR38/IRC/SP10 | --- |
| 60PAR/CAP/IR/WSP12 | 60PAR/HIR/SP12 | 60PAR38/IRC/WSP12 | --- |
| 60PAR/CAP/IR/NFL25 | --- | 60PAR38/IRC/FL25 | --- |
| 60PAR/CAP/IR/FL30 | 60PAR/HIR/FL30 | --- | --- |
| 80PAR/CAP/IR/SP10 | 80PAR/HIR/SP10 | --- | --- |
| 80PAR/CAP/IR/FL25 | 80PAR/HIR/FL25 | --- | --- |
| 100PAR/CAP/IR/SP10 | 100PAR/HIR/SP10 | 100PAR38/IRC/SP10 | --- |
| 100PAR/CAP/IR/NFL25 | 100PAR/HIR/FL25 | 100PAR38/IRC/FL25 | --- |
| 100PAR/CAP/IR/FL40 | 100PAR/HIR/FL40 | --- | --- |
| **TRU-AIM MR11** | | | |
| 20MR11/SP10/FTB | Q20MR11/SP15(FTC) | 20MRC11/SP10 | 46890SP |
| 20MR11/FL35/FTD | Q20MR11/NFL30(FTD) | 20MRC11/FL30 | 46890WFL |
| 35MR11/FL40/FTH | Q35MR11/NFL30(FTH) | --- | 46892WFL |
| 35MR11/SP10/FTE | Q35MR11/SP20(FTF) | --- | 46892SP |
| **STANDARD TRU-AIM MR16** | | | |
| 20MR16/NSP8/ESX | Q20MR16/SP | 20MRC16/SP10 | 41860SP |
| 20MR16/FL40/BAB | Q20MR16/FL | 20MRC16/FL36 | 41860WFL |
| 35MR16/FL40 | Q35MR16CG/FL | --- | 41865WFL |
| 50MR16/NSP12/EXT | Q50MR16/SP | 50MRC16/SP10 | 41870SP |
| 50MR16/NFL25/EXZ | --- | 50MRC16/NFL24 | --- |
| 50MR16/FL40/EXN | Q50MR16/FL | 50MRC16/FL38 | 41870WFL |
| 65MR16/NSP10/FPA | --- | 75MR16/SP10-EYF | --- |
| 65MR16/FL40/FPB | --- | 75MR16/FL36-EYC | --- |
| **TRU-AIM BRILLIANT MR16** | | | |
| 20MR16/B/FL35/C | --- | --- | 41861WFL |
| 50MR16/B/NSP11/C/EXT | --- | 50MRC16/SP12/A | --- |
| 50MR16/B/NFL25/EXZ | --- | 50MRC16/NFL24/A | --- |
| 50MR16/B/FL35/C/EXN | --- | 50MRC16/FL36 | 41871WFL |
| **TRU-AIM TITAN MR16** | | | |
| 20MR16/T/NSP10/ESX | Q20MR16/C/VNSP7 | 20MRC16/CC/SP10 | 46860SP |
| 20MR16/T/FL40/BAB | Q20MR16/C/FL40 | 20MRC16/CC/FL38 | 46860WFL |
| 35MR16/T/NSP10/FRB | --- | --- | 46865SP |
| 35MR16/T/NFL25 | Q35MR16/C/SP20 | --- | 46865FL |
| 35MR16/T/FL40/FMW | Q35MR16/C/FL40 | --- | 46865WFL |
| 50MR16/T/NSP10/EXT | Q50MR16/C/NSP15 | 50MRC16/CC/SP10 | 46870SP |
| 50MR16/T/NFL25/EXZ | Q50MR16/C/NFL25 | 50MRC16/CC/NFL24 | 46870FL |
| 50MR16/T/FL40/EXN | Q50MR16/C/FL40 | 50MRC16/CC/FL38 | 46870WFL |
| 50MR16/T/VWFL60/FNV | Q50MR16/C/WFL55 | --- | 46870VWFL |
| 65MR16/T/NSP10/FPA | Q71MR16/C/NSP15 | --- | --- |
| 65MR16/T/NFL25 | Q71MR16/C/NFL25 | --- | --- |
| 65MR16/T/FL40/FPB | Q71MR16/C/FL40 | --- | --- |
| **TRU-AIM IR MR16** | | | |
| 20MR16/IR/SP10/C | --- | 20MRC16/IRC/SP8 | 48860SP |
| 20MR16/IR/NFL25/C | --- | --- | 48860FL |
| 20MR16/IR/FL40/C | --- | 20MRC16/IRC/FL36 | 48860WFL |
| 20MR16/IR/WFL60/C | --- | --- | 48860VWFL |
| 37MR16/IR/SP10/C | Q37MR16/HIR/CG10 | 35MRC16/IRC/SP8 | 48865SP |
| 37MR16/IR/NFL25/C | Q37MR16/HIR/CG25 | 35MRC16/IRC/NFL24 | 48865FL |
| 37MR16/IR/FL40/C | Q37MR16/HIR/CG40 | 35MRC16/IRC/FL36 | 48865WFL |
| 37MR16/IR/WFL60/C | --- | 35MRC16/IRC/WFL60 | 48865VWFL |
| 50MR16/IR/SP10/C | Q50MR16/HIR/CG10 | 45MRC16/IRC/SP8 | 48870SP |
| 50MR16/IR/NFL25/C | Q50MR16/HIR/CG25 | 45MRC16/IRC/NFL24 | 48870FL |

# Manufacturers' Cross Reference (continued)

## HALOGEN LAMPS

| SYLVANIA | GE | PHILIPS | OSRAM |
|---|---|---|---|
| **TRU-AIM IR MR16 (continued)** | | | |
| 50MR16/IR/FL40/C | Q50MR16/HIR/CG40 | 45MRC16/IRC/FL36 | 48870WFL |
| 50MR16/IR/WFL60/C | --- | 45MRC16/IRC/WFL60 | 48870VWFL |
| **SINGLE ENDED** | | | |
| 100Q/CL/DC/64485 | --- | --- | 64485 |
| 100Q/CL/DC/ESR | Q100CL/DC | 100Q/CL/DC ESR | --- |
| 100Q/CL/MC/ESN | Q100CL/MC | 100Q/CL ESN | --- |
| 100Q/DC/ETD | Q100DC | --- | --- |
| 150Q/CL/DC/1/ESP | Q150CL/DC/2V | --- | --- |
| 150Q/CL/DC/ETC | Q150CL/DC | 150Q/CL/DC ETC | --- |
| 150Q/CL/MC/2/ETG | Q150CL/MC | 150Q/CL | --- |
| 150Q/CL/MC/ESL | Q150CL/MC/2V | --- | --- |
| 150Q/DC/ETF | Q150DC | 150Q/DC | --- |
| 150Q/MC/ETH | Q150MC | 150Q ETH | --- |
| 250Q/CL/DC/ESS | Q250CL/DC | 250Q/CL/DC ESS | --- |
| 250Q/CL/MC/EHT | Q250CL/MC | 250Q/CL EHT | --- |
| 250Q/DC/ETB | Q250DC | --- | --- |
| 250Q/MC/ESM | Q250MC | --- | --- |
| **DOUBLE ENDED** | | | |
| 100T3Q/CL | Q100T3/CL/CD | BC100T3Q/CL/TP | --- |
| 150T3Q/S/CL | Q150T4/CL | BC150T3Q/CL/TP | --- |
| 150T3Q/CL | Q150T3/117/CL/CD | --- | --- |
| 300T3Q/CL | Q300T3/CL | 300T3Q/P/CL | --- |
| 500T3Q/CL | Q500T3/CL | 500T3Q/P/CL | --- |
| **BIPIN** | | | |
| 5T3Q/CL | Q5T3/CL | 5W/12V/CAPSULE | 64405S |
| 10T3Q/CL | Q10T3/CL | --- | 64415 |
| 20T3Q/CL | Q20T3/CL/CD | --- | 64425 |
| 50T4Q/CL | Q50T3/CL | 50W/12V/CAPSULE | 64440 |
| 75T4Q/CL/RP | Q75T4/CL/CD | --- | --- |
| 10T3Q/CL/AX | --- | 10W/12V/CAPSULE | 64415S |
| 20T3Q/CL/AX | --- | 20W/12V/CAPSULE | 64425S |
| 35T4Q/CL/AX | Q35T3/CL | 35W/12V/CAPSULE | 64432S |
| 50T4Q/CL/AX | --- | --- | 64440S |
| 75T4Q/CL/AX | --- | --- | 64450S |
| 90T4Q/CL/AX | --- | --- | 64458S |
| **AR 70 & AR111** | | | |
| 20AR70/SP8 | --- | 15ALR18/NSP6-GBA | 41970 SP USA |
| 20AR70/FL25 | --- | --- | 41970 FL USA |
| 50AR70/SP8 | --- | 50ALR18/SP10-GBJ | 41990 SP USA |
| 50AR70/FL25 | --- | 50ALR18/NFL22-GBK | 41990 FL USA |
| 35AR111/SSP4 | --- | --- | 41830 SSP |
| 50AR111SSP4 | --- | --- | 41835 NSP 12V 50W |
| 50AR111/SP8 | --- | --- | 41835 SP 12V 50W |
| 50AR111/FL25 | --- | --- | 41835 FL 12V 50W |
| 75AR111/SP8 | --- | --- | 41840 SP 12V 75W |
| 75AR111/FL25 | --- | --- | 41840 FL 12V 75W |
| 75AR111/WFL45 | --- | --- | 41840 WFL 12V 75W |
| 100AR111/SP8 | --- | --- | 41850 SP 12V 100W |
| 100AR111/FL25 | --- | --- | 41850 FL 12V 100W |
| 100AR111/WFL45 | --- | --- | 41850 WFL 12V 100W |

# MINIATURE & AUTOMOTIVE LAMPS

| Ordering Abbreviation | Product Number | Bulb | Base | Avg Rated Life (hrs) | Approx Lumens | Amps | Design Voltage (V) | Pkg Qty | MOL (in) | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|
| **1076** | 36183 | S8 | DC Bayonet | 200 | 402.12 | 1.8 | 13 | 1000 | 2 | |
| **1130** | 36237 | S8 | DC Bayonet | 200 | 263.89 | 2.63 | 6 | 1000 | 2 | |
| **1141** | 36377 | S8 | SC Bayonet | 1000 | 263.89 | 1.44 | 13 | 1000 | 2 | |
| **1156** | 36521 | S8 | SC Bayonet | 1200 | 402 | 2.1 | 13 | 1000 | 2 | |
| **1156** | 36521 | S8 | SC Bayonet | 1200 | 402 | 2.1 | 13 | 1000 | 2 | |
| **1157** | 36561 | S8 | DC Index | 1200<br>5000 | 402.00<br>38.00 | 2.1<br>0.6 | 13<br>14 | 1000 | 2 | |
| **120MB** | 34503 | T2.5 | Mini Bayonet | 10000 | 4.52 | 0.025 | 120 | 1000 | 1.19 | |
| **120MB** | 34503 | T2.5 | Mini Bayonet | 10000 | 4.52 | 0.025 | 120 | 1000 | 1.19 | |
| **120MB 6W** | 34513 | T2.5 | Mini Bayonet | 3000 | 18 | 0.052 | 120 | 1000 | 1.19 | |
| **120PC** | 34519 | T2 | Bipin | 7500 | | 0.025 | 120 | 1000 | 1.125 | 1 |
| **120PSB** | 34557 | T2 | Slide Base # 5 | 10000 | | 0.025 | 120 | 1000 | 1.11 | |
| **120PSB** | 34557 | T2 | Slide Base # 5 | 10000 | | 0.025 | 120 | 1000 | 1.11 | |
| **12PSB** | 32983 | T2 | Slide Base # 5 | 12000 | | 0.17 | 12 | 1000 | 1.11 | |
| **161** | 34691 | T3.25 | W2.1x9.2D | 4000 | 12.57 | 0.19 | 14 | 1000 | 1.054 | |
| **168** | 34711 | T3.25 | W2.1x9.2D | 1500 | 37.7 | 0.35 | 14 | 1000 | 1.054 | |
| **17** | 33061 | T1.75 | W2.1x4.9D | 5000 | 8.17 | 0.065 | 28 | 1000 | 0.8 | |
| **1815** | 37329 | T3.25 | Mini Bayonet | 3000 | 17.59 | 0.2 | 14 | 1000 | 1.19 | |
| **1816** | 37333 | T3.25 | Mini Bayonet | 1000 | 37.7 | 0.33 | 13 | 1000 | 1.19 | |
| **1819** | 37351 | T3.25 | Mini Bayonet | 2500 | 4.27 | 0.04 | 28 | 1000 | 1.19 | |
| **1820** | 37355 | T3.25 | Mini Bayonet | 1000 | 20.11 | 0.1 | 28 | 1000 | 1.19 | |
| **1822** | 37367 | T3.25 | Mini Bayonet | 1000 | 26.39 | 0.1 | 36 | 1000 | 1.19 | |
| **1829** | 37377 | T3.25 | Mini Bayonet | 1000 | 12.57 | 0.07 | 28 | 1000 | 1.19 | |
| **1835** | 37387 | T3.25 | Mini Bayonet | 5000 | 13.82 | 0.05 | 55 | 1000 | 1.19 | |
| **1847** | 37391 | T3.25 | Mini Bayonet | 5000 | 4.78 | 0.15 | 6 | 1000 | 1.19 | |
| **1864** | 37413 | T3.25 | Mini Bayonet | 1500 | 37.7 | 0.17 | 28 | 1000 | 1.19 | |
| **1893** | 37505 | T3.25 | Mini Bayonet | 2500 | 25.13 | 0.33 | 14 | 1000 | 1.19 | |
| **1895** | 37531 | G4.5 | Mini Bayonet | 2000 | 25.13 | 0.27 | 14 | 1000 | 1.06 | |
| **194** | 34761 | T3.25 | W2.1x9.2D | 2500 | 25.13 | 0.27 | 14 | 1000 | 1.054 | |
| **1992 ERD** | 30215 | T3.25 | Wedge | 150 | 804 | 2.5 | 14 | 24 | 1 | |
| **214-2 BU** | 34942 | T3 | End Caps | 1000 | 50.27 | 0.52 | 14 | 1000 | 1.72 | |
| **2187** | 37747 | T1.75 | 5/8" Wire Term | 7000 | 3.7 | 0.04 | 28 | 1000 | 0.52 | |
| **222** | 34967 | TL3 | Mini Screw | 5 | | 0.22 | 2 | 1000 | 0.94 | |
| **2342 24:30V30MA** | 39307 | T5 | W2x4.6D | 1000 | | 0.3 | 24 | 200 | 0.78 | |
| **24E** | 33181 | T2 | Slide Base # 3 | 7000 | | 0.035 | 24 | 1000 | 1.69 | |
| **24ESB** | 33189 | T2 | Slide Base # 5 | 8000 | | 0.04 | 24 | 1000 | 1.11 | |
| **24MB** | 33213 | T2.5 | Mini Bayonet | 10000 | 6.28 | 0.07 | 24 | 1000 | 1.19 | |
| **24PSB** | 33229 | T2 | Slide Base # 5 | 10000 | | 0.072 | 24 | 1000 | 1.11 | |
| **24X** | 33257 | T2 | Slide Base # 3 | 8000 | | 0.035 | 24 | 1000 | 1.69 | |
| **259** | 35027 | T3.25 | W2.1x9.2D | 5000 | 8.17 | 0.25 | 6 | 1000 | 1.054 | |
| **28ESB** | 33285 | T2 | Slide Base # 5 | 6000 | | 0.04 | 28 | 1000 | 1.11 | |
| **28MB** | 33311 | T2.5 | Mini Bayonet | 5000 | 3.64 | 0.04 | 28 | 1000 | 1.19 | |
| **28PSB** | 33327 | T2 | Slide Base # 5 | 5000 | | 0.04 | 28 | 1000 | 1.11 | |
| **30099 PLH** | 32169 | T2 | Socket | | | | | 100 | 0.91 | 2,3,4 |
| **30110 PILOT TPLR** | 32161 | T2 | Dome Trans | | | | | 1000 | 0.38 | 5 |
| **30112 PILOT TPLG** | 32159 | T2 | Dome Trans | | | | | 1000 | 0.38 | 5 |
| **30120 PILOT FLR** | 32119 | T2 | Dome Fluted | | | | | 1000 | 0.38 | 5 |
| **31099 PLH BAY** | 32173 | T2.5 & T3.25 | Socket | | | | | 100 | 1.68 | 2,4,6 |
| **313** | 35133 | T3.25 | Mini Bayonet | 500 | 43.92 | 0.17 | 28 | 1000 | 1.06 | |
| **3157WL** | 59894 | S8 | Wedge | 1200<br>5000 | 402.12<br>37.69 | 2.1<br>0.59 | 13<br>14 | 1000 | 1.7 | |
| **327** | 35155 | T1.75 | SC Midg Flanged | 4000 | 4.27 | 0.04 | 28 | 1000 | 0.63 | |
| **328** | 35169 | T1.75 | SC Midg Flanged | 1000 | 4.27 | 0.2 | 6 | 1000 | 0.63 | |

# MINIATURE & AUTOMOTIVE LAMPS

| Ordering Abbreviation | Product Number | Bulb | Base | Avg Rated Life (hrs) | Approx Lumens | Amps | Design Voltage (V) | Pkg Qty | MOL (in) | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|
| **330** | 35183 | T1.75 | SC Midg Flanged | 1500 | 6.28 | 0.08 | 14 | 1000 | 0.63 | |
| **334** | 35205 | T1.75 | Midget Groove | 4000 | 4.27 | 0.04 | 28 | 1000 | 0.63 | |
| **3797 24V2W** | 39375 | T2.75 | BA9S | 200 | 16.96 | 0.083 | 24 | 200 | 0.932 | |
| **382** | 35311 | T1.75 | SC Midg Flanged | 15000 | 3.76 | 0.08 | 14 | 1000 | 0.63 | |
| **385** | 35321 | T1.75 | SC Midg Flanged | 10000 | 1.88 | 0.04 | 28 | 1000 | 0.36 | |
| **387** | 35327 | T1.75 | SC Midg Flanged | 7000 | 3.76 | 0.04 | 28 | 1000 | 0.63 | |
| **388** | 35349 | T1.75 | Midget Groove | 7000 | 3.76 | 0.04 | 28 | 1000 | 0.63 | |
| **44** | 33459 | T3.25 | Mini Bayonet | 3000 | 11.28 | 0.25 | 6 | 1000 | 0.94 | |
| **4414 PAR 36** | 30965 | PAR36 | 2 Screw Terminal | 300 | | 1.41 | 13 | 12 | 2 3/4 | |
| **464** | 35413 | T3.25 | W2.1x9.2D | 1500 | 37.7 | 0.17 | 28 | 1000 | 1.054 | |
| **47** | 33479 | T3.25 | Mini Bayonet | 3000 | 6.28 | 0.15 | 6 | 1000 | 0.94 | |
| **48C** | 33507 | T2 | Slide Base # 3 | 7000 | | 0.035 | 48 | 1000 | 1.69 | |
| **48PSB** | 33599 | T2 | Slide Base # 5 | 10000 | | 0.05 | 48 | 1000 | 1.69 | |
| **502** | 35417 | G4.5 | Mini Screw | 100 | 7.53 | 0.15 | 5 | 1000 | 1.06 | |
| **516/2PK/RP 12V** | 35920 | T5 | W2.1x9.2D | 300 | 43.98 | 0.312 | 13 | 12 | 1.49 | |
| **52A TB OBS** | 33711 | T2 | Slide Base # 6 | 8000 | | 0.03 | 24 | 1000 | 0.92 | |
| **53** | 33719 | G3.5 | Mini Bayonet | 1000 | 12.57 | 0.12 | 14 | 1000 | 0.6 | |
| **55** | 33785 | G4.5 | Mini Bayonet | 500 | 25.13 | 0.41 | 7 | 1000 | 0.84 | |
| **56** | 33831 | T1.75 | W2.1x4.9D | 20000 | 1.88 | 0.115 | 5 | 1000 | 0.8 | |
| **57** | 33871 | G4.5 | Mini Bayonet | 500 | 25.13 | 0.24 | 14 | 1000 | 0.84 | |
| **60MB** | 33927 | T2.5 | Mini Bayonet | 7500 | 9.17 | 0.05 | 60 | 1000 | 1.19 | |
| **60PSB** | 33945 | T2 | Slide Base # 5 | 7500 | | 0.05 | 60 | 1000 | 1.11 | |
| **6411 12V10W** | 39407 | T3.25 | SV8.5-8 | 200 | 100.53 | 0.83 | 12 | 200 | 1.61 | |
| **64111 12V5W** | 39431 | T2.75 | Mini Bayonet | 240 | 80.42 | | 12 | 200 | 1.29 | 7 |
| **6413 12V5W** | 39405 | T3.25 | SV8.5-8 | 200 | 100.53 | 0.4 | 12 | 200 | 1.61 | |
| **64150 H1 12V55W** | 31393 | T2.5 | P14.5S | 225 | 1621.06 | | 12 | 100 | 2.43 | |
| **64151 H3 12V55W** | 31397 | T3.25 | PK22S | 225 | 1520.53 | | 12 | 100 | 1.65 | 8,9 |
| **64156 H3 24V70W** | 31415 | T3.25 | PK22S | 225 | 1834.69 | | 24 | 100 | 1.65 | 8,9 |
| **6421 24V3W** | 39376 | T3.25 | SV8.5-8 | 1000 | 17.59 | 0.125 | 24 | 200 | 1.61 | |
| **6424 24V5W** | 39411 | T3.25 | SV8.5-8 | 200 | 61.95 | 0.2 | 24 | 200 | 1.61 | |
| **6429 24V10W** | 39397 | T3.25 | SV8.5-8 | 200 | 105.55 | 0.42 | 24 | 200 | 1.61 | |
| **656** | 35561 | T3.25 | W2.1x9.2D | 2500 | 7.79 | 0.06 | 28 | 1000 | 1.054 | |
| **657** | 35565 | T3.25 | W2.1x9.2D | 15000 | 7.79 | 0.08 | 28 | 1000 | 1.054 | |
| **657** | 35565 | T3.25 | W2.1x9.2D | 15000 | 7.79 | 0.08 | 28 | 1000 | 1.054 | |
| **67** | 34021 | G6 | SC Bayonet | 5000 | 50.27 | 0.69 | 14 | 1000 | 1.44 | |
| **68** | 34067 | G6 | DC Bayonet | 5000 | 50.27 | 0.59 | 14 | 1000 | 1.44 | |
| **6PSB** | 32803 | T2 | Slide Base # 5 | 20000 | | 0.14 | 6 | 1000 | 1.11 | |
| **73** | 34091 | T1.75 | W2.1x4.9D | 15000 | 3.77 | 0.08 | 14 | 1000 | 0.8 | |
| **7327 BIPIN T1 3/4** | 38289 | T1.75 | Bipin | 4000 | 4.27 | 0.04 | 28 | 1000 | 0.63 | 10 |
| **7371** | 38379 | T1.75 | Bipin | 20000 | 1.25 | 0.04 | 12 | 1000 | 0.63 | |
| **7382** | 38417 | T1.75 | Bipin | 15000 | 3.76 | 0.08 | 14 | 1000 | 0.63 | |
| **7511 P21W 24V21W** | 39361 | S8 | BAY15S | 150 | 464.95 | 0.88 | 24 | 200 | 2.095 | |
| **755** | 35763 | T3.25 | Mini Bayonet | 20000 | 4.15 | 0.15 | 6 | 1000 | 0.94 | |
| **755** | 35763 | T3.25 | Mini Bayonet | 20000 | 4.15 | 0.15 | 6 | 1000 | 0.94 | |
| **756** | 35771 | T3.25 | Mini Bayonet | 15000 | 3.9 | 0.08 | 14 | 1000 | 1.06 | |
| **757** | 35781 | T3.25 | Mini Bayonet | 7500 | 7.79 | 0.08 | 28 | 1000 | 1.06 | |
| **85** | 34179 | T1.75 | W2.1x4.9D | 7000 | 3.77 | 0.04 | 28 | 1000 | 0.8 | |
| **86** | 34201 | T1.75 | W2.1x4.9D | 20000 | 5.03 | 0.2 | 6 | 1000 | 0.8 | |
| **88** | 34219 | S8 | DC Bayonet | 300 | 188.5 | 1.91 | 7 | 1000 | 2 | |
| **89** | 34233 | G6 | SC Bayonet | 750 | 75.4 | 0.58 | 13 | 1000 | 1.44 | |
| **90** | 34271 | G6 | DC Bayonet | 750 | 75.4 | 0.58 | 13 | 1000 | 1.44 | |
| **90MB** | 34299 | T2.5 | Mini Bayonet | 5000 | 4.67 | 0.03 | 90 | 1000 | 1.19 | |

## MINIATURE & AUTOMOTIVE LAMPS

| Ordering Abbreviation | Product Number | Bulb | Base | Avg Rated Life (hrs) | Approx Lumens | Amps | Design Voltage (V) | Pkg Qty | MOL (in) | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|
| **912** | 35869 | T5 | W2.1x9.2D | 1000 | 150.8 | 1 | 13 | 500 | 1.49 | |
| **918** | 35923 | T5 | W2.1x9.2D | 500 | 81.62 | 0.54 | 13 | 500 | 1.49 | |
| **918/2PK/RP 13V** | 35921 | T5 | W2.1x9.2D | 500 | 81.68 | 0.54 | 13 | 12 | 1.49 | |
| **93** | 34311 | S8 | SC Bayonet | 700 | 188.5 | 1.04 | 13 | 1000 | 2 | |
| **93BL2PK 13V** | 16810 | S8 | SC Bayonet | 700 | 188.49 | 1.04 | 13 | 24 | 1.8 | |
| **94** | 34337 | S8 | DC Bayonet | 700 | 187.87 | 1.04 | 13 | 1000 | 2 | |
| **NE51 B1A** | 32427 | T3.25 | Mini Bayonet | 25000 | | 0.3 | 105 | 1000 | | 11 |
| **NE51H B2A** | 32429 | T3.25 | Mini Bayonet | 25000 | | 1.2 | 105 | 1000 | | 11 |
| **PR12** | 38931 | B3.5 | SC Mini Flanged | 15 | 37.69 | 0.5 | 6 | 1000 | 1 1/4 | |
| **PR13** | 38939 | B3.5 | SC Mini Flanged | 15 | 25.13 | 0.5 | 5 | 1000 | 1 1/4 | |
| **PR2** | 38891 | B3.5 | SC Mini Flanged | 15 | 10.05 | 0.5 | 2 | 1000 | 1 1/4 | |
| **PR3** | 38901 | B3.5 | SC Mini Flanged | 15 | 18.84 | 0.5 | 4 | 1000 | 1 1/4 | |
| **PR4** | 38911 | B3.5 | SC Mini Flanged | 10 | 5.02 | 0.27 | 2 | 1000 | 1 1/4 | |
| **PR6** | 38917 | B3.5 | SC Mini Flanged | 30 | 5.65 | 0.3 | 2 | 1000 | 1 1/4 | |
| **SM2A PCS 30096** | 32249 | T2 | Solder Lugs | | | | | 500 | 1.2 | 2,12,13 |

## FOOTNOTES FOR MINIATURE LAMPS

| Footnote | Description |
|---|---|
| 1 | MOL = Excluding pins. |
| 2 | Socket dimensions front to panel to end of terminals. |
| 3 | UL File No. E31557(M) CSA File No.LR20904 |
| 4 | Universal lamp housings for T2.5 and T3.25 miniature bayonet based lamps. |
| 5 | Universal lamp housings for T2 slide based pilot lamps. |
| 6 | UL File No. E31557(M) CSA File No.LR20904 |
| 7 | Caution: Operates under pressure and may shutter. Use appropriate techniques to protect people and surroundings. Do not operate in close proximity to persons, combustible materials, or substances affected by heat or drying. Do not operate over 110% rated voltage because such operation increases pressure and lamps' tendency to shatter. Ultraviolet output may cause skin and eye irritation with prolonged exposure. Protect bulb from abrasions and scratches. Do not insert lamps when power is on. Follow operating instructions. |
| 8 | ECE Approved |
| 9 | Lamp Life B3 @ 13.2 volts. |
| 10 | There are two distinctively different lamps with this part number. When ordering T-1 3/4 , #7327, please also specify category and base type. S-11. #7327 discontinued. |
| 11 | Material : Black Phenolic |
| 12 | MIL-Std. 18236 B-MIL Std. 202B |
| 13 | Material : Plastic |

# OSRAM SYLVANIA: THE LEADER IN ENERGY-SAVING HID LAMPS

## UNDERSTANDING HIGH INTENSITY DISCHARGE LIGHTING

A brief description of the catalog format and related terminology will assist the reader in understanding the information presented in this section.

All product families are listed in ascending wattage, followed by alphabetical bulb designation to simplify lamp identification. Performance ratings are based on tests conducted under controlled conditions on AC circuits with auxiliary equipment meeting current published ANSI specifications.

Lamp performance under typical service conditions may vary from rated values. Ratings and specifications are subject to change without notice.

For more information on HID SYSTEM SOLUTIONS, refer to page 101.

### ANSI CODE

This is a unique code that describes the class and the electrical characteristics of the lamp and ballast as well as the fixture requirements. The code is developed and assigned by the American National Standards Institute (ANSI). It is intended to aid in matching the lamp to both the correct ballast and to a luminaire with the required features. The ANSI CODE consists of type of lamp (S = HPS, H = Mercury, M = Metal Halide, L = LPS, C = Ceramic Metal Halide), followed by the ballast number, and for metal halide and Ceramic metal halide lamps followed by the fixture requirement (O, E, S, F).

The emergence of electronic ballasts to operate metal halide lamps has produced additional need to separate the lamp designation of quartz and ceramic metal halide lamps, as there can be some important differences in system performance. Therefore the C lamp designation from NEMA has been introduced going forward for future differentiation of ceramic metal halide lamps and they will begin to be labeled accordingly.

### ARC LENGTH

Arc length is the dimension of the arc discharge measured from one electrode tip to the other. This is useful for optical design of reflectors and affects fixture efficiency.

### AVERAGE LIFE (HOURS)

The average life of a lamp is based on vertical operation (unless otherwise noted) of representative lamps operated under controlled conditions of at least 10 hours per start (except for M1500 and Briteline lamps, which are based on 5 hours per start). Average life is defined as the total operation hours at which 50% (Median) of any group of lamps is still operating (except for most High Pressures Sodium and Mercury lamps, for which 65% of the lamps are operating at the end of life denoted by a "+" next to the life rating). Variations in operating conditions such as bulb and base temperatures and line voltage can also affect lamp life.

Regular operation of lamps with off times less than the hot restrike time will shorten lamp life. For hot restrike values of specific lamp types, please refer to the SYLVANIA Metal Halide Lamp Specification Guide.

Operating cycles shorter than 10 hours per start will reduce lamp life as follows:

5 hours / start - Approximately 75% of rating

2.5 hours / start - Approximately 55% of rating

1.25 hours / start - Approximately 40% of rating

### BASE

Most SYLVANIA HID lamp bases for general lighting are made of corrosion-resistant brass with special lubricant to provide easy removal at end of lamp life. See the following pages for all base illustrations.

**E26 Medium** - Medium (MED) bases are used on lamps in E17 bulbs and are limited to 175W maximum.

**E26 Medium Skirted** - Medium skirted (Med. Skt.) bases consist of a medium brass base with a skirt, which is mechanically connected to a PAR38 bulb.

**E39 Mogul** - All (MOG) bases are embossed with letters and numbers representing months and years. The date of installation can be recorded by marking the letter of the current month and the number that coincides with the last digit of the current year.

**EX39 Exclusionary Mogul Base** - Exclusionary Mogul bases (EXCL MOG) are bases used on metal halide lamps having shrouded arc tubes, permitting them to be used in open fixture applications. These bases are compatible with exclusionary or standard mogul sockets.

**E39 POM** - Position Oriented Mogul (POM) bases are used on lamps designed to operate only in the horizontal position and require a special POM socket. A pin located on the base engages in a slot within the POM socket ensuring proper operating position of the lamp within the fixture.

**Rx7s / R7s Recessed Single Contact** - SYLVANIA double-ended HID lamps with recessed single contact (RSC) bases have silver plated contacts to provide maximum electrical contact.

### BULB

Each bulb description consists of a letter to indicate bulb shape, followed by numbers that indicate maximum bulb diameter in 1/8 inch increments. For example, a BT37 bulb is a blown shape with a tubular top, 37/8 of an inch or 4 5/8 inches in diameter. Illustrations of bulb shapes are shown on the following pages.

Although SYLVANIA HID bulbs are made of glass designed to resist thermal shock in normal applications, they must be shielded from direct contact with liquids, such as rain, during operation to avoid bulb breakage.

### COLOR RENDERING INDEX (CRI)

Color Rendering Index (CRI) is an international scale (numbering system) up to 100 indicating the relative color rendering quality of a light source when compared to a standard reference light source of the same chromaticity (color temperature). The CRI expresses the degree to which colors will appear "familiar" or "natural" under the light source selected. In general, the higher the CRI number, the better the color rendering properties of the light source being measured. The color rendering index of any two like sources should only be compared if those sources have the same correlated color temperature (CCT).

### CORRELATED COLOR TEMPERATURE (CCT)

The correlated color temperature of a light source, expressed in Kelvin (K), is a means of describing the appearance or chromaticity of the source. The correlated color temperature of the light source contributes to the visual appearance of the lighted space. "Warm" light sources have a low color temperature (2000-3000K) and feature more light in the red/orange/yellow range. Light with a higher color temperature (>4000K) features more blue and is referred to as "cool."

With new installations, or group relamps, all color performance evaluations should be made after at least 100 hours of operation (at recommended operating cycles) to allow the lamps to stabilize. Additional changes in chemistry within the arc tube over the life of the lamp may also cause the color temperature to shift as the lamp gets closer to the end of it's rated life. To minimize color variation within an installation, it is recommended that HID lamps be group relamped and run on equal operating cycles.

### DIMMING HID

Most SYLVANIA HID products can be dimmed on stepped, bi-level dimming systems provided specific guidelines are followed. Generally, most Metalarc® metal halide lamps can be dimmed down to 50% of rated wattage depending on the lamp type and operating position. Lumalux® high pressure sodium lamps can also be dimmed down to 50% of rated wattage. In addition to lower light output, HID lamps may shift in overall color and exhibit a lower color rendering index (CRI) when operated in a dimmed mode. Some restrictions apply to both the operation of the ballast and lamp. For more information on dimming, please reference NEMA guidelines or contact a SYLVANIA representative.

### FIXTURE REQUIREMENT

Developed by the American National Standard Institute (ANSI), the fixture requirement code describes the type of fixture required for each lamp type. See lamp warnings for additional information and proper operating instructions.

**E** = Lamps classified as E-type are to be used only in suitably rated enclosed luminaires.

**O** = Lamps classified as O-type, comply with ANSI Standard C78.389 for containment testing and may be used in open luminaires.

**S** = When operated within 15 degrees of vertical, this lamp may be operated in an open luminaire provided the installation is not near people or flammable or combustible material, otherwise it must be operated in a suitably enclosed luminaire.

**F** = F-rated lamps require an enclosed fixture with a U.V filter and lens interlock.

The 2005 NEC requires that luminaires which use a metal halide lamp shall be provided with either a containment barrier that encloses the lamp (historically referred to as an enclosed luminaire) or shall be provided with a means, typically a special lampholder, that will only accept an ANSI Type-O metal halide lamp. (Exception: This requirement will not apply to open luminaires with thick-glass parabolic reflector PAR lamps.)

## UNDERSTANDING HIGH INTENSITY DISCHARGE LIGHTING (continued)

### FIXTURE REQUIREMENT (continued)

The 2005 NEC also requires that metal halide luminaires for new contruction/major renovations in the playing and spectator areas of indoor sports, mixed use, and all purpose facilities, which are subject to physical damage, must be of a type that protects the lamp with a glass or plastic lens. Open luminaires will not be permitted. The use of self-extinguishing lamps is still recommmended and permitted for all existing installations.

For more information regarding the use of Type-O, S, and E metal halide systems, please refer to the NEMA white paper on this subject that is freely available at nema.org.

### HOT RESTRIKE

In most instances, if an HID lamp experiences a momentary power interruption or sudden voltage drop, the lamp may extinguish. A lamp that is still hot will not restart immediately. Because the arc tube within the lamp must cool down before it can re-start, HID lamps have hot restrike times ranging from 1-15 minutes depending on the product type.

### KEY TO DATE OF MANUFACTURE

Consult your SYLVANIA Sales Representative or call 1-800-LIGHTBULB.

### LAMP WARNINGS

HID Metal Halide and Mercury lamps are marked with a “T” or “R” on their packaging. These letters provide safety information about the lamp. Below is the text used by the FDA to describe each of the letters.

**T: WARNING:** This lamp should self-extinguish within 15 minutes after the outer envelope is broken or punctured. If such damage occurs, TURN OFF AND REMOVE LAMP to avoid possible injury from hazardous shortwave ultraviolet radiation.

**R: WARNING:** This lamp can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available.

### LIGHT CENTER LENGTH (LCL)

The light center length of HID lamps is a measurement from the center of the arc tube to the bottom of the lamp base.

### LUMENS

Initial lumen ratings are based on photometry under controlled conditions of at least 10 hours per start in the prescribed position at rated lamp wattage after 100 operating hours. HQI®, LUMALUX® Super and SOX lamp ratings are based on measurements at constant input voltage. Lamp performance under typical service conditions may vary from rated values. Operating universal METALARC® lamps in off-vertical positions will result in reduced lumen output.

Mean lumens are measured on ANSI reference circuits at rated wattage (HQI, LUMALUX Super and SOX lamp ratings are based on input voltage) at 40% of average rated life except for those lamps with a "+" next to their life rating; these lamps are measured at 50% of average rated life. All measurements are based on ballast operation on systems with current crest factors of 1.8 or less. Higher current crest factors reduce values. In actual applications on CW or CWA ballasts, mean lumens may be higher than published ratings.

Unless otherwise noted, all photometry measurements are made on an ANSI reference ballast at rated lamp wattage.

### MAXIMUM OVERALL LENGTH (MOL)

The maximum overall length of single-ended lamps is the maximum distance from the top of the bulb to the bottom of the base. For double-ended lamps, it is the maximum distance from end-to-end (excluding any leadwires).

### ORDERING ABBREVIATION

Ordering abbreviation provides a shorthand description of the lamp, using a unique code which can be used when ordering a lamp if you do not know the product number. This information can be found on the lamp etch.

### PACKAGE QUANTITY

This identifies the number of lamps contained in a standard shipping carton.

### PRODUCT NUMBER

Product number is a five digit number used to identify a specific SYLVANIA lamp and should be used when ordering.

### WARM UP TIME

Most HID lamps do not have instant on capabilities. It may take several minutes for the arc tube to stabilize before optimal light output is achieved.

### WATTS

Watts shown are nominal lamp watts only.

## HOW TO READ PRODUCT INFORMATION - HID

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Ballast Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life(hrs) | Approx Lumens (initial) | (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **100** | E17 | E26 Med | 67506 | **LU100/MED** | S54 | 20 | Clear | Universal | O | 24000+ | 9500 | 8000 | 22 | 2100 | 5,34 |
| **320** | BT37 | E39 Excl Mogul | 64851 | **MCP320/C/PS/BU-ONLY/ 840/BT37 PB** | M154/O | 6 | Coated | Base up within 15° only | O | 20000 | 36000 | 27000 | 88 | 3900 | 1,10,11,13 |
| **360** | BT37 | E39 Mogul | 64655 | **MS360/SS/BU-HOR** | M59/S | 6 | Clear | BU-HOR | S | 20000V 15000H | 36000V 30000H | 23500V 19000H | 65 | 4000 | ✹ 20,23,24 |
| **1000** | BT37 | E39 Mogul | 64351 | **M1000/PS/U/BT37** | M141/E | 6 | Clear | Universal | E | 15000V 9000H | 110000V 107800H | 96000V 86300H | 65 | 3800 | 2,10 |

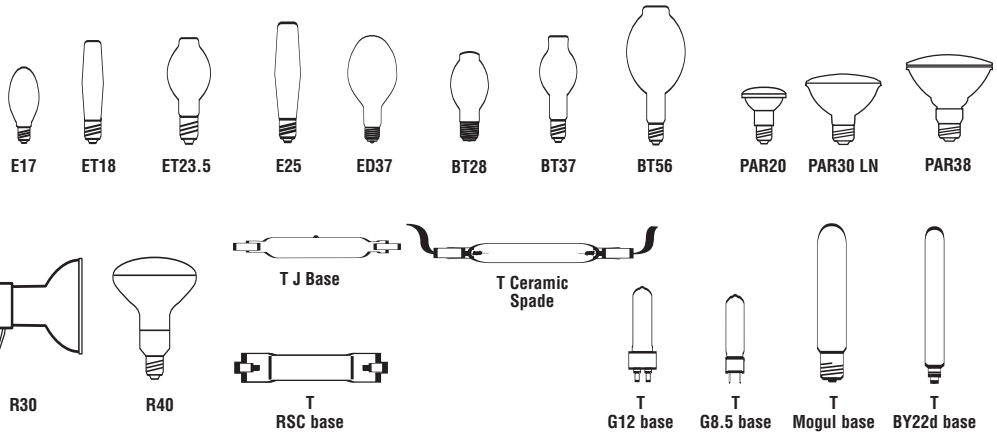
Please refer to the "Understanding High Intensity Discharge" section on previous pages for definitions and explanations of the category headers.

## HOW TO READ ORDERING ABBREVIATIONS

| MS360/SS/BU-HOR | | MCP320/C/PS/BU-ONLY/840/BT37 PB | | LU100/D/MED | | H39KC-175/DX | |
|---|---|---|---|---|---|---|---|
| **MS** | Super METALARC | **MCP** | Metalarc Ceramic Pro-Tech | **LU** | Lumalux® | **H39** | ANSI Ballast Number |
| **360** | Wattage | **320** | Wattage | **100** | Wattage | **175** | Wattage |
| **SS** | SUPERSAVER | **C** | Coated | **D** | Coated | **DX** | Brite White Deluxe Coated |
| **BU-HOR** | Operating Position: Base up through Horizontal | **PS** | Pulse Start | **MED** | Medium Base | | |
| | | **BU-ONLY** | Operating Position: Base up only | | | | |
| | | **840** | 80+ CRI; 4000 CCT | | | | |
| | | **BT37** | Bulb Type | | | | |
| | | **PB** | Powerball | | | | |

## BULBS

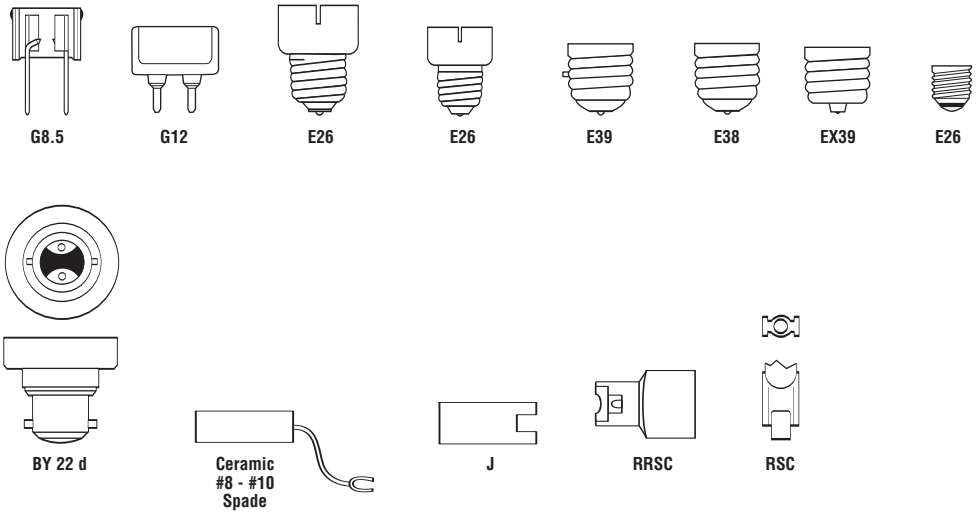
A bulb designation consists of a letter(s) to indicate the shape and a number(s) to indicate the approximate maximum diameter in eighths of an inch. Thus, an E17 lamp is an Ellipsoidal shape and 17/8 of an inch or 2 1/8 inches in diameter. Other letter designations include: BT=Bulbous Tubular; E or ED=Ellipsoidal; ET=Ellipsoidal Tubular; PAR=Parabolic; R=Reflector; T=Tubular.




## BASES

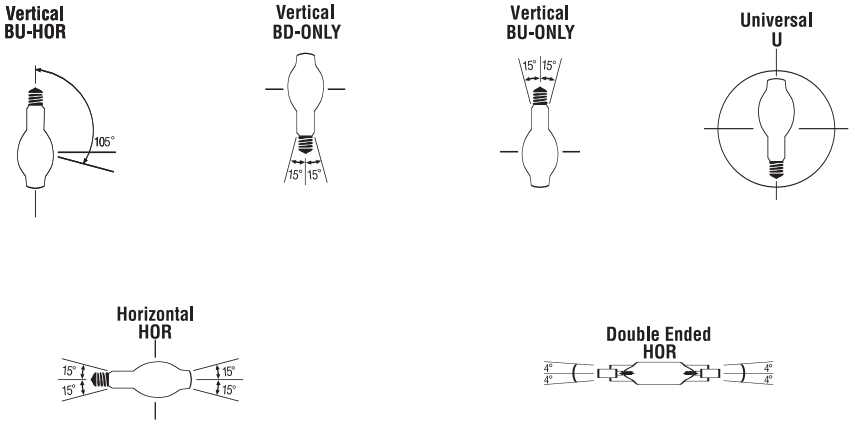
Lamps with screw bases have one lead-in wire soldered or welded to the center contact and the other soldered or welded to the upper rim of the base shell.

Bases with ceramic bodies have internal leads welded to either silver-plated contacts or external lead wires.




## OPERATING POSITIONS

A designated operating positions assure maximum lamp performance. Where it is not specified, the lamp is suitable for operation in any position.



## HID BRAND NAME GUIDE

Note: These tables are intended only as guides and may represent another lamp company's most similar product or product family rather than an identical match. Individual manufacturer's performance values should be consulted.

| SYLVANIA | GE * | PHILIPS ** |
|---|---|---|
| METALARC® | Multi-Vapor | Metal Halide |
| METALARC Powerball® | ConstantColor CMH | MasterColor |
| METALARC PRO-TECH® | Protected Multi-Vapor | Protected Metal Halide |
| Super METALARC | High Output Multi-Vapor | Metal Halide |
| METALARC Pulse Start | PulseArc Multi-Vapor | Pulse Start Metal Halide |
| METALARC Super Saver | Watt-Miser High Output Multi-Vapor | Metal Halide |
| METALARC Briteline | SportsLighting | Double-Ended Metal Halide |
| HQI® | Arcstream | Double-Ended Metal Halide |
| METALARC SAFELINE® | Saf-T-Gard Multi-Vapor | Safety Lifeguard Metal Halide |

*Trademark or registered trademark of General Electric Company.

| SYLVANIA | GE * | PHILIPS ** |
|---|---|---|
| LUMALUX® | Lucalox | Ceramalux |
| LUMALUX / ECO® | Ecolux | Ceramalux ALTO |
| LUMALUX PLUS®/ ECO | Ecolux NC | Ceramalux ALTO NC |
| LUMALUX Standby | Standby Longlife Lucalox | Ceramalux Instant Restrike |
| UNALUX® | E-Z Lux | Ceramalux RetroLux |
| SOX Low Pressure Sodium | SOX Low Pressure Sodium | SOX Low Pressure Sodium |

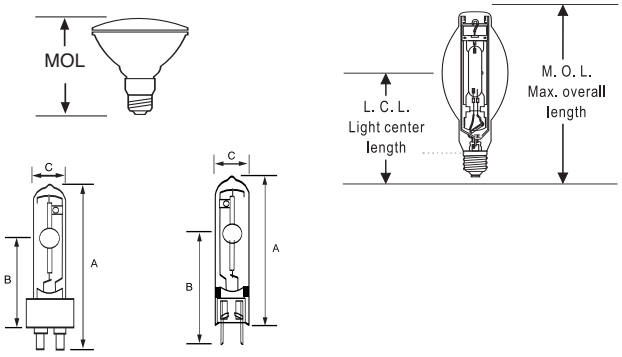
**Trademark or registered trademark of Philips.

## PHYSICAL DIMENSIONS

| BRITELINE | PHYSICAL SIZE | (dimensions in mm) |
|---|---|---|
| **Bulb** | **LCL** | **MOL** |
| T7 | 127 | 256 |
| T8 | 127 | 254 |
| T9 | 127 | 254 |

| HQI | PHYSICAL SIZE | (dimensions in mm) |
|---|---|---|
| **Bulb** | **LCL** | **MOL** |
| T6 | 57 | 114 |
| T7 | 66 | 132 |
| T7.5 | 56 | 84 |
| R30 | -- | 3.5 |

| MERCURY VAPOR | | (dimensions in inches) |
|---|---|---|
| **Bulb** | **LCL** | **MOL** |
| E17 | 3.75 | 5.44 |
| ET23.5 | 5 | 7.5 |
| ED28 | 5 | 8.31 |
| ED37 | 7 | 11.5 |
| BT56 | 9.5 | 15.38 |
| PAR38 | -- | 5.44 |
| R40 (100W) | -- | 5.44 |
| R40 (175W) | -- | 7.5 |




| METALARC METAL HALIDE | | (dimensions in inches) |
|---|---|---|
| **Physical size of all Metalarc lamps** | | |
| **Bulb** | **LCL** | **MOL** |
| T4.5/TC | 2 | 3.19 |
| E17/ED17 | 3.4 | 5.44 |
| ET18 (250W) | 5.75 | 9.75 |
| ET18 (400W) | 6.14 | 9.75 |
| ET23.5 | 4.49 | 6.97 |
| BT28/ED28 | 5 | 8.31 |
| BT37 | 7 | 11.5 |
| BT56 | 9.5 | 15.38 |
| T6 | 2.2 | 3.94 |
| T6 (DE) | 2.25 | 4.5 |
| T7.5 | 2.2 | 4.13 |
| PAR20 | -- | 3.65 |
| PAR30LN | -- | 4.76 |
| PAR38 | -- | 5.32 |

| LUMALUX HIGH PRESSURE SODIUM | | (dimensions in inches) |
|---|---|---|
| **Physical size of all LUMALUX and UNALUX lamps** | | |
| **Bulb** | **LCL** | **MOL** |
| T7 | 5 | 10.06 |
| T14.5 | 6.89 | 11.22 |
| E17 | 3.43 | 5.43 |
| ET18 | 5.75 | 9.75 |
| ET23.5 | 5 | 7.75 |
| E25 | 8.75 | 15.08 |
| BT28 | 5 | 8.98 |
| BT28 (UNALUX) | 5 | 8.31 |
| BT37 | 7 | 11.5 |


The following items were accepted into the 2006 IESNA Progress Report, which recognizes innovative products introduced to the industry during that year.

20-watt PAR30 METALARC POWERBALL
39-watt PAR20 METALARC POWERBALL
39-watt PAR30 METALARC POWERBALL
750-watt METALARC Metal Halide

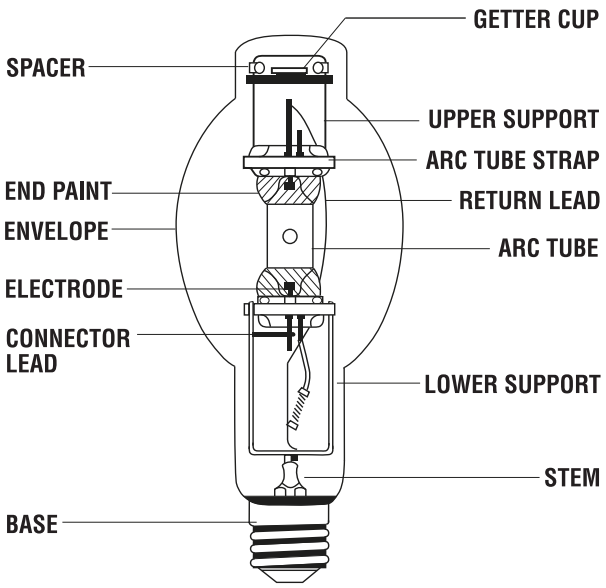
## LAMP DISPOSAL LABELING

The following information appears on the packages of high intensity discharge lamps that contain mercury. For more information on lamp disposal labeling, see the inside back cover of this catalog.

**Hg Lamp Contains Mercury**
**Manage in accordance with disposal laws**
**See www.lamprecycle.org or 1-866-666-6850**

**For weight and measure information, please visit www. sylvania.com**
**For more information about HID lamp warranties, please visit the warranty section of this catalog.**

## GUIDE TO METAL HALIDE LAMPS




METALARC® Metal Halide lamps are designed for general lighting applications such as commercial, industrial lighting and outdoor floodlighting where good color and high efficiency are desired. OSRAM SYLVANIA currently offers ten families of Metal Halide lamps:

**STANDARD METALARC(M)** — Offered in a range of wattages (from 175-1500 watts), standard METALARC metal halide lamps allow for design flexibility with multiple light source solutions to choose from. METALARC lamps have significantly higher efficacy than mercury vapor or incandescent products and considerably better CRI than mercury vapor and high pressure sodium lamps.

**COMPACT METALARC(M/BT##)** — These lamps have reduced outer jacket sizes compared to standard metal halide lamps for use in smaller fixtures. The reduced bulb diameter allows fixture manufacturers to design more versatile, less expensive and highly efficient luminaries.

**SUPER METALARC(MS)** — Super METALARC lamps are position dedicated, which means that they are specifically designed to be run in particular operating positions. Because of this feature, these lamps exhibit improved performance over standard, universal operating metal halide lamps of similar wattage. Product features include long life, higher maintained lumens and increased efficacy.

**METALARC PRO-TECH®(MP)** — These are specially designed lamps that incorporate a protective shroud to contain a non-passive arc tube failure. Metalarc Pro-Tech lamps can be used in open or enclosed fixtures. Dedicated bases are standard on both low and high wattage lamp types.

**METALARC POWERBALL® CERAMIC(MC or MCP)** — POWERBALL lamps use a patented round ceramic arc tube, which allows for a more uniform arc tube temperature, higher color rendering (>85), and improved color consistency. These lamps are ideal for applications that demand the best in color performance.

**METALARC PULSE START(M/PS)** — METALARC Pulse Start lamps utilize metal halide performance with proven ignitor technology for longer life, improved lumen maintenance and reduced color shift over lamp life compared to standard metal halide products. Lamp configurations include low and high wattage types, both clear and coated. METALARC PRO-TECH designs are also available for open fixture applications. All METALARC products lower than 150-watts and all METALARC POWERBALL products utilize Pulse Start technology exclusively.

**METALARC SUPERSAVER®(M/SS)**— Constructed with an enhanced arc tube for peak performance, METALARC SUPERSAVER lamps are designed as energy-saving, replacement metal halide lamps. The 360W SUPERSAVER lamp is a direct retrofit for existing 400W products, the 950W SUPERSAVER replaces 1000W lamps, and the 150W SUPERSAVER replaces 175 W lamps -- no ballast change is required.

**METALARC BRITELINE(M)** — These double-ended lamps are designed for compact fixtures, which provide excellent optical control and high efficiency. These higher wattage lamps are particularly well suited for sports lighting and outdoor floodlighting applications.

**METALARC SAFELINE®(MT)** — METALARC SAFELINE lamps are designed to self-extinguish when the outer bulb is broken reducing exposure to possible ultraviolet radiation. These lamps are recommeded for use in sports facilities and other places of public assembly where the lamps may be subject to breakage by external objects.

**HQI®** — With their compact size and very short arc length, HQI metal halide lamps allow luminaire manufacturers to design highly efficient fixtures using proven quartz arc tube technology.

## Enclosed fixture rated METALARC®, E-Type Lamp

R

**⚠ WARNING**

ANSI Luminaire Code **E**
**ENCLOSED FIXTURE**

THE FOLLOWING INSTRUCTIONS MUST BE COMPLIED WITH TO AVOID RISK OF PERSONAL INJURY, PROPERTY DAMAGE AND POOR LAMP PERFORMANCE.

**I. RUPTURE RISKS:** This Metal Halide lamp is constructed of a UV-attenuating outer quartz bulb with an internal arc-tube. Metal Halide arc-tubes operate at high pressure and at very high temperatures and can unexpectedly rupture due to internal causes or external factors such as a ballast failure or misapplication. An arc-tube rupture can burst and shatter the outer glass bulb resulting in the discharge of glass fragments and extremely hot particles. In the event of such rupture, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

**TO REDUCE THESE RISKS:**

1. **Only operate lamp in an enclosed fixture with a lens/diffuser material able to contain hot lamp fragments (up to 2192°F, 1200°C for a ceramic arc tube and 2012°F, 1100°C for quartz). If you are uncertain, contact your fixture manufacturer.**
2. **Only operate lamp with compatible ballast and fixture. (See catalog for specific information.)**
3. **Only operate lamp in designated operating positions. (See catalog for illustration.)**
4. **Lamp must be turned off for a minimum of fifteen minutes at least once a week.**
5. **Never expose an operating lamp to moisture (such as rain, sleet or snow).**
6. **Replace lamp if outer glass bulb is scratched, cracked or damaged in any way.**
7. **Electrically insulate any metal support in contact with the outer bulb to avoid glass decomposition.**
8. **Replace lamp at or before the end of rated life. (See catalog for rated life.)**

FOR APPLICATIONS WHERE AN ADDITIONAL MEASURE OF SAFETY IS DESIRED, LAMPS USING AN INTERNAL SHIELD DESIGNED TO CONTAIN AN ARC-TUBE RUPTURE ARE AVAILABLE.

**II. ELECTRICAL SHOCK AND BURN HAZARD:** Do not remove or insert lamp while power is on. If outer glass bulb is broken, shut off power immediately and remove lamp after it has cooled.

**III. ULTRAVIOLET RADIATION EXPOSURE:**
WARNING: This lamp can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if the outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available. This product conforms to the following federal regulations: U.S.A.: 21 CFR 1040.30 and CANADA: SOR/80-381

**IV. LAMP INSTALLATION:**

1. Screw lamp firmly but not forcibly into socket to avoid breakage.
2. All horizontal lamps with position oriented mogul (POM) bases (with locating pin) require a POM socket. Do not remove pin from base.
3. All pulse start lamps require a socket rated to withstand a 4000 volt pulse.
4. Never install the lamp into an ordinary household socket.

**V. BROKEN ARC-TUBE:** Take care in handling and disposing of this lamp. If arc-tube is broken, avoid skin contact with any of the contents and fragments. See Product Safety Data Sheet for further details.

## Enclosed fixture rated METALARC® E-Type (Ceramic & Quartz, G12, G8.5 & DE, UV-Stop Outer-jacket) Lamp

R

**⚠ WARNING**

ANSI Luminaire Code **E**
**ENCLOSED FIXTURE**

THE FOLLOWING INSTRUCTIONS MUST BE COMPLIED WITH TO AVOID RISK OF PERSONAL INJURY, PROPERTY DAMAGE AND POOR LAMP PERFORMANCE.

**I. RUPTURE RISKS:** This Metal Halide lamp is constructed of an outer glass bulb with an internal ceramic or quartz arc-tube. Metal Halide arc-tubes operate at high pressure and at very high temperatures and can unexpectedly rupture due to internal causes or external factors such as a ballast failure or misapplication. An arc-tube rupture can burst and shatter the outer glass bulb resulting in the discharge of glass fragments and extremely hot particles. In the event of such rupture, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

**TO REDUCE RISKS:**

1. **Only operate lamp in an enclosed fixture with a lens/diffuser material able to contain hot lamp fragments (up to 2192°F, 1200°C for a ceramic arc-tube and 2012°F, 1100°C for quartz). If you are uncertain, contact your fixture manufacturer.**
2. **Only operate lamp with compatible ballast and fixture. (See catalog for specific information.)**
3. **Only operate lamp in designated operating positions. (See catalog for illustration.)**
4. **Lamp must be turned off for a minimum of fifteen minutes at least once a week.**
5. **Never expose operating lamp to moisture (such as rain, sleet or snow).**
6. **Replace lamp if outer glass bulb is scratched, cracked or damaged in any way.**
7. **Electrically insulate any metal support in contact with the outer bulb to avoid glass decomposition.**
8. **Replace lamp at or before the end of rated life. (See catalog for rated life.)**

**II. ELECTRICAL SHOCK AND BURN HAZARD:** Do not remove or insert lamp while power is on. If outer glass bulb is broken, shut off power immediately and remove lamp after it has cooled.

**III. ULTRAVIOLET RADIATION EXPOSURE:**
WARNING: This lamp can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if the outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available. This product conforms to the following federal regulations: U.S.A.: 21 CFR 1040.30 and CANADA: SOR/80-381

**IV. LAMP INSTALLATION:**

1. Ensure that lamp is securely seated in the socket.
2. All sockets must be rated to withstand the maximum pulse voltage output of the ballast.
3. Never install the lamp into an ordinary household socket or a fixture intended for tungsten halogen lamps.

**V. BROKEN ARC-TUBE:** Take care in handling and disposing of this lamp. If arc-tube is broken, avoid skin contact with any of the contents and fragments. See Product Safety Data Sheet for further details.

## Open Fixture Rated, METALARC PRO-TECH®, O-Type Lamp

R

**⚠ WARNING**

ANSI Luminaire Code **O**
**OPEN FIXTURE permissible**

THE FOLLOWING INSTRUCTIONS MUST BE COMPLIED WITH TO AVOID RISK OF PERSONAL INJURY, PROPERTY DAMAGE AND POOR LAMP PERFORMANCE.

**I. RUPTURE RISKS:** This Metal Halide lamp is constructed of an outer glass bulb with an internal arc-tube. Metal Halide arc-tubes operate at high pressure and at very high temperatures and can unexpectedly rupture due to internal causes or external factors such as a ballast failure or misapplication. An arc-tube rupture can burst and shatter the outer glass bulb resulting in the discharge of glass fragments and extremely hot particles. In the event of such rupture, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

**TO REDUCE THESE RISKS:**

1. **Only operate with compatible ballast and fixture. (See catalog for specific information.)**
2. **Only operate lamp in designated operating positions. (See catalog for illustration.)**
3. **Lamp must be turned off for a minimum of fifteen minutes at least once a week.**
4. **Never expose operating lamp to moisture (such as rain, sleet or snow).**
5. **Replace lamp if outer glass bulb is scratched, cracked or damaged in any way.**
6. **Electrically insulate any metal support in contact with the outer glass bulb to avoid glass decomposition.**
7. **Replace lamp at or before the end of rated life. (See catalog for rated life.)**

This lamp is intended for use in open fixtures since it contains a special shield which was designed to contain a ruptured arc-tube and thereby minimize the resultant risks of personal injury, property damage, burns and fire. In applications where an additional measure of safety is desired, an enclosed fixture may be used with a lens/diffuser material able to contain hot lamp fragments (up to 2192°F, 1200°C for a ceramic arc tube and 2012°F, 1100°C for quartz). If you are uncertain, contact your fixture manufacturer.

**II. ELECTRICAL SHOCK AND BURN HAZARD:** Do not remove or insert lamp while power is on. If outer glass bulb is broken, shut off power immediately and remove lamp after it has cooled.

**III. ULTRAVIOLET RADIATION EXPOSURE:**
WARNING: This lamp can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if the outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available. This product conforms to the following federal regulations: U.S.A.: 21 CFR 1040.30 and CANADA: SOR/80-381

**IV. LAMP INSTALLATION:**

1. Screw lamp firmly but not forcibly into socket to avoid breakage.
2. All pulse start lamps require a socket rated to withstand a 4000 volt pulse.
3. Never install the lamp into an ordinary household socket.

**V. BROKEN ARC-TUBE:** Take care in handling and disposing of this lamp. If arc-tube is broken, avoid skin contact with any of the contents and fragments. See Product Safety Data Sheet for further details.

## METALARC®, S-Type Lamp

R

**⚠ WARNING**

ANSI Luminaire Code **S**
**ENCLOSED FIXTURE/Open if meets requirement of Paragraph I.1 below**

THE FOLLOWING INSTRUCTIONS MUST BE COMPLIED WITH TO AVOID RISK OF PERSONAL INJURY, PROPERTY DAMAGE AND POOR LAMP PERFORMANCE.

**I. RUPTURE RISKS:** This Metal Halide lamp is constructed of an outer glass bulb with an internal arc-tube. Metal Halide arc-tubes operate at high pressure and at very high temperatures and can unexpectedly rupture due to internal causes or external factors such as a ballast failure or misapplication. An arc-tube rupture can burst and shatter the outer glass bulb resulting in the discharge of glass fragments and extremely hot particles. In the event of such rupture, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

**TO REDUCE THESE RISKS:**

1. **Only operate lamp in an enclosed fixture with a lens/diffuser material able to contain hot lamp fragments (up to 2012°F, 1100°C). If you are uncertain, contact your fixture manufacturer. When operated within 15° of vertical, this lamp may be operated in an open fixture PROVIDED THE INSTALLATION IS NOT NEAR PEOPLE OR FLAMMABLE OR COMBUSTIBLE MATERIAL.**
2. **Only operate lamp with compatible ballast and fixture. (See catalog for specific information.)**
3. **Only operate lamp in designated operating positions. (See catalog for illustration.)**
4. **Lamp must be turned off for a minimum of fifteen minutes at least once a week.**
5. **Never expose an operating lamp to moisture (such as rain, sleet or snow).**
6. **Replace lamp if outer glass bulb is scratched, cracked or damaged in any way.**
7. **Electrically insulate any metal support in contact with the outer bulb to avoid glass decomposition.**
8. **Replace lamp at or before the end of rated life. (See catalog for rated life.)**

FOR APPLICATIONS WHERE AN ADDITIONAL MEASURE OF SAFETY IS DESIRED, LAMPS USING AN INTERNAL SHIELD DESIGNED TO CONTAIN AN ARC-TUBE RUPTURE ARE AVAILABLE.

**II. ELECTRICAL SHOCK AND BURN HAZARD:** Do not remove or insert lamp while power is on. If outer glass bulb is broken, shut off power immediately and remove lamp after it has cooled.

**III. ULTRAVIOLET RADIATION EXPOSURE:**
WARNING: This lamp can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if the outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available. This product conforms to the following federal regulations: U.S.A.: 21 CFR 1040.30 and CANADA: SOR/80-381

**IV. LAMP INSTALLATION:**

1. Screw lamp firmly but not forcibly into socket to avoid breakage.
2. All horizontal lamps with position oriented mogul (POM) bases (with locating pin) require a POM socket. Do not remove pin from base.
3. All pulse start lamps require a socket rated to withstand a 4000 volt pulse.
4. Never install the lamp into an ordinary household socket.

**V. BROKEN ARC-TUBE:** Take care in handling and disposing of this lamp. If arc-tube is broken, avoid skin contact with any of the contents and fragments. See Product Safety Data Sheet for further details.

## METALARC® SAFELINE®, S-Type Lamp

T

**⚠ WARNING**

ANSI Luminaire Code **S**
**ENCLOSED FIXTURE/Open if meets requirement of Paragraph I.1 below**

THE FOLLOWING INSTRUCTIONS MUST BE COMPLIED WITH TO AVOID RISK OF PERSONAL INJURY, PROPERTY DAMAGE AND POOR LAMP PERFORMANCE.

**I. RUPTURE RISKS:** This Metal Halide lamp is constructed of an outer glass bulb with an internal arc-tube. Metal Halide arc-tubes operate at high pressure and at very high temperatures and can unexpectedly rupture due to internal causes or external factors such as a ballast failure or misapplication. An arc-tube rupture can burst and shatter the outer glass bulb resulting in the discharge of glass fragments and extremely hot particles. In the event of such rupture, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

**TO REDUCE THESE RISKS:**

1. **Only operate lamp in an enclosed fixture with a lens/diffuser material able to contain hot lamp fragments (up to 2012°F, 1100°C). If you are uncertain, contact your fixture manufacturer. When operated within 15° of vertical, this lamp may be operated in an open fixture PROVIDED THE INSTALLATION IS NOT NEAR PEOPLE OR FLAMMABLE OR COMBUSTIBLE MATERIAL.**
2. **Only operate lamp with compatible ballast and fixture. (See catalog for specific information.)**
3. **Only operate lamp in designated operating positions. (See catalog for illustration.)**
4. **Lamp must be turned off for a minimum of fifteen minutes at least once a week.**
5. **Never expose an operating lamp to moisture (such as rain, sleet or snow).**
6. **Replace lamp if outer glass bulb is scratched, cracked or damaged in any way.**
7. **Electrically insulate any metal support in contact with the outer bulb to avoid glass decomposition.**
8. **Replace lamp at or before the end of rated life. (See catalog for rated life.)**

FOR APPLICATIONS WHERE AN ADDITIONAL MEASURE OF SAFETY IS DESIRED, LAMPS USING AN INTERNAL SHIELD DESIGNED TO CONTAIN AN ARC-TUBE RUPTURE ARE AVAILABLE.

**II. ELECTRICAL SHOCK AND BURN HAZARD:** Do not remove or insert lamp while power is on. If outer glass bulb is broken, shut off power immediately and remove lamp after it has cooled.

**III ULTRAVIOLET RADIATION EXPOSURE:** This lamp should self-extinguish within 15 minutes after the outer envelope is broken or punctured. If such damage occurs, TURN OFF AND REMOVE LAMP to avoid possible injury from hazardous shortwave ultraviolet radiation. This product conforms to the following federal regulations: U.S.A.: 21 CFR 1040.30 and CANADA: SOR/80-381

**IV. LAMP INSTALLATION:**

1. Screw lamp firmly but not forcibly into socket to avoid breakage.
2. Never install the lamp into an ordinary household socket.

**V. BROKEN ARC-TUBE:** Take care in handling and disposing of this lamp. If arc-tube is broken, avoid skin contact with any of the contents and fragments. See Product Safety Data Sheet for further details.

## METALARC® BRITELINE, F-Type Lamp

**⚠ WARNING**

ANSI Luminaire Code **F**
**ENCLOSED FIXTURE with UV filter and lens interlock required**

THE FOLLOWING INSTRUCTIONS MUST BE COMPLIED WITH TO AVOID RISK OF PERSONAL INJURY, PROPERTY DAMAGE AND POOR LAMP PERFORMANCE.

**I. RUPTURE RISKS:** This Metal Halide lamp is constructed with a quartz arc-tube which operates at high pressure and at very high temperatures. The arc-tube can unexpectedly rupture due to internal causes or external factors such as a ballast failure or misapplication resulting in the discharge of glass fragments and extremely hot particles. In the event of such rupture, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

**TO REDUCE THESE RISKS:**

1. **Only operate lamp in an enclosed fixture with a lens/diffuser material able to contain hot lamp fragments (up to 2012°F, 1100°C). If you are uncertain, contact your fixture manufacturer.**
2. **Only operate lamp with compatible ballast and fixture. (See catalog for specific information.)**
3. **Only operate lamp in horizontal position. (See catalog for allowable deviation from horizontal.)**
4. **Lamp must be turned off for a minimum of fifteen minutes at least once a week.**
5. **Never expose operating lamp to moisture (such as rain, sleet or snow).**
6. **Replace lamp if bulb is scratched, cracked or damaged in any way.**
7. **Keep all metals at least 3 inches from the body of the arc tube to avoid glass decomposition.**
8. **Replace lamp at or before the end of rated life. (See catalog for rated life.)**

**II. ULTRAVIOLET RADIATION HAZARD:** THIS LAMP EMITS ULTRAVIOLET (UV) POWER DURING OPERATION AND IS IN RISK GROUP 3 PER ANSI-IESNA Rp-27.3-96. THIS LAMP CAN CAUSE SERIOUS SKIN BURN AND EYE INJURY FROM SHORTWAVE ULTRAVIOLET RADIATION. IT **MUST** BE OPERATED IN AN ENCLOSED FIXTURE WHICH FILTERS OUT THE HARMFUL SHORTWAVE ULTRAVIOLET RADIATION. IF YOU ARE UNCERTAIN, CONTACT YOUR FIXTURE MANUFACTURER.

A power interlock device is required to automatically turn off the lamp if the fixture assembly is opened. It is strongly recommended that a power interlock device also turn off power to the lamp if the fixture lens is broken. If the fixture lens breaks and the lamp remains on, turn off power immediately and repair before re-energizing.

This lamp is to be used **ONLY** in a fixture specifically designed for use with this lamp and recommended for its use by the equipment manufacturer.

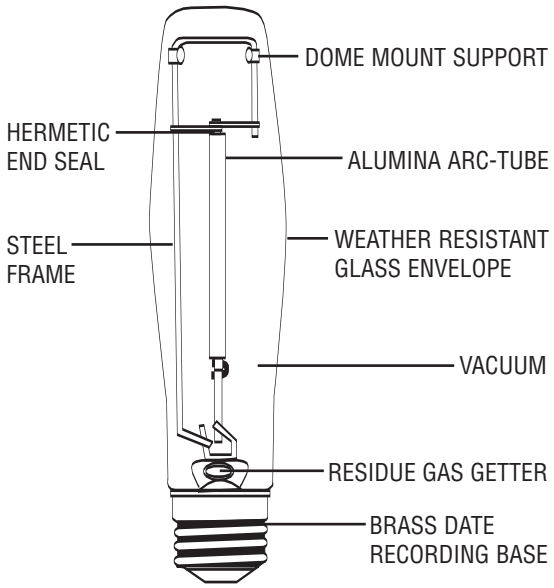
**III. ELECTRICAL SHOCK AND BURN HAZARD:** Do not remove or insert lamp while power is on. Allow lamp to cool before removing.

**IV. LAMP INSTALLATION AND FIXTURE:** Do not remove lamp from package until ready for use and then handle only with clean cotton gloves. If lamp is handled, fingerprints, grease or oils may be removed from the bulb by wiping with alcohol. This will remove materials which cause whitish spotting (devitrification) and premature lamp failure. Dry lamp carefully with clean cotton cloth.

1. Install lamp without undue pressure.
2. Ensure that lamp electrical connections are secure and nothing is touching bulb.
3. All seal gaskets and wire insulation must be shielded from the UV radiation produced by this lamp.
4. Fixture wiring must have a temperature rating of 250° C and a minimum voltage rating of 600 V RMS for all lamps except the 1500T7 lamp which must have a voltage rating of 1500V RMS.
5. For maximum performance, all double-ended lamps must be operated with the arc-tube tip up.

**V. BROKEN ARC-TUBE:** Take care in handling and disposing of this lamp. If arc-tube is broken, avoid skin contact with any of the contents and fragments. See Product Safety Data Sheet for further details.

# GUIDE TO HIGH PRESSURE SODIUM LAMPS




High Pressure Sodium lamps are one of the most efficient HID sources available today. These lamps are used for general lighting applications where high efficiency and long life are desired while color rendering is not critical. Typical applications include street lighting, parking lot lighting, building floodlighting and general area lighting.

**LUMALUX PLUS® / ECO® AND LUMALUX PLUS® —** These environmentally friendlier lamps contain significantly less Mercury than standard high pressure sodium lamps. They will not cycle at the end of life and are rated for 30,000 hours life. All lamps operate on existing high pressure sodium ballasts. LUMALUX Plus / ECO lamps are designed with lead-free bases and they pass the existing Federal TCLP limits.*

**LUMALUX® AND LUMALUX / ECO —** Available in a broad range of wattages, in both clear and coated configurations, LUMALUX and LUMALUX / ECO lamps are ideal for a variety of applications. LUMALUX medium based lamps are available in wattages ranging from 35-150 watts while mogul based lamps are offered in 50-1000 watts. The mogul based LUMALUX / ECO lamps operate on standard high pressure sodium ballasts and pass the Federal TCLP test.*

**LUMALUX STANDBY —** These lamps are designed with two arc tubes to provide instant restrike capability in the event of a momentary power interruption. With almost twice the life of standard high pressure sodium lamps, LUMALUX Standby lamps are a great way to reduce maintenance costs.

**SOX —** These energy efficient low pressure sodium lamps emit a characteristic yellow light that is ideal for certain exterior street and area lighting.

* based on NEMA LL Series Standards

**WARNING**

## LUMALUX, LUMALUX / ECO, LUMALUX PLUS / ECO, AND LUMALUX STANDBY LAMPS

THE FOLLOWING INSTRUCTIONS MUST BE COMPLIED WITH TO AVOID RISK OF PERSONAL INJURY, PROPERTY DAMAGE AND POOR LAMP PERFORMANCE.

**I. OPERATE WITH COMPATIBLE BALLAST AND FIXTURE ONLY:**
This lamp must be operated in a fixture and ballast which has an ANSI designation identical to that found on the lamp outer glass bulb. (with the exception of the LU/PLUS on Cooper ignitor 220C173G11, which may have compatibility issues).

**II. ELECTRICAL SHOCK AND BURN HAZARD:**
Do not remove or insert lamp when power is on. If outer glass bulb is broken, shut off power immediately and remove lamp after it has cooled.

**III. INSTALLATION AND OPERATING INSTRUCTIONS:**
See catalog for specific operating parameters.
1. A specially designed socket which is electrically rated to withstand a 4000 volt pulse is required for all High Pressure Sodium lamps except for the 750 and 1000 watt lamps which require a socket rated to withstand a 5000 volt pulse.
2. These lamps have a vacuum jacket and may implode if broken. For added safety, wear safety glasses and gloves when installing or removing lamps.
3. To avoid burn injury, allow lamp to cool before removing from fixture.
4. Screw lamp firmly but not forcibly into socket to avoid breakage.
5. Replace lamps at or before end of rated life. (See catalog for rated life.)
6. Never install it into an ordinary household socket.
7. This lamp may be operated in any position.

**IV. PROPER CARE AND MAINTENANCE:**
To reduce the possibility of a rupture and premature lamp failure:
1. Do not use with luminaires which would cause an excessive increase in arc-tube operating voltage.
2. Do not expose operating lamp to moisture (such as, rain, sleet or snow).
3. Replace lamp if outer glass bulb has been scratched, cracked, or damaged in any way.
4. Electrically insulate any metal support in contact with the outer glass bulb to avoid glass decomposition.

**V. BROKEN ARC-TUBE:** Take care in handling and disposing of this lamp. If arc-tube is broken, avoid skin contact with any of the contents and fragments. See Product Safety Data Sheet for further details.

**WARNING**

ANSI LUMINAIRE Code **F**
**ENCLOSED FIXTURE with UV Filter and lens interlock required**

## LUMALUX® Double-Ended Quartz Jacketed Lamps

**I. OPERATE WITH COMPATIBLE BALLAST AND FIXTURE ONLY:** This lamp must be operated in a fixture and ballast which has an ANSI designation identical to that found on the lamp outer glass bulb.

**II. ULTRAVIOLET RADIATION HAZARD:** THIS LAMP EMITS ULTRAVIOLET (UV) POWER DURING OPERATION AND IS IN RISK GROUP 2 PER ANSI-IESNA Rp-27.3-96. THIS LAMP CAN CAUSE SERIOUS SKIN BURN AND EYE INJURY FROM SHORTWAVE ULTRAVIOLET RADIATION. IT **MUST** BE OPERATED IN AN ENCLOSED FIXTURE WHICH FILTERS OUT THE HARMFUL SHORTWAVE ULTRAVIOLET RADIATION. IF YOU ARE UNCERTAIN, CONTACT YOUR FIXTURE MANUFACTURER.

A power interlock device is required to automatically turn off the lamp if the fixture assembly is opened. It is strongly recommended that a power interlock device also turn off power to the lamp if the fixture lens is broken. If the fixture lens breaks and the lamp remains on, turn off power immediately and repair before re-energizing.

This lamp is to be used **ONLY** in a fixture specifically designed for use with this lamp and recommended for its use by the equipment manufacturer.

**III. ELECTRICAL SHOCK AND BURN HAZARD: Do not remove or insert lamp while power is on. Allow lamp to cool before removing.**

**IV. LAMP INSTALLATION AND FIXTURE:** Do not remove lamp from package until ready for use and then handle only with clean cotton gloves. If lamp is handled, fingerprints, grease or oils may be removed from the bulb by wiping with alcohol. This will remove materials which cause whitish spotting (devitrification) and premature lamp failure. Dry lamp carefully with clean cotton cloth.

1. Install lamp without undue pressure.
2. Ensure that lamp electrical connections are secure and nothing is touching bulb.
3. All seal gaskets and wire insulation must be shielded from the UV radiation produced by this lamp.
4. Fixture wiring must have a temperature rating of 250° C and a minimum voltage rating of 600 V RMS.
5. Never install it into a fixture designed for use with tungsten halogen lamps.
6. Do not expose operating lamp to moisture (such as rain, sleet or snow).
7. Replace lamp if outer glass bulb has been scratched, cracked, or damaged in any way.

**V. BROKEN ARC-TUBE:** Take care in handling and disposing of this lamp. If arc-tube is broken, avoid skin contact with any of the contents and fragments. See Product Safety Data Sheet for further details.

R ⚠ WARNING

## SOX LAMPS

THE FOLLOWING INSTRUCTIONS MUST BE COMPLIED WITH TO AVOID RISK OF PERSONAL INJURY, PROPERTY DAMAGE AND POOR LAMP PERFORMANCE

**I. BURNS AND FIRE HAZARD:**
Sox lamps contain a quantity of sodium which may heat from a reaction with moisture in the air or on the skin if a lamp is broken. Hot sodium will burn spontaneously when exposed to the air. Sodium lamps must be packed, shipped, and stored in the wrapping provided to reduce the risk of breakage.

**II. IMPLOSION HAZARD:**
**Always wear safely glasses when handling lamp.** Low pressure sodium lamps are made of glass and are evacuated and could therefore implode if damaged or handled incorrectly. Replace lamp if outer glass bulb has been scratched, cracked, or damaged in any way. To reduce the possibility of a lamp cracking or breaking, do not expose operating lamp to rain, snow, or water.

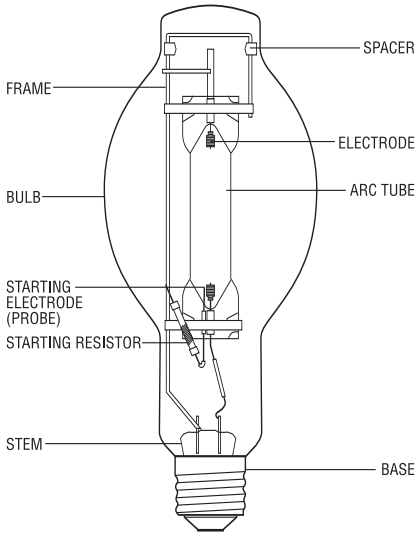
**III. ELECTRICAL SHOCK AND BURN HAZARD:**
Do not remove or insert lamp when power is on. If outer glass bulb is broken, shut off power immediately and remove lamp after it has cooled.

**IV. OPERATE WITH COMPATIBLE BALLAST AND FIXTURE ONLY:**
This lamp must be operated in a fixture and ballast which was specifically designed for use with this lamp.

**V. INSTALLATION AND OPERATING INSTRUCTIONS:**
1. When operated in other than the base up orientation, single-based "SOX" lamps of from 35 watts to 180 watts must be supported at the end opposite to the base in such a way as to allow for thermal expansion and contraction along the lamp axis.
2. Install lamp firmly but not forcibly into socket to avoid breakage.
3. For maximum system performance, replace lamp at or before end of rated life. (See catalog for rated life.)
4. Only operate lamps in designated operating positions. (See catalog for illustration.)

**VI. LAMP DISPOSAL:**
To avoid the risk of personal injury or property damage from sodium reaction when disposing of spent lamps, the following procedure should be followed:
1. Before commencing, operator must be outfitted with appropriate OSHA-approved face mask, gloves and apron.
2. Place no more than 20 lamp(s) in a large, dry container. (Do not exceed one-quarter of the container height.)
3. Break lamp(s) into small pieces inside the container in a dry atmosphere and in a well ventilated area.
4. From a safe distance, carefully pour enough tap water into container to cover all materials.
5. After a few minutes, the reaction of the sodium with the large quantity of water will produce a mild sodium hydroxide solution which may be disposed of in accordance with applicable federal, state and local regulations.

# GUIDE TO MERCURY VAPOR LAMPS




OSRAM SYLVANIA Mercury lamps are designed primarily for use in general lighting applications where good efficiency and long life are desired while color rendering requirements are moderate. Applications include street lighting, industrial hi-bay, parking lot lighting, and general flood-lighting.

**STANDARD MERCURY —** Available in a wide range of lamp types from 75-1000 watts, in both clear and coated configurations, Mercury vapor lamps are ideal for a variety of lighting applications. PAR lamps offer floodlighting and ultra-violet spectra for special lighting applications.



**WARNING**

## STANDARD MERCURY "R" LAMPS

**I. RUPTURE RISKS:** This Mercury lamp is constructed of an outer glass bulb with an internal arc-tube made of quartz. Mercury arc-tubes operate at high pressure and at very high temperatures and can unexpectedly rupture due to internal causes or external factors such as a ballast failure or misapplication. An arc-tube rupture can burst and shatter the outer glass bulb resulting in the discharge of glass fragments and extremely hot quartz particles. In the event of such rupture, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

**TO REDUCE THESE RISKS:**

1. **Only operate lamp with compatible ballast and fixture. (See catalog for specific information.)**
2. **Fixture lens/diffuser material must be able to contain hot lamp fragments (as high as 1832˚F, 1000˚C). If you are uncertain, contact your fixture manufacturer.**
3. **Never expose an operating lamp to moisture (such as rain, sleet, or snow).**
4. **Replace lamp if outer glass bulb is scratched, cracked or damaged in any way.**
5. **Electrically insulate any metal support in contact with the outer bulb to avoid glass decomposition.**
6. **Replace lamp at or before the end of rated life. (See catalog for rated life.)**

**II. ELECTRICAL SHOCK AND BURN HAZARD:** Do not remove or insert lamp when power is on. If outer glass bulb is broken, shut off power immediately and remove lamp after it has cooled.

**III. ULTRAVIOLET RADIATION EXPOSURE:**
**WARNING:** THIS LAMP CAN CAUSE SERIOUS SKIN BURN AND EYE INFLAMMATION FROM SHORT WAVE ULTRAVIOLET RADIATION IF OUTER ENVELOPE OF THE LAMP IS BROKEN OR PUNCTURED. DO NOT USE WHERE PEOPLE WILL REMAIN FOR MORE THAN A FEW MINUTES UNLESS ADEQUATE SHIELDING OR OTHER SAFETY PRECAUTIONS ARE USED. LAMPS THAT WILL AUTOMATICALLY EXTINGUISH WHEN THE OUTER ENVELOPE IS BROKEN OR PUNCTURED ARE COMMERCIALLY AVAILABLE.

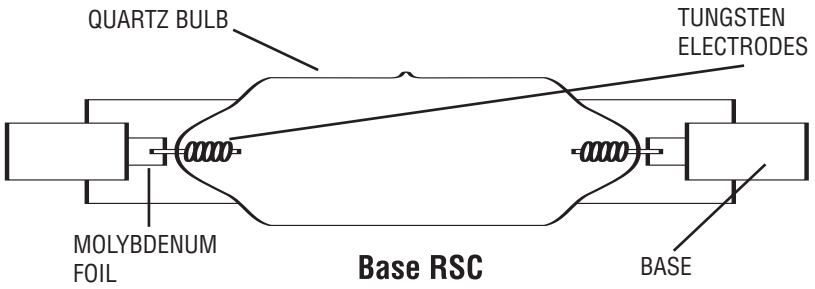
THIS PRODUCT CONFORMS TO THE FOLLOWING FEDERAL REGULATIONS:
U.S.A.: 21 CFR 1040.30 CANADA: SOR/80-381

**IV. INSTALLATION:**

1. Screw lamp firmly but not forcibly into socket to avoid breakage.
2. To avoid damaging a lamp, never install it into an ordinary household socket.
3. This lamp may be operated in any position.

**V. BROKEN ARC-TUBE:** Take care in handling and disposing of this lamp. If arc-tube is broken, avoid skin contact with any of the contents and fragments. See Product Safety Data Sheet for further details.

# GUIDE TO REPROGRAPHIC LAMPS




**Base RSC**

OSRAM SYLVANIA reprographic lamps are designed for applications other than general lighting. These applications include: plate making, photo resist exposure, imaging and other requiring the use of ultraviolet energy.

## UNJACKETED REPROGRAPHIC F-TYPE LAMP

## ⚠ WARNING

THE FOLLOWING INSTRUCTIONS MUST BE COMPLIED WITH TO AVOID RISK OF PERSONAL INJURY, PROPERTY DAMAGE AND POOR LAMP PERFORMANCE.

I. **RUPTURE RISKS:** This High Intensity Discharge (HID) lamp is constructed with a quartz arc-tube which operates at high pressure and at very high temperatures. The arc-tube can unexpectedly rupture due to internal causes or external factors such as a ballast failure or misapplication resulting in the discharge of glass fragments and extremely hot particles. In the event of such rupture, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

**TO REDUCE THESE RISKS:**

1. **Only operate lamp in an enclosed fixture with a lens/diffuser material able to contain hot lamp fragments (up to 2012°F, 1100°C). If you are uncertain, contact your fixture manufacturer.**
2. **Only operate lamp with compatible ballast (including capacitor and ignitor) and fixture.**
3. **Only operate lamp in horizontal position (Maximum deviation from horizontal is 15°).**
4. **Lamp must be turned off for a minimum of fifteen minutes at least once a week.**
5. **Never expose an operating lamp to moisture (such as rain, sleet or snow).**
6. **Replace lamp if bulb is scratched, cracked or damaged in any way.**
7. **Keep all metals at least 3 inches from the body of the arc-tube to avoid glass decomposition.**
8. **Do not operate lamps when output radiation falls below 75% of its initial value.**

II. **ULTRAVIOLET RADIATION HAZARD:** THIS LAMP EMITS ULTRAVIOLET (UV) POWER DURING OPERATION AND IS IN RISK GROUP 3 PER ANSI-IESNA Rp-27.3-96. THIS LAMP CAN CAUSE SERIOUS SKIN BURN AND EYE INFLAMMATION FROM SHORTWAVE ULTRAVIOLET RADIATION. KEEP OUT OF DIRECT OR INDIRECT LIGHT DURING OPERATION UNLESS APPROPRIATE EYE AND SKIN PROTECTION IS WORN. A POWER INTERLOCK DEVICE IS RECOMMENDED TO AUTOMATICALLY TURN OFF THE LAMP IF THE FIXTURE ASSEMBLY IS OPENED.

DUE TO THE ULTRAVIOLET HAZARD, THIS LAMP IS TO BE USED **ONLY** IN EQUIPMENT SPECIFICALLY DESIGNED FOR USE WITH THIS LAMP AND RECOMMENDED FOR ITS USE BY THE EQUIPMENT MANUFACTURER.

III. **ELECTRICAL SHOCK AND BURN HAZARD:** Do not remove or insert lamp while power is on. Allow lamp to cool before removing.

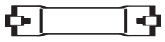
IV. **LAMP INSTALLATION AND FIXTURE:** Do not remove lamp from package until ready for use and then handle only with clean cotton gloves. If lamp is handled, fingerprints, grease or oils may be removed from the bulb by wiping with alcohol. This will remove materials which cause whitish spotting (devitrification) and premature lamp failure. Dry lamp carefully with clean cotton cloth.

1. Install lamps without undue pressure.
2. Ensure that lamp electrical connections are secure and nothing is touching bulb.
3. The seal base temperature must not exceed 350° C and the bulb wall temperature, as measured in center, must be maintained between 600° C and 700° C.
4. If cooling is required to maintain the seal/base and the bulb wall temperatures of item 3 above, air interlock vane switches are recommended to protect against fan-motor failure.
5. All seal gaskets and wire insulation must be shielded from the UV radiation produced by this lamp.
6. Fixture wiring must have a temperature rating of 250° C and a minimum voltage rating of 600V RMS for lamps of less than 1000 watts and 1500V RMS for lamps of 1000 watts or greater.
7. For maximum performance, all double-ended lamps must be operated with the arc-tube tip up.

V. **BROKEN ARC-TUBE:** Take care in handling and disposing of this lamp. If arc-tube is broken, avoid skin contact with any of the contents and fragments. See Product Safety Data Sheet for further details.


T (G8.5 base)


T (G12 base), T (G22 base)


T (RSC base)


PAR30 LN


PAR20



## POWERBALL® CERAMIC METALARC® TUBULAR SINGLE-ENDED
### High CRI, Pulse Start, UV Stop – Enclosed Fixtures Only

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | Approx Lumens (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | T4.5 | G8.5 | 64882 | **MC20TC/U/G8.5/830PB** | M156/E | 12 | Clear | Universal | E | 12000 | 1700 | 1275 | 83 | 3000 | 1,4,18,24,25,30,48 |
| 39 | T4.5 | G8.5 | 64791 | **MC39TC/U/G8.5/830PB** | M130/E | 12 | Clear | Universal | E | 12000 | 3400 | 2720 | 82 | 3000 | 1,4,18,24,25,30,48 |
| | T6 | G12 | 64363 | **MC39T6/U/G12/830PB** | M130/E | 12 | Clear | Universal | E | 12000 | 3400 | 2720 | 82 | 3000 | 1,4,18,24,25,30,48 |
| | | | 64325 | **MC39T6/U/G12/940PB** | M130/E | 12 | Clear | Universal | E | 12000 | 3300 | 2640 | 90 | 4200 | 1,4,18,24,25,26,30,48 |
| 70 | T4.5 | G8.5 | 64825 | **MC70TC/U/G8.5/930PB** | M139/E, M98/E | 12 | Clear | Universal | E | 12000 | 6300 | 5040 | 95 | 3000 | 1,4,18,24,25,26,30,48 |
| | T6 | G12 | 64361 | **MC70T6/U/G12/830PB** | M139/E, M98/E | 12 | Clear | Universal | E | 12000 | 7000 | 5600 | 87 | 3000 | 1,4,18,24,25,26,30,48 |
| | | | 64200 | **MC70T6/U/G12/930PB** | M139/E, M98/E | 12 | Clear | Universal | E | 12000 | 6400 | 5120 | 95 | 3000 | 1,4,18,24,25,26,30,48 |
| | | | 64338 | **MC70T6/U/G12/940PB** | M139/E, M98/E | 12 | Clear | Universal | E | 12000 | 6700 | 5360 | 93 | 4200 | 1,4,18,24,25,26,30,48 |
| 150 | T7.5 | G12 | 64359 | **MC150T7.5/U/G12/830** | M102/E, M142/E | 12 | Clear | Universal | E | 12000 | 15500 | 12400 | 89 | 3000 | 1,4,18,24,30,31,48 |
| | | | 64337 | **MC150T7.5/U/G12/940PB** | M102/E, M142/E | 12 | Clear | Universal | E | 12000 | 14500 | 11600 | 95 | 4200 | 1,4,18,24,30,31,48 |
| 250 | T9 | G22 | 64167 | **MC250T9/U/G22/830PB** | M80/E | 10 | Clear | Universal | E | 12000 | 24500 | 19600 | 86 | 3000 | 1,4,18,24,30,31,48 |

## POWERBALL® CERAMIC METALARC® TUBULAR DOUBLE-ENDED

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | Approx Lumens (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70 | T6 | RX7s RSC | 64793 | **MC70T6/DE/830PB** | M139/E, M85/E, M98/E | 12 | Clear | HOR ± 45° | E | 12000 | 6900 | 5520 | 88 | 3000 | 1,4,18,25,26,30,35,48 |
| 150 | T7.5 | RX7s RSC | 64794 | **MC150T7.5/DE/830PB** | M102/E, M142/E, M81/E | 12 | Clear | HOR ± 45° | E | 12000 | 14800 | 11840 | 91 | 3000 | 1,4,18,30,37,48 |

## POWERBALL® CERAMIC METALARC® PAR
### High CRI, Pulse Start, UV Stop – Open or Enclosed Fixtures

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Beam Type | Beam Angle | Operating Position | Fix Req | Avg Rated Life (hrs) | MBCP | Approx Lumens (initial) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | PAR30LN | E26 Med | 64879 | **MCP20PAR30LN/U/830/SP/ECOPB** | M156/O | 6 | SP | 10° | Universal | O | 12000 | 24000 | 1200 | 82 | 3100 | 1,4,7,17,24,30,48 |
| | | | 64878 | **MCP20PAR30LN/U/830/FL/ECOPB** | M156/O | 6 | FL | 30° | Universal | O | 12000 | 4000 | 1200 | 82 | 3100 | 1,4,7,17,24,30,48 |
| 39 | PAR20 | E26 Med | 64824 | **MCP39PAR20/U/830/SPPB** | M130/O | 12 | SP | 10° | Universal | O | 12000 | 20000 | 2000 | 87 | 3000 | 1,4,17,24,25,30,48 |
| | | | 64826 | **MCP39PAR20/U/830/FLPB** | M130/O | 12 | FL | 30° | Universal | O | 12000 | 5000 | 2000 | 87 | 3000 | 1,4,17,24,25,30,48 |
| | PAR30LN | E26 Med | 64880 | **MCP39PAR30LN/U/830/SP/ECOPB** | M130/O | 6 | SP | 10° | Universal | O | 12000 | 39600 | 2300 | 85 | 3000 | 1,4,7,17,24,25,30,48 |
| | | | 64881 | **MCP39PAR30LN/U/830/FL/ECOPB** | M130/O | 6 | FL | 30° | Universal | O | 12000 | 8000 | 2300 | 85 | 3000 | 1,4,7,17,24,25,30,48 |


PAR30 LN


PAR38


E17



## POWERBALL® CERAMIC METALARC® PAR
### High CRI, Pulse Start, UV Stop – Open or Enclosed Fixtures

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Beam Type | Beam Angle | Operating Position | Fix Req | Avg Rated Life (hrs) | MBCP | Approx Lumens (initial) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 39 | PAR30LN | E26 Med | 64885 | **MCP39PAR30LN/U/830/VWFL/ECOPB** | M130/O | 6 | VWFL | 46° | Universal | O | 12000 | 3500 | 2300 | 85 | 3000 | CRI 1,4,7,17,24,25,30,48 |
| 70 | PAR30LN | E26 Med | 64201 | **MCP70PAR30LN/U/930/SP/ECOPB** | M139/O, M98/O | 6 | SP | 12° | Universal | O | 12000 | 42000 | 3600 | 95 | 3000 | CRI 1,4,7,17,25,26,30,48 |
| | | | 64202 | **MCP70PAR30LN/U/930/FL/ECOPB** | M139/O, M98/O | 6 | FL | 30° | Universal | O | 12000 | 12000 | 3600 | 95 | 3000 | CRI 1,4,7,17,25,26,30,48 |
| | PAR38 | E26 Med Skt | 64749 | **MCP70PAR38/U/830/SP/ECOPB** | M139/O, M98/O | 6 | SP | 15° | Universal | O | 12000 | 40000 | 4300 | 88 | 3000 | CRI 1,4,7,17,26,30,38,48 |
| | | | 64750 | **MCP70PAR38/U/830/FL/ECOPB** | M139/O, M98/O | 6 | FL | 25° | Universal | O | 12000 | 16000 | 4300 | 88 | 3000 | CRI 1,4,7,17,26,30,38,48 |
| | | | 64751 | **MCP70PAR38/U/VWFL/830/ECOPB** | M139/O, M98/O | 6 | VWFL | 65° | Universal | O | 12000 | 3500 | 4300 | 88 | 3000 | CRI 1,4,7,17,26,30,38,48 |
| 100 | PAR38 | E26 Med Skt | 64752 | **MCP100PAR38/U/830/SP/ECOPB** | M90/O, M140/O | 6 | SP | 15° | Universal | O | 12000 | 58000 | 6500 | 88 | 3000 | CRI 1,4,7,17,27,30,38,48 |
| | | | 64753 | **MCP100PAR38/U/830/FL/ECOPB** | M90/O, M140/O | 6 | FL | 25° | Universal | O | 12000 | 25000 | 6500 | 88 | 3000 | CRI 1,4,7,17,27,30,38,48 |
| | | | 64754 | **MCP100PAR38/U/830/VWFL/ECOPB** | M90/O, M140/O | 6 | VWFL | 60° | Universal | O | 12000 | 6000 | 6500 | 88 | 3000 | CRI 1,4,7,17,27,30,38,48 |
| 150 | PAR38 | E26 Med Skt | 64841 | **MCP150/PAR38/U/830/SP/ECOPB** | M102/O, M142/O | 6 | SP | 15° | Universal | O | 12000 | 50000 | 9100 | 88 | 3000 | CRI 1,4,7,17,31,38,48 |
| | | | 64842 | **MCP150/PAR38/U/830/FL/ECOPB** | M102/O, M142/O | 6 | FL | 25° | Universal | O | 12000 | 28000 | 9100 | 88 | 3000 | CRI 1,4,7,17,31,38,48 |
| | | | 64843 | **MCP150/PAR38/U/830/VWFL/ECOPB** | M102/O, M142/O | 6 | VWFL | 65° | Universal | O | 12000 | 6500 | 9100 | 88 | 3000 | CRI 1,4,7,17,31,38,48 |

## POWERBALL® CERAMIC METALARC® E17 & HIGH WATTAGE
### High CRI, Pulse Start – Open or Enclosed Fixtures

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | Approx Lumens (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | E17 | E26 Med | 64840 | **MCP50/U/MED/830PB** | M110/O, M148/O | 12 | Clear | Universal | O | 12000 | 4100 | 2850 | 88 | 3000 | CRI 1,4,17,30,48 |
| | | | 64849 | **MCP50/C/U/MED/830PB** | M110/O, M148/O | 12 | Coated | Universal | O | 12000 | 3800 | 2640 | 88 | 2900 | CRI 1,4,17,30,48 |
| 70 | E17 | E26 Med | 64739 | **MCP70/U/MED/830PB** | M139/O, M98/O | 12 | Clear | Universal | O | 16000 | 5900 | 4365 | 88 | 3000 | CRI I/O 1,4,17,26,30,48 |
| | | | 64740 | **MCP70/C/U/MED/830PB** | M139/O, M98/O | 12 | Coated | Universal | O | 16000 | 5500 | 3900 | 88 | 3000 | CRI I/O 1,4,17,26,30,48 |
| | | | 64193 | **MCP70/U/MED/940PB** | M139/O, M98/O | 12 | Clear | Universal | O | 12000 | 6000 | 4800 | 93 | 4000 | CRI I/O 1,4,17,26,30,48 |
| | | | 64194 | **MCP70/C/U/MED/940PB** | M139/O, M98/O | 12 | Coated | Universal | O | 12000 | 5600 | 4480 | 93 | 3800 | CRI I/O 1,4,17,26,30,48 |
| 100 | E17 | E26 Med | 64743 | **MCP100/U/MED/830PB** | M90/O, M140/O | 12 | Clear | Universal | O | 16000 | 9000 | 6660 | 88 | 3000 | CRI 1,4,17,27,30,48 |
| | | | 64744 | **MCP100/C/U/MED/830PB** | M90/O, M140/O | 12 | Coated | Universal | O | 16000 | 8100 | 5994 | 88 | 3000 | CRI 1,4,17,27,30,48 |
| | | | 64322 | **MCP100/U/MED/940PB** | M90/O, M140/O | 12 | Clear | Universal | O | 20000 | 8200 | 6150 | 93 | 4000 | CRI 1,4,17,27,30,48 |
| | | | 64315 | **MCP100/C/U/MED/940PB** | M90/O, M140/O | 12 | Clear | Universal | O | 20000 | 7500 | 5625 | 90 | 4000 | CRI I/O 1,4,17,27,48 |


E17, E17/ED17


BT28, BT28/ED28, BT28/ET23.5


BT37

## POWERBALL® CERAMIC METALARC® E17 & HIGH WATTAGE
### High CRI, Pulse Start – Open or Enclosed Fixtures

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 150 | E17 | E26 Med | 64741 | **MCP150/U/MED/830PB** | M102/O | 12 | Clear | Universal | O | 12000 | 13000 | 11000 | 88 | 3000 | CRI 1,4,17,30, 31,48 |
| | | | 64742 | **MCP150/C/U/MED/830PB** | M102/O | 12 | Coated | Universal | O | 12000 | 12000 | 10000 | 88 | 3000 | CRI 1,4,17,30, 31,48 |
| 250 | BT28 | EX39 Excl Mogul | 64786 | **MCP250/PS/BU-ONLY/940PB** | M153/O | 6 | Clear | BU ± 15° | O | 15000 | 24000 | 19200 | 94 | 4200 | ✹ CRI 1,4,17, 23,48 |
| | | | 64821 | **MCP250/C/PS/BU-ONLY/940PB** | M153/O | 6 | Coated | BU ± 15° | O | 15000 | 22500 | 18000 | 94 | 4000 | CRI 1,4,17,23, 48 |
| 320 | BT37 | EX39 Excl Mogul | 64834 | **MCP320/PS/BU-ONLY/840PB** | M154/O | 6 | Clear | BU ± 15° | O | 20000 | 37500 | 28125 | 88 | 4000 | ✹ CRI 1,4,17, 48 |
| | | | 64851 | **MCP320/C/PS/BU-ONLY/840PB** | M154/O | 6 | Coated | BU ± 15° | O | 20000 | 36000 | 27000 | 88 | 3900 | ✹ CRI 1,4,17, 48 |

## METALARC® PULSE START
### High Output, Reduced Color Shift – Enclosed Fixtures

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 175 | ED17 | E26 Med | 64171 | **MS175/PS/BU-ONLY/MED** | M152/E, M137E | 12 | Clear | BU ± 15° | E | 15000 | 17500 | 12800 | 65 | 4000 | 4,18,23,39 |
| | | | 64170 | **MS175/C/PS/BU-ONLY/MED** | M152/E, M137/E | 12 | Coated | BU ± 15° | E | 15000 | 16600 | 12500 | 70 | 3700 | 4,18,23,39 |
| | ED28 | E39 Mogul | 64815 | **MS175/PS/BU-ONLY** | M152/E, M137/E | 12 | Clear | BU ± 15° | E | 15000 | 17500 | 12800 | 65 | 4000 | 4,18,23,39 |
| | | | 64816 | **MS175/C/PS/BU-ONLY** | M152/E, M137/E | 12 | Coated | BU ± 15° | E | 15000 | 16600 | 12500 | 70 | 3700 | 4,18,23,39 |
| 200 | ET23.5 | E39 Mogul | 64837 | **MS200/PS/BU-ONLY/ET23.5** | M136/E | 12 | Clear | BU ± 15° | E | 15000 | 19000 | 13300 | 65 | 4200 | 4,18,23 |
| | BT28 | E39 Mogul | 64838 | **MS200/PS/BU-ONLY/BT28** | M136/E | 6 | Clear | BU ± 15° | E | 15000 | 19000 | 13500 | 65 | 4000 | 4,18,23 |
| | | | 64839 | **MS200/C/PS/BU-ONLY/BT28** | M136/E | 6 | Coated | BU ± 15° | E | 15000 | 18000 | 12800 | 70 | 3800 | 4,18,23 |
| 250 | BT28 | E39 Mogul | 64320 | **M250/PS/U** | M153/E, M138/E | 6 | Clear | Universal | E | 15000V 12000H | 22000V 19000H | 15400V 14000H | 65 | 3800 | ✹ 4,18,23 |
| | | | 64578 | **MS250/PS/BU-ONLY** | M153/E, M138/E | 6 | Clear | BU ± 15° | E | 20000 | 23000 | 17000 | 65 | 4200 | 4,18,23 |
| | | | 64617 | **MS250/C/PS/BU-ONLY** | M153/E, M138/E | 6 | Coated | BU ± 15° | E | 20000 | 21500 | 15500 | 70 | 3600 | 4,18,23 |
| 320 | BT28 | E39 Mogul | 64507 | **MS320/PS/BU-HOR** | M154/E, M132/E | 6 | Clear | BU-HOR | E | 20000V 15000H | 30000V 28000H | 21000V 19700H | 65 | 4300 | 4,18,23,41 |
| | | | 64646 | **MS320/C/PS/BU-HOR** | M154/E, M132/E | 6 | Coated | BU-HOR | E | 20000V 15000H | 30000V 28000H | 19700V 18400H | 70 | 3900 | 4,18,23,41 |
| 400 | BT28 | E39 Mogul | 64188 | **M400/PS/U/BT28** | M155/E | 6 | Clear | Universal | E | 20000V 15000H | 36000V 31000H | 25500V 22400H | 65 | 4000 | 4,18,23,42 |
| | | | 64191 | **MS400/PS/BD-ONLY/BT28** | M155/E, M135/E | 6 | Clear | BD ± 15° | E | 20000 | 40000 | 32500 | 65 | 4100 | 4,18,23,42,46 |
| | | | 64189 | **MS400/PS/BU-ONLY/BT28** | M155/E, M135/E | 6 | Clear | BU ± 15° | E | 20000 | 40000 | 32500 | 65 | 4100 | 4,18,23,42,46 |
| | BT37 | E39 Mogul | 64321 | **M400/PS/U** | M155/E | 6 | Clear | Universal | E | 20000V 15000H | 36000V 31000H | 25500V 22400H | 65 | 4000 | 4,18,23 |
| | | | 64525 | **MS400/PS/BU-ONLY** | M155/S, M135/S | 6 | Clear | BU ± 15° | S | 20000 | 42000 | 31000 | 65 | 4000 | 4,6,20,21,23,24, 42,46 |


BT37


E17


BT28



## METALARC® PULSE START
### High Output, Reduced Color Shift – Enclosed Fixtures

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | BT37 | E39 Mogul | 64527 | **MS400/C/PS/BU-ONLY** | M155/S, M135/S | 6 | Coated | BU ± 15° | S | 20000 | 42000 | 29000 | 70 | 3600 | 4,6,20,21,23,24, 42,46 |
| 750 | BT37 | E39 Mogul | 65424 | **MS750/PS/BD-ONLY/BT37** | M149/E | 6 | Clear | BD ± 15° | E | 16000 | 78000 | 67000 | 65 | 4000 | ✹ 4,18,33 |
| | | | 64787 | **MS750/PS/BU-HOR/BT37** | M149/E | 6 | Clear | BU-HOR | E | 16000V 12000H | 78000V 68000H | 67000V 56000H | 65 | 4000 | 4,18,33 |
| | | | 64822 | **MS750/C/PS/BU-HOR/BT37** | M149/E | 6 | Coated | BU-HOR | E | 16000V 12000H | 75000V 65000H | 63000V 53000H | 70 | 3700 | 4,18,33 |
| 1000 | BT37 | E39 Mogul | 64351 | **M1000/PS/U/BT37** | M141/E | 6 | Clear | Universal | E | 15000V 9000H | 110000V 107800H | 96000V 86300H | 65 | 3800 | 4,18 |

## METALARC PRO-TECH® PULSE START
### High Output, Reduced Color Shift – Open or Enclosed Fixtures

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | E17 | E26 Med | 64587 | **MP50/U/MED** | M110/O | 20 | Clear | Universal | O | 20000V 10000H | 3450 | 1900 | 70 | 3000 | 4,17 |
| | | | 64588 | **MP50/C/U/MED** | M110/O | 20 | Coated | Universal | O | 20000V 10000H | 3200 | 1820 | 70 | 2900 | 4,17 |
| 70 | E17 | E26 Med | 64625 | **MPD70/U/MED/840** | M98/O | 20 | Clear | Universal | O | 7500H 6000V | 5500 | 4000 | 80 | 4200 | CRI 4,17 |
| | | | 64621 | **MPD70/C/U/MED/840** | M98/O | 20 | Coated | Universal | O | 7500H 6000V | 5100 | 3800 | 82 | 4000 | CRI 4,17 |
| | | | 64547 | **MP70/U/MED** | M98/O | 20 | Clear | Universal | O | 15000V 10000H | 5200 | 3400 | 75 | 3000 | 4,17 |
| | | | 64546 | **MP70/C/U/MED** | M98/O | 20 | Coated | Universal | O | 15000V 10000H | 4700 | 3100 | 75 | 2900 | 4,17 |
| 100 | E17 | E26 Med | 64417 | **MP100/U/MED** | M90/O | 20 | Clear | Universal | O | 15000V 10000H | 8500 | 5525 | 75 | 3000 | 4,17 |
| | | | 64418 | **MP100/C/U/MED** | M90/O | 20 | Coated | Universal | O | 15000V 10000H | 7900 | 5800 | 75 | 2900 | 4,17 |
| | | | 64426 | **MPD100/U/MED/840** | M90/O | 20 | Clear | Universal | O | 7500V 6000H | 8400 | 5800 | 82 | 4200 | CRI 4,17 |
| | | | 64433 | **MPD100/C/U/MED/840** | M90/O | 20 | Coated | Universal | O | 7500V 6000H | 7700 | 5500 | 82 | 4000 | CRI 4,17 |
| 150 | E17 | E26 Med | 64402 | **MP150/U/MED** | M102/O | 20 | Clear | Universal | O | 15000V 10000H | 12900 | 8000 | 75 | 3000 | 4,17 |
| | | | 64406 | **MP150/C/U/MED** | M102/O | 20 | Coated | Universal | O | 15000V 10000H | 11600 | 7500 | 75 | 2900 | 4,17 |
| | | | 64403 | **MPD150/U/MED/840** | M102/O | 20 | Clear | Universal | O | 7500V 6000H | 12500 | 11000 | 88 | 4200 | CRI 4,17 |
| | | | 64425 | **MPD150/C/U/MED/840** | M102/O | 20 | Coated | Universal | O | 7500V 6000H | 11500 | 9500 | 88 | 4000 | CRI 4,17 |
| 250 | BT28 | EX39 Excl Mogul | 64790 | **MP250/C/PS/BU-ONLY** | M153/O, M138/O | 6 | Coated | BU ± 15° | O | 15000 | 21000 | 16000 | 70 | 4000 | 4,17,23 |
| | | | 64789 | **MP250/PS/BU-ONLY** | M153/O, M138/O | 6 | Clear | BU ± 15° | O | 15000 | 22500 | 17000 | 65 | 4000 | 4,17,23 |
| 320 | BT28 | EX39 Excl Mogul | 64391 | **MP320/350/PS/BU-ONLY/BT28** | M154/O, M132/O, M131/O | 6 | Clear | BU ± 15° | O | 20000 | 28600V 33500H | 21000V 24000H | 65 | 3800 3600 | 4,17,23,41 |


BT28, BT37


PAR38


E17


BT28



## METALARC PRO-TECH® PULSE START
### High Output, Reduced Color Shift – Open or Enclosed Fixtures

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | Lumens (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 320 | BT28 | EX39 Excl Mogul | 64349 | **MP320/350/C/PS/BU-ONLY/BT28** | M154/O, M132/O, M131/O | 6 | Coated | BU ± 15° | O | 20000 | 27700V 32000H | 19000V 22000H | 70 | 3600 | 4,17,23,41 |
| 350 | BT37 | EX39 Excl Mogul | 64769 | **MP350/400/PS/BU-ONLY** | M131/O, M155/O, M135/O | 6 | Clear | BU ± 15° | O | 20000 | 33000V 40000H | 24500V 29500H | 65 | 3700 3500 | 4,17,23,42,46 |
| | | | 64770 | **MP350/400/C/PS/BU-ONLY** | M131/O, M155/O, M135/O | 6 | Coated | BU ± 15° | O | 20000 | 32000V 39000H | 23000V 28000H | 70 | 3500 3300 | 4,17,23,42,46 |

## METALARC PRO-TECH® PULSE START - PAR

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Beam Type | Beam Angle | Operating Position | Fix Req | Avg Rated Life (hrs) | MBCP | Approx Lumens (initial) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70 | PAR38 | E26 Med Skt | 64590 | **MP70PAR38/U/SP20/ECO** | M98/O | 6 | SP | 20° | Universal | O | 8500 | 18000 | 3400 | 75 | 3200 | 4,7,17,38 |
| | | | 64592 | **MP70PAR38/U/FL35/ECO** | M98/O | 6 | FL | 35° | Universal | O | 8500 | 10000 | 3400 | 75 | 3200 | 4,7,17,38 |
| | | | 64594 | **MP70PAR38/U/VWFL65/ECO** | M98/O | 6 | VWFL | 65° | Universal | O | 8500 | 3000 | 3400 | 75 | 3200 | 4,7,17,38 |
| 100 | PAR38 | E26 Med Skt | 64580 | **MP100PAR38/U/SP20/ECO** | M90/O | 6 | SP | 20° | Universal | O | 8500 | 26000 | 5800 | 75 | 3000 | 4,7,17,38 |
| | | | 64582 | **MP100PAR38/U/FL35/ECO** | M90/O | 6 | FL | 35° | Universal | O | 8500 | 12000 | 5800 | 75 | 3000 | 4,7,17,38 |
| | | | 64584 | **MP100PAR38/U/VWFL65/ECO** | M90/O | 6 | VWFL | 65° | Universal | O | 8500 | 4500 | 5800 | 75 | 3000 | 4,7,17,38 |
| 150 | PAR38 | E26 Med Skt | 64593 | **MP150PAR38/U/SP20/ECO** | M102/O | 6 | SP | 20° | Universal | O | 8500 | 34000 | 8800 | 75 | 3200 | 4,7,17,38 |
| | | | 64597 | **MP150PAR38/U/FL35/ECO** | M102/O | 6 | FL | 35° | Universal | O | 8500 | 17000 | 8800 | 75 | 3200 | 4,7,17,38 |
| | | | 64599 | **MP150PAR38/U/VWFL65/ECO** | M102/O | 6 | VWFL | 65° | Universal | O | 8500 | 7500 | 8800 | 75 | 3200 | 4,7,17,38 |

## METALARC PRO-TECH® SUPERSAVER®
### Energy Saving, Metal Halide Retrofit - Open or Enclosed Fixtures

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | Lumens (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | BT37 | EX39 Excl Mogul | 64737 | **MSP360/SS/BU-ONLY** | M59/O, M165/O | 6 | Clear | BU ± 15° | O | 20000 | 35000 | 23500 | 65 | 4000 | 12,17,46 |
| | | | 64738 | **MSP360/C/SS/BU-ONLY** | M59/O, M165/O | 6 | Coated | BU ± 15° | O | 20000 | 34000 | 22500 | 70 | 3600 | 12,17,46 |

## METALARC PRO-TECH®
### Open or Enclosed Fixtures

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | Lumens (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 175 | ED17 | E26 Med | 64733 | **MP175/BU-ONLY/MED** | M57/O | 20 | Clear | BU ± 15° | O | 10000 | 14400 | 10800 | 65 | 3600 | 17 |
| | BT28 | EX39 Excl Mogul | 64773 | **MP175/BU-ONLY** | M57/O | 6 | Clear | BU ± 15° | O | 10000 | 14400 | 10200 | 65 | 4000 | 17 |
| | | | 64774 | **MP175/C/BU-ONLY** | M57/O | 6 | Coated | BU ± 15° | O | 10000 | 12800 | 7800 | 70 | 3800 | 17 |
| 250 | BT28 | EX39 Excl Mogul | 64404 | **MP250/BU-ONLY** | M58/O | 6 | Clear | BU ± 15° | O | 10000 | 23000 | 17000 | 65 | 4000 | 17 |
| | | | 64405 | **MP250/C/BU-ONLY** | M58/O | 6 | Coated | BU ± 15° | O | 10000 | 20000 | 14350 | 70 | 3800 | 17 |
| 400 | BT37 | EX39 Excl Mogul | 64705 | **MP400/BU-ONLY** | M59/O | 6 | Clear | BU ± 15° | O | 20000 | 40000 | 26000 | 65 | 3600 | 17 |


BT37


BT56


BT28



## METALARC PRO-TECH®
### Open or Enclosed Fixtures

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | BT37 | EX39 Excl Mogul | 64706 | **MP400/C/BU-ONLY** | M59/O | 6 | Coated | BU ± 15° | O | 20000 | 38500 | 25000 | 70 | 3400 | 17 |
| | | | 64717 | **MP400/BD-ONLY** | M59/O | 6 | Clear | BD ± 15° | O | 20000 | 40000 | 26000 | 65 | 3600 | 17 |
| 1000 | BT56 | EX39 Excl Mogul | 64714 | **MP1000/BU-ONLY** | M47/O | 6 | Clear | BU ± 15° | O | 15000 | 109000 | 87500 | 65 | 3500 | 17 |
| | | | 64716 | **MP1000/C/BU-ONLY** | M47/O | 6 | Coated | BU ± 15° | O | 15000 | 102000 | 82000 | 70 | 3200 | 17 |

## METALARC® SUPER
### High Output, Position Dedicated – Enclosed Fixtures

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 175 | BT28 | E39 POM | 64439 | **MS175/HOR** | M57/E | 6 | Clear | HOR ± 15° | E | 10000 | 15000 | 8000 | 65 | 4200 | 11,18 |
| | | | 64440 | **MS175/C/HOR** | M57/E | 6 | Coated | HOR ± 15° | E | 10000 | 14500 | 8000 | 70 | 4000 | 11,18 |
| 250 | BT28 | E39 POM | 64448 | **MS250/HOR** | M58/E | 6 | Clear | HOR ± 15° | E | 10000 | 23000 | 15000 | 65 | 4200 | 11,18 |
| | | | 64449 | **MS250/C/HOR** | M58/E | 6 | Coated | HOR ± 15° | E | 10000 | 22000 | 14000 | 70 | 3800 | 11,18 |
| | | | 64496 | **MS250/3K/HOR** | M58/E | 6 | Coated | HOR ± 15° | E | 10000 | 17200 | 13500 | 70 | 3200 | 11,18 |
| 400 | BT28 | E39 POM | 64443 | **MS400/HOR/BT28** | M59/E | 6 | Clear | HOR ± 15° | E | 20000 | 39000 | 26000 | 65 | 4200 | 11,18 |
| | | | 64444 | **MS400/C/HOR/BT28** | M59/E | 6 | Coated | HOR ± 15° | E | 20000 | 36500 | 24000 | 70 | 3800 | 11,18 |
| | BT37 | E39 POM | 64445 | **MS400/HOR** | M59/E | 6 | Clear | HOR ± 15° | E | 20000 | 39000 | 25000 | 65 | 4200 | 11,18 |
| | | | 64446 | **MS400/C/HOR** | M59/E | 6 | Coated | HOR ± 15° | E | 20000 | 38000 | 24000 | 70 | 3800 | 11,18 |
| | | | 64498 | **MS400/3K/HOR** | M59/E | 6 | Coated | HOR ± 15° | E | 20000 | 33500 | 23300 | 70 | 3200 | 11,18 |
| | BT28 | E39 Mogul | 64441 | **MS400/BU-ONLY/BT28** | M59/E | 6 | Clear | BU ± 15° | E | 20000 | 40000 | 26000 | 65 | 3800 | 18 |
| | BT37 | E39 Mogul | 64450 | **MS400/BU-ONLY** | M59/S | 6 | Clear | BU ± 15° | S | 20000 | 42000 | 26000 | 65 | 4000 | 6,20,47 |
| | | | 64452 | **MS400/C/BU-ONLY** | M59/S | 6 | Coated | BU ± 15° | S | 20000 | 42000 | 24700 | 70 | 3600 | 6,20,47 |
| | | | 64454 | **MS400/3K/BU-ONLY** | M59/S | 6 | Coated | BU ± 15° | S | 20000 | 35000 | 22000 | 70 | 3200 | 20 |
| | | | 64451 | **MS400/BD-ONLY** | M59/S | 6 | Clear | BD ± 15° | S | 20000 | 42000 | 27500 | 65 | 4000 | 20 |
| 1000 | BT56 | E39 Mogul | 64435 | **MS1000/BU-ONLY** | M47/S | 6 | Clear | BU ± 15° | S | 18000 | 115000 | 92000 | 65 | 4000 | 20 |
| | | | 64460 | **MS1000/C/BU-ONLY** | M47/S | 6 | Coated | BU ± 15° | S | 18000 | 110000 | 88000 | 70 | 3400 | 20 |
| | | | 64436 | **MS1000/BD-ONLY** | M47/S | 6 | Clear | BD ± 15° | S | 18000 | 115000 | 92000 | 65 | 4000 | 20 |

## METALARC® SUPERSAVER®
### Energy Saving, Metal Halide Retrofit

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 150 | BT28 | E39 Mogul | 64719 | **M150/SS/U/BT28** | M107/E, M57/E | 6 | Clear | Universal | E | 10000V 7500H | 13000V 12000H | 7500V 8500H | 65 | 4000 | 18,29,46 |
| 360 | BT37 | E39 Mogul | 64655 | **MS360/SS/BU-HOR** | M59/S, M165/S | 6 | Clear | BU-HOR | S | 20000V 15000H | 36000V 30000H | 23500V 19000H | 65 | 4000 | 12,20,46 |
| | | | 64656 | **MS360/C/SS/BU-HOR** | M59/S, M165/S | 6 | Coated | BU-HOR | S | 20000V 15000H | 36000V 30000H | 22500V 19000H | 70 | 3600 | 12,20,46 |
| | | EX39 Excl Mogul | 64737 | **MSP360/SS/BU-ONLY** | M59/O, M165/O | 6 | Clear | BU ± 15° | O | 20000 | 35000 | 23500 | 65 | 4000 | 12,17,46 |


BT37


BT56


E17


BT28


ET18

## METALARC® SUPERSAVER®
### Energy Saving, Metal Halide Retrofit

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | BT37 | EX39 Excl Mogul | 64738 | **MSP360/C/SS/BU-ONLY** | M59/O, M165/O | 6 | Coated | BU ± 15° | O | 20000 | 34000 | 22500 | 70 | 3600 | 12,17,46 |
| 950 | BT56 | E39 Mogul | 64850 | **M950/SS/U/BT56** | M47/E, M176/E | 6 | Clear | Universal | E | 18000V 12000H | 103000V 90000H | 80000V 64000H | 65 | 4000 | ✹ 18,44 |

## METALARC® STANDARD

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 175 | E17 | E26 Med | 64479 | **M175/U/MED** | M57/E | 20 | Clear | Universal | E | 10000V 7500H | 14400V 12800H | 9300 | 65 | 4000 | 18 |
| | | | 64480 | **M175/C/U/MED** | M57/E | 20 | Coated | Universal | E | 10000V 7500H | 13000V 11080H | 8400 | 70 | 3600 | 18 |
| | BT28 | E39 Mogul | 64471 | **M175/U** | M57/E | 6 | Clear | Universal | E | 10000V 7500H | 14400V 12800H | 9300 | 65 | 4200 | 18 |
| | | | 64472 | **M175/C/U** | M57/E | 6 | Coated | Universal | E | 10000V 7500H | 14000V 12000H | 8400 | 70 | 3800 | 18 |
| | | | 64473 | **M175/3K/BU-ONLY** | M57/E | 6 | Coated | BU ± 15° | E | 10000 | 11800 | 7600 | 70 | 3200 | 18 |
| 250 | ET18 | E39 Mogul | 64474 | **M250/U/ET18** | M58/E | 10 | Clear | Universal | E | 10000V 7500H | 22000V 20000H | 17500V 13500H | 65 | 4000 | 18 |
| | BT28 | E39 Mogul | 64457 | **M250/U** | M58/E | 6 | Clear | Universal | E | 10000V 7500H | 22000V 20000H | 15000V 13000H | 65 | 4200 | 18 |
| | | | 64458 | **M250/C/U** | M58/E | 6 | Coated | Universal | E | 10000V 7500H | 21500V 19500H | 17000V 14000H | 70 | 3800 | 18 |
| | | | 64475 | **M250/3K/BU-ONLY** | M58/E | 6 | Coated | BU ± 15° | E | 10000 | 17500 | 13000 | 70 | 3200 | 18 |
| 400 | ET18 | E39 Mogul | 64575 | **M400/U/ET18** | M59/E | 10 | Clear | Universal | E | 20000V 15000H | 36000V 33000H | 25000V 21500H | 65 | 4000 | 18 |
| | BT28 | E39 Mogul | 64488 | **M400/U/BT28** | M59/E | 6 | Clear | Universal | E | 20000V 15000H | 36000V 32000H | 25000V 20500H | 65 | 4000 | 18 |
| | | | 64489 | **M400/C/U/BT28** | M59/E | 6 | Coated | Universal | E | 20000V 15000H | 36000V 32000H | 25000V 20500H | 70 | 3600 | 18 |
| | BT37 | E39 Mogul | 64490 | **M400/U** | M59/S | 6 | Clear | Universal | S | 20000V 15000H | 36000V 32000H | 23500V 20500H | 65 | 4000 | 6,20,47 |
| | | | 64492 | **M400/C/U** | M59/S | 6 | Coated | Universal | S | 20000V 15000H | 36000V 32000H | 22500V 20500H | 70 | 3700 | 6,20,47 |
| 1000 | BT37 | E39 Mogul | 64469 | **M1000/U/BT37** | M47/E | 6 | Clear | Universal | E | 15000V 9000H | 110000V 107800H | 96000V 86300H | 65 | 3800 | 18 |
| | BT56 | E39 Mogul | 64468 | **M1000/U** | M47/S | 6 | Clear | Universal | S | 18000V 12000H | 110000V 107800H | 86000V 86000H | 65 | 4000 | 20 |
| | | | 64470 | **M1000/C/U** | M47/S | 6 | Coated | Universal | S | 18000V 12000H | 107000V 101600H | 80000V 80700H | 70 | 3400 | 20 |
| 1500 | BT56 | E39 Mogul | 64431 | **M1500/BU-HOR** | M48/E | 6 | Clear | BU-HOR | E | 3000 | 170000V 153000H | 140000 | 70 | 4000 | 18,28 |
| | | | 64432 | **M1500/BD** | M48/E | 6 | Clear | BD ± 15° | E | 3000 | 167000 | 140000 | 70 | 4000 | 18 |


BT37


T (RSC base)


R30/R40


T (G12 base)


ET23.5


E17



## METALARC®SAFELINE®
### Self-Extinguishing

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | Lumens (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | BT37 | E39 Mogul | 64707 | **MT400/BU-ONLY** | M59/S | 6 | Clear | BU ± 15° | S | 20000 | 36000 | 22000 | 60 | 4500 | 12,16,20,32 |
| | | | 64709 | **MT400/C/BU-ONLY** | M59/S | 6 | Coated | BU ± 15° | S | 20000 | 35000 | 20600 | 65 | 4100 | 12,16,20,32 |

## METALARC®BRITELINE
### Double-Ended – Enclosed Fixtures Only

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | Lumens (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | T7 | RX7s RSC | 66619 | **M1500T7/DE** | M_F | 10 | Clear | HOR ± 4° | F | 3000 | 150000 | 127500 | 65 | 4200 | 2,10,21,43,45,46 |
| | T8 | Cer #8-10 Spade | 66632 | **M1500T8/DE** | M133/F | 10 | Clear | HOR ± 4° | F | 6000 | 150000 | 127500 | 65 | 4200 | 2,21,43,45 |
| 2000 | T8 | RX7s RSC | 66627 | **M2000T8/DE** | M_F | 10 | Clear | HOR ± 4° | F | 3000 | 200000 | 170000 | 65 | 4000 | 2,10,21,43,45,46 |
| | T9 | Cer #8-10 Spade | 66631 | **M2000T9/DE** | M134/F | 10 | Clear | HOR ± 4° | F | 3000 | 180000 | 153000 | 65 | 4200 | 2,21,43,45 |

## HQI® METAL HALIDE DOUBLE-ENDED
### Compact, Quartz – Enclosed Fixtures

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | Lumens (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70 | T6 | RX7s RSC | 64360 | **HQI-DE70/WDX** | M85/E | 12 | Clear | HOR ± 45° | E | 9000 | 5000 | 4400 | 76 | 3000 | CRI 18,30 |
| | | | 64362 | **HQI-DE70/NDX** | M85/E | 12 | Clear | HOR ± 45° | E | 9000 | 5500 | 3800 | 83 | 4000 | CRI 18,30 |
| 150 | T7 | RX7s RSC | 64366 | **HQI-DE150/WDX** | M81/E | 12 | Clear | HOR ± 45° | E | 12000 | 11000 | 9000 | 76 | 3000 | CRI 18,30 |
| | | | 64368 | **HQI-DE150/NDX** | M81/E | 12 | Clear | HOR ± 45° | E | 12000 | 11250 | 9500 | 85 | 4200 | CRI 18,30 |

## HQI® FIBER-OPTIC INTEGRATED DICHROIC REFLECTOR
### Compact, High CRI, Quartz – Enclosed Fixtures

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | Lumens (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 150 | R30 | 2 Pin Connector | 64339 | **HQI-R150/NDX/FO** | M81/E | 12 | Clear | HOR | E | 9000 | 11000 | | 85 | 4200 | CRI |

## HQI® METAL HALIDE SINGLE-ENDED

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | Lumens (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 150 | T7.5 | G12 | 64342 | **HQI-SE 150/NDX** | M81/E | 12 | Clear | Universal | E | 9000 | 13000 | 9200 | 85 | 4200 | CRI 18,30 |

## LUMALUX PLUS®AND LUMALUX PLUS® ECO®
### Non-Cycling High Pressure Sodium

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | Lumens (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | ET23.5 | E39 Mogul | 67607 | **LU50/PLUS/ECO** | S68 | 20 | Clear | Universal | O | 30000 | 4000 | 3600 | 22 | 1900 | 4,7,8 |
| 70 | E17 | E26 Medium | 67322 | **LU70/PLUS/MED** | S62 | 20 | Clear | Universal | O | 30000 | 6300 | 5600 | 22 | 1900 | 4,8 |
| | ET23.5 | E39 Mogul | 67497 | **LU70/PLUS/ECO** | S62 | 20 | Clear | Universal | O | 30000 | 6300 | 5600 | 22 | 1900 | 4,7,8 |




## LUMALUX PLUS®AND LUMALUX PLUS® ECO®
### Non-Cycling High Pressure Sodium

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100 | E17 | E26 Medium | 67323 | **LU100/PLUS/MED** | S54 | 20 | Clear | Universal | 0 | 30000 | 10000 | 9000 | 22 | 2100 | 4,8 |
| | ET23.5 | E39 Mogul | 67559 | **LU100/PLUS/ECO** | S54 | 20 | Clear | Universal | 0 | 30000 | 10000 | 9000 | 22 | 2100 | 4,7,8 |
| 150 | ET23.5 | E39 Mogul | 67494 | **LU150/55/PLUS/ECO** | S55 | 20 | Clear | Universal | 0 | 30000 | 16000 | 14400 | 22 | 2100 | 4,7,8,13, 36 |
| 200 | ET18 | E39 Mogul | 67495 | **LU200/PLUS/ECO** | S66 | 20 | Clear | Universal | 0 | 30000 | 22000 | 19800 | 22 | 2100 | 4,7,8 |
| 250 | ET18 | E39 Mogul | 67572 | **LU250/PLUS/ECO** | S50 | 20 | Clear | Universal | 0 | 30000 | 29000 | 26100 | 22 | 2100 | 4,7,8 |
| 310 | ET18 | E39 Mogul | 67660 | **LU310/PLUS/ECO** | S67 | 20 | Clear | Universal | 0 | 30000 | 37000 | 33300 | 22 | 2100 | 4,7,8 |
| 400 | ET18 | E39 Mogul | 67312 | **LU400/PLUS/ECO** | S51 | 20 | Clear | Universal | 0 | 30000 | 50000 | 45000 | 22 | 2100 | 4,7,8 |
| 1000 | E25 | E39 Mogul | 67316 | **LU1000/PLUS** | S52 | 6 | Clear | Universal | 0 | 30000 | 130000 | 124000 | 22 | 2100 | 4,8 |

## LUMALUX ® STANDARD AND LUMALUX® ECO®

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 35 | E17 | E26 Medium | 67500 | **LU35/MED** | S76 | 20 | Clear | Universal | 0 | 16000+ | 2250 | 2050 | 22 | 1900 | 4,22 |
| | | | 67501 | **LU35/D/MED** | S76 | 20 | Coated | Universal | 0 | 16000+ | 2100 | 1935 | 22 | 1900 | 4,22 |
| 50 | E17 | E26 Medium | 67502 | **LU50/MED** | S68 | 20 | Clear | Universal | 0 | 24000+ | 4000 | 3600 | 21 | 1900 | 4,22 |
| | | | 67503 | **LU50/D/MED** | S68 | 20 | Coated | Universal | 0 | 24000+ | 3700 | 3420 | 22 | 1900 | 4,22 |
| | ET23.5 | E39 Mogul | 67510 | **LU50/ECO** | S68 | 20 | Clear | Universal | 0 | 24000+ | 4000 | 3600 | 22 | 1900 | 4,7,22 |
| | | | 67511 | **LU50/D** | S68 | 20 | Coated | Universal | 0 | 24000+ | 3700 | 3420 | 22 | 1900 | 4,22 |
| 70 | E17 | E26 Medium | 67504 | **LU70/MED** | S62 | 20 | Clear | Universal | 0 | 24000+ | 6300 | 5350 | 22 | 1900 | 4,22 |
| | | | 67505 | **LU70/D/MED** | S62 | 20 | Coated | Universal | 0 | 24000+ | 5800 | 4900 | 22 | 1900 | 4,22 |
| | ET23.5 | E39 Mogul | 67512 | **LU70/ECO** | S62 | 20 | Clear | Universal | 0 | 24000+ | 6300 | 5500 | 22 | 1900 | 4,7,22 |
| | | | 67513 | **LU70/D** | S62 | 20 | Coated | Universal | 0 | 24000+ | 5500 | 4900 | 22 | 1900 | 4,22 |
| 100 | E17 | E26 Medium | 67506 | **LU100/MED** | S54 | 20 | Clear | Universal | 0 | 24000+ | 9500 | 8000 | 22 | 2100 | 4,22 |
| | | | 67507 | **LU100/D/MED** | S54 | 20 | Coated | Universal | 0 | 24000+ | 8800 | 7500 | 22 | 2100 | 4,22 |
| | ET23.5 | E39 Mogul | 67514 | **LU100/ECO** | S54 | 20 | Clear | Universal | 0 | 24000+ | 9500 | 8000 | 22 | 2100 | 4,7,22 |
| | | | 67515 | **LU100/D** | S54 | 20 | Coated | Universal | 0 | 24000+ | 8800 | 7500 | 22 | 2100 | 4,22 |
| 150 | E17 | E26 Medium | 67508 | **LU150/55/MED** | S55 | 20 | Clear | Universal | 0 | 24000+ | 15800 | 13400 | 22 | 2100 | 4,13,22,36 |
| | | | 67509 | **LU150/55/D/MED** | S55 | 20 | Coated | Universal | 0 | 24000+ | 14500 | 12300 | 22 | 2100 | 4,13,22,36 |
| | ET23.5 | E39 Mogul | 67516 | **LU150/55/ECO** | S55 | 20 | Clear | Universal | 0 | 24000+ | 16000 | 13800 | 22 | 2100 | 4,7,13,22, 36 |
| | | | 67517 | **LU150/55/D** | S55 | 20 | Coated | Universal | 0 | 24000+ | 14000 | 12500 | 22 | 2100 | 4,13,22,36 |
| | BT28 | E39 Mogul | 67518 | **LU150/100** | S56 | 10 | Clear | Universal | 0 | 24000+ | 15700 | 14100 | 22 | 2100 | 4,14,22,36 |
| 200 | ET18 | E39 Mogul | 67576 | **LU200/ECO** | S66 | 20 | Clear | Universal | 0 | 24000+ | 22000 | 19800 | 22 | 2100 | 4,7,22 |
| 250 | ET18 | E39 Mogul | 67578 | **LU250/ECO** | S50 | 20 | Clear | Universal | 0 | 24000+ | 29000 | 26100 | 22 | 2100 | 4,7,22 |
| | BT28 | E39 Mogul | 67521 | **LU250/D** | S50 | 10 | Coated | Universal | 0 | 24000+ | 26000 | 23400 | 22 | 2100 | 4,22 |
| 310 | ET18 | E39 Mogul | 67580 | **LU310/ECO** | S67 | 20 | Clear | Universal | 0 | 24000+ | 37000 | 32300 | 22 | 2100 | 4,7,22 |
| 400 | ET18 | E39 Mogul | 67533 | **LU400/ECO** | S51 | 20 | Clear | Universal | 0 | 24000+ | 50000 | 45000 | 22 | 2100 | 4,7,22 |
| | BT37 | E39 Mogul | 67524 | **LU400/D** | S51 | 10 | Coated | Universal | 0 | 24000+ | 47500 | 40000 | 22 | 2100 | 4,22 |
| 600 | T14.5 | E40 Mogul | 67610 | **LU600 SUPER** | S106 | 12 | Clear | Universal | 0 | 24000 | 90000 | 81000 | 25 | 2200 | 3 |
| 750 | BT37 | E39 Mogul | 67547 | **LU750** | S111 | 6 | Clear | Universal | 0 | 24000+ | 105000 | 94500 | 22 | 2100 | 3,22 |
| 1000 | E25 | E39 Mogul | 67307 | **LU1000/ECO** | S52 | 6 | Clear | Universal | 0 | 24000+ | 130000 | 124000 | 22 | 2100 | 3,22 |




## LUMALUX ®STANDBY
### Dual Arc Tube,Long Life

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70 | ET23.5 | E39 Mogul | 67540 | **LU70/SBY** | S62 | 20 | Clear | Universal | O | 40000 | 6050 | 4950 | 22 | 1900 | 4,19 |
| 100 | ET23.5 | E39 Mogul | 67542 | **LU100/SBY** | S54 | 20 | Clear | Universal | O | 40000 | 9500 | 7600 | 22 | 2100 | 4,19 |
| 150 | ET23.5 | E39 Mogul | 67544 | **LU150/55/SBY** | S55 | 20 | Clear | Universal | O | 40000 | 15700 | 12100 | 22 | 2100 | 4,13,19,36 |
| 200 | ET18 | E39 Mogul | 67586 | **LU200/100/SBY** | S66 | 20 | Clear | Universal | O | 40000 | 21500 | 18000 | 22 | 2100 | 4,19 |
| 250 | ET18 | E39 Mogul | 67582 | **LU250/SBY** | S50 | 20 | Clear | Universal | O | 40000 | 27500 | 23200 | 22 | 2100 | 4,19 |
| 400 | ET18 | E39 Mogul | 67584 | **LU400/SBY** | S51 | 20 | Clear | Universal | O | 40000 | 47500 | 40000 | 22 | 2100 | 4,19 |
| 1000 | E25 | E39 Mogul | 67543 | **LU1000/SBY** | S52 | 6 | Clear | Universal | O | 24000+ | 127000 | 115000 | 22 | 2100 | 3,22 |

## SPECIALTY

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | (mean) | CRI | CCT (K) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | T7 | RX7s RSC | 67527 | **LU400T7/RSC** | S51 | 10 | Clear | Horizontal | E | 24000 | 4600 | 41400 | 21 | 2100 | 4,18 |
| | T14.5 | E40 Mogul | 67711 | **400W PLANTASTAR** | S51 | 12 | Clear | Universal | O | 16000 | 55000 | 50000 | 22 | 2000 | 3,43 |
| 600 | T14.5 | E40 Mogul | 67712 | **600W PLANTASTAR** | S106 | 12 | Clear | Universal | O | 16000 | 90000 | 81000 | 22 | 2000 | 3,43 |
| 1000 | E25 | E39 Mogul | 67314 | **LU1000/PLANTASTAR** | S52 | 6 | Clear | Universal | O | 24000 | 130000 | 124000 | 22 | 2100 | 3 |

## MERCURY VAPOR

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Beam Type | Beam Angle | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | (mean) | CRI | CCT (K) | Arc Length (in) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75 | E17 | E26 Med | 69402 | **H43AV-75/DX** | H43 | 20 | | | Coated | Universal | O | 16000+ | 2700 | 1800 | 45 | 4300 | | 22,34 |
| 100 | E17 | E26 Med | 69403 | **H38AV-100/DX** | H38 | 20 | | | Coated | Universal | O | 18000+ | 4000 | 3560 | 45 | 4000 | | 22,34 |
| | PAR38 | ADMed Skt | 68843 | **H44GS-100SP** | H44 | 12 | SP | 8° | | Universal | O | 16000 | 2500 | 1950 | 20 | 5900 | | 22,34 |
| | | E26 Med Skt | 68846 | **H44GS-100/MDSKSP** | H44 | 12 | SP | 8° | | Universal | O | 16000 | 2500 | 1950 | 20 | 5900 | | 22,34 |
| | R40 | E26 Med | 69405 | **H38BP-100/DX** | H38 | 10 | FL | | Coated | Universal | O | 24000+ | 2500 | 2000 | 45 | 4000 | | 22,34 |
| | ET23.5 | E39 Mogul | 69408 | **H38JA-100/DX** | H38 | 20 | | | Coated | Universal | O | 24000+ | 4100 | 3300 | 45 | 4000 | | 22,34 |
| 175 | R40 | E26 Med | 69406 | **H39BP-175/DX** | H39 | 10 | FL | | Coated | Universal | O | 24000+ | 5100 | 4100 | 45 | 4000 | | 22,34 |
| | ED28 | E39 Mogul | 69444 | **H39KB-175** | H39 | 6 | | | Clear | Universal | O | 24000+ | 7700 | 7150 | 22 | 5900 | | 22,34 |
| | | | 69445 | **H39KC-175/DX** | H39 | 6 | | | Coated | Universal | O | 24000+ | 8400 | 6800 | 45 | 4000 | | 22,34 |
| 250 | ED28 | E39 Mogul | 69448 | **H37KC-250/DX** | H37 | 6 | | | Coated | Universal | O | 24000+ | 12500 | 10000 | 45 | 4000 | | 22,34 |
| 400 | ED37 | E39 Mogul | 69449 | **H33CD-400** | H33 | 6 | | | Clear | Universal | O | 24000+ | 20000 | 18700 | 22 | 5900 | | 22,34 |
| | | | 69450 | **H33GL-400/DX** | H33 | 6 | | | Coated | Universal | O | 24000+ | 23000 | 16200 | 43 | 4000 | | 22,34 |
| 1000 | BT56 | E39 Mogul | 69331 | **H36GW-1000/DX** | H36 | 6 | | | Coated | Universal | O | 24000+ | 58000 | 48500 | 45 | 4000 | | 9,22,34 |

## LOW PRESSURE SODIUM

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | ANSI Code | Pkg Qty | Beam Type | Beam Angle | Lamp Finish | Operating Position | Fix Req | Avg Rated Life (hrs) | Approx Lumens (initial) | (mean) | CRI | CCT (K) | Arc Length (in) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | T17 | BY22D | 69510 | **SOX18** | L69 | 12 | | | Clear | BU+/- | E | 18000 | 1800 | 1620 | | 1700 | | |
| 35 | T17 | BY22D | 69511 | **SOX35** | L70 | 12 | | | Clear | BU+/- | E | 18000 | 4550 | 4095 | | 1700 | | |
| 55 | T17 | BY22D | 69512 | **SOX55** | L71 | 12 | | | Clear | BU+/- | E | 18000 | 7800 | 7800 | | 1700 | | |
| 90 | T21 | BY22D | 69513 | **SOX90** | L72 | 12 | | | Clear | HOR+/- | E | 18000 | 14300 | 12155 | | 1700 | | |
| 135 | T21 | BY22D | 69514 | **SOX135** | L73 | 12 | | | Clear | HOR+/- | E | 18000 | 22600 | 19210 | | 1700 | | |
| 180 | T21 | BY22D | 69519 | **SOX180 6PK** | L74RF | 6 | | | Clear | HOR+/- | E | 18000 | 32000 | 22400 | | 1700 | | |

# SYMBOLS & FOOTNOTES FOR HIGH INTENSITY DISCHARGE (HID) LAMPS

| Symbol | Description |
|---|---|
| | New item introduced within the past year. |
| | Item will be discontinued when inventory is depleted. |
| | New item introduced within the past year. |
| | This ECOLOGIC® lamp was designed to pass the Federal TCLP criteria for classification as non-hazardous waste in most states. Disposal regulations may vary; check local and state regulations. |
| CRI | This lamp is a High Color Rendering Lamp |

| Footnote | Description |
|---|---|
| 1 | Consult your OSRAM SYLVANIA Lighting Representative for compatible electronic operating systems. |
| 2 | Use in equipment where gasket material is protected from all lamp radiation. |
| 3 | Use with 5000V pulse rated sockets only. |
| 4 | Use with 4000V pulse rated sockets only. |
| 5 | Unjacketed reprographical/photochemical lamp. |
| 6 | 20,000 average rated life based on 10 hrs/start. 30,000 average rated life based on 120 hrs/start. |
| 7 | Passes Federal TCLP test based on NEMA LL Series Standards. TCLP data available upon request. Disposal regulations may vary depending on location. Please check your local and state/provincial regulations. |
| 8 | Voltage rise due to fixture effect is to be evaluated using standard lamp types and not LUMALUX PLUS lamp types |
| 9 | H34 and H36 lamps are not interchangeable. |
| 10 | Consult your OSRAM SYLVANIA Lighting Representative for lamp/ballast compatibility. |
| 11 | Horizontally oriented lamps require a position oriented mogul (POM) socket to accept position oriented mogul bases. |
| 12 | Operates at 360 watts on 400w M59 ballast or a M165 ballast. |
| 13 | 55 Volt lamp. |
| 14 | 100 Volt lamp. |
| 15 | UNALUX lamps must be operated on mercury lag or reactor ballasts only. |
| 16 | Lamps must be operated on CW/CWA ballasts only |
| 17 | O = Lamps classified as O-type, comply with ANSI standard C78.389 for containment testing and may be used in open luminaries. See lamp warning. |
| 18 | E = Lamps classified as E-type are to be used ONLY in suitably enclosed luminaries. See lamp warning. |
| 19 | Standby feature not guaranteed beyond 24,000 operating hours. |
| 20 | S = When operated within 15 degrees of vertical, this lamp may be operated in an open luminaire provided the installation is not near people or flammable or combustible material, otherwise it must be operated in a suitably enclosed luminaire. See lamp warning. |
| 21 | F = Enclosed luminaire with UV filter and lens interlock required. WARNING: This lamp emits ultraviolet radiation which can cause serious skin burn and eye inflammation. Additionally, this lamp operates under high pressure at very high temperatures. Should the lamp break there can exist a danger of personal injury and/or fire from the broken lamp particles being discharged. This lamp should only be used in fully enclosed luminaire with ultraviolet (UV) filter tempered glass lens capable of containing any particles discharges by breakage. Do not use this lamp if the filter lens is damaged or missing. This lamp should only be used in luminaires equipped with safety interlock lens switches. See lamp warning. |
| 22 | Mean lumens measured at 50% of average rated life |
| 23 | When operated on ballasts having a sustaining voltage less than 270V, lamp life may be significantly reduced. |
| 24 | The circuit must include overcurrent protection (I.e. Thermally switched ballast). |
| 25 | Lamp requires a nominal Open Circuit Voltage of 230V or higher. Without an igniter in the circuit minimum OCV is 209Vrms. |
| 26 | Lamps may be operated on ANSI M98 Compliant Ballast. |
| 27 | Lamps may be operated on ANSI M140 Compliant Ballast. |
| 28 | Published rated life based on 5 hours per start. Life rating will increase to 6,000 hours if operated for at least 10 hours per start in the base up position. Lumens will be lower for operating positions other than base up. See lumen tilt factor curve in the Metal Halide Specification Guide. |
| 29 | Operates at 150W on a 175W M57 ballast or a M107 ballast. |
| 30 | UV-Stop quartz |
| 31 | Lamps may be operated on a M142 Compliant ballast. |

## SYMBOLS & FOOTNOTES FOR HIGH INTENSITY DISCHARGE (HID) LAMPS

| Footnote | Description |
|---|---|
| 32 | Do not operate on dimming systems. Dimming systems will prevent a lamp the ability to self-extinguish. |
| 33 | When operating on a ballast with a sustaining voltage less than 310V, lamp life may be significantly reduced. |
| 34 | In general, Horizontal lumen values will be 5-10% lower than the vertical lumen values. |
| 35 | Lamps may be operated on ANSI M85 or M98 Compliant ballasts. |
| 36 | LU150/100 and LU150/55 lamps are not interchangeable. |
| 37 | Lamps may be operated on ANSI M142 or M81 Compliant ballasts. |
| 38 | Lamps with a E26 medium skirt base are not compatible with exclusionary medium sockets. |
| 39 | Lamps may be operated on ANSI M137 Compliant ballasts. |
| 40 | The ULX880 lamp should not be used on any circuit other than 480V H36 mercury reactor. |
| 41 | Lamps may be operated on ANSI M132 (320W) Compliant ballasts. |
| 42 | Lamps may be operated on ANSI M135 (400W) Compliant ballasts. |
| 43 | Use with 4-5kV igniter. |
| 44 | Operates at 950 watts on 1000W M47 CWA ballasts |
| 45 | For use where seal temperature does not exceed 350C. |
| 46 | Please consult with your ballast and fixture manufacturer for compatible systems |
| 47 | Lamps may be operated M155 or M135 pulse start ballast with a sustaining voltage greater than 270V |
| 48 | The emergence of electronic ballasts to operate metal halide lamps has produced additional need to separate the lamp designation of quartz and ceramic metal halide lamps, as there can be some important differences in system performance. Therefore the C lamp designation from NEMA has been introduced going forward for future differentiation of ceramic metal halide lamps and they will begin to be labeled accordingly. |

# Manufacturers' Cross Reference

## HIGH INTENSITY DISCHARGE LAMPS

| SYLVANIA | GE | PHILIPS |
|---|---|---|
| **METALARC CERAMIC METAL HALIDE** | | |
| MC150T7.5/U/G12/940 PB | CMH150/T/U/942/G12 | CDM150/T6/942 |
| MC70T6/U/G12/940 PB | CMH70/T/U/942/G12 | CDM70/T6/942 |
| MC150T7.5/G12/U/830 PB | CMH150/T/U/830/G12 | CDM150/T6/830 |
| MC39T6/U/G12/830 PB | CMH39/T/U/830/G12 | CDM35/T6/830 |
| MCP70/U/MED/830 PB | CMH70/U/830MED | MHC70/U/MP/3K |
| MCP70/C/U/MED/830 PB | CMH70/C/U/830/MED | MHC70/C/U/MP/3K |
| MCP100/U/MED/830 PB | CMH100/U/830/MED | MHC100/U/MP/3KALTO |
| MCP100/C/U/MED/830 PB | CMH100/C/U/830/MED | MHC100/C/U/MP/3KALTO |
| MCP70PAR38/U/SP/830/ECO PB | CMH70/PAR38/830/SP15 | CDM70/PAR38/SP/3K |
| MCP70PAR38/U/FL/830/ECO PB | CMH70PAR38/830FL25 | CDM70/PAR38/FL/3K |
| MCP70PAR38/U/VWFL/830/ECO PB | CMH70/PAR38/830WF | CDM70/PAR38/WFL/3K |
| MCP100PAR38/U/SP/830/ECO PB | CMH100/PAR38/830S15 | CDM100/PAR38/SP/3K |
| MCP100PAR38/U/FL/830/ECO PB | CMH100/PAR38/830/FL2 | CDM100/PAR38/FL/3K |
| MCP100PAR38/U/VWFL/830/ECO PB | CMH100/PAR38/830W | CDM100/PARWFL/3K |
| MC39TC/U/G8.5/830 PB | CMH39/TC/U/830/G8.5 | CDM35/TC/830 |
| MC70T6/DE/830 PB | CMH70/TD/942/RX7S | CDM70/TD/830 |
| MC150T7.5/DE/830 PB | CMH150/TD830/RX7S | CDM150/TD/830 |
| MCP320/PS/BU-ONLY/840/BT37 PB | CMH320/PA/O | CDM320/V/O/PS/4K/ALTO |
| MCP70/U/MED/940 PB | CMH70/U/942/MED/O | MHC70/U/MP/4K/ALTO |
| MCP70/C/U/MED/940 PB | CMH70/C/U/942/MED/O | MHC70/C/U/MP/4K/ALTO |
| MC70T6/U/G12/930 PB | ---- | ---- |
| MCP70PAR30LN/U/930/SP/ECO PB 90V | CMH70/PAR30L/830SP | CDM70/PAR30L/M/SP (830) |
| MCP70PAR30LN/U/930/FL/ECO PB 90V | CMH70/PAR30L/830FL | CDM70/PAR30L/M/FL (830) |
| MCP100/U/MED/940 PB | ---- | MHC100/U/MP/4K/ALTO |
| MC39T6/U/G12/940 PB 90V | CMH39/T/U/942/G12 | ---- |
| MCP150/U/MED/830 PB | CMH150/U/830/MED/O | MHC150/U/MP/3K/ALTO |
| MCP150/C/U/MED/830 PB | CMH150/C/U/830/MED/O | MHC150/C/U/MP/3K/ALTO |
| MCP250/PS/BU-ONLY/940 PB | CMH250/VBU/PA/O | ---- |
| MCP250/C/PS/BU-ONLY/940 PB | CMH250/C/VBU/PA/O | ---- |
| MCP39PAR20U830SP PB | CMH39/UPAR20/SP10 | CDM35/PAR20/M/SP |
| MC70TC/U/G8.5/930 PB | CMH70/TC/U/942/G8.5 | CDM70/TC/830 |
| MCP39PAR20U830FL PB | CMH39/UPAR20/FL25 | CDM35/PAR20/M/FL |
| MCP50/U/MED/830 PB | ---- | MHC50/U/MP/3K/ALTO |
| MCP150/PAR38/U/830/SP/ECO PB | ---- | ---- |
| MCP150/PAR38/U/830/FL/ECO PB | ---- | ---- |
| MCP150/PAR38/U/830/VWFL/ECO PB | ---- | ---- |
| MCP50/C/U/MED/830 PB | ---- | ---- |
| MCP320/C/PS/BU-ONLY/840/BT37 PB | CMH320/C/PA/O | CDM320/C/V/O/PS/4K/ALTO |
| MCP20PAR30LN/U/830/FL/ECO PB | CMH20PAR30/FL25 | ---- |
| MCP20PAR30LN/U/830/SP/ECO PB | CMH20PAR30/SP10 | ---- |
| MCP39PAR30LNU830SPECO PB | CMH39/PAR30L/SP10 | CDM35/PAR30L/M/SP |
| MCP39PAR30LNU830FLECO PB | CMH39/PAR30L/FL25 | CDM35/PAR30L/M/FL |
| MC20TC/U/G8.5/830PB | CMH20/TC/U/830/G8.5 | ---- |
| MC70TC/U/G8.5/930PB | CMH70/T/U/830/G12 | CDM70/T6/830 |
| **METALARC PULSE START** | | |
| MP50/C/U/MED | MXR50/U/MED | ---- |
| MP50/U/MED | MXR50/U/MED/O | ---- |
| MP70/C/U/MED | MVR70/C/U/MED | ---- |
| MP70/U/MED | MVR70/U/MED | ---- |
| MP100/C/U/MED | MXR100/C/U/MED | ---- |
| MP100/U/MED | MXR100/U/MED | ---- |
| MP150/C/U/MED | MXR150/C/U/MED/O | ---- |
| MP150/U/MED | MXR150/U/MED/O | ---- |
| MS175/C/PS/BU-ONLY | MVR175/C/VBU/PA | ---- |
| MS175/C/PS/BU-ONLY/MED | MVR175/C/VBU/MED/PA | ---- |
| MS175/PS/BU-ONLY | MVR175/VBU/PA | MS175/BU/PS |
| MS175/PS/BU-ONLY/MED | MVR175/VBU/VBU/PA | ---- |
| MS200/C/PS/BU-ONLY/BT28 | ---- | ---- |
| MS200/PS/BU-ONLY/BT28 | ---- | ---- |
| MS200/PS/BU-ONLY/ET23.5 | ---- | ---- |
| M250/PS/U | ---- | ---- |
| MP250/C/PS/BU-ONLY | MVR250/C/VBU/PA | ---- |
| MP250/PS/BU-ONLY | MVR250/VBU/PA | ---- |
| MS250/C/PS/BU-ONLY | MVR250/C/VBU/MED/PA | ---- |

# Manufacturers' Cross Reference Guide (continued)

## HIGH INTENSITY DISCHARGE LAMPS - METALARC CERAMIC

| SYLVANIA | GE | PHILIPS |
|---|---|---|
| MS250/PS/BU-ONLY | MVR250/VBU/PA | ---- |
| MS320/C/PS/BU-HOR | MVR320/C/VBU/XHOPA | ---- |
| MS320/PS/BU-HOR | MVR320VBU/XHO/PA | ---- |
| MP320/350/C/PS/BU-ONLY/BT28 | MPR350/C/VBU/PA | MP350/C/BU/PS |
| MP320/350/C/PS/BU-ONLY/BT28 | MPR320/C/VBU/XHO/PA | MP320/C/BU/PS |
| MP320/350/PS/BU-ONLY/BT28 | MPR350/VBU/PA | MP350/BU/PS |
| MP320/350/PS/BU-ONLY/BT28 | MPR320/VBU/XHOPA | MP320/BU/PS |
| MP350/400/C/PS/BU-ONLY | MPR400/C/VBU/XHOPA | MP400/C/BU/PS |
| MP350/400/PS/BU-ONLY | MPR350/VBU/PA | MP400/BU/PS |
| MS400/C/PS/BU-ONLY | MVR400/VBU/XHO/PA | MS400/C/BU/PS |
| MS400/PS/BD-ONLY/BT28 | MVR400/C/VBU/ED28/PA | ---- |
| MS400/PS/BU-ONLY | MVR400/VBU/HO/PA | MS400/BU/PS |
| MS400/PS/BU-ONLY/BT28 | MVR400/VBU/ED28/PA | ---- |
| MS750/C/PS/BU-HOR/BT37 | ---- | ---- |
| MS750/PS/BD-ONLY/BT37 | ---- | ---- |
| MS750/PS/BU-HOR/BT37 | MVR750/VBU/PA | ---- |
| M1000/PS/U/BT37 | MVR1000/U/BT37/PA | MS1000/BU/BT37/PS |

## METALARC SUPERSAVER

| | | |
|---|---|---|
| M150/SS/U/BT-28 | MVR150/U/WM | ---- |
| MS360/C/SS/BU-HOR | MVR360CVBU/WM/HO | ---- |
| MS360/SS/BU-HOR | MVR360/VBU/WM/HO | MS360/BU/EW |
| MSP360/C/SS/BU-ONLY | MVR360/C/VBU/WM/HO | MP360/C/BU/EW |
| MSP360/SS/BU-ONLY | MPR360/VBU/WM/HO/O | MP360BU/EW |
| M950/SS/U/BT56 | ---- | ---- |
| METALARC SUPER | | |
| MS175/HOR | MVR175/HOR | ---- |
| MS175/C/HOR | MVR175/C/HOR | MS175/C/HOR |
| MS250/3K/HOR | ---- | ---- |
| MS250/C/HOR | MVR250/C/HOR | MS250/C/HOR |
| MS250/HOR | MVR250/HOR | ---- |
| MS400/3K/BU-ONLY | MVR400/VBU/XHO | MS400/3K/BU |
| MS400/BD-ONLY | MVR400/VBD | ---- |
| MS400/BU-ONLY | MVR400VBU/HO | MS400/BU |
| MS400/BU-ONLY/BT28 | MVR400/VBU/BT28 | MS400/BU/ED28 |
| MS400/C/BU-ONLY | MVR400/C/VBU | MS400/C/BU |
| MS400/C/HOR | MVR400/C/HOR/MOG | ---- |
| MS400/C/HOR/BT28 | ---- | ---- |
| MS400/HOR | MVR400/HOR/MOG | ---- |
| MS400/HOR/BT28 | MVR400/HOR/BT28 | ---- |
| MS1000/BD-ONLY | ---- | MS1000/BD |
| MS1000/BU-ONLY | MVR1000/VBU/HO | MS1000/BU |
| MS1000/C/BU-ONLY | MVR1000/C/VBU/HO | MS1000/C/BU |

## METALARC STANDARD® & METALARC PRO-TECH®

| | | |
|---|---|---|
| M175/U | MVR175/U | MH175/U |
| M175/C/U | MVR175/C/U | MH175/C/U |
| M175/C/U/MED | MVR175/C/U/MED | MH175/C/U/M |
| M175/U/MED | MVR175/U/MED | MH175/U/M |
| M175/3K/BU-ONLY | MVR175/SP30/U | MH175/3K/BU |
| MP175/BU-ONLY | MPR175/VBU/O | MP175/BU |
| MP175/BU-ONLY/MED | ---- | ---- |
| MP175/C/BU-ONLY | MPR175/C/VBU/O | ---- |
| M250/U | MVR250/U | MH250/U |
| M250/C/U | MVR250/C/U | MH250/C/U |
| M250/3K/BU-ONLY | MVR250/SP30/U | MH250/3K/BU |
| M250/U/ET18 | ---- | ---- |
| MP250/BU-ONLY | MPR250/VBU/O | MP250/BU |
| MP250/C/BU-ONLY | MPR250/C/VBU/O | ---- |
| M400/U | MVR400/U | MH400U |
| M400/C/U | MVR400/C/U | MH400/C/U |
| M400/C/U/BT28 | MVR400/C/U/ED28 | MH400/U/ED28 |
| M400/U/BT28 | MVR400/U/ED28 | MH400/U/ED28 |
| M400/U/ET18 | ---- | ---- |

# Manufacturers' Cross Reference (continued)

## HIGH INTENSITY DISCHARGE LAMPS - METAL HALIDE / HIGH PRESSURE SODIUM

| SYLVANIA | GE | PHILIPS |
|---|---|---|
| **METALARC STANDARD® & METALARC PRO-TECH®** | | |
| MP400/BD-ONLY | ---- | ---- |
| MP400/BU-ONLY | MPR400/VBU/HO/O | MP400/BU |
| MP400/C/BU-ONLY | MPR400/C/VBU/HO/O | MP400/C/BU |
| M1000/U | MVR1000/U | MH1000/U |
| M1000/C/U | MVR1000/C/U | MH1000/C/U |
| M1000/U/BT37 | MVR1000/U/BT37 | MH1000/U/BT37 |
| MP1000/BU-ONLY | MPR1000/VBU/O | MP1000/BU |
| MP1000/C/BU-ONLY | ---- | ---- |
| M1500/BD | ---- | MH1500/U |
| M1500/BU-HOR | MVR1500/HBU | MH1500/U |
| **METALARC BRITELINE** | | |
| M1500T7/DE | SPL1500/L/H/652 | ---- |
| M2000T8/DE | ---- | ---- |
| M2000T9/DE | MQI2000/T9/40 | ---- |
| **METALARC SAFELINE** | | |
| MT400/BU-ONLY | MVT400/VBU | MHT400/U |
| MT400/C/BU-ONLY | MVT400/C/VBU | MHT400/C/U |
| **DOUBLE-ENDED HQI** | | |
| HQI-DE150/NDX | ARC150/TD/UVC/742 | MHN150/TD/840 |
| HQI-DE150/WDX | ARC150/TD/UVC/730 | ---- |
| HQI-DE70/NDX | ARC70/TD/UVC/743 | MHN70/TD/840 |
| HQI-DE70/WDX | ARC70/TD/UVC/730 | ---- |
| HQI-SE 150/NDX | ARC150T/U/840G12 | ---- |
| **LUMALUX PLUS® ECOLOGIC®** | | |
| LU50/PLUS/ECO | | C50S68/ALTONC |
| LU70/PLUS/ECO | LU70/ECO/NC | C70S62/ALTO/PLUS |
| LU70/PLUS/MED | ---- | ---- |
| LU100/PLUS/ECO | LU100/ECO/NC | C100S54/ALTONC |
| LU150/55/PLUS/ECO | LU150/ECO/NC | C150S55/ALTONC |
| LU200/PLUS/ECO | LU200/ECO/NC | C200S66/ALTONC |
| LU250/PLUS/ECO | LU250/ECO/NC | C250S50/ALTO/NC |
| LU310/PLUS/ECO | ---- | ---- |
| LU400/PLUS/ECO | LU400/ECO/NC | CS400S51/ALTO/PLUS |
| **LUMALUX® STANDARD & ECOLOGIC®** | | |
| LU35/D/MED | LU35/D/MED | C35S76/D/M |
| LU35/MED | LU35/MED | C35S76/M |
| LU50/D/MED | LU50/D/MED | C50S68/D/M |
| LU50/ECO | LU50 | C50S68/ALTO |
| LU50/MED | LU50/MED | C50S68/M |
| LU50/D | LU50/D | C50S68/D/ALTO |
| LU70/D | LU70/D | C70S62/D/ALTO |
| LU70/D/MED | LU70/D/MED | C70S62/D/M |
| LU70/ECO | LU70/ECO | C70S62/ALTO |
| LU70/MED | LU70/MED | C70S62/M |
| LU100/D | LU100/D | C100S54/D/ALTO |
| LU100/D/MED | LU100/D/MED | C100S54/D/M |
| LU100/ECO | LU100/ECO | C100S54/ALTO |
| LU100/MED | LU100MED | C100S54/M |
| LU150/100 | LU150/100 | C150/S56/ALTO |
| LU150/55/D | LU150/55/D | C50S55/D/ALTO |
| LU150/55/D/MED | LU150/D/MED | C150S55/D/M |
| LU150/55/ECO | LU150/55/ECO | C150S55/ALTO |
| LU150/55/MED | LU150/MED | C150S55/M |
| LU200/ECO | LU200/ECO | C200S66/ALTO |
| LU250/D | LU250/D | C250S50/D/ALTO |
| LU250/ECO | LU250/ECO | C250S50/ALTO |
| LU310/ECO | LU310 | C310S67 |
| LU400/D | LU400/D | C400S51/D/ALTO |

# Manufacturers' Cross Reference Guide (continued)

## HIGH INTENSITY DISCHARGE LAMPS - HIGH PRESSURE SODIUM / SOX / MERCURY VAPOR



| SYLVANIA | GE | PHILIPS |
|---|---|---|
| **LUMALUX® STANDARD & ECOLOGIC®** | | |
| LU400/ECO | LU400/ECO | C50S68/D/ALTO |
| LU750 | LU750 | ---- |
| LU1000 | LU1000/ECO | C1000S52/ALTO |
| **LUMALUX STANDBY** | | |
| LU70/SBY | LU70/SBY/XL | C70S62/2 |
| LU100/SBY | LU100/SBY/XL | C100S54/2 |
| LU150/55/SBY | LU150/55/SBY/XL | C150S55/2 |
| LU200/100/SBY | LU200/SBY/XL | ---- |
| LU250/SBY | LU250/SBY/XL | C250S50/2 |
| LU400/SBY | LU400/SBY/XL | C400S51/2 |
| LU1000/SBY | LU1000/SBY/XL | C1000S52/2 |
| **SOX LOW PRESSURE SODIUM** | | |
| SOX18 | SOX18 | SOX-E18 |
| SOX35 | SOX35 | SOX35 |
| SOX55 | SOX55 | SOX55 |
| SOX90 | SOX90 | SOX90 |
| SOX180 | ---- | SOX180 |
| **MERCURY VAPOR** | | |
| H33CD-400 | HR400A33 | H33CD-400 |
| H33GL-400/DX | HR400DX33 | H33GL-400/DX |
| H36GW-1000/DX | HR1000DX36 | H36GW-1000/DX |
| H37KC-250/DX | HR250DX37 | H37KC-250/DX |
| H38AV-100/DX | HR100DX38/MED | H38MP-100/DX |
| H38BP-100/DX | HR100RFL38 | H38BP-100/DX |
| H38JA-100/DX | HR100DX38/12PK | H38JA-100/DX |
| H39BP-175/DX | HR175RFL39 | H39BM-175 |
| H39KB-175 | HR175A39/CP | H39KB-175 |
| H39KC-175/DX | HR175DX39 | H39KC-175/DX |
| H43AV-75/DX | HR75DX43 | H43AV-75/DX |
| H44GS-100/MDSKSP | HR100PSP44/MED | H44GS-100/M |
| H44GS-100SP | HR100PSP44 | H44GS-100 |

# OSRAM SYLVANIA: THE LEADER IN ENERGY SAVING COMPACT FLUORESCENT LAMPS

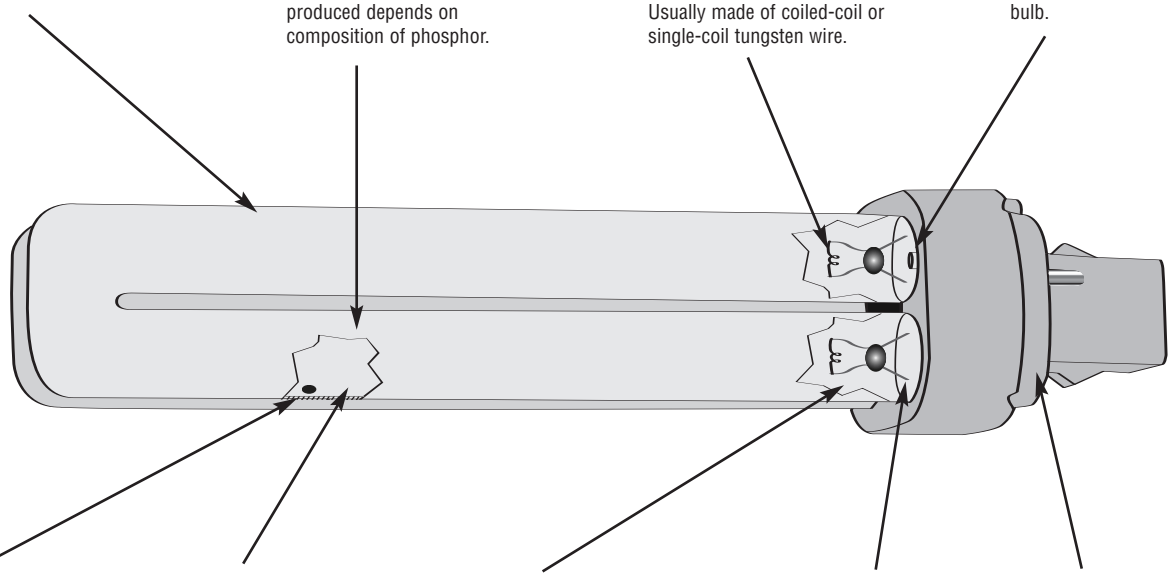
The compact fluorescent lamp is an electric discharge device which utilizes a low pressure mercury vapor arc to generate ultra-violet (plus a little visible) energy. The ultra-violet energy is absorbed by a phosphor coat on the inside of the glass tube and converted by the phosphor to visible wavelengths; the wavelengths of the light generated are determined by the composition of the phosphor. In addition to the small amount of mercury vapor, the fluorescent tube contains an atmosphere of an inert gas, usually argon, krypton, neon, or a mixture of two or more of these gases. The pressure of the gases contained in the lamp is very low, usually from 2 to 3 torr. Atmospheric pressure is 760 torr.

**BULB**
A wide variety of compact fluorescent bulb shapes are available

**PHOSPHOR**
Coating inside the bulb transforms ultraviolet radiation into visible light. Color of light produced depends on composition of phosphor.

**CATHODE**
"Hot cathodes" at each end of lamp are coated with emissive materials which emit electrons. Usually made of coiled-coil or single-coil tungsten wire.

**EXHAUST TUBE**
Air is exhausted through this tube during manufacture and inert gas introduced into the bulb.



**MERCURY**
A minute quantity of liquid mercury is placed in the bulb to furnish mercury vapor.

**GAS**
Usually a mixture of argon and neon at low pressure.

**STEM PRESS**
The lead-in wires have an air tight seal here and are made of specific material to assure about the same coefficient of expansion as the glass.

**LEAD-IN WIRES**
Connect to the base pins and carry the current to and from the cathodes and the mercury arc.

**BASE**
Several different types used to connect the lamp to the electric circuit and to support the lamp in the lampholder.

# HOW TO READ PRODUCT INFORMATION - COMPACT FLUORESCENT

| Nominal Wattage | Bulb | MOL (in) | MOL (mm) | Base | Product Number | Ordering Abbreviation | NEMA Generic Designation | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F (@35°C/95°F) | Approx Lumens Mean @25°C/77°F (@35°C/95°F) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **13** | Twist | 4.6 | 117 | Med | 29116 | **CF13EL/MINITWIST** | | 6 | 8000 | 3000 | 82 | 800 | 640 | 2,21,28, 36,63,64 |
| **26** | D(T4) | 6.8 | 173 | G24D-3 | 20710 | **CF26DD/830/ECO** | CFQ26W/G24D/30 | 50 | 10000 | 3000 | 82 | 1800 | 1548 | 2,21,28, 34,37 |
| **32** | T(T4) | 5.5 | 140 | GX24Q-3 | 20885 | **CF32DT/E/IN/835/ECO** | CFTR32W/GX24Q/35 | 50 | 10000 | 3500 | 82 | 2328<br>2400 | 2002<br>2064 | 2,21,28, 33,35,59 |
| **40** | L(T5) | 22.6 | 573 | 2G11 | 20586 | **FT40DL/841/RS/ECO** | FT40W/2G11/RS/41 | 10 | 20000 | 4100 | 82 | 3150 | 2709 | 2,21,28 |

| | |
|---|---|
| **Nominal Wattage** | Design wattage on reference ballast. Actual wattage dependent on ballast. |
| **Bulb** | Describes the shape of the bulb. |
| **Base** | Base designations for compact fluorescent lamps are the NEMA designations. Please see page 111 for base illustrations. |
| **MOL** | Maximum overall length. The actual length of the lamp measured from the bottom of the base to the top outside edge of the glass. In many cases, the bottom of the base is the bottom of the center post of the base of the lamp. |
| **Symbols & Footnotes** | Most symbols and footnotes that apply to a specific product will appear in this space. The explanations of the symbols and footnotes are at the end of the fluorescent section. |
| **Ordering Abbreviation** | A text description of the lamp. Please see below for several examples and explanations of some of the codes. |
| **NEMA Generic Designation** | Designation assigned by NEMA (National Electrical Manufacturers Association). |
| **CCT** | Correlated Color Temperature. The degree of "whiteness" of the light. Expressed in kelvins (K). Please see page 109 for more information. |
| **CRI** | Color Rendering Index. A numbering system for rating the relative color rendering quality of a light source compared to a standard. Please see page 109 for more information. |
| **Initial & Mean Lumens** | Initial lumens are measured when the lamp has been operating for 100 hours. Mean lumens are typically measured at 40% of the rated life of the lamp. Compact Fluorescent lamp lumens are measured at 25°C (77°F) and 35˚C (95˚F) |

## How to Read Ordering Abbreviations

| CF26DD/830 | |
|---|---|
| CF | Compact Fluorescent |
| 26 | Nominal lamp wattage |
| DD | DULUX® Double |
| 8 | 82 CRI |
| 30 | 3000K CCT |

| CF32DT/E/IN/835/ECO | |
|---|---|
| CF | Compact Fluorescent |
| 32 | Nominal lamp wattage |
| DT | DULUX Triple |
| E | Electronic or dimming operation |
| IN | Amalgam |
| 8 | 82 CRI |
| 35 | 3500K CCT |
| ECO | ECOLOGIC |

| FT40DL/841/RS/ECO | |
|---|---|
| FT | Fluorescent Twin |
| 40 | Nominal lamp wattage |
| DL | DULUX Long |
| 8 | 82 CRI |
| 41 | 4100K CCT |
| RS | Rapid Start |
| ECO | ECOLOGIC |

| CF20EL/830/MED/ECO | |
|---|---|
| CF | Compact Fluorescent |
| 20 | Nominal lamp wattage |
| EL | Electronic Lamp |
| 8 | 82 CRI |
| 30 | 3000K CCT |
| MED | Medium screw base |
| ECO | ECOLOGIC |

## DULUX® LAMP FAMILIES

CF... DS = DULUX Single, 2-pin for magnetic operation, ECOLOGIC®
CF... DS/E = DULUX Single, 4-pin for electronic or dimming operation
CF... DD = DULUX Double, 2-pin for magnetic operation, ECOLOGIC
CF... DD/E = DULUX Double, 4-pin for electronic or dimming operation, ECOLOGIC
CF... DT = DULUX Triple, 2-pin for magnetic operation, ECOLOGIC
CF... DT/E = DULUX Triple, 4-pin for electronic or dimming operation, ECOLOGIC
CF... DT/E/IN = DULUX Triple, 4-pin for electronic or dimming operation, amalgam, ECOLOGIC
FT... DL = Fluorescent Twin, DULUX Long, 4-pin
CF... DF = DULUX Flat, 4-pin
CF... EL = DULUX self-ballasted, medium screw base

## For weight and measurement information, please visit www.sylvania.com

## Lamp Disposal Labeling

The following information appears on packages of fluorescent lamps. For more information on lamp disposal labeling, see the inside back cover of this catalog.

**Hg Lamp Contains Mercury**

**Manage in accordance with disposal laws**
**See www.lamprecycle.org or 1-866-666-6850**

## COMPACT FLUORESCENT LAMP COLORS

| COLOR | COLOR ABBREVIATION | CORRELATED COLOR TEMPERATURE(1) | COLOR RENDERING INDEX(2) |
|---|---|---|---|
| DULUX® 2700K | 827 | 2700 | 82 |
| SOFT WHITE | Soft White | 2900 | 82 |
| WARM WHITE | WW | 3000 | 52 |
| DULUX SOFT WHITE | 830 | 3000 | 82 |
| DULUX 3000K | 830 | 3000 | 82 |
| DULUX 4100K | 841 | 4100 | 82 |
| DULUX 5000K | 850 | 5000 | 82 |
| DAYLIGHT™ | D | 6500 | 76 |

## COMPACT FLUORESCENT COMPETITIVE GUIDES

NOTE: These tables are intended only as guides and may represent another lamp company's most similar product or product family rather than an identical match. Individual manufacturer's performance values should be consulted. Environmental conditions, ballast type, and other auxiliary equipment may affect lamp performance.

### COMPACT FLUORESCENT BRAND NAMES

| SYLVANIA | GE* | PHILIPS** |
|---|---|---|
| DULUX® | BIAX | PL |
| DULUX S | Low wattage BIAX | PL |
| DULUX D, D/E | Double BIAX | PL-C |
| DULUX T, T/E | Triple BIAX | PL-T |
| DULUX F | --- | --- |
| DULUX L | High Lumen BIAX | PL-L |
| DULUX EL | Spiral | Marathon Twister |
| --- | 2D | --- |
| DURA-ONE™ | GENURA | --- |
| ECOLOGIC® (ECO®) | Ecolux (ECO) | ALTO |

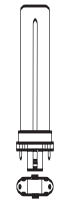
* Trademarks or registered trademarks of General Electric Company ** Trademarks or registered trademarks of Philips

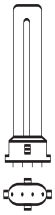
### COMPACT FLUORESCENT COLOR CROSS REFERENCE

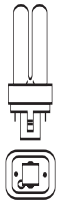
| SYLVANIA | GE | PHILIPS |
|---|---|---|
| 827 | SPX27 | 27 |
| 830 | SPX30 | 30, 830 |
| 835 | SPX35 | 35, 835 |
| 841 | SPX41 | 41, 841 |
| 850 | SPX50 | 50, 850 |
| 865 | SPX65 | 865 |
| 950 | | 950 |

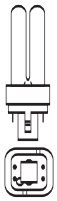
## COMPACT FLUORESCENT LAMPS

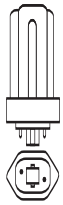
The overall length of DULUX® compact fluorescent lamps is measured from the bottom of the base to the outside edge of the glass. In many cases, the bottom of the base is the bottom of the center post of the base of the lamp.

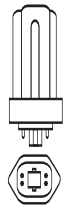

DULUX S

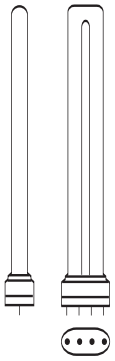

DULUX S/E

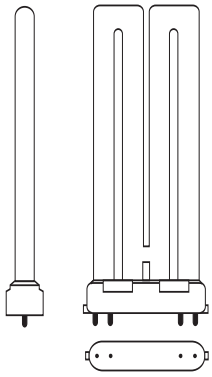

DULUX D

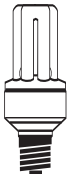

DULUX D/E


DULUX T


DULUX T/E
DULUX T/E/IN

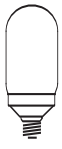

DULUX L


DULUX F


DULUX
EL Triple


DULUX
EL TWIST


DULUX EL CLASSIC
(A-Shape)


DULUX EL
BULLET

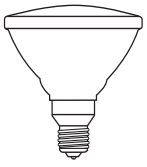

DULUX EL Low
Profile GLOBE

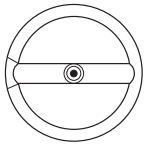

DULUX EL
GLOBE


DULUX EL
DECOR


DULUX EL
REFLECTOR


BR-30


PAR-38


DULUX EL Circline (6-1/2"
& 8" outside diameters)


BR40 Med

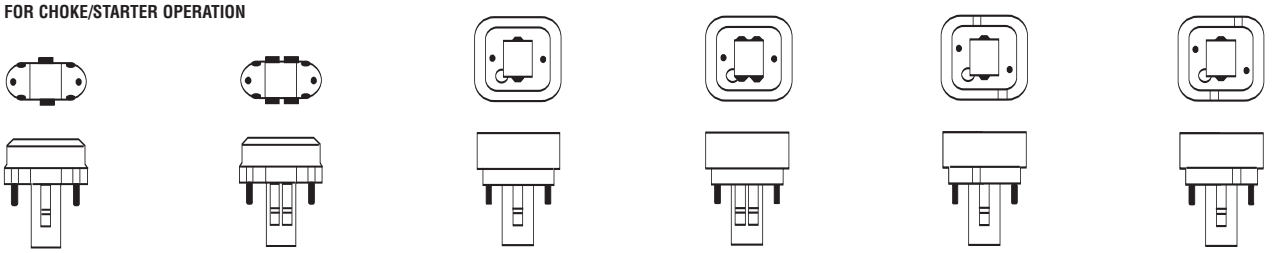

PAR38 Med
Skrt

# BASES

Pin-based compact fluorescent lamps have either 2 pins or 4 pins. Each 2-pin lamp has an internal starter and is designed for preheat, magnetic operation. The 4-pin lamps are designed for electronic ballast operation and are dimmable. These lamps have no internal starter; starting the lamps is a function of the ballast.

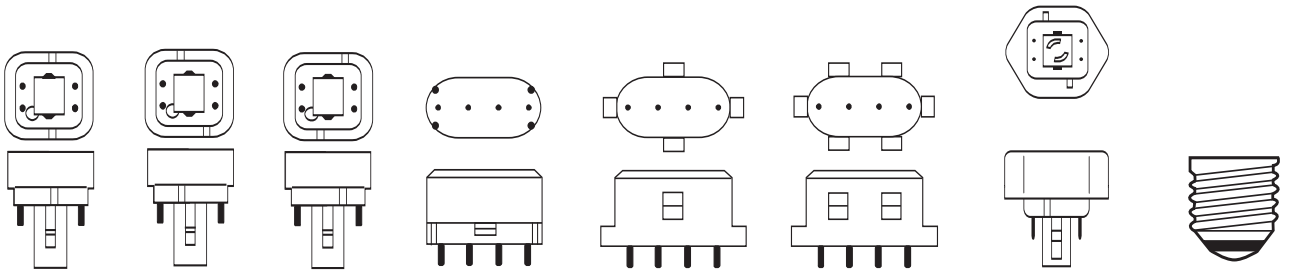
Medium screw base, compact fluorescent lamps have integral ballasts.

**FOR CHOKE/STARTER OPERATION**

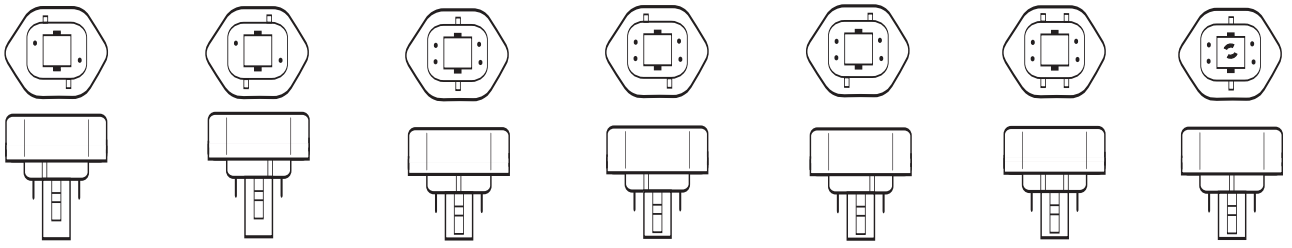


G 23 | GX 23 | G 23-2 | GX 23-2 | G 24 d2 | G24 d3

**FOR ELECTRONIC OR DIMMING OPERATION**



G 24 q-1 | G 24 q-2 | G 24 q-3 | 2 G 11 | 2 G 7 | 2 GX 7 | GX 24 | Medium Screw Base or DULUX® EL



GX 24 d-2 | GX 24 d-3 | GX 24 q-1 | GX 24 q-2 | GX 24 q-3 | GX 24 q-4 | GX 24 q-5

# SYLVANIA DULUX® COMPACT FLUORESCENT CROSS REFERENCE

## DULUX S

| NAED | SYLVANIA | NEMA / GENERIC | GE | PHILIPS | WATTAGE | BASE |
|---|---|---|---|---|---|---|
| 20325 | CF5DS/827 | CFT5W/G23/827 | F5BX/SPX27 | PL-S 5W/827 | 5 | G23 |
| 20303 | CF5DS/841 | CFT5W/G23/827 | F5BX/SPX41 | — | 5 | G23 |
| 20327 | CF7DS/827 | CFT7W/G23/827 | F7BX/SPX27 | PL-S 7W/827 | 7 | G23 |
| 20310 | CF7DS/835 | CFT7W/G23/835 | F7BX/SPX35 | PL-S 7W/835 | 7 | G23 |
| 20304 | CF7DS/841 | CFT7W/G23/841 | F7BX/SPX41 | PL-S 7W/841 | 7 | G23 |
| 20307 | CF7DS/850 | CFT7W/G23/850 | — | PL-S 7W/850 | 7 | G23 |
| 20329 | CF9DS/827 | CFT9W/G23/827 | F9BX/SPX27 | PL-S 9W/827 | 9 | G23 |
| 20333 | CF9DS/835 | CFT9W/G23/835 | F9BX/SPX35 | PL-S 9W/835 | 9 | G23 |
| 20305 | CF9DS/841 | CFT9W/G23/841 | F9BX/SPX41 | PL-S 9W/841 | 9 | G23 |
| 20308 | CF9DS/850 | CFT9W/G23/850 | — | PL-S 9W/850 | 9 | G23 |
| 20331 | CF13DS/827 | CFT13W/GX23/827 | F13BX/SPX27 | PL-S 13W/827 | 13 | GX23 |
| 20283 | CF13DS/830 | CFT13W/GX23/830 | F13BX/SPX30 | PL-S 13W/830 | 13 | GX23 |
| 20335 | CF13DS/835 | CFT13W/GX23/835 | F13BX/SPX35 | PL-S 13W/835 | 13 | GX23 |
| 20306 | CF13DS/841 | CFT13W/GX23/841 | F13BX/SPX41 | PL-S 13W/841 | 13 | GX23 |
| 20309 | CF13DS/850 | CFT13W/GX23/850 | F13BX/SPX50 | PL-S 13W/850 | 13 | GX23 |
| 20374 | CFT13WDS/EC/827 | CFT13W/GX23/827 | F13BX/E/827 | — | 13 | GX23 |
| 20397 | CFT13WDS/EC/830 | CFT13W/GX23/830 | F13BX/E/830 | — | 13 | GX23 |
| 20368 | CFT13WDS/EC/835 | CFT13W/GX23/835 | F13BX/E/835 | — | 13 | GX23 |
| 20375 | CFT13WDS/EC/841 | CFT13W/GX23/841 | F13BX/E/841 | — | 13 | GX23 |

## DULUX S/E

| NAED | SYLVANIA | NEMA / GENERIC | GE | PHILIPS | WATTAGE | BASE |
|---|---|---|---|---|---|---|
| 20311 | CF5DS/E/827 | CFT5W/2G7/827 | — | — | 5 | 2G7 |
| 20315 | CF5DS/E/841 | CFT5W/2G7/841 | — | — | 5 | 2G7 |
| 20312 | CF7DS/E/827 | CFT7W/2G7/827 | — | — | 7 | 2G7 |
| 20316 | CF7DS/E/841 | CFT7W/2G7/841 | — | — | 7 | 2G7 |
| 20313 | CF9DS/E/827 | CFT9W/2G7/827 | — | — | 9 | 2G7 |
| 20317 | CF9DS/E/841 | CFT9W/2G7/841 | — | — | 9 | 2G7 |
| 20314 | CF13DS/E/827 | CFT13W/2GX7/827 | — | — | 13 | 2GX7 |
| 20284 | CF13DS/E/830 | CFT13W/2GX7/830 | — | — | 13 | 2GX7 |
| 20318 | CF13DS/E/841 | CFT13W/2GX7/841 | — | — | 13 | 2GX7 |

## DULUX D

| NAED | SYLVANIA | NEMA / GENERIC | GE | PHILIPS | WATTAGE | BASE |
|---|---|---|---|---|---|---|
| 20689 | CF9DD/827 | CFQ9W/G23/827 | F9DBX23T4/SPX27 | — | 9 | G23-2 |
| 20783 | CF9DD/830 | CFQ9W/G23/830 | — | — | 9 | G23-2 |
| 20690 | CF9DD/835 | CFQ9W/G23/835 | — | — | 9 | G23-2 |
| 20691 | CF13DD/827 | CFQ13W/GX23/827 | F13DBX23T4/SPX27 | PL-C 13W/827/USA | 13 | GX23-2 |
| 20705 | CF13DD/830 | CFQ13W/GX23/830 | F13DBX23T4/SPX30 | PL-C 13W/830/USA | 13 | GX23-2 |
| 20692 | CF13DD/835 | CFQ13W/GX23/835 | F13DBX23T4/SPX35 | PL-C 13W/835/USA | 13 | GX23-2 |
| 20708 | CF13DD/841 | CFQ13W/GX23/841 | F13DBX23T4/SPX41 | PL-C 13W/841/USA | 13 | GX23-2 |
| 20676 | CF18DD/827 | CFQ18W/G24d/827 | F18DBXT4/SPX27 | PL-C 18W/827 | 18 | G24 d-2 |
| 20709 | CF18DD/830 | CFQ18W/G24d/830 | F18DBXT4/SPX30 | PL-C 18W/830 | 18 | G24 d-2 |
| 20677 | CF18DD/835 | CFQ18W/G24d/835 | F18DBXT4/SPX35 | PL-C 18W/835 | 18 | G24 d-2 |
| 20678 | CF18DD/841 | CFQ18W/G24d/841 | F18DBXT4/SPX41 | PL-C 18W/841 | 18 | G24 d-2 |
| 20679 | CF26DD/827 | CFQ26W/G24d/827 | F26DBXT4/SPX27 | PL-C 26W/827 | 26 | G24 d-3 |
| 20710 | CF26DD/830 | CFQ26W/G24d/830 | F26DBXT4/SPX30 | PL-C 26W/830 | 26 | G24 d-3 |
| 20680 | CF26DD/835 | CFQ26W/G24d/835 | F26DBXT4/SPX35 | PL-C 26W/835 | 26 | G24 d-3 |
| 20681 | CF26DD/841 | CFQ26W/G24d/841 | F26DBXT4/SPX41 | PL-C 26W/841 | 26 | G24 d-3 |

## DULUX D/E

| NAED | SYLVANIA | NEMA / GENERIC | GE | PHILIPS | WATTAGE | BASE |
|---|---|---|---|---|---|---|
| 20682 | CF13DD/E/827 | CFQ13W/G24q/827 | F13DBX/SPX27/4P | PL-C 13W/827/4P | 13 | G24 q-1 |
| 20721 | CF13DD/E/830 | CFQ13W/G24q/830 | F13DBX/SPX30/4P | PL-C 13W/830/4P | 13 | G24 q-1 |
| 20671 | CF13DD/E/835 | CFQ13W/G24q/835 | F13DBX/SPX35/4P | PL-C 13W/835/4P | 13 | G24 q-1 |
| 20667 | CF13DD/E/841 | CFQ13W/G24q/841 | F13DBX/SPX41/4P | PL-C 13W/841/4P | 13 | G24 q-1 |
| 20683 | CF18DD/E/827 | CFQ18W/G24q/827 | F18DBX/SPX27/4P | PL-C 18W/827/4P | 18 | G24 q-2 |
| 20724 | CF18DD/E/830 | CFQ18W/G24q/830 | F18DBX/SPX30/4P | PL-C 18W/830/4P | 18 | G24 q-2 |
| 20672 | CF18DD/E/835 | CFQ18W/G24q/835 | F18DBX/SPX35/4P | PL-C 18W/835/4P | 18 | G24 q-2 |
| 20668 | CF18DD/E/841 | CFQ18W/G24q/841 | F18DBX/SPX41/4P | PL-C 18W/841/4P | 18 | G24 q-2 |
| 20684 | CF26DD/E/827 | CFQ26W/G24q/827 | F26DBX/SPX27/4P | PL-C 26W/827/4P | 26 | G24 q-3 |
| 20722 | CF26DD/E/830 | CFQ26W/G24q/830 | F26DBX/SPX30/4P | PL-C 26W/830/4P | 26 | G24 q-3 |
| 20673 | CF26DD/E/835 | CFQ26W/G24q/835 | F26DBX/SPX35/4P | PL-C 26W/835/4P | 26 | G24 q-3 |
| 20669 | CF26DD/E/841 | CFQ26W/G24q/841 | F26DBX/SPX41/4P | PL-C 26W/841/4P | 26 | G24 q-3 |

# SYLVANIA DULUX® COMPACT FLUORESCENT CROSS REFERENCE

## DULUX T

| NAED | SYLVANIA | NEMA / GENERIC | GE | PHILIPS | WATTAGE | BASE |
|---|---|---|---|---|---|---|
| 20756 | CF18DT/827 | CFQ18W/GX24d/827 | — | — | 18 | GX24 d-2 |
| 20752 | CF26DT/827 | CFQ26W/GX24d/827 | — | — | 26 | GX24 d-3 |

## DULUX T/E

| NAED | SYLVANIA | NEMA / GENERIC | GE | PHILIPS | WATTAGE | BASE |
|---|---|---|---|---|---|---|
| 20891 | CF13DT/E/827 | CFTR13W/GX24q/827 | F13TBX/827/4P/EOL | — | 13 | GX24 q-1 |
| 20892 | CF13DT/E/830 | CFTR13W/GX24q/830 | — | — | 13 | GX24 q-1 |
| 20893 | CF13DT/E/835 | CFTR13W/GX24q/835 | — | — | 13 | GX24 q-1 |
| 20894 | CF13DT/E/841 | CFTR13W/GX24q/841 | — | — | 13 | GX24 q-1 |
| 20760 | CF18DT/E/827 | CFTR18W/GX24q/827 | F18TBX/827/4P/EOL | — | 18 | GX24 q-2 |
| 20767 | CF26DT/E/827 | CFTR26W/GX24q/827 | F26TBX/827/4P/EOL | — | 26 | GX24 q-3 |
| 20768 | CF32DT/E/827 | CFTR32W/GX24q/827 | — | — | 32 | GX24 q-3 |

## DULUX T/E/IN

| NAED | SYLVANIA | NEMA / GENERIC | GE | PHILIPS | WATTAGE | BASE |
|---|---|---|---|---|---|---|
| 20875 | CF18DT/E/IN/827 | CFTR18W/GX24q/827 | F18TBX/SPX27/A/4P | PL-T 18W/827/4P | 18 | GX24 q-2 |
| 20876 | CF18DT/E/IN/830 | CFTR18W/GX24q/830 | F18TBX/SPX30/A/4P | PL-T 18W/830/4P | 18 | GX24 q-2 |
| 20877 | CF18DT/E/IN/835 | CFTR18W/GX24q/835 | F18TBX/SPX35/A/4P | PL-T 18W/835/4P | 18 | GX24 q-2 |
| 20878 | CF18DT/E/IN/841 | CFTR18W/GX24q/841 | F18TBX/SPX41/A/4P | PL-T 18W/841/4P | 18 | GX24 q-2 |
| 20879 | CF26DT/E/IN/827 | CFTR26W/GX24q/827 | F26TBX/SPX27/A/4P | PL-T 26W/827/4P | 26 | GX24 q-3 |
| 20880 | CF26DT/E/IN/830 | CFTR26W/GX24q/830 | F26TBX/SPX30/A/4P | PL-T 26W/830/4P | 26 | GX24 q-3 |
| 20881 | CF26DT/E/IN/835 | CFTR26W/GX24q/835 | F26TBX/SPX35/A/4P | PL-T 26W/835/4P | 26 | GX24 q-3 |
| 20882 | CF26DT/E/IN/841 | CFTR26W/GX24q/841 | F26TBX/SPX41/A/4P | PL-T 26W/841/4P | 26 | GX24 q-3 |
| 20883 | CF32DT/E/IN/827 | CFTR32W/GX24q/827 | F32TBX/SPX27/A/4P | PL-T 32W/827/4P | 32 | GX24 q-3 |
| 20884 | CF32DT/E/IN/830 | CFTR32W/GX24q/830 | F32TBX/SPX30/A/4P | PL-T 32W/830/4P | 32 | GX24 q-3 |
| 20885 | CF32DT/E/IN/835 | CFTR32W/GX24q/835 | F32TBX/SPX35/A/4P | PL-T 32W/835/4P | 32 | GX24 q-3 |
| 20886 | CF32DT/E/IN/841 | CFTR32W/GX24q/841 | F32TBX/SPX41/A/4P | PL-T 32W/841/4P | 32 | GX24 q-3 |
| 20887 | CF42DT/E/IN/827 | CFTR42W/GX24q/827 | F42TBX/827/A/4P/EOL | PL-T 42W/827/4P | 42 | GX24 q-4 |
| 20888 | CF42DT/E/IN/830 | CFTR42W/GX24q/830 | F42TBX/830/A/4P/EOL | PL-T 42W/830/4P | 42 | GX24 q-4 |
| 20871 | CF42DT/E/IN/835 | CFTR42W/GX24q/835 | F42TBX/835/A/4P/EOL | PL-T 42W/835/4P | 42 | GX24 q-4 |
| 20890 | CF42DT/E/IN/841 | CFTR42W/GX24q/841 | F42TBX/841/A/4P/EOL | PL-T 42W/841/4P | 42 | GX24 q-4 |
| 20895 | CF57DT/E/IN/827 | CFTR57W/GX24q/827 | F57QBX/827/A/4P/EOL | — | 57 | GX24 q-5 |
| 20896 | CF57DT/E/IN/830 | CFTR57W/GX24q/830 | F57QBX/830/A/4P/EOL | PL-T 57W/830/4P/A | 57 | GX24 q-5 |
| 20897 | CF57DT/E/IN/835 | CFTR57W/GX24q/835 | F57QBX/835/A/4P/EOL | PL-T 57W/835/4P/A | 57 | GX24 q-5 |
| 20899 | CF57DT/E/IN/841 | CFTR57W/GX24q/841 | F57QBX/841/A/4P/EOL | PL-T 57W/841/4P/A | 57 | GX24 q-5 |
| 20794 | CF70DT/E/IN/827 | CFTR70W/GX24q/827 | F70QBX/827/A/4P/EOL | — | 70 | GX24 q-6 |
| 20795 | CF70DT/E/IN/830 | CFTR70W/GX24q/830 | F70QBX/830/A/4P/EOL | — | 70 | GX24 q-6 |
| 20796 | CF70DT/E/IN/835 | CFTR70W/GX24q/835 | F70QBX/835/A/4P/EOL | — | 70 | GX24 q-6 |
| 20797 | CF70DT/E/IN/841 | CFTR70W/GX24q/841 | F70QBX/841/A/4P/EOL | — | 70 | GX24 q-6 |

## DULUX L

| NAED | SYLVANIA | NEMA / GENERIC | GE | PHILIPS | WATTAGE | BASE |
|---|---|---|---|---|---|---|
| 20587 | FT18DL830 | FT18W/2G11/830 | F18BX/SPX30 | PL-L 18W/830 | 18 | 2G11 |
| 20595 | FT18DL830RS | FT18W/2G11/RS/830 | F18BX/SPX30/RS | PL-L 18W/830 | 18 | 2G11 |
| 20588 | FT18DL835 | FT18W/2G11/835 | F18BX/SPX35 | PL-L 18W/835 | 18 | 2G11 |
| 20594 | FT18DL835RS | FT18W/2G11/RS/835 | F18BX/SPX35/RS | PL-L 18W/835 | 18 | 2G11 |
| 20589 | FT18DL841 | FT18W/2G11/841 | F18BX/SPX41 | PL-L 18W/841 | 18 | 2G11 |
| 20593 | FT18DL841RS | FT18W/2G11/RS/841 | F18BX/SPX41/RS | PL-L 18W/841 | 18 | 2G11 |
| 20597 | FT24DL830 | FT24W/2G11/830 | F27BX/SPX30/RS | PL-L 24W/830 | 24 | 2G11 |
| 20580 | FT24DL835 | FT24W/2G11/835 | F27BX/SPX35/RS | PL-L 24W/835 | 24 | 2G11 |
| 20596 | FT24DL841 | FT24W/2G11/841 | F27BX/SPX41/RS | PL-L 24W/841 | 24 | 2G11 |
| 20581 | FT36DL830 | FT36W/2G11/830 | F39BX/SPX30/RS | PL-L 36W/830 | 36 | 2G11 |
| 20582 | FT36DL835 | FT36W/2G11/835 | F39BX/SPX35/RS | PL-L 36W/835 | 36 | 2G11 |
| 20583 | FT36DL841 | FT36W/2G11/841 | F39BX/SPX41/RS | PL-L 36W/841 | 36 | 2G11 |
| 20518 | FT40DL/28W/830/SS/IS | FT40W/2G11/RS/830 | — | — | 28 | 2G11 |
| 20519 | FT40DL/28W/835/SS/IS | FT40W/2G11/RS/835 | — | — | 28 | 2G11 |
| 20488 | FT40DL/28W/841/SS/IS | FT40W/2G11/RS/841 | — | — | 28 | 2G11 |
| 20584 | FT40DL830RS | FT40W/2G11/RS/830 | F40/30BX/SPX30 | PL-L 40W/830/RS/IS | 40 | 2G11 |
| 20585 | FT40DL835RS | FT40W/2G11/RS/835 | F40/30BX/SPX35 | PL-L 40W/835/RS/IS | 40 | 2G11 |
| 20586 | FT40DL841RS | FT40W/2G11/RS/841 | F40/30BX/SPX41 | PL-L 40W/841/RS/IS | 40 | 2G11 |
| 20576 | FT40DL850RS | FT40W/2G11/RS/850 | F40/30BX/SPX50RS | — | 40 | 2G11 |
| 20554 | FT40DL965RS | FT40W/2G11/RS/865 | — | — | 40 | 2G11 |
| 20590 | FT55DL830 | FT55W/2G11/RS/830 | F55BX/830 | — | 55 | 2G11 |
| 20591 | FT55DL835 | FT55W/2G11/RS/835 | F55BX/835 | — | 55 | 2G11 |
| 20592 | FT55DL841 | FT55W/2G11/RS/841 | F55BX/841 | — | 55 | 2G11 |
| 20563 | FT55DL965 | FT55W/2G11/RS/965 | — | — | 55 | 2G11 |
| 20572 | FT80DL830 | FT80W/2G11/RS/830 | — | PL-L 80W/830/4P | 80 | 2G11 |
| 20622 | FT80DL835 | FT80W/2G11/RS/835 | — | PL-L 80W/835/4P | 80 | 2G11 |
| 20624 | FT80DL841 | FT80W/2G11/RS/841 | — | PL-L 80W/841/4P | 80 | 2G11 |

# DULUX S PREHEAT 2-PIN ECOLOGIC® COMPACT FLUORESCENT LAMPS

With starter in Lamp Base for Magnetic Ballast

| Nominal Wattage | Bulb | MOL (in) | MOL (mm) | Base | Product Number | Ordering Abbreviation | NEMA Generic Designation | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **5** | S (T4) | 4.2 | 107 | G23 | 20547 | **CF5DS/827/RP/ECO** | CFT5W/G23/827 | 10 | 10000 | 2700 | 82 | 230 | 198 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20325 | **CF5DS/827/ECO** | CFT5W/G23/827 | 50 | 10000 | 2700 | 82 | 230 | 198 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20303 | **CF5DS/841/ECO** | CFT5W/G23/841 | 50 | 10000 | 4100 | 82 | 230 | 198 | CRI 1,4,6,11, 12,20,22 |
| **7** | S (T4) | 5.3 | 135 | G23 | 20548 | **CF7DS/827/RP/ECO** | CFT7W/G23/827 | 10 | 10000 | 2700 | 82 | 400 | 344 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20327 | **CF7DS/827/ECO** | CFT7W/G23/827 | 50 | 10000 | 2700 | 82 | 400 | 344 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20310 | **CF7DS/835/ECO** | CFT7W/G23/835 | 50 | 10000 | 3500 | 82 | 400 | 344 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20304 | **CF7DS/841/ECO** | CFT7W/G23/841 | 50 | 10000 | 4100 | 82 | 400 | 344 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20307 | **CF7DS/850/ECO** | CFT7W/G23/850 | 50 | 10000 | 5000 | 82 | 400 | 344 | CRI 1,4,6,11, 12,20,22 |
| **9** | S (T4) | 6.5 | 165 | G23 | 20536 | **CF9DS/827/RP/ECO** | CFT9W/G23/827 | 10 | 10000 | 2700 | 82 | 580 | 499 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20329 | **CF9DS/827/ECO** | CFT9W/G23/827 | 50 | 10000 | 2700 | 82 | 580 | 499 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20299 | **DULUX S 9W/78** | | 50 | 10000 | | | | | 1,4,10,11,12,22 |
| | | | | | 20333 | **CF9DS/835/ECO** | CFT9W/G23/835 | 50 | 10000 | 3500 | 82 | 580 | 499 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20305 | **CF9DS/841/ECO** | CFT9W/G23/841 | 50 | 10000 | 4100 | 82 | 580 | 499 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20308 | **CF9DS/850/ECO** | CFT9W/G23/850 | 50 | 10000 | 5000 | 82 | 580 | 499 | CRI 1,4,6,11, 12,20,22 |
| **13** | S (T4) | 7.1 | 180 | GX23 | 20549 | **CF13DS/827/RP/ECO** | CFT13W/GX23/827 | 10 | 10000 | 2700 | 82 | 800 | 688 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20331 | **CF13DS/827/ECO** | CFT13W/GX23/827 | 50 | 10000 | 2700 | 82 | 800 | 688 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20283 | **CF13DS/830/ECO** | CFT13W/GX23/830 | 50 | 10000 | 3000 | 82 | 800 | 688 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20335 | **CF13DS/835/ECO** | CFT13W/GX23/835 | 50 | 10000 | 3500 | 82 | 800 | 688 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20306 | **CF13DS/841/ECO** | CFT13DS/GX23/841 | 50 | 10000 | 4100 | 82 | 800 | 688 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20309 | **CF13DS/850/ECO** | CFT13W/GX23/850 | 50 | 10000 | 5000 | 82 | 800 | 688 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20374 | **CFT13WDS/EC/827/ECO** | CFT13W/GX23/827 | 10 | 10000 | 2700 | 82 | 800 | 688 | CRI 1,2,4,11,12,20 |
| | | | | | 20397 | **CFT13WDS/EC/830/ECO** | CFT13W/GX23/830 | 10 | 10000 | 3000 | 82 | 800 | 688 | CRI 1,2,4,11,12,20 |
| | | | | | 20368 | **CFT13WDS/EC/835/ECO** | CFT13W/GX23/835 | 10 | 10000 | 3500 | 82 | 800 | 688 | CRI 1,2,4,11,12,20 |
| | | | | | 20375 | **CFT13WDS/EC/841/ECO** | CFT13W/GX23/841 | 10 | 10000 | 4100 | 82 | 800 | 688 | CRI 1,2,4,11,12,20 |

DULUX® S/E

DULUX® D



## DULUX S/E 4-PIN COMPACT FLUORESCENT LAMPS

for Dimming and Electronic Ballast. Lamps have End-of-lamp Life (EOL) Protection

| Nominal Wattage | Bulb | MOL (in) | MOL (mm) | Base | Product Number | Ordering Abbreviation | NEMA Generic Designation | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **5** | S (T4) | 3.4 | 85 | 2G7 | 20311 | **CF5DS/E/827** | CFT5W/2G7/827 | 50 | 10000 | 2700 | 82 | 230 | 198 | CRI 1,2,5,12,16,20 |
| | | | | | 20315 | **CF5DS/E/841** | CFT5W/2G7/841 | 50 | 10000 | 4100 | 82 | 230 | 198 | CRI 1,2,5,12,16,20 |
| **7** | S (T4) | 4.5 | 115 | 2G7 | 20312 | **CF7DS/E/827** | CFT7W/2G7/827 | 50 | 10000 | 2700 | 82 | 400 | 344 | CRI 1,2,5,12,16,20 |
| | | | | | 20316 | **CF7DS/E/841** | CFT7W/2G7/841 | 50 | 10000 | 4100 | 82 | 400 | 344 | CRI 1,2,5,12,16,20 |
| **9** | S (T4) | 5.7 | 145 | 2G7 | 20313 | **CF9DS/E/827** | CFT9W/2G7/827 | 50 | 10000 | 2700 | 82 | 580 | 499 | CRI 1,2,5,12,20 |
| | | | | | 20317 | **CF9DS/E/841** | CFT9W/2G7/841 | 50 | 10000 | 4100 | 82 | 580 | 499 | CRI 1,2,5,12,20 |
| **13** | S (T4) | 6.2 | 157 | 2GX7 | 20314 | **CF13DS/E/827** | CFT13W/2GX7/827 | 50 | 10000 | 2700 | 82 | 800 | 688 | CRI 1,2,5,12,20 |
| | | | | | 20284 | **CF13DS/E/830** | CFT13W/2GX7/830 | 50 | 10000 | 3000 | 82 | 800 | 688 | CRI 1,2,5,12,20 |
| | | | | | 20318 | **CF13DS/E/841** | CFT13W/2GX7/841 | 50 | 10000 | 4100 | 82 | 800 | 688 | CRI 1,2,5,12,20 |

## DULUX D PREHEAT 2-PIN ECOLOGIC® COMPACT FLUORESCENT LAMPS

With starter in Lamp Base for Magnetic Ballast

| Nominal Wattage | Bulb | MOL (in) | MOL (mm) | Base | Product Number | Ordering Abbreviation | NEMA Generic Designation | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **9** | D (T4) | 4.3 | 110 | G23-2 | 20537 | **CF9DD/827/RP/ECO** | CFQ9W/G23/827 | 10 | 10000 | 2700 | 82 | 525 | 452 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20689 | **CF9DD/827/ECO** | CFQ9W/G23/827 | 50 | 10000 | 2700 | 82 | 525 | 452 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20783 | **CF9DD/830/ECO** | CFQ9W/G23/830 | 50 | 10000 | 3000 | 82 | 525 | 452 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20690 | **CF9DD/835/ECO** | CFQ9W/G23/835 | 50 | 10000 | 3500 | 82 | 525 | 452 | CRI 1,4,6,11, 12,20,22 |
| **13** | D (T4) | 4.6 | 118 | GX23-2 | 20691 | **CF13DD/827/ECO** | CFQ13W/GX23/827 | 50 | 10000 | 2700 | 82 | 780 | 671 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20705 | **CF13DD/830/ECO** | CFQ13W/GX23/830 | 50 | 10000 | 3000 | 82 | 780 | 671 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20692 | **CF13DD/835/ECO** | CFQ13W/GX23/835 | 50 | 10000 | 3500 | 82 | 780 | 671 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20708 | **CF13DD/841/ECO** | CFQ13W/GX23/841 | 50 | 10000 | 4100 | 82 | 780 | 671 | CRI 1,4,6,11, 12,20,22 |
| **18** | D (T4) | 6.0 | 153 | G24D-2 | 20676 | **CF18DD/827/ECO** | CFQ18W/G24D/827 | 50 | 10000 | 2700 | 82 | 1150 | 989 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20709 | **CF18DD/830/ECO** | CFQ18W/G24D/830 | 50 | 10000 | 3000 | 82 | 1150 | 989 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20677 | **CF18DD/835/ECO** | CFQ18W/G24D/835 | 50 | 10000 | 3500 | 82 | 1150 | 989 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20678 | **CF18DD/841/ECO** | CFQ18W/G24D/841 | 50 | 10000 | 4100 | 82 | 1150 | 989 | CRI 1,4,6,11, 12,20,22 |
| **26** | D (T4) | 6.8 | 173 | G24D-3 | 20679 | **CF26DD/827/ECO** | CFQ26W/G24D/827 | 50 | 10000 | 2700 | 82 | 1710 | 1470 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20710 | **CF26DD/830/ECO** | CFQ26W/G24D/830 | 50 | 10000 | 3000 | 82 | 1710 | 1470 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20680 | **CF26DD/835/ECO** | CFQ26W/G24D/835 | 50 | 10000 | 3500 | 82 | 1710 | 1470 | CRI 1,4,6,11, 12,20,22 |
| | | | | | 20681 | **CF26DD/841/ECO** | CFQ26W/G24D/841 | 50 | 10000 | 4100 | 82 | 1710 | 1470 | CRI 1,4,6,11, 12,20,22 |

DULUX® D

DULUX® T



## DULUX® D/E 4-PIN ECOLOGIC® COMPACT FLUORESCENT LAMPS

for Dimming and Electronic Ballast. Lamps have End-of-lamp Life (EOL) Protection

| Nominal Wattage | Bulb | MOL (in) | MOL (mm) | Base | Product Number | Ordering Abbreviation | NEMA Generic Designation | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **13** | D (T4) | 5.2 | 131 | G24Q-1 | 20682 | **CF13DD/E/827/ECO** | CFQ13W/G24Q/827 | 50 | 12000 | 2700 | 82 | 900 | 774 | CRI 1,2,5,6, 7,12,20 |
| | | | | | 20721 | **CF13DD/E/830/ECO** | CFQ13W/G24Q/830 | 50 | 12000 | 3000 | 82 | 900 | 774 | CRI 1,2,5,6, 7,12,20 |
| | | | | | 20671 | **CF13DD/E/835/ECO** | CFQ13W/G24Q/835 | 50 | 12000 | 3500 | 82 | 900 | 774 | CRI 1,2,5,6, 7,12,20 |
| | | | | | 20667 | **CF13DD/E/841/ECO** | CFQ13W/G24Q/841 | 50 | 12000 | 4100 | 82 | 900 | 774 | CRI 1,2,5,6, 7,12,20 |
| **18** | D (T4) | 5.8 | 147 | G24Q-2 | 20683 | **CF18DD/E/827/ECO** | CFQ18W/G24Q/827 | 50 | 12000 | 2700 | 82 | 1150 | 989 | CRI 1,2,5,6, 7,12,20 |
| | | | | | 20724 | **CF18DD/E/830/ECO** | CFQ18W/G24Q/830 | 50 | 12000 | 3000 | 82 | 1150 | 989 | CRI 1,2,5,6, 7,12,20 |
| | | | | | 20672 | **CF18DD/E/835/ECO** | CFQ18W/G24Q/835 | 50 | 12000 | 3500 | 82 | 1150 | 989 | CRI 1,2,5,6, 7,12,20 |
| | | | | | 20668 | **CF18DD/E/841/ECO** | CFQ18W/G24Q/841 | 50 | 12000 | 4100 | 82 | 1150 | 989 | CRI 1,2,5,6, 7,12,20 |
| **26** | D (T4) | 6.5 | 166 | G24Q-3 | 20684 | **CF26DD/E/827/ECO** | CFQ26W/G24Q/827 | 50 | 12000 | 2700 | 82 | 1710 | 1470 | CRI 1,2,5,6, 7,12,20 |
| | | | | | 20722 | **CF26DD/E/830/ECO** | CFQ26W/G24Q/830 | 50 | 12000 | 3000 | 82 | 1710 | 1470 | CRI 1,2,5,6, 7,12,20 |
| | | | | | 20673 | **CF26DD/E/835/ECO** | CFQ26W/G24Q/835 | 50 | 12000 | 3500 | 82 | 1710 | 1470 | CRI 1,2,5,6, 7,12,20 |
| | | | | | 20669 | **CF26DD/E/841/ECO** | CFQ26W/G24Q/841 | 50 | 12000 | 4100 | 82 | 1710 | 1470 | CRI 1,2,5,6, 7,12,20 |

## DULUX T PREHEAT 2-PIN ECOLOGIC® COMPACT FLUORESCENT LAMPS

With starter in Lamp Base for Magnetic Ballast

| Nominal Wattage | Bulb | MOL (in) | MOL (mm) | Base | Product Number | Ordering Abbreviation | NEMA Generic Designation | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **18** | T (T4) | 4.8 | 123 | GX24D-2 | 20756 | **CF18DT/827/ECO** | CFTR18W/GX24D/827 | 50 | 12000 | 2700 | 82 | 1200 | 1032 | CRI 1,4,6,11, 12,20,22 |
| **26** | T (T4) | 5.4 | 138 | GX24D-3 | 20752 | **CF26DT/827/ECO** | CFTR26W/GX24D/827 | 50 | 12000 | 2700 | 82 | 1800 | 1548 | CRI 1,4,6,11, 12,20,22 |

## DULUX T/E 4-PIN ECOLOGIC® COMPACT FLUORESCENT LAMPS

For dimming and electronic ballast. Lamps have End-of-Lamp Life (EOL) Protection

| Nominal Wattage | Bulb | MOL (in) | MOL (mm) | Base | Product Number | Ordering Abbreviation | NEMA Generic Designation | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **13** | T (T4) | 4.2 | 106 | GX24Q-1 | 20891 | **CF13DT/E/827/ECO** | CFTR13W/GX24Q/827 | 50 | 12000 | 2700 | 82 | 900 | 774 | CRI 1,2,5,6, 7,12,20 |
| | | | | | 20892 | **CF13DT/E/830/ECO** | CFTR13W/GX24Q/830 | 50 | 12000 | 3000 | 82 | 900 | 774 | CRI 1,2,5,6, 7,12,20 |
| | | | | | 20893 | **CF13DT/E/835/ECO** | CFTR13W/GX24Q/835 | 50 | 12000 | 3500 | 82 | 900 | 774 | CRI 1,2,5,6, 7,12,20 |
| | | | | | 20894 | **CF13DT/E/841/ECO** | CFTR13W/GX24Q/841 | 50 | 12000 | 4100 | 82 | 900 | 774 | CRI 1,2,5,6, 7,12,20 |
| **18** | T (T4) | 4.6 | 116 | GX24Q-2 | 20760 | **CF18DT/E/827/ECO** | CFTR18W/GX24Q/827 | 50 | 12000 | 2700 | 82 | 1200 | 1032 | CRI 1,2,5,6, 7,12,20 |

## DULUX® D/E 4-PIN ECOLOGIC® COMPACT FLUORESCENT LAMPS

| Nominal Wattage | Bulb | MOL (in) | MOL (mm) | Base | Product Number | Ordering Abbreviation | NEMA Generic Designation | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **26** | T (T4) | 5.2 | 124 | GX24Q-3 | 20767 | **CF26DT/E/827/ECO** | CFTR26W/GX24Q/827 | 50 | 12000 | 2700 | 82 | 1800 | 1548 | CRI 1,2,5,6, 7,12,20 |
| | | | | | 20995 | **CF26DT/E/835/ECO/BL/1** | CFTR26W/GX24Q/835 | 50 | 12000 | 3500 | 82 | 1800 | 1548 | CRI 1,2,5,6, 7,12,20 |
| **32** | T (T4) | 5.8 | 147 | GX24Q-3 | 20768 | **CF32DT/E/827/ECO** | CFTR32W/GX24Q/827 | 50 | 12000 | 2700 | 82 | 2400 | 2064 | CRI 1,2,5,6, 7,12,18,20 |

## DULUX T/E/IN AMALGAM, 4-PIN ECOLOGIC COMPACT FLUORESCENT LAMPS

For electronic ballast for high and low temperature applications. Lamps have End-of-Lamp Life (EOL) Protection

| Nominal Wattage | Bulb | MOL (in) | MOL (mm) | Base | Product Number | Ordering Abbreviation | NEMA Generic Designation | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F @35°C/95°F | Approx Lumens Mean @25°C/77°F @35°C/95°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **18** | T (T4) | 4.4 | 111 | GX24Q-2 | 20875 | **CF18DT/E/IN/827/ECO** | CFTR18W/GX24Q/827 | 50 | 12000 | 2700 | 82 | 1164<br>1200 | 1001<br>1032 | CRI 1,2,5,6, 7,12,20,21 |
| | | | | | 20876 | **CF18DT/E/IN/830/ECO** | CFTR18W/GX24Q/830 | 50 | 12000 | 3000 | 82 | 1164<br>1200 | 1001<br>1032 | CRI 1,2,5,6, 7,12,20,21 |
| | | | | | 20877 | **CF18DT/E/IN/835/ECO** | CFTR18W/GX24Q/835 | 50 | 12000 | 3500 | 82 | 1164<br>1200 | 1001<br>1032 | CRI 1,2,5,6, 7,12,20,21 |
| | | | | | 20878 | **CF18DT/E/IN/841/ECO** | CFTR18W/GX24Q/841 | 50 | 12000 | 4100 | 82 | 1164<br>1200 | 1001<br>1032 | CRI 1,2,5,6, 7,12,20,21 |
| **26** | T (T4) | 5.0 | 126 | GX24Q-3 | 20879 | **CF26DT/E/IN/827/ECO** | CFTR26W/GX24Q/827 | 50 | 12000 | 2700 | 82 | 1746<br>1800 | 1501<br>1548 | CRI 1,2,5,6, 7,12,20,21 |
| | | | | | 20880 | **CF26DT/E/IN/830/ECO** | CFTR26W/GX24Q/830 | 50 | 12000 | 3000 | 82 | 1746<br>1800 | 1501<br>1548 | CRI 1,2,5,6, 7,12,20,21 |
| | | | | | 20881 | **CF26DT/E/IN/835/ECO** | CFTR26W/GX24Q/835 | 50 | 12000 | 3500 | 82 | 1746<br>1800 | 1501<br>1548 | CRI 1,2,5,6, 7,12,20,21 |
| | | | | | 20882 | **CF26DT/E/IN/841/ECO** | CFTR26W/GX24Q/841 | 50 | 12000 | 4100 | 82 | 1746<br>1800 | 1501<br>1548 | CRI 1,2,5,6, 7,12,20,21 |
| **32** | T (T4) | 5.6 | 142 | GX24Q-3 | 20883 | **CF32DT/E/IN/827/ECO** | CFTR32W/GX24Q/827 | 50 | 12000 | 2700 | 82 | 2328<br>2400 | 2002<br>2064 | CRI 1,2,5,6, 7,12,18,20,21 |
| | | | | | 20884 | **CF32DT/E/IN/830/ECO** | CFTR32W/GX24Q/830 | 50 | 12000 | 3000 | 82 | 2328<br>2400 | 2002<br>2064 | CRI 1,2,5,6, 7,12,18,20,21 |
| | | | | | 20885 | **CF32DT/E/IN/835/ECO** | CFTR32W/GX24Q/835 | 50 | 12000 | 3500 | 82 | 2328<br>2400 | 2002<br>2064 | CRI 1,2,5,6, 7,12,18,20,21 |
| | | | | | 20886 | **CF32DT/E/IN/841/ECO** | CFTR32W/GX24Q/841 | 50 | 12000 | 4100 | 82 | 2328<br>2400 | 2002<br>2064 | CRI 1,2,5,6, 7,12,18,20,21 |
| **42** | T (T4) | 6.5 | 163 | GX24Q-4 | 20887 | **CF42DT/E/IN/827/ECO** | CFTR42W/GX24Q/827 | 50 | 12000 | 2700 | 82 | 3104<br>3200 | 2670<br>2752 | CRI 1,2,5,6, 7,12,18,20,21 |
| | | | | | 20888 | **CF42DT/E/IN/830/ECO** | CFTR42W/GX24Q/830 | 50 | 12000 | 3000 | 82 | 3104<br>3200 | 2670<br>2752 | CRI 1,2,5,6, 7,12,18,20,21 |
| | | | | | 20871 | **CF42DT/E/IN/835/ECO** | CFTR42W/GX24Q/835 | 50 | 12000 | 3500 | 82 | 3104<br>3200 | 2670<br>2752 | CRI 1,2,5,6, 7,12,18,20,21 |
| | | | | | 20890 | **CF42DT/E/IN/841/ECO** | CFTR42W/GX24Q/841 | 50 | 12000 | 4100 | 82 | 3104<br>3200 | 2670<br>2752 | CRI 1,2,5,6, 7,12,18,20,21 |
| **57** | T (T4) | 7.76 | 197 | GX24Q-5 | 20895 | **CF57DT/E/IN/827/ECO** | CFTR57W/GX24Q/827 | 50 | 12000 | 2700 | 82 | 4171<br>4300 | 3587<br>3698 | CRI 1,2,5,6, 12,18,20,21 |
| | | | | | 20896 | **CF57DT/E/IN/830/ECO** | CFTR57W/GX24Q/830 | 50 | 12000 | 3000 | 82 | 4171<br>4300 | 3587<br>3698 | CRI 1,2,5,6, 12,18,20,21 |
| | | | | | 20897 | **CF57DT/E/IN/835/ECO** | CFTR57W/GX24Q/835 | 50 | 12000 | 3500 | 82 | 4171<br>4300 | 3587<br>3698 | CRI 1,2,5,6, 12,18,20,21 |

DULUX® T

DULUX® L



## DULUX® T/E/IN AMALGAM, 4-PIN ECOLOGIC® COMPACT FLUORESCENT LAMPS

| Nominal Wattage | Bulb | MOL (in) | MOL (mm) | Base | Product Number | Ordering Abbreviation | NEMA Generic Designation | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @35°C/95°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **57** | T (T4) | 7.76 | 197 | GX24Q-5 | 20899 | **CF57DT/E/IN/841/ECO** | CFTR57W/GX24Q/841 | 50 | 12000 | 4100 | 82 | 4171<br>4300 | 3587<br>3698 | CRI 1,2,5,6,7,12,18,20,21 |

## DULUX L HIGH LUMEN ECOLOGIC® COMPACT FLUORESCENT LAMPS

| Nominal Wattage | Bulb | MOL (in) | MOL (mm) | Base | Product Number | Ordering Abbreviation | NEMA Generic Designation | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **18** | L (T5) | 9.0 | 229 | 2G11 | 20587 | **FT18DL/830/ECO** | FT18W/2G11/830 | 10 | 12000 | 3000 | 82 | 1250 | 1075 | CRI 1,2,5,12,20 |
| | | | | | 20588 | **FT18DL/835/ECO** | FT18W/2G11/835 | 10 | 12000 | 3500 | 82 | 1250 | 1075 | CRI 1,2,5,12,20 |
| | | | | | 20589 | **FT18DL/841/ECO** | FT18W/2G11/841 | 10 | 12000 | 4100 | 82 | 1250 | 1075 | CRI 1,2,5,12,20 |
| | L (T5) | 10.5 | 267 | 2G11 | 20595 | **FT18DL/830/RS/ECO** | FT18W/2G11/RS/830 | 10 | 20000 | 3000 | 82 | 1250 | 1075 | CRI 1,2,5,12,20 |
| | | | | | 20594 | **FT18DL/835/RS/ECO** | FT18W/2G11/RS/835 | 10 | 20000 | 3500 | 82 | 1250 | 1075 | CRI 1,2,5,12,20 |
| | | | | | 20593 | **FT18DL/841/RS/ECO** | FT18W/2G11/RS/841 | 10 | 20000 | 4100 | 82 | 1250 | 1075 | CRI 1,2,5,12,20 |
| **24** | L (T5) | 12.9 | 326 | 2G11 | 20597 | **FT24DL/830/ECO** | FT24W/2G11/830 | 10 | 12000 | 3000 | 82 | 1800 | 1548 | CRI 1,2,5,12,16,20 |
| | | | | | 20580 | **FT24DL/835/ECO** | FT24W/2G11/835 | 10 | 12000 | 3500 | 82 | 1800 | 1548 | CRI 1,2,5,12,16,20 |
| | | | | | 20596 | **FT24DL/841/ECO** | FT24W/2G11/841 | 10 | 12000 | 4100 | 82 | 1800 | 1548 | CRI 1,2,5,12,16,20 |
| **36** | L (T5) | 16.6 | 422 | 2G11 | 20581 | **FT36DL/830/ECO** | FT36W/2G11/830 | 10 | 12000 | 3000 | 82 | 2900 | 2494 | CRI 1,2,5,12,16,20 |
| | | | | | 20582 | **FT36DL/835/ECO** | FT36W/2G11/835 | 10 | 12000 | 3500 | 82 | 2900 | 2494 | CRI 1,2,5,12,16,20 |
| | | | | | 20583 | **FT36DL/841/ECO** | FT36W/2G11/841 | 10 | 12000 | 4100 | 82 | 2900 | 2494 | CRI 1,2,5,12,16,20 |
| **40** | L (T5) | 22.4 | 570 | 2G11 | 20518 | **FT40DL/28W/830/SS/IS/ECO** | FT28W/2G11/830 | 10 | 20000 | 3000 | 82 | 2800 | 2408 | 1,2,5,6,12,18,20 |
| | | 22.6 | 573 | 2G11 | 20584 | **FT40DL/830/RS/ECO** | FT40W/2G11/RS/830 | 10 | 20000 | 3000 | 82 | 3150 | 2709 | CRI 1,2,5,12,20 |
| | | 22.4 | 570 | 2G11 | 20519 | **FT40DL/28W/835/SS/IS/ECO** | FT28W/2G11/835 | 10 | 20000 | 3500 | 82 | 2800 | 2408 | 1,2,5,6,12,18,20 |
| | | 22.6 | 573 | 2G11 | 20585 | **FT40DL/835/RS/ECO** | FT40W/2G11/RS/835 | 10 | 20000 | 3500 | 82 | 3150 | 2709 | CRI 1,2,5,12,20 |
| | | 22.4 | 570 | 2G11 | 20488 | **FT40DL/28W/841/SS/IS/ECO** | FT28W/2G11/841 | 10 | 20000 | 4100 | 82 | 2800 | 2408 | 1,2,5,6,12,18,20 |
| | | 22.6 | 573 | 2G11 | 20586 | **FT40DL/841/RS/ECO** | FT40W/2G11/RS/841 | 10 | 20000 | 4100 | 82 | 3150 | 2709 | CRI 1,2,5,12,20 |
| | | | | | 20576 | **FT40DL/850/RS/ECO** | FT40W/2G11/RS/850 | 10 | 20000 | 5000 | 82 | 3150 | 2709 | CRI 1,2,5,12,20 |
| **50** | L (T5) | 22.6 | 573 | 2G11 | 20276 | **FT50DL/841/RS/ECO** | FT50W/2G11/RS/841 | 10 | 14000 | 4100 | 82 | 4300 | 3655 | CRI 1,2,5,12,20 |
| | | | | | 20278 | **FT50DL/835/RS/ECO** | FT50W/2G11/RS/835 | 10 | 14000 | 3500 | 82 | 4300 | 3655 | CRI 1,2,5,12,20 |


DULUX® L


DULUX® F


DULUX® EL Twist



## DULUX® L HIGH LUMEN ECOLOGIC® COMPACT FLUORESCENT LAMPS

| Nominal Wattage | Bulb | MOL (in) | MOL (mm) | Base | Product Number | Ordering Abbreviation | NEMA Generic Designation | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **50** | L (T5) | 22.6 | 573 | 2G11 | 20280 | **FT50DL/830/RS/ECO** | FT50W/2G11/RS/830 | 10 | 14000 | 3000 | 82 | 4300 | 3655 | 1,2,5,12,20 |
| **55** | L (T5) | 21.1 | 535 | 2G11 | 20590 | **FT55DL/830/ECO** | FT55W/2G11/830 | 10 | 12000 | 3000 | 82 | 4800 | 4128 | 1,2,5,12,17,20 |
| | | | | | 20726 | **FT55DL/930/ECO** | FT55W/2G11/30 | 10 | 12000 | 3000 | 90 | 4800 | 4128 | 1,2,5,12,17,20 |
| | | | | | 20591 | **FT55DL/835/ECO** | FT55W/2G11/835 | 10 | 12000 | 3500 | 82 | 4800 | 4128 | 1,2,5,12,17,20 |
| | | | | | 20592 | **FT55DL/841/ECO** | FT55W/2G11/841 | 10 | 12000 | 4100 | 82 | 4800 | 4128 | 1,2,5,12,17,20 |
| | | | | | 20725 | **FT55DL/954/ECO** | FT55W/2G11/50 | 10 | 12000 | 5400 | 90 | 4800 | 4128 | 1,2,5,12,17,20 |
| **80** | L (T5) | 22.6 | 4.5 | 2G11 | 20572 | **FT80DL/830/ECO** | FT80W/2G11/830 | 10 | 12000 | 3000 | 82 | 6000 | 5160 | 1,2,5,12,17,20 |
| | | | 573 | 2G11 | 20622 | **FT80DL/835/ECO** | FT80W/2G11/835 | 10 | 12000 | 3500 | 82 | 6000 | 5160 | 1,2,5,12,17,20 |
| | | | 4.5 | 2G11 | 20624 | **FT80DL/841/ECO** | FT80W/2G11/841 | 10 | 12000 | 4100 | 82 | 6000 | 5160 | 1,2,5,12,17,20 |

## DULUX F FLAT COMPACT FLUORESCENT LAMPS

| Nominal Wattage | Bulb | MOL (in) | MOL (mm) | Base | Product Number | Ordering Abbreviation | NEMA Generic Designation | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **18** | F (T5) | 4.8 | 122 | 2G10 | 20551 | **CF18DF/830** | CFM18W/2G10/830 | 10 | 10000 | 3000 | 82 | 1100 | 946 | 1,2,5,12,19,20 |
| | | | | | 20552 | **CF18DF/841** | CFM18W/2G10/841 | 10 | 10000 | 4100 | 82 | 1100 | 946 | 1,2,5,12,19,20 |
| **24** | F (T5) | 6.7 | 171 | 2G10 | 20553 | **CF24DF/830** | CFM24W/2G10/830 | 10 | 10000 | 3000 | 82 | 1700 | 1462 | 1,2,5,12,19,20 |
| | | | | | 20558 | **CF24DF/841** | CFM24W/2G10/841 | 10 | 10000 | 4100 | 82 | 1700 | 1462 | 1,2,5,12,19,20 |
| **36** | F (T5) | 8.5 | 217 | 2G10 | 20559 | **CF36DF/830** | CFM36W/2G10/830 | 10 | 10000 | 3000 | 82 | 2800 | 2408 | 1,2,5,12,19,20 |
| | | | | | 20560 | **CF36DF/841** | CFM36W/2G10/841 | 10 | 10000 | 4100 | 82 | 2800 | 2408 | 1,2,5,12,19,20 |

## DULUX EL SELF-BALLASTED COMPACT FLUORESCENT LAMPS

### Mini Twist Compact Fluorescent Lamps

| Nominal Wattage | Bulb | MOL (in) | Base | Product Number | Ordering Abbreviation | Voltage | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **7** | MINITWIST | 4.4 | Medium | 29451 | **CF7EL/MINI/827** | 120 | 6 | 8000 | 2700 | 82 | 375 | 300 | 1,3,8,9,12,14,20 |
| | | | | 29379 | **CF7EL/MINI/830** | 120 | 6 | 8000 | 3000 | 82 | 375 | 300 | 1,3,8,9,12,14,20 |
| | | | | 29371 | **CF7EL/MINI/830/BL** | 120 | 6 | 8000 | 3000 | 82 | 375 | 300 | 1,3,8,9,12,14,20 |
| | | 4.2 | Medium | 29697 | **CF7EL/SUPER/830/BL** | 120 | 6 | 10000 | 3000 | 82 | 375 | 300 | 1,3,8,9,12,14,20 |
| **11** | MINITWIST | 4.2 | Medium | 29766 | **CF11EL/SUPER/830/BL** | 120 | 6 | 10000 | 3000 | 82 | 600 | 480 | 1,3,8,9,12,14,20 |
| | | 4.5 | Medium | 29378 | **CF11EL/MINI/830** | 120 | 6 | 8000 | 3000 | 82 | 600 | 480 | 1,3,8,9,12,14,20 |
| | | | | 29364 | **CF11EL/MINI/830/BL** | 120 | 6 | 8000 | 3000 | 82 | 600 | 480 | 1,3,8,9,12,14,20 |
| **13** | MINITWIST | 4.6 | Medium | 29409 | **CF13EL/MINI/827** | 120 | 6 | 10000 | 2700 | 82 | 800 | 640 | 1,3,8,9,12,14,20 |

# DULUX® EL SELF-BALLASTED COMPACT FLUORESCENT LAMPS

## Mini Twist Compact Fluorescent Lamps

| Nominal Wattage | Bulb | MOL (in) | Base | Product Number | Ordering Abbreviation | Voltage | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **13** | MINITWIST | 4.6 | Medium | 29727 | **CF13EL/MICRO/830/RP2** | 120 | 12 | 12000 | 3000 | 82 | 825 | 660 | 1,3,8, 9,12,14,20 |
| | | 4.5 | Medium | 29376 | **CF13EL/MINI/830** | 120 | 6 | 8000 | 3000 | 82 | 800 | 640 | 1,3,8, 9,12,14,20 |
| | | 4.2 | Medium | 29059 | **CF13EL/SUPER/827/BL** | 120 | 6 | 10000 | 2700 | 82 | 880 | 704 | 1,3,8, 9,12,14,20 |
| | | | | 29449 | **CF13EL/SUPER/830/BL** | 120 | 6 | 10000 | 3000 | 82 | 880 | 704 | 1,3,8, 9,12,14,20 |
| | | | | 29713 | **CF13EL/SUPER/835/BL** | 120 | 6 | 10000 | 3500 | 82 | 800 | 640 | 1,3,8, 9,12,14,20 |
| | | 4.6 | Medium | 29567 | **CF13EL/MINI/841** | 120 | 6 | 10000 | 4100 | 82 | 800 | 640 | 1,3,8, 9,12,14,20 |
| | | 4.2 | Medium | 29588 | **CF13EL/SUPER/850/BL** | 120 | 10 | 10000 | 5000 | 82 | 800 | 640 | 1,3,8, 9,12,14,20 |
| | | | | 29469 | **CF13EL/MINI/865/BL/CS10** | 120 | 10 | 10000 | 6500 | 82 | 800 | 640 | 1,3,8, 9,12,14,20 |
| **19** | MINITWIST | 5.2 | Medium | 29410 | **CF19EL/MINI/827** | 120 | 6 | 8000 | 2700 | 82 | 1200 | 960 | 1,3,8, 9,12,14,20 |
| | | 5.5 | Medium | 29396 | **CF19EL/MINI/830** | 120 | 6 | 8000 | 3000 | 82 | 1200 | 960 | 1,3,8, 9,12,14,20 |
| | | 4.7 | Medium | 29689 | **CF19EL/SUPER/830/BL** | 120 | 6 | 10000 | 3000 | 82 | 1200 | 960 | 1,3,8, 9,12,14,20 |
| | | | | 28950 | **CF19EL/SUPER/850/BL** | 120 | 6 | 10000 | 5000 | 82 | 1200 | 960 | 1,3,8, 9,12,14,20 |
| | | | | 29720 | **CF19EL/SUPER/865/BL** | 120 | 6 | 10000 | 6500 | 82 | 1200 | 960 | 1,3,8, 9,12,14,20 |
| **20** | MINITWIST | 4.2 | Medium | 29728 | **CF20EL/MICRO/830/RP2** | 120 | 12 | 12000 | 3000 | 82 | 1280 | 1024 | 1,3,8, 9,12,14,20 |
| **23** | MINITWIST | 4.6 | Medium | 29411 | **CF23EL/MINI/827** | 120 | 6 | 10000 | 2700 | 82 | 1600 | 1280 | 1,3,8, 9,12,14,20 |
| | | 4.4 | Medium | 29729 | **CF23EL/MICRO/830/RP2** | 120 | 12 | 12000 | 3000 | 82 | 1600 | 1280 | 1,3,8, 9,12,14,20 |
| | | 5.75 | Medium | 29397 | **CF23EL/MINI/830** | 120 | 6 | 8000 | 3000 | 82 | 1600 | 1280 | 1,3,8, 9,12,14,20 |
| | | 5.06 | Medium | 29692 | **CF23EL/SUPER/830/BL** | 120 | 6 | 10000 | 3000 | 82 | 1600 | 1280 | 1,3,8, 9,12,14,20 |
| | | | | 29714 | **CF23EL/SUPER/835/BL** | 120 | 6 | 10000 | 3500 | 82 | 1600 | 1280 | 1,3,8, 9,12,14,20 |
| | | 4.6 | Medium | 29564 | **CF23EL/MINI/841** | 120 | 6 | 10000 | 4100 | 82 | 1600 | 1280 | 1,3,8, 9,12,14,20 |
| | | 5.06 | Medium | 29690 | **CF23EL/SUPER/850/BL** | 120 | 6 | 10000 | 5000 | 82 | 1600 | 1280 | 1,3,8, 9,12,14,20 |
| | | | | 29716 | **CF23EL/SUPER/865/BL** | 120 | 6 | 10000 | 6500 | 82 | 1600 | 1280 | 1,3,8, 9,12,14,20 |
| **30** | MINITWIST | 4.93 | Medium | 29578 | **CF30EL/MINI/835/DAY/BL** | 120 | 5 | 6000 | 3500 | 82 | 2000 | 1600 | 1,3,8, 9,12,14,20 |

DULUX® EL Twist

DULUX® EL Classic

# DULUX® EL SELF-BALLASTED COMPACT FLUORESCENT LAMPS

## Twist Compact Fluorescent Lamps

| Nominal Wattage | Bulb | MOL (in) | Base | Product Number | Ordering Abbreviation | Voltage | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **27** | TWIST | 6.1 | Medium | 29390 | **CF27EL/TWIST/830** | 120 | 6 | 10000 | 3000 | 82 | 1750 | 1400 | 1,3,8, 9,12,14,20 |
| **30** | TWIST | 5.13 | Medium | 29395 | **CF30EL/TWIST/830** | 120 | 6 | 10000 | 3000 | 82 | 2000 | 1600 | 1,3,8, 9,12,14,20 |
| | | | | 29392 | **CF30EL/TWIST/830/BL** | 120 | 5 | 6000 | 3000 | 82 | 2000 | 1600 | 1,3,8, 9,12,14,20 |
| | | | | 29415 | **CF30EL/TWIST/827** | 120 | 6 | 10000 | 2700 | 82 | 2000 | 1600 | 1,3,8, 9,12,14,20 |
| **40** | TWIST | 5.25 | Medium | 29147 | **CF40EL/TWIST/827** | 120 | 6 | 8000 | 2700 | 82 | 2600 | 2080 | 1,3,8, 9,12,14,20 |
| | | | | 29481 | **CF40EL/TWIST/830/BL** | 120 | 10 | 6000 | 3000 | 82 | 2600 | 2080 | 1,3,8, 9,12,14,20 |
| **65** | TWIST | 7.85 | Medium | 29508 | **CF65EL/TWIST/841** | 120 | 6 | 8000 | 4100 | 82 | 4200 | 3360 | 1,3,8, 9,12,14,20 |
| **12**<br>**19**<br>**28** | TWIST | 5.75 | 3CON Med | 29523 | **CF28EL/3WAY/TWIST/827** | 120 | 6 | 6000 | 2700 | 82 | 600<br>1100<br>1800 | 480<br>880<br>1440 | 1,3,8, 9,12,14,20 |
| | | | | 29351 | **CF28EL/3WAY/TWIST/830** | 120 | 6 | 6000 | 3000 | 82 | 600<br>1100<br>1800 | 480<br>880<br>1440 | 1,3,8, 9,12,14,20 |
| | | | | 29349 | **CF28EL/3WAY/TWIST/830/BL** | 120 | 5 | 6000 | 3000 | 82 | 600<br>1100<br>1800 | 480<br>880<br>1440 | 1,3,8, 9,12,14,20 |

## Classic (A-shape) Compact Fluorescent Lamps

| Nominal Wattage | Bulb | MOL (in) | Base | Product Number | Ordering Abbreviation | Voltage | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **5** | A15 | 3.95 | Medium | 29743 | **CF5EL/A15/DIM/830** | 120 | 6 | 15000 | 3000 | 82 | 200 | 160 | 1,3,8, 12,14,20 |
| **9** | A19 | 4 | Medium | 29665 | **CF9EL/A19/827** | 120 | 6 | 8000 | 2700 | 82 | 450 | 360 | 1,3,8, 9,12,14,20 |
| | A15 | 4 | Medium | 29526 | **CF9EL/A15/830/BL2** | 120 | 12 | 8000 | 3000 | 82 | 450 | 360 | 1,3,8, 9,12,14,20 |
| **14** | A19 | 4.75 | Medium | 29575 | **CF14EL/A19/827** | 120 | 6 | 6000 | 2700 | 82 | 800 | 640 | 1,3,8, 9,12,14,20 |
| | | | | 29468 | **CF14EL/A19/830** | 120 | 6 | 6000 | 3000 | 82 | 800 | 640 | 1,3,8, 9,12,14,20 |
| | | 5 | Medium | 29485 | **CF14EL/A19/830/BL** | 120 | 6 | 8000 | 3000 | 82 | 800 | 640 | 1,3,8, 9,12,14,20 |
| | | 4.75 | Medium | 29346 | **CF14EL/A19/Y/BL** | 120 | 5 | 6000 | - | - | 405 | 324 | 1,3,8, 9,12,14,20 |

## Decorative Compact Fluorescent Lamps

| Nominal Wattage | Bulb | MOL (in) | Base | Product Number | Ordering Abbreviation | Voltage | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **4** | FLAME | 4.25 | Candelabra | 29135 | **CF4EL/B15/C/827** | 120 | 6 | 6000 | 2700 | 82 | 160 | 128 | 1,3,8, 9,12,14,20 |
| | | | | 29121 | **CF4EL/B15/C/830/BL** | 120 | 6 | 6000 | 3000 | 82 | 160 | 128 | 1,3,8, 9,12,14,20 |


DULUX® EL Globe


DULUX® EL Reflector


FLAME



# DULUX® EL SELF-BALLASTED COMPACT FLUORESCENT LAMPS

## Decorative Compact Fluorescent Lamps

| Nominal Wattage | Bulb | MOL (in) | Base | Product Number | Ordering Abbreviation | Voltage | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **5** | FLAME | 5.06 | Medium | 29742 | **CF5EL/B10/DIM/830** | 120 | 6 | 25000 | 3000 | 82 | 200 | 160 | 1,3,8, 9,12,14,20 |
| **7** | FLAME | 5.0 | Medium | 29039 | **CF7EL/B15/827** | 120 | 6 | 6000 | 2700 | 82 | 280 | 224 | 1,3,8, 9,12,14,20 |
| | | | | 29167 | **CF7EL/B15/830/BL** | 120 | 6 | 6000 | 3000 | 82 | 280 | 224 | 1,3,8, 9,12,14,20 |
| **9** | FLAME | 4.25 | Candelabra | 29584 | **CF9EL/B14/C/830/ADP/BL2** | 120 | 12 | 8000 | 3000 | 82 | 450 | 360 | 1,3,8, 9,12,14,20 |

## Globe Compact Fluorescent Lamps

| Nominal Wattage | Bulb | MOL (in) | Base | Product Number | Ordering Abbreviation | Voltage | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **9** | G25 | 4.25 | Medium | 29414 | **CF9EL/G25/827** | 120 | 6 | 8000 | 2700 | 82 | 495 | 396 | 1,3,8, 9,12,14,20 |
| | | | | 29528 | **CF9EL/G25/830/BL2** | 120 | 12 | 8000 | 3000 | 82 | 495 | 396 | 1,3,8, 9,12,14,20 |
| **14** | G30 | 5.5 | Medium | 29195 | **CF14EL/G30/830** | 120 | 6 | 6000 | 3000 | 82 | 700 | 560 | 1,3,8, 9,12,14,20 |

## Reflector Compact Fluorescent Lamps

| Nominal Wattage | Bulb | MOL (in) | Base | Product Number | Ordering Abbreviation | Voltage | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **9** | R20 | 3.94 | Medium | 29638 | **CF9EL/R20/827** | 120 | 6 | 8000 | 2700 | 82 | 300 | 240 | 1,3,8, 9,12,14,20 |
| | | | | 29640 | **CF9EL/R20/830/BL** | 120 | 6 | 8000 | 3000 | 82 | 300 | 240 | 1,3,8, 9,12,14,20 |
| **14** | R20 | 4.25 | Medium | 29624 | **CF14EL/R20/827** | 120 | 6 | 8000 | 2700 | 82 | 495 | 396 | 1,3,8, 9,12,14,20 |
| | | | | 29587 | **CF14EL/R20/830/BL** | 120 | 6 | 8000 | 3000 | 82 | 495 | 396 | 1,3,8, 9,12,14,20 |
| **15** | BR30 | 5.5 | Medium | 29465 | **CF15EL/BR30/DIM/827** | 120 | 6 | 6000 | 2700 | 82 | 600 | 480 | 1,3,8, 9,12,14,20 |
| | | | | 29667 | **CF15EL/BR30/DIM/830/BL** | 120 | 6 | 8000 | 3000 | 82 | 600 | 480 | 1,3,8, 9,12,14,20 |
| | | 5.6 | Medium | 29539 | **CF15EL/BR30/850/BL** | 120 | 6 | 6000 | 5000 | 82 | 560 | 448 | 1,3,8, 9,12,14,20 |
| **16** | BR30 | 5.7 | Medium | 29591 | **CF16EL/BR30/827** | 120 | 6 | 8000 | 2700 | 82 | 750 | 600 | 1,3,8, 9,12,14,20 |
| | | | | 29590 | **CF16EL/BR30/830** | 120 | 6 | 8000 | 3000 | 82 | 750 | 600 | 1,3,8, 9,12,14,20 |
| **19** | PAR38 | 5.8 | Medium | 29581 | **CF19EL/PAR38/830** | 120 | 6 | 8000 | 3000 | 82 | 950 | 760 | 1,3,8, 9,12,14,20 |
| **20** | BR40 | 6.5 | Medium | 29399 | **CF20EL/BR40/827** | 120 | 6 | 8000 | 2700 | 82 | 900 | 720 | 1,3,8, 9,12,14,20 |
| | | | | 29363 | **CF20EL/BR40/830** | 120 | 6 | 8000 | 3000 | 82 | 900 | 720 | 1,3,8, 9,12,14,20 |
| **23** | PAR38 | 6.25 | Medium | 29359 | **CF23EL/PAR38/827** | 120 | 6 | 8000 | 2700 | 82 | 1200 | 960 | 1,3,8, 9,12,14,20 |


DULUX® EL Dura-One


DULUX® EL Bullet


DULUX® EL Reflector



# DULUX® EL SELF-BALLASTED COMPACT FLUORESCENT LAMPS

## Reflector Compact Fluorescent Lamps

| Nominal Wattage | Bulb | MOL (in) | Base | Product Number | Ordering Abbreviation | Voltage | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **23** | PAR38 | 6.25 | Medium | 29897 | **CF23EL/PAR38/GL/827** | 120 | 6 | 8000 | 2700 | 82 | 1000 | 800 | 1,3,8, 9,12,14,20 |
| | BR40 | 6.5 | Medium | 29442 | **CF23EL/BR40/830/BL** | 120 | 6 | 8000 | 3000 | 82 | 1250 | 1000 | 1,3,8, 9,12,14,20 |
| | PAR38 | 6.25 | Medium | 29586 | **CF23EL/PAR38/830/BL** | 120 | 6 | 8000 | 3000 | 82 | 1200 | 960 | 1,3,8, 9,12,14,20 |

# DURA-ONE™ COMPACT FLUORESCENT LAMPS

| Nominal Wattage | Bulb | MOL (in) | Base | Product Number | Ordering Abbreviation | Voltage | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **20** | A19 | 5.31 | Medium | 29537 | **CF20RC/A19/827** | 120 | 6 | 15000 | 2700 | 82 | 1200 | 960 | 1,3,8,12,15,20 |
| **23** | BR30 | 5.56 | Medium | 29535 | **CF23RC/BR30/827** | 120 | 6 | 15000 | 2700 | 82 | 1100 | 880 | 1,3,8,12, 15,20 |

# LOW PROFILE BULLET AND CIRCLINE ELECTRONIC COMPACT FLUORESCENT LAMPS

| Nominal Wattage | Bulb | MOL (in) | Base | Product Number | Ordering Abbreviation | Voltage | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **14** | BULLET | 5.5 | Medium | 29196 | **CF14EL/T20/830** | 120 | 6 | 6000 | 3000 | 82 | 700 | 560 | 1,3,8, 9,12,14,20 |

# SYMBOLS & FOOTNOTES FOR COMPACT FLUORESCENT LAMPS

| Symbol | Description |
|---|---|
| | New item introduced within the past year. |
| | Item will be discontinued when inventory is depleted. |
| | This ECOLOGIC® lamp was designed to pass the Federal TCLP criteria for classification as non-hazardous waste in most states. Disposal regulations may vary; check local and state regulations. |
| CRI | This lamp is a High Color Rendering Lamp |
| | Product is Canadian Standards Association approved for the Canadian market |
| | Product is Underwriters Laboratories listed |

| Footnote | Description |
|---|---|
| 1 | Approximate initial lumens after 100 hours operation. |
| 2 | Minimum starting temperature is a function of the ballast; consult the ballast manufacturer. |
| 3 | Minimum starting temperature for DULUX EL lamps is 0˚ F, unless otherwise specified in product literature. . |
| 4 | 2 pin CF lamps are not suitable for use in frequently cycled applications or with occupancy sensors. 2 pin CF lamps should never be installed in 4 pin sockets regardless if lamp will fit. |
| 5 | There is a NEMA supported, industry issue where T2, T4, and T5 fluorescent and compact fluorescent lamps operated on high frequency ballasts may experience an abnormal end-of-life phenomenon. This end-of-life phenomenon can resulting one or both of the following: 1. Bulb wall cracking near the lamp base. 2. The lamp can overheat in the base area and possibly melt the base and socket. NEMA recommends that high frequency compact fluorescent ballasts have an end-of-life shutdown circuit which will safely and reliably shut down the system in the rare event of an abnormal end-of-life failure mode described above. The final requirements of this system are yet to be defined by ANSI. For additional information refer to NEMA papers on their WEBSITE at www.NEMA.org. |
| 6 | SYLVANIA ECOLOGIC fluorescent lamps are designed to pass the Federal Toxic Characteristic Leaching Procedure (TCLP) criteria for classification as non-hazardous waste in most states. TCLP test results are available upon request. Lamp disposal regulations may vary, check your local & state regulations. For more information, please visit www.lamprecycle.org |
| 7 | This 4-pin DULUX lamp has an internal end-of-life mechanism (EOL) that shuts down the lamp preventing abnormal end-of life failure modes. This lamp was designed for use with high frequency ballasts that do not have their own end-of-life (lamp) sensing circuits, but it is also compatible with high frequency ballasts that have their own end-of-life (lamp) sensing circuits. |
| 8 | DULUX Els meet CSA, FCC and UL requirements. |
| 9 | Caution: DULUX EL units cannot be used on dimming circuits, emergency exit fixtures or lights, electronic timers, photocells, lighted switches or any other switches that do not meet UL20 Sec. 7.6.15. In outdoor applications, use only in enclosed fixtures to avoid exposure to weather. Use only on 120V, 60 Hz circuits. Never disassemble or modify lamp. Install or remove unit from fixture by grasping plastic base. Best performance achieved when operated at 77degrees F (25 degrees C). 40 Watt lamp is designed for base down orientation only. |
| 10 | CAUTION: This lamp emits ultraviolet (UV) power during operation and is in Risk Group 1 per ANSI/IESNA RP-27.3-96. Exposure at less than 0.3 meters (12 inches) should be limited; for example exposure at 0.2m (8 inches) should not exceed 4 hours in an 8 hour interval (see ANSI/IESNA RP-27.1-96). Certain medications and chemicals can increase an individual's sensitivity. Consult your physician for specific information. Protective eyewear should be worn in occupational situations involving long term exposure in close proximity to the lamp. This lamp is not intended and should not be used for diagnostic, therapeutic or cosmetic purposes. |
| 11 | 2 pin CF lamps should never be installed in 4 pin sockets regardless if lamp will fit. |
| 12 | The life ratings of fluorescent lamps are based on 3 hr. burning cycles under specified conditions and with ballast meeting ANSI specifications. If burning cycle is increased, there will be a corresponding increase in the average hours life. |
| 13 | Caution: DULUX EL Circline units cannot be used on dimming circuits, emergency exit fixtures or lights, electronic timers, photocells or lighted switches. In outdoor applications, use only in enclosed fixtures to avoid exposure to weather. Use only on 120V, 60 Hz circuits. |
| 14 | Minimum starting temperature for DULUX EL lamps is 0 degrees F |
| 15 | Caution: Although DURA-ONE lamps can be used with occupancy sensors that have a fluorescent volt-amp rating, DURA-ONE lamps cannot be used on any other dimming circuits, emergency exit fixtures or lights, electronic timers, photocells, lighted switches or any other switches that do not meet UL20 Sec. 7.6.15. In outdoor applications, use only in enclosed fixtures to avoid exposure to weather. Use only on 120V, 60 Hz circuits. Never disassemble or modify lamp. Install or remove unit from fixture by grasping plastic base. Best performance achieved when operated at 77˚F (25˚C). Operating temperature range of DURA-ONE lamps is -20˚F/-29˚C to 122˚F/50˚C. |
| 16 | These lamps may also be operated on rapid start circuits. On rapid start circuits the 24 watt lamp operates at 27 watts and the 36 watt lamp operated at 39 watts. Rated lamp life is unchanged. |
| 17 | Lumen output rated on high frequency operation. 60 HZ operation would result in lower lumen output. |
| 18 | Lumen output and life rated on high frequency operation. |
| 19 | DULUX F lamps can typically be operated on DULUX L and PENTRON HO ballasts of the same/similar wattage. Check with the ballast manufacturer to verify lamp/ballast compatibility. |
| 20 | Rule of Thumb for Compact Fluorescent Lamps: Divide wattage of incandescent lamp by 4 to determine approximate wattage of compact fluorescent lamp that will provide similar light output. |
| 21 | Optimum light output for DULUX T/E IN amalgam compact fluorescent lamps occurs at approximately 35 deg. C/ 95 deg. F ambient temperature when the lamp is operated in the base up position. The lumen value listed refers to the optimum light output. Non-amalgam compact fluorescent lamps provide at least 90% light output from 60-100 degrees F in the base up position, the temperature range is narrower for horizontal or base down position. |
| 22 | Minimum starting temperature: CF5: -22 degrees F; CF7: -4 degrees F; CF9: 14 degrees F; CF13DS: 14 degrees F; CF13DD: -4 degrees F; CF18DD: 5 degrees F; CF18DT: -4 degrees F; CF26: 14 degrees F. |

# Manufacturers' Cross Reference

## COMPACT FLUORESCENT LAMPS

| SYLVANIA | GE | PHILIPS |
|---|---|---|
| CF5DS/827/ECO | F5BX/SPX27/827 | PL-S_5W/27 |
| CF5DS/827/RP/ECO | F5BX-SPX27_CD | PL-S_5W/27 |
| CF5DS/841/ECO | F5BX/SPX41/840_10PK | PL-S 5W/841/2P/ALTO |
| CF7DS/827/ECO | F7BX/SPX27/827 | PL-S7W/27 |
| CF7DS/827/RP/ECO | F7BX/SPX27_CD | PL-S7W/27 |
| CF7DS/835/ECO | F7BX7/SPX35/825_10PK | PL-S_7W/35 |
| CF7DS/841/ECO | F7BX/SPX41/840_10PK | PL-S_7W/41 |
| CF7DS/850/ECO | F7BX/SPX50/850 | PL-S7W/50 |
| CF7EL/DECO/MEDIUM/1/BL | FLE7/2/CAM/827 | BC-EL/MCAN9ALTO |
| CF7EL/DECO/MEDIUM/2700K | FLE7/2/CAM/827 | --- |
| CF7EL/MINITWIST/1 | --- | --- |
| CF7EL/MINITWIST/2700K | | EL/MDT9 |
| CF9DD/827/ECO | F9DBXT4/SPX41/827 | --- |
| CF9DD/835/ECO | --- | --- |
| CF9DS/827/ECO | F9BX/SPX27/827_10PK | PL-S9W/27 |
| CF9DS/827/RP/ECO | F9BX/SPX27_CD | PL-S9W/27 |
| CF9DS/835/ECO | F9BX/SPX35/835 | PL-S9W/35 |
| CF9DS/841/ECO | F9BX/SPX41/840_10PK | PL-S9W/41 |
| CF9DS/850/ECO | F9BX/SPX50/850 | PL-S9W/50 |
| CF9EL/G25/2700K | FLE11/2/G25XL/CD_12 | EL/AG25 |
| CF9EL/R20/2700K | --- | --- |
| CF9WEL/FAN/2BL | FLE11/2/A17 | --- |
| CF11EL/MINITWIST/1 | --- | EL/mdT 11 |
| CF13DD/827/ECO | F13DBX23T4/SPX27 | PL-C_13W/27/USA |
| CF13DD/827/ECO/RP/1 | FL3DBX/SPX27/CD | PL-C 13W/827/USA/ALTO |
| CF13DD/827/RP/ECO | FL3DBX/SPX27/CD | PL-C__13W/827 |
| CF13DD/830/ECO | F13DBX23T4/SPX30 | PL-C_13W/30/USA |
| CF13DD/835/ECO | F13DBX23T4/SPX35 | PL-C_13W/35/USA |
| CF13DD/841/ECO | F13DBX23T4/SPX41 | PL-C_13W/41/USA |
| CF13DD/E/827/ECO | F13DBX/SPX27/4P | PL-C_13W/27/4P |
| CF13DD/E/830/ECO | F13DBX/SPX30/4P | PL-C 13W/830/4P/ALTO |
| CF13DD/E/835/ECO | F13DBX/SPX35/4P | PL=C_13W/35/4P |
| CF13DD/E/841/ECO | F13DBX/SPX41/4P | PL-C_13W/41/4P |
| CF13DS/827/ECO | 14650_F13BX/SPX27_#011 | PL-S13W/27 |
| CF13DS/827/ECO/RP/1 | 14650_F13BX/SPX27_#011 | PL-S13W/27 |
| CF13DS/830/ECO | F13BX/SPX30/830 | PL-S13W/30 |
| CF13DS/835/ECO | 17048_F13BX/SPX35_#013 | PL-S13W/35 |
| CF13DS/841/ECO | 20434_F13BX/SPX41_#014 | PL-S13W/41 |
| CF13DS/841/ECO/RP/1 | 20434_F13BX/SPX41_#014 | PL-S13W/41 |
| CF13DS/850/ECO | F13BX/SPX50/850 | PL-S13W/50 |
| CF13DT/E/827/ECO | F13TBX/SPX27/A/4P | --- |
| CF13DT/E/830/ECO | F13TBX/SPX30/A/4P | --- |
| CF13DT/E/835/ECO | F13TBX/SPX35/A/4P | --- |
| CF13DT/E/841/ECO | F13TBX/SPX41/A/4P | --- |
| CF13EL/MINITWIST/2700K | FLE13HT3/2/827 | --- |
| CF13EL/MINITWIST/4100K | | 14786-8 |
| CF13EL/SUPERMINI/5K/1BL | --- | EL/MDT135000K |
| CF13ELSUPERMINIBL 120V | --- | --- |
| CF14EL/A19 | FLE15/2/A21XL | --- |
| CF14EL/A19/1/BL/YELLOW | FLE14/2/TC16/BUG | EL/O_15_BAW |
| CF14EL/A19/2700K | FLE15/A19/827 | --- |
| CF14EL/G/830/MED | FLG15/E-120 | EL/A116WG30ALTO |
| CF14EL/R20/2700K | --- | --- |
| CF15BR30DIMMABLE3000KBL | FLE15/2/DV/R30 | EL/A/R30 |
| CF15EL/BR30/5000K/BL | --- | --- |
| CF15ELBR30/DIMMABLE/2700K | FLE15/2/DV/R30 | EL/AR30DIM16ALTO |
| CF15ELBR30/DIMMABLE/2700K | FLE15/2/DV/R30 | EL/AR30DIM16ALTO |
| CF15ELBR30DIMMABLERP3000K | FLE15/2/DV/R30 | EL/A R30 Dim 16 ALTO |
| CF16EL/BR30 | --- | BR30 16 ALTO |
| CF16ELBR30/2700K | FLE15/A2/R30 | EL/AR30 |
| CF18DD/827/ECO | F18DBXT4/SPX27 | PL-C_18W/27 |
| CF18DD/830/ECO | F18DBXT4/SPX30 | PL-C_18W/30 |
| CF18DD/835/ECO | F18DBXT4/SPX35 | PL-C_18W/35 |
| CF18DD/841/ECO | F18DBXT4/SPX41 | PL-C_18W/41 |

# Manufacturers' Cross Reference Guide (continued)

## COMPACT FLUORESCENT LAMPS

| SYLVANIA | GE | PHILIPS |
|---|---|---|
| CF18DD/E/827/ECO | F18DBX/SPX27/4P | PL-C_18W/27/4P |
| CF18DD/E/830/ECO | F18DBX/SPX30/4P | PL-C 18W/830/4P/ALTO |
| CF18DD/E/835/ECO | F18DBX/SPX35/4P | PL-C_18W/35/4P |
| CF18DD/E/841/ECO | F18DBX/SPX41/4P | PL-C_18W/41/4P |
| CF18DT/E/827/ECO | F18TBX827/4P/ECO | PL-T 18W/827/4P/ALTO |
| CF18DT/E/IN/827/ECO | F18TBX/SPX27/A/4P | PL-T_18W/827/4P |
| CF18DT/E/IN/830/ECO | F18TBX/SPX30/A/4P | PL-T_18W/30/4P/ALTO |
| CF18DT/E/IN/835/ECO | F18TBX/SPX35/A/4P | PL-T_18W/35/4P/ALTO |
| CF18DT/E/IN/841/ECO | F18TBX/SPX41/A/4P | PL-T_18W/41/4P/ALTO |
| CF19EL/MINITWIST | --- | EL/MDT 20 |
| CF19EL/MINITWIST/2700K | FLE20HT3/2/XL | EL/MDT20 |
| CF19EL/MINITWIST/DAY/BL/1 | --- | --- |
| CF19ELSUPERMINI5KBL | --- | --- |
| CF19ELSUPERMINI6500BL | FLE20HT3/2/D/2PK | --- |
| CF19ELSUPERMINIRP3 | --- | --- |
| CF20EL/BR40/2700K | FLE15/A2/R30 | --- |
| CF20EL/BR40/3000K | FLE23/A4/R40 | EL/AR40 |
| CF20EL/TWIST | FLE21/HLX/8/SW/CD | Mini-Deco Twister EL/mdT |
| CF23EL/BR40/BL/1 | FLE23/A4/R40 | --- |
| CF23EL/MINITWIST/2700K | FLE23HT3/2/XL | EL/MDT27 |
| CF23EL/PAR38/2700K | FLE26/2/PAR38/SW/CD | EL/APAR38 |
| CF23EL/PAR38/2700K | FLE26/2/PAR38/SW/CD | EL/APAR38 |
| CF23EL/PAR38/BL/1 | --- | --- |
| CF23EL/TWIST | FLE27/HLX/8/SW/CD | --- |
| CF23ELSUPERMINI6500RP3 | --- | --- |
| CF23RC/BR30/2700K/1 120V | GENURA_EL23/R25/SW | --- |
| CF26DD/827/ECO | F26DBXT4/SPX27 | PL-C_26W/27 |
| CF26DD/830/ECO | F26DBXT4/SPX30 | PL-C_26W/30 |
| CF26DD/835/ECO | F26DBXT4/SPX35 | PL-C_26W/35 |
| CF26DD/841/ECO | F26DBXT4/SPX41 | PL-C_26W/41 |
| CF26DD/E/827/ECO | F26DBXT4/SPX27/4P | PL-C_26W/27/4P |
| CF26DD/E/830/ECO | F26DBXT4/SPX30/4P | PL-C_26W/30/4P |
| CF26DD/E/835/ECO | F26DBX/SPX35/4P | PL-C_26W/35/4P |
| CF26DD/E/841/ECO | F26DBX/SPX41/4P | PL-C_26W/41/4P |
| CF26DT/E/827/ECO | F26TBX827/4P/ECO | PL-T 26W/827/4P/ALTO |
| CF26DT/E/827/ECO/RP/1 | F26TBX827/4P/ECO | PL-T 26W/827/4P/ALTO |
| CF26DT/E/IN/827/ECO | F26TBX/SPX27/A/4P | PL-T_26W/827/4P |
| CF26DT/E/IN/830/ECO | F26TBX/SPX30/A/4P | PL-T_26W/30/4P/ALTO |
| CF26DT/E/IN/835/ECO | F26TBX/SPX35/A/4P | PL-T_26W/35/4P/ALTO |
| CF26DT/E/IN/841/ECO | F26TBX/SPX41/A/4P | PL-T_26W/41/4P/ALTO |
| CF27EL/TWIST | FLE26HT3/2/SW/3PK | EL/mdT 27 |
| CF27EL/TWIST/2700K | FLE26HT3/2/SW/3PK | --- |
| CF28EL/3WAY/TWIST/2700K | FLE29HLX/2D3/827 | EL/TW134-26-18 |
| CF28EL/3WAY/TWIST/2700K | FLE29HLX/2D3/827 | EL/TW134-26-18 |
| CF28EL/3WAY/TWIST/830/1 | | EL/TW134-26-18 |
| CF28EL/3WAY/TWIST/830/BL/1 | | EL/TW134-26-18 |
| CF30EL/CIRC/830/MED | FEA30CIR/SW/CD | FC9T5 |
| CF30EL/TWIST/2700K | FLE29HLX/2/XL/827 | EL/MDT27 |
| CF32DT/E/827/ECO | --- | PL-T 32W/827/4P/ALTO |
| CF32DT/E/IN/827/ECO | F32TBX/SPX27/A/4P | PL-T_32W/827/4P |
| CF32DT/E/IN/830/ECO | F32TBX/SPX30/A/4P | PL-T_32W/30/4P/ALTP |
| CF32DT/E/IN/835/ECO | F32TBX/SPX35/A/4P | PL-T_32W/35/4P/ALTO |
| CF32DT/E/IN/841/ECO | F32TBX/SPX41/A/4P | PL-T_32W/41/4P/ALTO |
| CF40EL/TWIST/2700K | FLE42HLX/VT/827 | EL/DT42 |
| CF42DT/E/IN/827/ECO | F42TBX/827/A/4P/EOL | PL-T_42W/827/4P |
| CF42DT/E/IN/830/ECO | F42TBX/830/A/48/EOL | PL-T_42W/30/4P/ALTO |
| CF42DT/E/IN/835/ECO | F42TBX/835/A/ECO | PL-T_42W/835/4P |
| CF42DT/E/IN/841/ECO | F42TBX/841/A/48/EOL | PL-T_42W/41/4P |
| CF4EL/DECO/CANDELABRA/1/BL | FLE5/2/CAC/827 | EL/MCAN5 |
| CF4EL/DECO/CANDELABRA/2700K | FLE5/2/CAM/827 | EL/A mCan Cand. |
| CF57DT/E/IN/830/ECO | F57QBX/830/A/ECO | PL-T_57W/830/4P/A |
| CF57DT/E/IN/835/ECO | F57QBX/835/A/ECO | PL-T_57W/835/4P/A |
| CF57DT/E/IN/841/ECO | F57QBX/841/A/ECO | PL-T_57W/841/4P/A |
| FT18DL/830/ECO | F18BX/SPX30 | PL-L__18W/830 |

# Manufacturers' Cross Reference (continued)

## COMPACT FLUORESCENT LAMPS

| SYLVANIA | GE | PHILIPS |
|---|---|---|
| FT18DL/830/RS/ECO | F18BX/SPX30/RS | PL-L__18W/830 |
| FT18DL/835/ECO | F18BX/SPX35 | PL-L__18W/835 |
| FT18DL/835/RS/ECO | F18BX/SPX35/RS | PL-L__18W/835 |
| FT18DL/841/ECO | F18BX/SPX41 | PL-L_18W/41 |
| FT18DL/841/RS/ECO | F18BX/SPX41/RS | PL-L_18W/41 |
| FT24DL/830/ECO | F27/24BX/SPX30 | PL-L__24W/830 |
| FT24DL/835/ECO | F27/24BX/SPX35 | PL-L_24W/835 |
| FT24DL/841/ECO | F27/24BX/SPX41 | PL-L_24W/41 |
| FT36DL/830/ECO | F39/36BX/SPX30 | PL-L_36W/30 |
| FT36DL/835/ECO | F39/36BX/SPX35 | PL-L_36W/35 |
| FT36DL/841/ECO | F39/36BX/SPX41 | PL-L_36W/41 |
| FT40DL/28W/830/SS/IS/ECO 100V | --- | --- |
| FT40DL/28W/835/SS/IS/ECO 100V | --- | --- |
| FT40DL/28W/841/SS/IS/ECO 100V | --- | --- |
| FT40DL/830/RS/ECO | F40/30BX/SPX30_36PK_BULK | PL-L_40W/30/RS |
| FT40DL/835/RS/ECO | F40/30BX/SPX35_36PK_BULK | PL-L_40W/35/RS |
| FT40DL/841/RS/ECO | F40/30BX/SPX41_36PK_BULK | PL-L_40W/41/RS |
| FT40DL/850/RS/ECO | F40/30BX/SPX50RS | --- |
| FT55DL/C/841/ECO | --- | --- |
| FT80DL/830/ECO | --- | PL-L_80W/830/4P |
| FT80DL/835/ECO | --- | PL-L__80W/835/4P |
| FT80DL/841/ECO | --- | PL-L__80W/841/4P |

## Notes:

# OSRAM SYLVANIA: THE LEADER IN ENERGY SAVING FLUORESCENT LAMPS

The fluorescent lamp is an electric discharge device which utilizes a low pressure mercury vapor arc to generate ultra-violet (plus a little visible) energy. The ultra-violet energy is absorbed by a phosphor coat on the inside of the glass tube and converted by the phosphor to visible wavelengths; the wavelengths of the light generated are determined by the composition of the phosphor. In addition to the small amount of mercury vapor, the fluorescent tube contains an atmosphere of an inert gas, usually argon, krypton, neon, or a mixture of two or more of these gases. The pressure of the gases contained in the lamp is very low, usually from 2 to 3 torr. Atmospheric pressure is 760 torr.

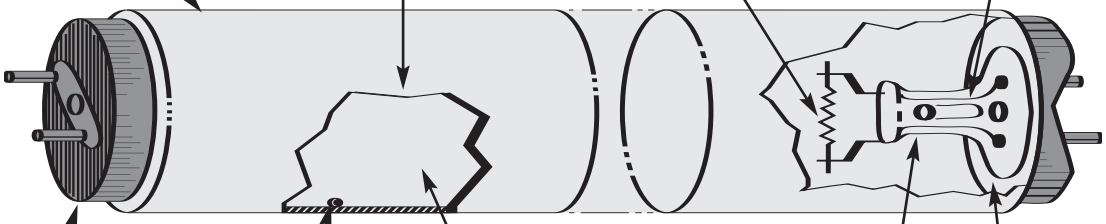


**BULB**
Usually straight glass tube. May also be circular or U-shaped.

**PHOSPHOR**
Coating inside the bulb transforms ultraviolet radiation into visible light. Color of light produced depends on composition of phosphor.

**CATHODE**
"Hot cathodes" at each end of lamp are coated with emissive materials which emit electrons. Usually made of coiled-coil or single-coil tungsten wire.

**EXHAUST TUBE**
Air is exhausted through this tube during manufacture and inert gas introduced into the bulb.



**BASE**
Several different types used to connect the lamp to the electric circuit and to support the lamp in the lampholder.

**MERCURY**
A minute quantity of liquid mercury is placed in the bulb to furnish mercury vapor.

**GAS**
Usually argon or a mixture of inert gases at low pressure. Krypton is sometimes used.

**STEM PRESS**
The lead-in wires have an air tight seal here and are made of specific wire to assure about the same coefficient of expansion as the glass.

**LEAD-IN WIRES**
Connect to the base pins and carry the current to and from the cathodes and the mercury arc.

## HOW TO READ PRODUCT INFORMATION - FLUORESCENT

| Nominal Wattage | Bulb | Nominal Length(in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life (hrs) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F (@35°C/95°F) | Approx Lumens Mean @25°C/77°F (@35°C/95°F) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | T8 | 48 | 47.78 | Med Bipin | 21763 | **FO32/835XP/ECO** | 30 | 24000 | 3500 | 85 | 3000 | 2850 | Ⓔ 2,21,31, 35,39,60,70 |
| **34** | T12 | 48 | 47.78 | Med Bipin | 24594 | **F34CW/SS** Formerly F40CW/SS | 30 | 20000 | 4200 | 60 | 2650 | 2279 | Ⓔ 2,10,13, 19,21,42 |
| **54** | T5 | 48 | 45.5 | Mini Bipin | 20857 | **FP54/830/HO** | 40 | 20000 | 3000 | 85 | 4450<br>5000 | 4228<br>4750 | 2,21,26,35,59 |
| **60** | T12 | 96 | 94 | Single Pin | 29815 | **F96T12/CW/SS** | 15 | 12000 | 4200 | 60 | 5300 | 4664 | Ⓔ 2,15,21 |

| | |
|---|---|
| **Nominal Wattage** | Design wattage on reference ballast. Actual wattage dependent on ballast. |
| **Bulb** | Describes the shape of the bulb followed by the bulb's diameter at its widest point. The diameter value is expressed in eighths of an inch. Ex. T = Tubular, 8 = 8/8 inch = 1 inch. Please see page 134 for bulb illustrations. |
| **Base** | Please see page 134 for base illustrations. |
| **Nominal Length** | The nominal length of linear fluorescent lamps is typically measured from back of lampholder to back of lampholder. PENTRON® linear lamp, CURVALUME® and Circline lamps are exceptions. The nominal length given for PENTRON linear lamps is the closest familiar nominal length. CURVALUME lamps are measured from the face of the bases to the outside of the glass bend. The measurement for Circline lamps is the outside diameter. Values are in inches. |
| **MOL** | Maximum overall length. The length of the lamp measured in inches. |
| **Symbols & Footnotes** | Most symbols and footnotes that apply to a specific product will appear in this space. The explanations of the symbols and footnotes are at the end of the fluorescent section. |
| **Ordering Abbreviation** | A text description of the lamp. Please see below for several examples and explanations of some of the codes. |
| **CCT** | Correlated Color Temperature. The degree of "whiteness" of the light. Expressed in kelvins (K). Please see page 131 for more information. |
| **CRI** | Color Rendering Index. A numbering system for rating the relative color rendering quality of a light source compared to a standard. Please see page 131 for more information. |
| **Initial & Mean Lumens** | Initial lumens are measured when the lamp has been operating for 100 hours. Mean lumens are typically measured at 40% of the rated life of the lamp. For longer life lamp such as the OCTRON® XP® lamps, the mean lumens are measured at the same point in time as they are measured for the standard lamps they replace. Fluorescent lamp lumens are typically measured at 25°C (77°F). The lamp lumens are measured at both 25°C (77°F) and 35°C (95°F) for PENTRON® linear lamps. |

### How to Read Ordering Abbreviations

| FO32/835XP/ECO | |
|---|---|
| F | Fluorescent |
| O | OCTRON® |
| 32 | Nominal lamp wattage |
| 8 | 85 CRI |
| 35 | 3500K CCT |
| XP® | EXtended Performance |
| ECO® | ECOLOGIC® - TCLP passing lamp |

| F34CW/SS | |
|---|---|
| F | Fluorescent |
| 34 | Nominal lamp wattage |
| CW | Cool White phosphor |
| SS | SUPERSAVER® - reduced wattage lamp |

| FP54/830/HO | |
|---|---|
| F | Fluorescent |
| P | PENTRON |
| 54 | Nominal lamp wattage |
| 8 | 85 CRI |
| 30 | 3000K CCT |
| HO | High Output |

| F96T12/CW/SS | |
|---|---|
| F | Fluorescent |
| 96 | 96" nominal length |
| T | Tubular Shape Bulb |
| 12 | Bulb diameter; ⅛ inch = 1 ½ inches |
| CW | Cool White phosphor |
| SS | SUPERSAVER - reduced wattage lamp |

### Lamp Disposal Labeling

The following information appears on the packages of fluorescent lamps. For more information on lamp disposal labeling, see the inside back cover of this catalog.

**Hg Lamp Contains Mercury**

Manage in accordance with disposal laws
See www.lamprecycle.org or 1-866-666-6850

For weight and measurement information, please visit www.sylvania.com

# FLUORESCENT LAMP COLORS

| COLOR | COLOR ABBREVIATION | CORRELATED COLOR TEMPERATURE(1) | COLOR RENDERING INDEX(2) |
|---|---|---|---|
| OCTRON® "800" 2700K | 827 | 2700 | 85 |
| OCTRON XP® "800" 2700K | 827 | 2700 | 85 |
| WARM WHITE DELUXE | WWX | 2900 | 82 |
| WARM WHITE | WW | 3000 | 52 |
| WARM WHITE PLUS | WWP | 3000 | 70 |
| DESIGNER® 3000K | D30 | 3000 | 70 |
| DESIGNER WARM WHITE | DWW | 3000 | 70 |
| DESIGNER "800" 3000K | D830 | 3000 | 80 |
| DESIGNER WARM WHITE PLUS | DWWP | 3000 | 80 |
| OCTRON "700" 3000K | 730 | 3000 | 75 |
| OCTRON XP "700" 3000K | 730 | 3000 | 78 |
| OCTRON "800" 3000K | 830 | 3000 | 82 |
| OCTRON XP "800" 3000K | 830 | 3000 | 85 |
| OCTRON XPS® "800" 3000K | 830 | 3000 | 85 |
| PENTRON® 3000K | 830 | 3000 | 85 |
| GRO-LUX®Aquarium WIDE SPECTRUM | GRO/AQ/WS | 3400 | 89 |
| WHITE | W | 3450 | 57 |
| DESIGNER 3500K | D35 | 3500 | 70 |
| DESIGNER "800" 3500K | D835 | 3500 | 80 |
| ICETRON® 3500K | 835 | 3500 | 80 |
| PENTRON 3500K | 835 | 3500 | 85 |
| OCTRON "700" 3500K | 735 | 3500 | 75 |
| OCTRON XP "700" 3500K | 735 | 3500 | 78 |
| OCTRON "800" 3500K | 835 | 3500 | 82 |
| OCTRON XP "800" 3500K | 835 | 3500 | 85 |
| OCTRON XPS "800" 3500K | 835 | 3500 | 86 |
| NATURAL WHITE | N | 3600 | 86 |
| DESIGNER 4100K | D41 | 4100 | 70 |
| DESIGNER COOL WHITE | DCW | 4100 | 70 |
| DESIGNER "800" 4100K | D841 | 4100 | 80 |
| DESIGNER COOL WHITE PLUS | DCWP | 4100 | 80 |
| ICETRON 4100K | 841 | 4100 | 80 |
| OCTRON "700" 4100K | 741 | 4100 | 75 |
| OCTRON XP "700" 4100K | 741 | 4100 | 78 |
| OCTRON "800" 4100K | 841 | 4100 | 82 |
| OCTRON XP "800" 4100K | 841 | 4100 | 85 |
| OCTRON XPS "800" 4100K | 841 | 4100 | 86 |
| PENTRON 4100K | 841 | 4100 | 85 |
| COOL WHITE DELUXE | CWX | 4100 | 87 |
| LITE WHITE | LW | 4150 | 48 |
| COOL WHITE | CW | 4200 | 60 |
| COOL WHITE PLUS | CWP | 4100 | 70 |
| ICETRON 5000K | 850 | 5000 | 80 |
| OCTRON "700" 5000K | 750 | 5000 | 75 |
| OCTRON "800" 5000K | 850 | 5000 | 80 |
| OCTRON XP "800" 5000K | 850 | 5000 | 85 |
| OCTRON "900" 5000K | 950 | 5000 | 90 |
| PENTRON 5000K | 580 | 5000 | 85 |
| DESIGN 50® | DSGN50 | 5000 | 90 |
| DAYLIGHT FULL SPECTRUM | DAYLIGHTFULL SPECTRUM | 5000 | 90 |
| DAYLIGHT® | DAYLIGHT | 6500 | 76 |
| DAYLIGHT 6500 | DAYLIGHT6500V | 6500 | 80 |
| OCTRON "700" 6500K | 765 | 6500 | 75 |
| OCTRON XP "800" 6500K | 865 | 6500 | 85 |
| PENTRON 6500K | 865 | 6500 | 85 |
| DESIGNER 6500K | 865 | 6500 | 80 |
| DAYLIGHT DELUXE | DX | 6500 | 88 |
| OCTRON SKYWHITE | SKYWHITE | 8000 | 88 |

# FLUORESCENT COMPETITIVE GUIDES

NOTE: These tables are intended only as guides and may represent another lamp company's most similar product or product family rather than an identical match. Individual manufacturer's performance values should be consulted. Environmental conditions, ballast type, and other auxiliary equipment may affect lamp performance.

## FLUORESCENT BRAND NAMES

| SYLVANIA | GE* | PHILIPS** |
|---|---|---|
| CURVALUME® (FB) | MOD-U-LINE (U) | U-Bent (FB) |
| CWX | | Home Light Everywhere (HL Everywhere) |
| DESIGN 50® (DSGN50) | Chroma 50 (C50) | Colortone 50 (C50) |
| DESIGNER® Series | Specification Series (SP) | SPEC or TL700 |
| DESIGNER 800 Series | Specification Series (SPX) | Ultralume or TL800 |
| DESIGNER Cool White | SP41 | Home Light Cool (HL Cool) |
| DESIGNER Cool White PLUS | SPX41 | 41U |
| DESIGNER Warm White | Kitchen and Bath ULTRA (70 CRI) | SPEC30 |
| DESIGNER Warm White PLUS (DWWP) | Kitchen and Bath ULTRA (80 CRI) | Home Light WX (HL WX) |
| DESIGNER 700, 3500K (D35) | SP35 | Home Light Warm (HL Warm) |
| ECOLOGIC® (ECO®) | Ecolux (ECO) | ALTO |
| GRO-LUX® | Gro & Sho/Plant & Aquarium/Terrarium | Agro-Lite (AGRO) |
| ICETRON® | --- | --- |
| OCTRON® | T8 (was Trimline) | TL70/TL80 |
| OCTRON 700 XP™ ECO | SP Ecolux XL T8 Lamps with Starcoat | TL700 PLUS ALTO |
| OCTRON 800 XP ECO | SPX Ecolux XL T8 Lamps with Starcoat | TL800 PLUS ALTO |
| OCTRON 800 XPS ECO | --- | --- |
| OCTRON 950 | --- | TL950 |
| PENTRON® | T5 Starcoat | SILHOUETTE™ |
| --- | --- | QL (similar to ICETRON, but not interchangeable) |
| SAFELINE® | covRguard | --- |
| SUN STICK® | SUN (Sunshine) | C50 |
| SUPERSAVER® (SS) | Watt-Miser (WM) | Econ-o-Watt (EW) |
| HO (800mA) | HO (800mA) | HO (800mA) |
| VHO (1500mA) | 1500 (1500mA) & Power Grove | VHO (1500mA) (was SHO) |
| VHO/LT | T10/1500MA | VHO-0 |
| XP® | XL | Plus |
| XPS® | | Advantage |

* Trademarks or registered trademarks of General Electric Company ** Trademarks or registered trademarks of Philips

## FLUORESCENT COLOR CROSS REFERENCE

| SYLVANIA | GE | PHILIPS | SYLVANIA | GE | PHILIPS |
|---|---|---|---|---|---|
| CW | CW | CW | D41 | SP41 | Spec 41 |
| CWX | | CWX, HL Everywhere | | SP65 | |
| D | D | D | D830 | SPX30 | 30U |
| DX | DX | DX | D835 | SPX35 | 35U |
| DSGN50 | C50 | 50 | D841 | SPX41 | 41U |
| DSGN50 | SGN | C50 | D865 | | |
| DCW, D41 | SP41 | HL Cool | 730 | SP30 | 730 |
| DCWP | SPX41 | U41 | 735 | SP35 | 735 |
| DWW, D30 | KB / 70 CRI, SP30 | SPEC30 | 741 | SP41 | 741 |
| DWWP, D830 | KB / 82 CRI, SPX30 | HL WX | 750 | SP50 | 750 |
| D35 | SP35 | HL Warm | 765 | SP65 | |
| GRO/AQ | | AGRO | 827 | SPX27 | 27 |
| GRO/WS/AQ | PL/AQ | | 830 | SPX30 | 30, 830 |
| LW | LW | LW | 835 | SPX35 | 35, 835 |
| N | N | N | 841 | SPX41 | 41, 841 |
| SUN STICK | SUN | C50 | 850 | SPX50 | 50, 850 |
| WW | WW | WW | 865 | SPX65 | 865 |
| D30 | SP30 | Spec 30 | 950 | | 950 |
| D35 | SP35 | Spec 35 | | | |

## FLUORESCENT ELECTRICAL INTERCHANGEABILITY

| SYLVANIA | GE | PHILIPS |
|---|---|---|
| **Linear Lamps** | | |
| F18T8/CW/K/23 | F24"T8/CW/4 | F15T8/CW/24 |
| F18T8/CW/K/26 | F26"T8/CW/4 | F16T8/CW/26 |
| F18T8/CW/K/28 | F28"T8/CW/4 | F17T8/CW/28 |
| F18T8/CW/K/30 | F30"T8/CW/4 | F18T8/CW/30 |
| F34CW/SS | F34CW/WM | F34CW/EW |
| Formerly known as F40CW/SS | F40CW/WM | F40CW/EW |
| F96T12/CW/SS | F96T12/CW/WM | F96T12/CW/EW |
| FB40/D41/6 | F40/SP41/U/6 | FB40/SPEC41/6 |
| FB40/CW/6/SS (new FB34/CW/6/SS) | F40CW/U/6/WM (new F34CW/U/6/WM) | FB40/CW/6/EW (new F34/CW/6/EW) |
| OCTRON® | T8 (was Trimline) | TL70/TL80 |
| OCTRON 700 Series | T8 SP | TL70 |
| OCTRON 800 Series | T8 SPX | TL80 |
| FO17… | F17T8/SP(or SPX)… | F17T8/TL… |
| FO25… | F25T8/SP(or SPX)… | F25T8/TL… |
| FO32… | F32T8/SP(or SPX)… | F32T8/TL… |
| FO32/...XP® | F32T8/XL/SP (or SPX) | F32T8/TL...PLUS |
| FO32/.../XPS®/ECO® | --- | F32T8/ADV |
| FO30…XP/SS/ECO | F32T8/SP…/IS/WM/ECO | F32T8/ADV8.../EW |
| FO28/8..XP/SS/ECO | --- | --- |
| FO32/25W/8…XP/SS/ECO | --- | F32T8/ADV8…/XEW/ALTO |
| FO40… | F40T8/SP… (or SPX) | F40T8/TL |
| FO72… | --- | --- |
| FO96… | F96T8/SP… (or SPX) | F96T8/TL… |
| FO96/7…XP/ECO | F96T8/XL.SP... | --- |
| FO96/8…XP/ECO | F96T8/XL/SPX... | --- |
| FO96/8...XP/SS/ECO | F96T8/SP…/WM | --- |
| --- | --- | F48T8/TL…/HO |
| --- | --- | F60T8/TL…/HO |
| --- | --- | F72T8/TL…/HO |
| FO96…/HO/ECO | F96T8/SP (or SPX)…/HO | F96T8/TL…/HO |
| --- | F25T12/SP… (for T8 electronic ballasts) | --- |
| FBO16… | --- | --- |
| FBO24… | --- | --- |
| FBO31… | F31T8/SPX…/U | --- |
| FBO31…XP | --- | --- |
| FBO32… | F32T8/SP(or SPX)…/U6 | FB32T8/TL…/6 |
| FBO32…XP | --- | --- |
| FBO31/...XPS/ECO | --- | --- |
| FBO32/...XPS/ECO | --- | --- |
| FBO32/8..XP/SS/ECO | --- | --- |
| FP14/8.. | F14/T5/8.. | F14T5/8.. |
| FP21/8.. | F21/T5/8.. | F21T5/8.. |
| FP28/8.. | F28/T5/8.. | F28T5/8.. |
| FP35/8.. | F35/T5/8.. | F35T5/8.. |
| FP24/8../HO | F24/T5/8../HO | F24T5/8../HO |
| FP39/8../HO | F39/T5/8../HO | F39T5/8../HO |
| FP54/8../HO | F54/T5/8../HO | F54T5/8../HO |
| FP80/8../HO | F80/T5/8../HO | F80T5/8../HO |
| --- | F40T17/CW/IS | --- |
| --- | F96T17/… | --- |
| HO (800mA) | HO (800mA) | HO (800mA) |
| F96T12/…/HO/COLDTEMP | F96T12/…/HO/CT | F96T12/…/HO-0 |
| VHO (1500mA) | 1500 or PG17 (both 1500mA) | VHO (1500mA) |
| VHO/LT (1500mA) | T10, 1500-0 (both1500mA) | VHO-0 (1500mA) |
| **Induction Lamps** | | |
| ICE 70/8... (ICETRON®) | --- | --- |
| ICE 100/8… (ICETRON) | --- | --- |
| ICE 150/8… (ICETRON) | --- | --- |
| --- | EL23/R25/… (Genura™) | --- |
| --- | --- | QL55W/… (QL) |
| --- | --- | QL85W/… (QL) |
| --- | --- | QL165W/…(QL) |

For a more complete manufacturers' cross reference, please see that section of this catalog or visit the electronic catalog at www.sylvania.com.

# FLUORESCENT LAMPS

The bulb shape and size of a fluorescent lamp are expressed by means of a code consisting of the letter "T" (which designates that the bulb is "tubular" in shape) followed by a number that expresses the diameter in eighths of an inch. Diameters range from T2 (¼ inch) to T17 (2 ⅛ inch). In nominal overall length, linear fluorescent lamps range from 6 to 96 inches. The nominal length is measured from back of lamp holder to back of lamp holder. For example, the actual overall length of the 40-watt rapid start T12 lamp with a nominal length of 48 inches is 47 ¾ inches. The nominal length given for PENTRON® linear lamps is the closest familiar nominal length. CURVALUME® U-shaped fluorescent lamps are available as OCTRON® T8 lamps with leg spacings of 1 ⅝ inches and 6 inches and as rapid start T12 lamps with 6 spacings of 6 inches. The leg spacing is measured from the center of one leg to the center of the other leg. The overall length of the CURVALUME lamps is measured from the face of the bases to the outside of the glass bend. Circline lamps, which are circular in shape, are available as T9 lamps with outside diameters of 6 ½, 8, 12 and 16 inches as well as PENTRON T5 lamps with outside diameters of 8.85 and 11.77 inches.

T2 MINIATURE

T2 Axial Base (2/8" Diameter)

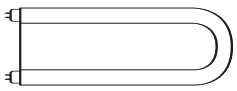
PREHEAT, RAPID START

Preheat T5 Miniature Bipin (5/8" diameter
PENTRON T5 Miniature Bipin (5/8" diameter)

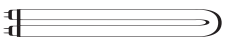
T8 Medium Bipin (1" diameter)

OCTRON T8 Medium Bipin (1" diameter)
Rapid Start or Instant Start operation

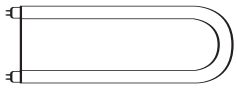
T12 Medium Bipin (1-1/2" diameter)



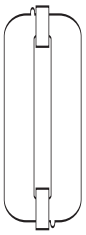
U-Shaped T12
(1-1/2" diameter)
6" leg spacing



OCTRON T8 U-Shaped
with 1 5/8" leg spacing
(1" diameter)



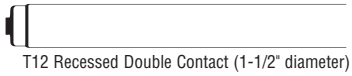
OCTRON T8 U-Shaped
with 6" leg spacing
(1" diameter)



ICETRON®

HIGH OUTPUT AND VERY HIGH OUTPUT

OCTRON T8 Recessed Double Contact (1" diameter)



T12 Recessed Double Contact (1-1/2" diameter)

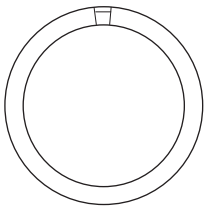
T14-1/2 Recessed Double Contact (1-13/16" diameter)

INSTANT START

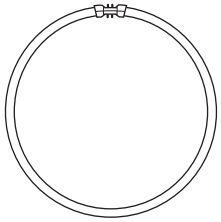
T6 Single Pin (3/4" diameter)

T8 Single Pin (1" diameter)
OCTRON T8 Single Pin (1" diameter)

T12 Single Pin (1-1/2" diameter)

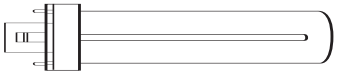


CIRCLINE 4-Pin T-9
(6-1/2", 8", 12", 16"
outside diameters)

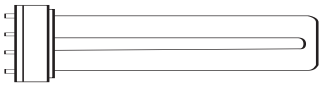


PENTRON CIRCLINE 4-
Pin T5 (8.85" & 11.77"
outside diameters)

Germicidal Compact Fluorescent

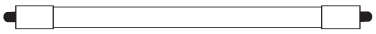


G23

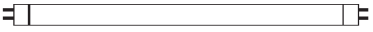


2G11

Germicidal Single End



Germicidal Single Pin



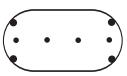
Germicidal T5 Bipin

Germicidal T8 Bipin

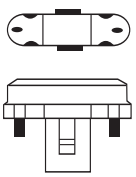
# BASES

For linear Preheat and Rapid Start Lamps, four electrical contacts are required, two at each end of the lamp. This is accomplished in the standard line of lamps by the use of a miniature bipin base for T5 lamps and a medium bipin for T8 and T12 lamps. The OCTRON® T8 medium bipin lamps may also be operated as instant start lamps with the proper wiring and ballasts. When operating OCTRON bipin lamps with instant start ballasts, the two contacts in the lamp holder are shorted together and connected to the single circuit in the ballast. In Circline lamps, the cathodes are connected to a four-pin base located between the junction of the two ends of the lamp. High Output (HO) and Very High Output (VHO) lamps have recessed double contact (RDC) type bases. Slimline Instant Start lamps require only two electrical contacts, one on each lamp end and have single pin bases.

**Germicidal Compact Fluorescent**



GX 23



2 G 11

SINGLE PIN

Single Pin for
T6 Slimline

Single Pin for T8 Slimline
& OCTRON

Single Pin for
T12 Slimline

BIPIN

Miniature Bipin for T5
Preheat & PENTRON®

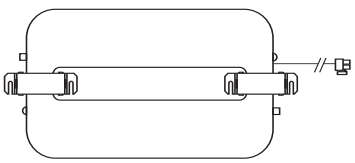
Miniature Bipin for T8
Preheat & OCTRON

Medium Bipin for T12

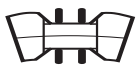
Axial T2 Subminiature

Recessed Double Contact
for OCTRON T8 HO

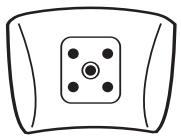
Recessed Double Contact
for T12 HO & VHO



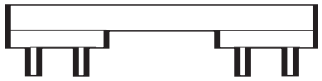
ICETRON® Mounting Brackets



4-pin for
PENTRON Circline



4-pin for T9 Circline



OCTRON T8 & T12 Rapid Start CURVALUME

Germicidal Single End

Germicidal Single Pin

Germicidal T5 Bipin

Germicidal T8 Bipin



Symbols/Footnotes on page 160-165

# OCTRON® AND OCTRON® CURVALUME® FLUORESCENT LAMPS

OCTRON® lamps are T8 fluorescent lamps designed to be operated on dedicated magnetic rapid start or electronic instant start or programmed rapid start (also known as programmed start) ballasts. For details on various lamp/ballast system combinations, please refer to the Systems Performance Guide in the "SYLVANIA QUICKTRONIC® Ballast Technology and Specification Guide".

## OCTRON® 800 XPS® Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start (@12hrs/start) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | T8 | 48 | 47.78 | Med Bipin | 21680 | **FO32/830/XPS/ECO** | 30 | 36000 (42000) | 3000 | 85 | 3100 | 2945 | CRI 19,31,33,48,52,76,94 |
| | | | | | 21697 | **FO32/835/XPS/ECO** | 30 | 36000 (42000) | 3500 | 85 | 3100 | 2945 | CRI 19,31,33,48,52,76,94 |
| | | | | | 21681 | **FO32/841/XPS/ECO** | 30 | 36000 (42000) | 4100 | 85 | 3100 | 2945 | CRI 19,31,33,48,52,76,94 |
| | | | | | 21660 | **FO32/850/XPS/ECO** | 30 | 36000 (42000) | 5000 | 80 | 3000 | 2850 | E CRI 19,31,33,48,52,76,94 |
| | | | | | 21659 | **FO32/865/XPS/ECO** | 30 | 36000 (42000) | 6500 | 80 | 2900 | 2750 | E CRI 19,31,33,48,52,76,94 |
| **17** | T8 | 24 | 23.78 | Med Bipin | 22150 | **FO17/830/XPS/ECO** | 30 | 30000 | 3000 | 85 | 1400 | 1330 | CRI 31,33,48,52,76,93,94 |
| | | | | | 22151 | **FO17/835/XPS/ECO** | 30 | 30000 | 3500 | 85 | 1400 | 1330 | CRI 31,33,48,52,76,93,94 |
| | | | | | 22152 | **FO17/841/XPS/ECO** | 30 | 30000 | 4100 | 85 | 1400 | 1330 | CRI 31,33,48,52,76,93,94 |
| **25** | T8 | 36 | 35.78 | Med Bipin | 22153 | **FO25/830/XPS/ECO** | 30 | 30000 | 3000 | 85 | 2200 | 2090 | CRI 31,33,48,52,76,93,94 |
| | | | | | 22154 | **FO25/835/XPS/ECO** | 30 | 30000 | 3500 | 85 | 2200 | 2090 | CRI 31,33,48,52,76,93,94 |
| | | | | | 22155 | **FO25/841/XPS/ECO** | 30 | 30000 | 4100 | 85 | 2200 | 2090 | CRI 31,33,48,52,76,93,94 |

## OCTRON® 800 XP® 4 Foot SUPERSAVER® Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start (@12hrs/start) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **25** | | 48 | 47.78 | Med Bipin | 22232 | **FO32/25W/830/XP/SS/ECO** | 30 | 36000 (42000) | 3000 | 85 | 2475 | 2350 | CRI 9,16,17,18,20,31,33,76,94 |
| | | | | | 22233 | **FO32/25W/835/XP/SS/ECO** | 30 | 36000 (42000) | 3500 | 85 | 2475 | 2350 | CRI 9,16,17,18,20,31,33,76,94 |
| | | | | | 22234 | **FO32/25W/841/XP/SS/ECO** | 30 | 36000 (42000) | 4100 | 85 | 2475 | 2350 | CRI 9,16,17,18,20,31,33,76,94 |
| | | | | | 22235 | **FO32/25W/850/XP/SS/ECO** | 30 | 36000 (42000) | 5000 | 85 | 2300 | 2185 | CRI 9,16,17,18,20,31,33,76,94 |
| **28** | T8 | 48 | 47.78 | Med Bipin | 22177 | **FO28/830/XP/SS/ECO** | 30 | 36000 (42000) | 3000 | 85 | 2725 | 2590 | CRI 9,16,20,23,31,33,44,76,94,95 |
| | | | | | 22178 | **FO28/835/XP/SS/ECO** | 30 | 36000 (42000) | 3500 | 85 | 2725 | 2590 | CRI 9,16,20,23,31,33,44,76,94,95 |
| | | | | | 22179 | **FO28/841/XP/SS/ECO** | 30 | 36000 (42000) | 4100 | 85 | 2725 | 2590 | CRI 9,16,20,23,31,33,44,76,94,95 |
| | | | | | 22184 | **FO28/850XP/SS/ECO** | 30 | 36000 (42000) | 5000 | 80 | 2600 | 2470 | E CRI 9,16,20,23,31,33,76,94,95 |

# OCTRON® AND OCTRON® CURVALUME® FLUORESCENT LAMPS

## OCTRON® 800 XP® 4 Foot SUPERSAVER® Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start (@12hrs/start) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **30** | T8 | 48 | 47.78 | Med Bipin | 22063 | **FO30/830/XP/SS/ECO** | 30 | 36000 (42000) | 3000 | 85 | 2850 | 2710 | CRI 9,16,20,23, 31,33,76,94,95 |
| | | | | | 22060 | **FO30/835/XP/SS/ECO** | 30 | 36000 (42000) | 3500 | 85 | 2850 | 2710 | CRI 9,16,20,23, 31,33,76,94,95 |
| | | | | | 22062 | **FO30/841/XP/SS/ECO** | 30 | 36000 (42000) | 4100 | 85 | 2850 | 2710 | CRI 9,16,20,23, 31,33,76,87,95 |
| | | | | | 22202 | **FO30/850/XP/SS/ECO** | 30 | 36000 (42000) | 5000 | 85 | 2800 | 2660 | CRI 9,16,20,23, 31,33,76,94,95 |

## OCTRON® 800 XP® Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start (@12hrs/start) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | T8 | 48 | 47.78 | Med Bipin | 22039 | **FO32/827/XP/ECO** | 30 | 36000 (42000) | 2700 | 85 | 3000 | 2850 | CRI 20,31,33,48, 52,76,94 |
| | | | | | 21759 | **FO32/830/XP/ECO** | 30 | 36000 (42000) | 3000 | 85 | 3000 | 2850 | CRI 20,31,33,48, 52,76,94 |
| | | | | | 21763 | **FO32/835/XP/ECO** | 30 | 36000 (42000) | 3500 | 85 | 3000 | 2850 | CRI 20,31,33,48, 52,76,94 |
| | | | | | 21767 | **FO32/841/XP/ECO** | 30 | 36000 (42000) | 4100 | 85 | 3000 | 2850 | CRI 20,31,33,48, 52,76,94 |
| | | | | | 22026 | **FO32/850/XP/ECO** | 30 | 36000 (42000) | 5000 | 85 | 3000 | 2850 | CRI 20,31,33,48, 52,76,94 |
| | | | | | 21720 | **FO32/865/XP/ECO** | 30 | 36000 (42000) | 6500 | 85 | 2850 | 2708 | CRI 20,31,33,48, 52,76,94 |
| | | | | | 22594 | **FO32/SKYWHITE/XP/ECO** | 30 | 36000 (42000) | 8000 | 88 | 2650 | 2518 | CRI 20,31,33,48, 52,76,94 |

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **17** | T8 | 24 | 23.78 | Med Bipin | 21587 | **FO17/827/XP/ECO** | 30 | 24000 | 2700 | 85 | 1375 | 1305 | CRI 31,33,44,48, 52,76,87 |
| | | | | | 21785 | **FO17/830/XP/ECO** | 30 | 24000 | 3000 | 85 | 1375 | 1305 | CRI 31,33,44,48, 52,76,87 |
| | | | | | 21778 | **FO17/835/XP/ECO** | 30 | 24000 | 3500 | 85 | 1375 | 1305 | CRI 31,33,44,48, 52,76,87 |
| | | | | | 21907 | **FO17/841/XP/ECO** | 30 | 24000 | 4100 | 85 | 1375 | 1305 | CRI 31,33,44,48, 52,76,87 |
| | | | | | 22193 | **FO17/850/XP/ECO** | 30 | 24000 | 5000 | 85 | 1375 | 1305 | CRI 31,33,44,48, 52,76,87 |
| | | | | | 21718 | **FO17/865/XP/ECO** | 30 | 24000 | 6500 | 85 | 1250 | 1188 | CRI 31,33,44,48, 52,76,87 |
| **25** | T8 | 36 | 35.78 | Med Bipin | 21586 | **FO25/827/XP/ECO** | 30 | 24000 | 2700 | 85 | 2175 | 2065 | CRI 31,33,44,48, 52,76,87 |
| | | | | | 21910 | **FO25/830/XP/ECO** | 30 | 24000 | 3000 | 85 | 2175 | 2065 | CRI 31,33,44,48, 52,76,87 |
| | | | | | 21776 | **FO25/835/XP/ECO** | 30 | 24000 | 3500 | 85 | 2175 | 2065 | CRI 31,33,44,48, 52,76,87 |
| | | | | | 21774 | **FO25/841/XP/ECO** | 30 | 24000 | 4100 | 85 | 2175 | 2065 | CRI 31,33,44,48, 52,76,87 |

# OCTRON® AND OCTRON® CURVALUME® FLUORESCENT LAMPS

## OCTRON® 800 XP® Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **25** | T8 | 36 | 35.78 | Med Bipin | 22194 | **FO25/850/XP/ECO** | 30 | 24000 | 5000 | 85 | 2175 | 2065 | 31,33,44,48, 52,76,87 |
| | | | | | 21719 | **FO25/865/XP/ECO** | 30 | 24000 | 6500 | 85 | 2000 | 1900 | 31,33,44,48, 52,76,87 |
| **40** | T8 | 60 | 59.61 | Med Bipin | 21912 | **FO40/830/XP/ECO** | 30 | 24000 | 3000 | 85 | 3750 | 3560 | 31,33,44,48, 52,76,87 |
| | | | | | 21911 | **FO40/835/XP/ECO** | 30 | 24000 | 3500 | 85 | 3750 | 3560 | 31,33,44,48, 52,76,87 |
| | | | | | 21916 | **FO40/841/XP/ECO** | 30 | 24000 | 4100 | 85 | 3750 | 3560 | 31,33,44,48, 52,76,87 |
| | | | | | 21721 | **FO40/865/XP/ECO** | 30 | 24000 | 6500 | 85 | 3650 | 3468 | 31,33,44,48, 52,76,87 |

## OCTRON® 700 XP® Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start (@12hrs/start) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | T8 | 48 | 47.78 | Med Bipin | 21711 | **FO32/730/XP/ECO** | 30 | 36000 (42000) | 3000 | 78 | 2850 | 2705 | E 31,33,44, 48,52,76,94 |
| | | | | | 22044 | **FO32/735/XP/ECO** | 30 | 36000 (42000) | 3500 | 78 | 2850 | 2705 | E 31,33,44, 48,52,76,94 |
| | | | | | 21712 | **FO32/741/XP/ECO** | 30 | 36000 (42000) | 4100 | 78 | 2850 | 2705 | E 31,33,44, 48,52,76,94 |

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **17** | T8 | 24 | 23.78 | Med Bipin | 21699 | **FO17/735/XP/ECO** | 30 | 24000 | 3500 | 78 | 1325 | 1255 | 31,33,44,48, 52,76,87 |
| | | | | | 21637 | **FO17/741/XP/ECO** | 30 | 24000 | 4100 | 78 | 1325 | 1255 | 31,33,44,48, 52,76,87 |
| **25** | T8 | 36 | 35.78 | Med Bipin | 21698 | **FO25/735/XP/ECO** | 30 | 24000 | 3500 | 78 | 2050 | 1945 | 31,33,44,48, 52,76,87 |
| | | | | | 21639 | **FO25/741/XP/ECO** | 30 | 24000 | 4100 | 78 | 2050 | 1945 | 31,33,44,48, 52,76,87 |

## OCTRON® 800 Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start (@12hrs/start) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | T8 | 48 | 47.78 | Med Bipin | 21777 | **FO32/830/ECO** | 30 | 30000 (35000) | 3000 | 85 | 2950 | 2802 | E 21,31,33, 48,52,76,94 |
| | | | | | 21779 | **FO32/835/ECO** | 30 | 30000 (35000) | 3500 | 85 | 2950 | 2802 | E 21,31,33, 48,52,76,94 |
| | | | | | 21781 | **FO32/841/ECO** | 30 | 30000 (35000) | 4100 | 85 | 2950 | 2802 | E 21,31,33, 48,52,76,94 |
| | | | | | 22143 | **FO32/850/ECO** | 30 | 30000 (35000) | 5000 | 80 | 2800 | 2660 | E 21,31,33, 48,52,76,94 |

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **17** | T8 | 24 | 23.78 | Med Bipin | 22135 | **FO17/830/ECO** | 30 | 20000 | 3000 | 82 | 1350 | 1240 | 31,33,35,48, 52,76 |

# OCTRON® AND OCTRON® CURVALUME® FLUORESCENT LAMPS

## OCTRON® 800 Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **17** | T8 | 24 | 23.78 | Med Bipin | 22136 | **FO17/835/ECO** | 30 | 20000 | 3500 | 82 | 1350 | 1240 | 31,33,35,48,52,76 |
| | | | | | 22137 | **FO17/841/ECO** | 30 | 20000 | 4100 | 82 | 1350 | 1240 | 31,33,35,48,52,76 |
| **25** | T8 | 36 | 35.78 | Med Bipin | 22138 | **FO25/830/ECO** | 30 | 20000 | 3000 | 82 | 2150 | 1975 | 31,33,35,48,52,76 |
| | | | | | 22139 | **FO25/835/ECO** | 30 | 20000 | 3500 | 82 | 2150 | 1975 | 31,33,35,48,52,76 |
| | | | | | 22140 | **FO25/841/ECO** | 30 | 20000 | 4100 | 82 | 2150 | 1975 | 31,33,35,48,52,76 |
| **40** | T8 | 60 | 59.61 | Med Bipin | 22144 | **FO40/830/ECO** | 30 | 20000 | 3000 | 82 | 3650 | 3473 | 31,33,35,48,52,76 |
| | | | | | 22145 | **FO40/835/ECO** | 30 | 20000 | 3500 | 82 | 3650 | 3473 | 31,33,35,48,52,76 |
| | | | | | 22146 | **FO40/841/ECO** | 30 | 20000 | 4100 | 82 | 3650 | 3473 | 31,33,35,48,52,76 |

## OCTRON® 700 Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | T8 | 48 | 47.78 | Med Bipin | 21997 | **FO32/730/ECO** | 30 | 25000 | 3000 | 78 | 2800 | 2520 | E 31,33,48,52,76,119 |
| | | | | | 21998 | **FO32/735/ECO** | 30 | 25000 | 3500 | 78 | 2800 | 2520 | E 31,33,48,52,76,119 |
| | | | | | 21678 | **FO32/735/SL** | 30 | 25000 | 3500 | 78 | 2716 | 2444 | E 31,33,52,96,98,119 |
| | | | | | 22181 | **FO32/741/ECO/CVP** | 12 | 25000 | 4100 | 78 | 2800 | 2520 | E 31,33,48,52,76,119 |
| | | | | | 21547 | **FO32/741/ECO/SL** | 30 | 25000 | 4100 | 78 | 2716 | 2444 | E 31,33,52,76,96,98,119 |
| | | | | | 21999 | **FO32/741/ECO** | 30 | 25000 | 4100 | 78 | 2800 | 2520 | E 31,33,48,52,76,119 |
| | | | | | 22141 | **FO32/750/ECO** | 30 | 25000 | 5000 | 78 | 2650 | 2385 | E 31,33,48,52,76,119 |
| | | | | | 22175 | **FO32/765/ECO** | 30 | 25000 | 6500 | 78 | 2700 | 2430 | E 31,33,48,52,76,119 |
| **14** | T8 | 18 | 17.91 | Med Bipin | 21666 | **FO13/735/ECO** | 30 | 20000 | 3500 | 75 | 830 | 745 | 31,33,35,48,52,76 |
| | | | | | 21667 | **FO13/741/ECO** | 30 | 20000 | 4100 | 75 | 830 | 745 | 31,33,35,48,52,76 |
| **17** | T8 | 24 | 23.78 | Med Bipin | 21918 | **FO17/730/ECO** | 30 | 20000 | 3000 | 75 | 1300 | 1170 | 31,33,35,48,52,76 |
| | | | | | 21769 | **FO17/735/ECO** | 30 | 20000 | 3500 | 75 | 1300 | 1170 | 31,33,35,48,52,76 |
| | | | | | 21770 | **FO17/741/ECO** | 30 | 20000 | 4100 | 75 | 1300 | 1170 | 31,33,35,48,52,76 |
| **25** | T8 | 36 | 35.78 | Med Bipin | 21937 | **FO25/730/ECO** | 30 | 20000 | 3000 | 75 | 1950 | 1755 | 31,33,35,48,52,76 |

T8 Med Bipin | T8 Single Pin | T8 RDC

# OCTRON® AND OCTRON® CURVALUME® FLUORESCENT LAMPS

## OCTRON® 700 Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **25** | T8 | 36 | 35.78 | Med Bipin | 21941 | **FO25/735/ECO** | 30 | 20000 | 3500 | 75 | 1950 | 1755 | CRI 31,33,35,48, 52,76 |
| | | | | | 21942 | **FO25/741/ECO** | 30 | 20000 | 4100 | 75 | 1950 | 1755 | CRI 31,33,35,48, 52,76 |
| **40** | T8 | 60 | 59.61 | Med Bipin | 22102 | **FO40/730/ECO** | 30 | 20000 | 3000 | 75 | 3500 | 3150 | CRI 31,33,35,48, 52,76 |
| | | | | | 22103 | **FO40/735/ECO** | 30 | 20000 | 3500 | 75 | 3500 | 3150 | CRI 31,33,35,48, 52,76 |
| | | | | | 22104 | **FO40/741/ECO** | 30 | 20000 | 4100 | 75 | 3500 | 3150 | CRI 31,33,35,48, 52,76 |

## OCTRON® 800 XP® 8 Foot SUPERSAVER® Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **55** | T8 | 96 | 94 | Single Pin | 22100 | **FO96/835/XP/SS/ECO** | 24 | 18000 | 3500 | 85 | 5700 | 5415 | CRI 7,31,33,76, 85 |
| | | | | | 22101 | **FO96/841/XP/SS/ECO** | 24 | 18000 | 4100 | 85 | 5700 | 5415 | CRI 7,31,33,76, 85 |

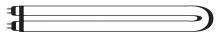
## OCTRON® 800 XP® 8 Foot Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **59** | T8 | 96 | 94 | Single Pin | 22036 | **FO96/830/XP/ECO** | 24 | 18000 | 3000 | 85 | 6100 | 5795 | CRI 31,33,44,48, 76,85 |
| | | | | | 22034 | **FO96/835/XP/ECO** | 24 | 18000 | 3500 | 85 | 6100 | 5795 | CRI 31,33,44,48, 76,85 |
| | | | | | 22032 | **FO96/841/XP/ECO** | 24 | 18000 | 4100 | 85 | 6100 | 5795 | CRI 31,33,44,48, 76,85 |
| | | | | | 22174 | **FO96/850/XP/ECO** | 24 | 18000 | 5000 | 85 | 6100 | 5795 | CRI 31,33,44,48, 76,85 |

## OCTRON® 800 8 Foot Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **59** | | 96 | 94 | Single Pin | 22147 | **FO96/830/ECO** | 24 | 15000 | 3000 | 82 | 5900 | 5428 | E CRI 10,31,33, 48,76 |
| | | | | | 22148 | **FO96/835/ECO** | 24 | 15000 | 3500 | 82 | 5900 | 5428 | E CRI 10,31,33, 48,76 |
| | | | | | 22149 | **FO96/841/ECO** | 24 | 15000 | 4100 | 82 | 5900 | 5428 | E CRI 10,31,33, 48,76 |
| | | | | | 22173 | **FO96/850/ECO** | 24 | 15000 | 5000 | 80 | 5900 | 5428 | E CRI 10,31,33, 48,76 |
| **86** | T8 | 96 | 93.91 | Recessed DC | 22206 | **FO96/835/HO/ECO** | 24 | 18000 | 3500 | 85 | 8200 | 7710 | CRI 31,33,48,76 |
| | | | | | 22207 | **FO96/841/HO/ECO** | 24 | 18000 | 4100 | 85 | 8200 | 7710 | CRI 31,33,48,76 |





T8 Single Pin | T8 RDC | T8 U-Shaped 1-5/8"



# OCTRON® AND OCTRON® CURVALUME® FLUORESCENT LAMPS

## OCTRON® 700 8 Foot Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **59** | T8 | 96 | 94 | Single Pin | 22030 | **FO96/730/ECO** | 24 | 15000 | 3000 | 75 | 5700 | 5130 | E CRI 31,33,48,76,84 |
| | | | | | 21737 | **FO96/735/ECO** | 24 | 15000 | 3500 | 75 | 5700 | 5130 | E CRI 31,33,48,76,84 |
| | | | | | 21736 | **FO96/741/ECO** | 24 | 15000 | 4100 | 75 | 5700 | 5130 | E CRI 31,33,48,76,84 |
| **86** | T8 | 96 | 93.91 | Recessed DC | 22204 | **FO96/735/HO/ECO** | 24 | 18000 | 3500 | 78 | 8000 | 7520 | E CRI 31,33,48,76 |
| | | | | | 22205 | **FO96/741/HO/ECO** | 24 | 18000 | 4100 | 78 | 8000 | 7520 | E CRI 31,33,48,76 |

## OCTRON® 800 XP® SUPERSAVER® CURVALUME® U-SHAPED Lamps - 1 5/8" Leg Spacing

The OCTRON® CURVALUME® lamps are made to the same color standards and may be used in conjunction with other SYLVANIA OCTRON lamps to meet the needs of lighting installations where OCTRON T8 systems are used. Since CURVALUME and linear OCTRON lamps of the same/similar wattages operate on the same ballasts, the types of ballasts used in an installation can be minimized. When OCTRON FBO31 lamps are used in 2X2 luminaires, the 2X2 luminaire can deliver light levels similar to 2X4 luminaires with the same number of linear OCTRON lamps. The nominal length of the CURVALUME lamp is measured from the base face to the outside of the glass bend.

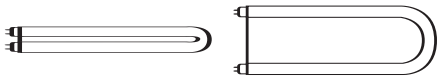
| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **29** | T8 | 22.5 | 22.6 | Med Bipin | 22195 | **FBO29/830XP/SS/ECO** | 15 | 24000 | 3000 | 85 | 2775 | 2636 | CRI 9,31,33,44,54,76,87,95 |
| | | | | | 22196 | **FBO29/835XP/SS/ECO** | 15 | 24000 | 3500 | 85 | 2775 | 2636 | CRI 9,31,33,44,54,76,87,95 |
| | | | | | 22197 | **FBO29/841XP/SS/ECO** | 15 | 24000 | 4100 | 85 | 2775 | 2636 | CRI 9,31,33,44,54,76,87,95 |

## OCTRON® 800 XP® CURVALUME® U-SHAPED Lamps - 1 5/8" Leg Spacing

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **31** | T8 | 22.5 | 22.6 | Med Bipin | 21693 | **FBO31/830/XP/ECO** | 15 | 24000 | 3000 | 85 | 2775 | 2636 | E CRI 31,33,44,48,52,54,55,76,87 |
| | | | | | 21695 | **FBO31/835/XP/ECO** | 15 | 24000 | 3500 | 85 | 2775 | 2636 | E CRI 31,33,44,48,52,54,55,76,87 |
| | | | | | 21696 | **FBO31/841/XP/ECO** | 15 | 24000 | 4100 | 85 | 2775 | 2636 | E CRI 31,33,44,48,52,54,55,76,87 |

## OCTRON® CURVALUME® U-SHAPED Lamps - 1 5/8" Leg Spacing

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **31** | | 22.5 | 22.6 | Med Bipin | 21877 | **FBO31/830** | 15 | 20000 | 3000 | 82 | 2725 | 2507 | CRI 31,33,35,48,52,54,55 |
| | | | | | 21878 | **FBO31/835** | 15 | 20000 | 3500 | 82 | 2725 | 2507 | CRI 31,33,35,48,52,54,55 |
| | | | | | 21879 | **FBO31/841** | 15 | 20000 | 4100 | 82 | 2725 | 2507 | CRI 31,33,35,48,52,54,55 |
| **16** | T8 | 10.5 | 10.60 | Med Bipin | 21834 | **FBO16/830** | 15 | 20000 | 3000 | 82 | 1125 | 1035 | CRI 31,33,35,48,52,54,55 |
| | | | | | 21835 | **FBO16/835** | 15 | 20000 | 3500 | 82 | 1125 | 1035 | CRI 31,33,35,48,52,54,55 |



T8 U-Shaped 1-5/8" T8 U-Shaped 6"

# OCTRON® AND OCTRON® CURVALUME® FLUORESCENT LAMPS

## OCTRON® CURVALUME® U-SHAPED Lamps - 1 5/8" Leg Spacing

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **16** | T8 | 10.5 | 10.60 | Med Bipin | 21836 | **FBO16/841** | 15 | 20000 | 4100 | 82 | 1125 | 1035 | CRI 31,33,35,48,52,54,55 |
| **24** | T8 | 16.5 | 16.6 | Med Bipin | 21874 | **FBO24/830** | 15 | 20000 | 3000 | 82 | 1925 | 1771 | CRI 31,33,35,48,52,54,55 |
| | | | | | 21875 | **FBO24/835** | 15 | 20000 | 3500 | 82 | 1925 | 1771 | CRI 31,33,35,48,52,54,55 |
| | | | | | 21876 | **FBO24/841** | 15 | 20000 | 4100 | 82 | 1925 | 1771 | CRI 31,33,35,48,52,54,55 |

## OCTRON® 800 XP® SUPERSAVER® CURVALUME® U-SHAPED Lamps - 6" Leg Spacing

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **30** | T8 | 22.5 | 22.6 | Med Bipin | 22170 | **FBO30/830XP/6/SS/ECO** | 16 | 24000 | 3000 | 85 | 2800 | 2660 | CRI 9,31,33,44,54,76,87,95 |
| | | | | | 22171 | **FBO30/835XP/6/SS/ECO** | 16 | 24000 | 3500 | 85 | 2800 | 2660 | CRI 9,31,33,44,54,76,87,95 |
| | | | | | 22172 | **FBO30/841XP/6/SS/ECO** | 16 | 24000 | 4100 | 85 | 2800 | 2660 | CRI 9,31,33,44,54,76,87,95 |

## OCTRON® 800 XP® CURVALUME® U-SHAPED Lamps - 6" Leg Spacing

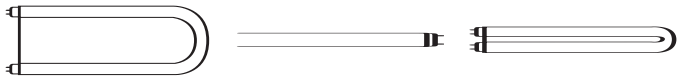
| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | T8 | 22.5 | 22.6 | Med Bipin | 22054 | **FBO32/830XP/6/ECO** | 16 | 24000 | 3000 | 85 | 2900 | 2755 | CRI 31,33,44,48,52,54,76,87 |
| | | | | | 22055 | **FBO32/835XP/6/ECO** | 16 | 24000 | 3500 | 85 | 2900 | 2755 | CRI 31,33,44,48,52,54,76,87 |
| | | | | | 22057 | **FBO32/841XP/6/ECO** | 16 | 24000 | 4100 | 85 | 2900 | 2755 | CRI 31,33,44,48,52,54,76,87 |

## OCTRON® 800 CURVALUME® U-SHAPED Lamps - 6" Leg Spacing

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | | 22.5 | 22.6 | Med Bipin | 21663 | **FBO32/830/6/ECO** | 16 | 20000 | 3000 | 82 | 2850 | 2622 | CRI 31,33,35,48,52,54,76 |
| | | | | | 21670 | **FBO32/835/6/ECO** | 16 | 20000 | 3500 | 82 | 2850 | 2622 | CRI 31,33,35,48,52,54,76 |
| | | | | | 21671 | **FBO32/841/6/ECO** | 16 | 20000 | 4100 | 82 | 2850 | 2622 | CRI 31,33,35,48,52,54,76 |

## OCTRON® 700 CURVALUME® U-SHAPED Lamps - 6" Leg Spacing

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | | 22.5 | 22.6 | Med Bipin | 22046 | **FBO32/730/6/ECO** | 16 | 20000 | 3000 | 75 | 2750 | 2475 | E CRI 31,33,35,48,52,54,76 |
| | | | | | 22051 | **FBO32/735/6/ECO** | 16 | 20000 | 3500 | 75 | 2750 | 2475 | E CRI 31,33,35,48,52,54,76 |



T8 U-Shaped 6" | T8 Med Bipin | T8 U-Shaped 1-5/8"

# OCTRON® AND OCTRON® CURVALUME® FLUORESCENT LAMPS

## OCTRON® 700 CURVALUME® U-SHAPED Lamps - 6" Leg Spacing

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | T8 | 22.5 | 22.6 | Med Bipin | 22052 | **FBO32/741/6/ECO** | 16 | 20000 | 4100 | 75 | 2750 | 2475 | E 31,33,35,48,52,54,76 |
| | | | | | 22053 | **FBO32/750/6/ECO** | 16 | 20000 | 5000 | 75 | 2625 | 2363 | E 31,33,35,48,52,54,76 |

## OCTRON® 5000K And 6500K for Displays, Signage and Backlighting

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **14** | T8 | 18 | 17.91 | Med Bipin | 21731 | **FO13/865XP/ECO** | 30 | 24000 | 6500 | 85 | 850 | 805 | 31,33,44,48,52,76,87 |
| **15** | T8 | 20 | 19.78 | Med Bipin | 21868 | **FO14/950/20in** | 30 | 20000 | 5000 | 90 | 750 | 638 | 31,33,35,48,52 |
| | | | | | 21716 | **FO14/865/XP/ECO** | 30 | 24000 | 6500 | 85 | 1000 | 950 | 31,33,44,48,52,76,87 |
| **16** | T8 | 10.5 | 10.60 | Med Bipin | 21726 | **FBO16/865XP** | 15 | 24000 | 6500 | 85 | 1125 | 1069 | 31,33,44,48,52,54,55,87 |
| **17** | T8 | 24 | 23.78 | Med Bipin | 21871 | **FO17/950/24in** | 30 | 20000 | 5000 | 90 | 800 | 680 | 31,33,35,48,52 |
| | | | | | 21718 | **FO17/865/XP/ECO** | 30 | 24000 | 6500 | 85 | 1250 | 1188 | 31,33,44,48,52,76,87 |
| **21** | T8 | 30 | 29.78 | Med Bipin | 21869 | **FO21/950/30in** | 30 | 20000 | 5000 | 90 | 1000 | 850 | 31,33,35,48,52 |
| | | | | | 21730 | **FO21/865/XP/ECO** | 30 | 24000 | 6500 | 85 | 1600 | 1520 | 31,33,44,48,52,76,87 |
| **25** | T8 | 36 | 35.78 | Med Bipin | 21872 | **FO25/950/36in** | 30 | 20000 | 5000 | 90 | 1250 | 1063 | 31,33,35,48,52 |
| | | | | | 21719 | **FO25/865/XP/ECO** | 30 | 24000 | 6500 | 85 | 2000 | 1900 | 31,33,44,48,52,76,87 |
| **28** | T8 | 40 | 39.78 | Med Bipin | 21870 | **FO28/950/40in** | 30 | 20000 | 5000 | 90 | 1400 | 1190 | 31,33,35,48,52 |
| **32** | T8 | 48 | 47.78 | Med Bipin | 21880 | **FO32/950/48in** | 30 | 25000 | 5000 | 90 | 1800 | 1530 | 31,33,48,52 |
| | | | | | 21720 | **FO32/865/XP/ECO** | 30 | 36000 ( ) | 6500 | 85 | 2850 | 2708 | 20,31,33,48,52,76,94 |
| **40** | T8 | 60 | 59.61 | Med Bipin | 21873 | **FO40/950/60in** | 30 | 20000 | 5000 | 90 | 2200 | 1870 | 31,33,35,48,52 |
| | | | | | 21721 | **FO40/865/XP/ECO** | 30 | 24000 | 6500 | 85 | 3650 | 3468 | 31,33,44,48,52,76,87 |

## OCTRON® Specialty

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | T8 | 48 | 47.78 | Med Bipin | 21961 | **FO32/GOLD** | 10 | 25000 | | | 1700 | 1530 | 31,33,35,43,48,52 |

# PENTRON® T5 FLUORESCENT LAMPS

PENTRON® T5 lamps are designed to operate on dedicated electronic programmed rapid start (also know as programmed start) ballasts only. These lamps are globally standardized and are designed to operate with their peak light output at 35°C (95°F) ambient temperature. For comparison purposes and to accommodate existing lamp measurement standards, ratings are given at both 25°C (77°F) and 35°C (95°F). The new lamp dimensions allow for innovative fixture designs and improved fixture performance

## PENTRON® High Performance T5 Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start (@12hrs/start) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F (@35°C/95°F) | Mean @25°C/77°F (@35°C/95°F) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **28** | T5 | 48 | 45.8 | Mini Bipin | 20868 | **FP28/830/ECO** | 40 | 20000 | 3000 | 85 | 2600<br>2900 | 2418<br>2697 | CRI 31,33,38,48, 74,76 |
| | | | | | 20901 | **FP28/835/ECO** | 40 | 20000 | 3500 | 85 | 2600<br>2900 | 2418<br>2697 | CRI 31,33,38,48, 74,76 |
| | | | | | 20902 | **FP28/841/ECO** | 40 | 20000 | 4100 | 85 | 2600<br>2900 | 2418<br>2697 | CRI 31,33,38,48, 74,76 |
| | | | | | 22203 | **FP28/850/ECO** | 40 | 20000 | 5000 | 85 | 2545<br>2840 | 2367<br>2641 | CRI 31,33,38,48, 74,76 |
| | | | | | 20990 | **FP28/865/ECO** | 40 | 20000 | 6500 | 85 | 2400<br>2750 | 2232<br>2558 | CRI 31,33,38,48, 74,76 |
| | | | | | 20977 | **FP28RED 40/CS 1/SKU** | 40 | 20000 | | | 2100 | | 15,31,33,38,48,74 |
| | | | | | 20978 | **FP28GREEN 40/CS 1/SKU** | 40 | 20000 | | | 3500 | | 15,31,33,38,48,74 |
| | | | | | 20986 | **FP28BLUE 40/CS 1/SKU** | 40 | 20000 | | | 700 | | 15,31,33,38,48,74 |
| **14** | T5 | 24 | 22.2 | Mini Bipin | 20907 | **FP14/830/ECO** | 40 | 20000 | 3000 | 85 | 1200<br>1350 | 1116<br>1256 | CRI 31,33,38,48, 74,76 |
| | | | | | 20908 | **FP14/835/ECO** | 40 | 20000 | 3500 | 85 | 1200<br>1350 | 1116<br>1256 | CRI 31,33,38,48, 74,76 |
| | | | | | 20914 | **FP14/841/ECO** | 40 | 20000 | 4100 | 85 | 1200<br>1350 | 1116<br>1256 | CRI 31,33,38,48, 74,76 |
| | | | | | 20988 | **FP14/865/ECO** | 40 | 20000 | 6500 | 85 | 1100<br>1300 | 1045<br>1209 | CRI 31,33,38,48, 74,76 |
| **21** | T5 | 36 | 34 | Mini Bipin | 20919 | **FP21/830/ECO** | 40 | 20000 | 3000 | 85 | 1900<br>2100 | 1767<br>1953 | CRI 31,33,38,48, 74,76 |
| | | | | | 20921 | **FP21/835/ECO** | 40 | 20000 | 3500 | 85 | 1900<br>2100 | 1767<br>1953 | CRI 31,33,38,48, 74,76 |
| | | | | | 20924 | **FP21/841/ECO** | 40 | 20000 | 4100 | 85 | 1900<br>2100 | 1767<br>1953 | CRI 31,33,38,48, 74,76 |
| | | | | | 20989 | **FP21/865/ECO** | 40 | 20000 | 6500 | 85 | 1750<br>2000 | 1662<br>1860 | CRI 31,33,38,48, 74,76 |
| **35** | T5 | 60 | 57.6 | Mini Bipin | 20925 | **FP35/830/ECO** | 40 | 20000 | 3000 | 85 | 3300<br>3650 | 3069<br>3394 | CRI 31,33,38,48, 74,76 |
| | | | | | 20926 | **FP35/835/ECO** | 40 | 20000 | 3500 | 85 | 3300<br>3650 | 3069<br>3394 | CRI 31,33,38,48, 74,76 |
| | | | | | 20927 | **FP35/841/ECO** | 40 | 20000 | 4100 | 85 | 3300<br>3650 | 3069<br>3394 | CRI 31,33,38,48, 74,76 |

## PENTRON® PREMIER™ High Performance T5 Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start (@12hrs/start) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F (@35°C/95°F) | Mean @25°C/77°F (@35°C/95°F) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **28** | T5 | 48 | 45.8 | Mini Bipin | 20948 | **FP28/830PM/ECO** | 40 | 20000 | 3000 | 85 | 2730<br>3050 | 2594<br>2898 | CRI 31,33,38,48, 74,76 |
| | | | | | 20943 | **FP28/835PM/ECO** | 40 | 20000 | 3500 | 85 | 2730<br>3050 | 2594<br>2898 | CRI 31,33,38,48, 74,76 |
| | | | | | 20944 | **FP28/841PM/ECO** | 40 | 20000 | 4100 | 85 | 2730<br>3050 | 2594<br>2898 | CRI 31,33,38,48, 74,76 |

# PENTRON® T5 FLUORESCENT LAMPS

## PENTRON® High Output, High Performance T5 Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start (@12hrs/start) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F (@35°C/95°F) | Mean @25°C/77°F (@35°C/95°F) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **54** | T5 | 48 | 45.8 | Mini Bipin | 20903 | **FP54/830/HO/ECO** | 40 | 25000 (35000) | 3000 | 85 | 4450 5000 | 4138 4650 | 31,33,38,48, 74,76 |
| | | | | | 20904 | **FP54/835/HO/ECO** | 40 | 25000 (35000) | 3500 | 85 | 4450 5000 | 4138 4650 | 31,33,38,48, 74,76 |
| | | | | | 21020 | **FP54/835/HO/ECO/SL** | 40 | 25000 (35000) | 3500 | 85 | 4316 4850 | 4014 4510 | 31,33,38,48, 74,76,96,98 |
| | | | | | 20906 | **FP54/841/HO/ECO** | 40 | 25000 (35000) | 4100 | 85 | 4450 5000 | 4138 4650 | 31,33,38,48, 74,76 |
| | | | | | 21021 | **FP54/841/HO/ECO/SL** | 40 | 25000 (35000) | 4100 | 85 | 4316 4850 | 4014 4510 | 31,33,48,74, 76,96,98 |
| | | | | | 20949 | **FP54/850/HO/ECO** | 40 | 25000 (35000) | 5000 | 85 | 4375 4900 | 4069 4557 | 31,33,38,48, 74,76 |
| | | | | | 21022 | **FP54/850/HO/ECO/SL** | 40 | 25000 (35000) | 5000 | 85 | 4243 4753 | 3946 4420 | 31,33,48,74, 76,96,98 |
| | | | | | 20862 | **FP54/865/HO/ECO** | 40 | 25000 (35000) | 6500 | 85 | 4050 4750 | 3766 4418 | 31,33,38,48, 74,76 |
| | | | | | 20997 | **FP54/RED/HO** | 40 | 20000 | | | | 3300 | 15,31,33,38,48,74 |
| | | | | | 20998 | **FP54/GREEN/HO** | 40 | 20000 | | | | 5550 | 15,31,33,38,48,74 |
| | | | | | 20999 | **FP54/BLUE/HO** | 40 | 20000 | | | | 1150 | 15,31,33,38,48,74 |
| **24** | T5 | 24 | 22.2 | Mini Bipin | 20928 | **FP24/830/HO/ECO** | 40 | 20000 | 3000 | 85 | 1750 2000 | 1627 | 31,33,38,48, 74,76 |
| | | | | | 20929 | **FP24/835/HO/ECO** | 40 | 20000 | 3500 | 85 | 1750 2000 | 1627 | 31,33,38,48, 74,76 |
| | | | | | 20931 | **FP24/841/HO/ECO** | 40 | 20000 | 4100 | 85 | 1750 2000 | 1627 | 31,33,38,48, 74,76 |
| **39** | T5 | 36 | 34 | Mini Bipin | 20932 | **FP39/830/HO/ECO** | 40 | 20000 | 3000 | 85 | 3100 3500 | 2883 | 31,33,38,48, 74,76 |
| | | | | | 20933 | **FP39/835/HO/ECO** | 40 | 20000 | 3500 | 85 | 3101 3500 | 2883 | 31,33,38,48, 74,76 |
| | | | | | 20934 | **FP39/841/HO/ECO** | 40 | 20000 | 4100 | 85 | 3102 3500 | 2883 | 31,33,38,48, 74,76 |
| **80** | T5 | 60 | 57.6 | Mini Bipin | 20935 | **FP80/830/HO/ECO** | 40 | 20000 | 3000 | 85 | 6150 7000 | 5719 6510 | 31,33,38,48, 74,76 |
| | | | | | 20936 | **FP80/835/HO/ECO** | 40 | 20000 | 3500 | 85 | 6151 7000 | 5720 6510 | 31,33,38,48, 74,76 |
| | | | | | 20937 | **FP80/841/HO/ECO** | 40 | 20000 | 4100 | 85 | 6152 7000 | 5721 6510 | 31,33,38,48, 74,76 |

## PENTRON® High Output, Wide Temperature Range T5 Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start (@12hrs/start) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F (@35°C/95°F) | Mean @25°C/77°F (@35°C/95°F) | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **54** | T5 | 48 | 45.8 | Mini Bipin | 21042 | **FP54/835/C/HO/ECO** | 40 | 25000 (35000) | 3500 | 85 | 4900 4900 | 4655 4655 | 31,33,38,48, 74,76 |
| | | | | | 21043 | **FP54/841/C/HO/ECO** | 40 | 25000 (35000) | 4100 | 85 | 4900 4900 | 4655 4655 | 31,33,38,48, 74,76 |
| | | | | | 21044 | **FP54/850/C/HO/ECO** | 40 | 25000 (35000) | 5000 | 85 | 4800 4800 | 4560 4560 | 31,33,38,48, 74,76 |

Circline 4-Pin T5

T12 Med Bipin

# PENTRON® T5 FLUORESCENT LAMPS

## PENTRON® Circline T5 Lamps

| Nominal Wattage | Bulb | Outside Diameter (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start (@12hrs/start) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **22** | T5 | 8.66 - 9.06 | 2GX13 | 20702 | **FPC22/830** | 12 | 12000 | 3000 | 82 | 1800 | 1585 | CRI 31,33,38,48,74 |
| | | | | 20712 | **FPC22/835** | 12 | 12000 | 3500 | 82 | 1800 | 1585 | CRI 31,33,38,48,74 |
| | | | | 20715 | **FPC22/841** | 12 | 12000 | 4100 | 82 | 1800 | 1585 | CRI 31,33,38,48,74 |
| **40** | T5 | 11.54 - 12.01 | 2GX13 | 20731 | **FPC40/830** | 12 | 12000 | 3000 | 82 | 3200 | 2815 | CRI 31,33,38,48,74 |
| | | | | 20732 | **FPC40/835** | 12 | 12000 | 3500 | 82 | 3200 | 2815 | CRI 31,33,38,48,74 |
| | | | | 20733 | **FPC40/841** | 12 | 12000 | 4100 | 82 | 3200 | 2815 | CRI 31,33,38,48,74 |
| **55** | T5 | 11.54 - 12.01 | 2GX13 | 20741 | **FPC55/830/HO** | 12 | 12000 | 3000 | 82 | 4000 | 3520 | CRI 31,33,38,48,74 |
| | | | | 20750 | **FPC55/835/HO** | 12 | 12000 | 3500 | 82 | 4000 | 3520 | CRI 31,33,38,48,74 |
| | | | | 20751 | **FPC55/841/HO** | 12 | 12000 | 4100 | 82 | 4000 | 3520 | CRI 31,33,38,48,74 |

# RAPID START LAMPS

Rapid Start lamps, 3-foot and 4-foot in length, are typically designated by their wattage: e.g. F40 = Fluorescent 40W. Therefore lamps previously designated as F30T12/RS/SS, F40/SS and FB40/SS energy saving types will now be designated as F25T12/RS/SS, F34/SS and FB34/SS, respectively to comply with standard lamp designation nomenclature for these families of lamps.

## 3' SUPERSAVER® Rapid Start Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **25** | T12 | 36 | 35.78 | Med Bipin | 23473 | **F25T12/WW/RS/SS** *formerly F30T12/WW/RS/SS* | 30 | 18000 | 3000 | 52 | 1975 | 1679 | 22,31,33 |
| | | | | | 23485 | **F25T12/D35/RS/SS** *formerly F30T12/D35/RS/SS* | 30 | 18000 | 3500 | 70 | 2050 | 1804 | CRI 22,31,33 |
| | | | | | 23472 | **F25T12/CW/RS/SS** *formerly F30T12/CW/RS/SS* | 30 | 18000 | 4200 | 60 | 1925 | 1636 | 22,31,33 |

## 3' Standard Rapid Start Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **30** | T12 | 36 | 35.78 | Med Bipin | 23490 | **F30T12/SW/RP** | 6 | 18000 | 3000 | 52 | 2275 | 1934 | 30,31,33,48 |
| | | | | | 23482 | **F30T12/WW/RS** | 30 | 18000 | 3000 | 52 | 2275 | 1934 | 30,31,33,48 |
| | | | | | 23474 | **F30T12/D830/RS** | 30 | 18000 | 3000 | 80 | 2290 | 2061 | CRI 30,31,33,48 |
| | | | | | 23484 | **F30T12/D35/RS** | 30 | 18000 | 3500 | 70 | 2250 | 1980 | CRI 30,31,33,48 |
| | | | | | 23139 | **F30T12/D835/RS** | 30 | 18000 | 3500 | 80 | 2290 | 2061 | CRI 30,31,33,48 |
| | | | | | 23493 | **F30T12/CW/RP** | 6 | 18000 | 4200 | 60 | 2200 | 1870 | 30,31,33,48 |
| | | | | | 23476 | **F30T12/CW/RS** | 30 | 18000 | 4200 | 60 | 2200 | 1870 | 30,31,33,48 |
| | | | | | 23487 | **F30T12/CW/RS/UPC** | 30 | 18000 | 4200 | 60 | 2200 | 1870 | 30,31,33,48 |
| | | | | | 23478 | **F30T12/D/RS** | 30 | 18000 | 6500 | 76 | 1900 | 1615 | CRI 30,31,33,48 |

## 4' SUPERSAVER® Rapid Start Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **34** | T12 | 48 | 47.78 | Med Bipin | 24538 | **F34WW/SS/ECO** *formerly F40WW/SS/ECO* | 30 | 20000 | 3000 | 52 | 2750 | 2365 | E 2,24,30,31, 33,56,76 |
| | | | | | 24535 | **F34/D30/SS/ECO** *formerly F40/D30/SS/ECO* | 30 | 20000 | 3000 | 70 | 2800 | 2520 | E CRI 2,24,30, 31,33,56,76 |

# RAPID START LAMPS

## 4' SUPERSAVER® Rapid Start Lamps

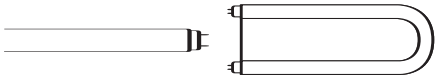
| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **34** | T12 | 48 | 47.78 | Med Bipin | 24589 | **F34/D830/SS** *formerly F40/D830/SS* | 30 | 20000 | 3000 | 80 | 2900 | 2610 | E CRI 2,24,30,31, 33,56 |
| | | | | | 24544 | **F34/D830/SS/ECO** *formerly F40/D830/SS/ECO* | 30 | 20000 | 3000 | 80 | 2900 | 2610 | E CRI 2,24,30, 31,33,56,76 |
| | | | | | 24591 | **F34W/SS** *formerly F40W/SS* | 30 | 20000 | 3450 | 57 | 2750 | 2365 | E 2,24,30,31,33,56 |
| | | | | | 24585 | **F34/D35/SS** *formerly F40/D35/SS* | 30 | 20000 | 3500 | 70 | 2800 | 2520 | E CRI 2,24,30,31, 33,56 |
| | | | | | 24522 | **F34/D35/SS/CVP** *formerly F40/D35/SS/CVP* | 10 | 20000 | 3500 | 70 | 2800 | 2520 | E CRI 2,24,30,31, 33,56 |
| | | | | | 24540 | **F34/D35/SS/ECO** *formerly F40/D35/SS/ECO* | 30 | 20000 | 3500 | 70 | 2800 | 2520 | E CRI 2,24,30, 31,33,56,76 |
| | | | | | 24547 | **F34/D835/SS/ECO** *formerly F40/D835/SS/ECO* | 30 | 20000 | 3500 | 80 | 2900 | 2610 | E CRI 2,24,30, 31,33,56,76 |
| | | | | | 24542 | **F34/D41/SS/ECO** *formerly F40/D41/SS/ECO* | 30 | 20000 | 4100 | 70 | 2800 | 2520 | E CRI 2,24,30, 31,33,56,76 |
| | | | | | 24554 | **F34/D841/SS/ECO** *formerly F40/D841/SS/ECO* | 30 | 20000 | 4100 | 80 | 2900 | 2610 | E CRI 2,24,30, 31,33,56,76 |
| | | | | | 24588 | **F34CWX/SS** *formerly F40CWX/SS* | 30 | 20000 | 4100 | 87 | 1925 | 1656 | CRI 2,24,30,31,33,56 |
| | | | | | 24566 | **F34LW/SS/ECO** *formerly F40LW/SS/ECO* | 30 | 20000 | 4150 | 48 | 2825 | 2430 | E 2,24,30,31, 33,56,76 |
| | | | | | 24590 | **F34LW/SS** *formerly F40LW/SS* | 30 | 20000 | 4150 | 48 | 2825 | 2430 | E 2,24,30,31,33,56 |
| | | | | | 24516 | **F34CW/SS/10** *formerly F40CW/SS/10* | 10 | 20000 | 4200 | 60 | 2650 | 2279 | E 2,24,30,31,33,56 |
| | | | | | 24524 | **F34CW/SS/CVP** *formerly F40/CW/SS/CVP* | 10 | 20000 | 4200 | 60 | 2650 | 2279 | E 2,24,30,31,33,56 |
| | | | | | 24396 | **F34CW/SS/SL** *formerly F40CW/SS/SL* | 30 | 20000 | 4200 | 60 | 2570 | 2313 | E 2,24,30,31,33,96, 98 |
| | | | | | 24596 | **F34CW/SS/ECO** *formerly F40CW/SS/ECO* | 30 | 20000 | 4200 | 60 | 2650 | 2279 | E 2,24,30,31, 33,56,76 |
| | | | | | 24632 | **F34CW/SS/ECO/CVP** *formerly F40/CW/SS/ECO/CVP* | 10 | 20000 | 4200 | 60 | 2650 | 2279 | E 2,24,30,31, 33,56,76 |
| | | | | | 24642 | **F34CW/SS/ECO/CVP30** *formerly F40CW/SS/ECO/CVP30* | 30 | 20000 | 4200 | 60 | 2650 | 2279 | E 2,24,30,31, 33,56,76 |
| | | | | | 24633 | **F34CW/SS/ECO/RP** *formerly F40/CW/SS/ECO/RP* | 30 | 20000 | 4200 | 60 | 2650 | 2279 | E 2,24,30,31, 33,48,56,76 |
| | | | | | 24599 | **F34/DX/SS** *formerly F40/DX/SS* | 30 | 20000 | 6500 | 88 | 1930 | 1565 | CRI 2,24,30,31,33,56 |
| | | | | | 24706 | **F34/D865/SS** *formerly F40/D865/SS* | 30 | 20000 | 6500 | 80 | 2650 | 2385 | E CRI 2,24,30,31, 33,56 |

## 4' Standard Rapid Start Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **40** | T12 | 48 | 47.78 | Med Bipin | 24521 | **F40/D30/ECO** | 30 | 20000 | 3000 | 70 | 3200 | 2880 | E CRI 2,30,31, 33,48,56,64,76 |



Symbols/Footnotes on page 160-165



T12 Med Bipin T12 U-Shaped 6"

# RAPID START LAMPS

## 4' Standard Rapid Start Lamps

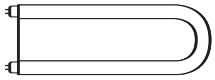
| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **40** | T12 | 48 | 47.78 | Med Bipin | 24543 | **F40/D830/ECO** | 30 | 20000 | 3000 | 80 | 3300 | 2970 | E, CRI 2,30,31,33,48,56,64,76 |
| | | | | | 24537 | **F40/D35/ECO** | 30 | 20000 | 3500 | 70 | 3200 | 2880 | E, CRI 2,30,31,33,48,56,64,76 |
| | | | | | 24546 | **F40/D835/ECO** | 30 | 20000 | 3500 | 80 | 3300 | 2970 | E, CRI 2,30,31,33,48,56,64,76 |
| | | | | | 24438 | **F40N** | 30 | 20000 | 3600 | 86 | 2100 | 1806 | CRI 2,30,31,33,48,56,64 |
| | | | | | 24442 | **F40CWX 10/CS** | 10 | 20000 | 4100 | 87 | 2150 | 1849 | CRI 2,30,31,33,48,56,64 |
| | | | | | 24441 | **F40CWX** | 30 | 20000 | 4100 | 87 | 2150 | 1849 | CRI 2,30,31,33,48,56,64 |
| | | | | | 24541 | **F40/D41/ECO** | 30 | 20000 | 4100 | 70 | 3200 | 2880 | E, CRI 2,30,31,33,48,56,64,76 |
| | | | | | 24553 | **F40/D841/ECO** | 30 | 20000 | 4100 | 80 | 3300 | 2970 | E, CRI 2,30,31,33,48,56,64,76 |
| | | | | | 24584 | **F40/D41** | 30 | 20000 | 4100 | 70 | 3200 | 2880 | E, CRI 2,30,31,33,48,56,64 |
| | | | | | 24683 | **F40DSGN50** | 30 | 20000 | 5000 | 90 | 2200 | 1892 | CRI 2,30,31,33,48,56,64 |
| | | | | | 24477 | **F40/DX** | 30 | 20000 | 6500 | 88 | 2180 | 1770 | CRI 2,30,31,33,48,56,64 |
| | | | | | 24570 | **F40/D865** | 30 | 20000 | 6500 | 80 | 3000 | 2700 | E, CRI 2,30,31,33,48,56,64 |
| | | | | | 24673 | **F40/GO** | 10 | 20000 | | | 1980 | | 2,30,31,33,48,56,64 |

## CURVALUME® SUPERSAVER® Rapid Start Lamps – U-Shaped, 6" Leg Spacing

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **34** | T12 | 22.5 | 22.6 | Med Bipin | 24062 | **FB34/WW/6/SS/UPC** *formerly FB40/WW/6/SS* | 12 | 18000 | 3000 | 52 | 2650 | 2279 | E 24,30,31,33 |
| | | | | | 24052 | **FB34/WW/6/SS/ECO** *formerly FB40/WW/6/SS/ECO* | 12 | 18000 | 3000 | 52 | 2650 | 2279 | E, 24,30,31,33,76 |
| | | | | | 24065 | **FB34/D35/6/SS** *formerly FB40/D35/SS* | 12 | 18000 | 3500 | 70 | 2730 | 2457 | E, CRI 24,30,31,33 |
| | | | | | 24059 | **FB34/CW/6/SS/UPC** *formerly FB40/CW/SS/6* | 12 | 18000 | 4200 | 60 | 2600 | 2236 | E 24,30,31,33 |
| | | | | | 24054 | **FB34/CW/6/SS/ECO** *formerly FB40/CW/6/SS/ECO* | 12 | 18000 | 4200 | 60 | 2600 | 2236 | E, 24,30,31,33,76 |

## CURVALUME® Standard Rapid Start Lamps – U-Shaped, 6" Leg Spacing

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **40** | T12 | 22.5 | 22.6 | Med Bipin | 24080 | **FB40/D30/6** | 12 | 18000 | 3000 | 70 | 3050 | 2745 | E, CRI 30,31,33,48 |
| | | | | | 24017 | **FB40/D830/6** | 12 | 18000 | 3000 | 80 | 3200 | 2880 | E, CRI 30,31,33,48 |
| | | | | | 24081 | **FB40/D35/6** | 12 | 18000 | 3500 | 70 | 3050 | 2745 | E, CRI 30,31,33,48 |
| | | | | | 24004 | **FB40/CWX/6** | 12 | 18000 | 4100 | 87 | 2100 | 1806 | CRI 30,31,33,48 |



T12 U-Shaped 6"

Circline 4-Pin T9

T12 RDC

# RAPID START LAMPS

## CURVALUME® Standard Rapid Start Lamps – U-Shaped, 6" Leg Spacing

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **40** | T12 | 22.5 | 22.6 | Med Bipin | 24082 | **FB40/D41/6** | 12 | 18000 | 4100 | 70 | 3050 | 2745 | E CRI 30,31,33,48 |

## Circline T9 Rapid Start Lamps

| Nominal Wattage | Bulb | Outside Diameter (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start (@12hrs/start) | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **20** | T9 | 6.25 - 6.75 | 4 PIN | 20155 | **FC6T9/WW/RS** | 12 | 8000 | 3000 | 52 | 800 | 696 | 31,33,42,48 |
| | | | | 20156 | **FC6T9/CW/RS** | 12 | 8000 | 4200 | 60 | 750 | 653 | 31,33,42,48 |
| **22** | T9 | 8.00 - 8.50 | 4 PIN | 20088 | **FC8T9/WW/RS** | 12 | 12000 | 3000 | 52 | 1050 | 914 | 31,33,42,48 |
| | | | | 20209 | **FC8T9/DSW/RP** | 6 | 12000 | 3000 | 70 | 1100 | 990 | CRI 31,33,42,48 |
| | | | | 20151 | **FC8T9/CW/RS/6 PACK** | 6 | 12000 | 4200 | 60 | 1050 | 914 | 31,33,42,48 |
| | | | | 20148 | **FC8T9/CW/RS** | 12 | 12000 | 4200 | 60 | 1050 | 914 | 31,33,42,48 |
| | | | | 20080 | **FC8T9/D/RS** | 12 | 12000 | 6500 | 76 | 900 | 783 | CRI 31,33,42,48 |
| **30** | T9 | 8.00 - 8.50 | 4 PIN | 20210 | **FC8T9/830/EL** | 6 | 10000 | 3000 | 80 | 1850 | 1591 | CRI 31,33,40,49,79,81 |
| **32** | T9 | 11.5 - 12.0 | 4 PIN | 20233 | **FC12T9/DSW/RP** | 6 | 15000 | 3000 | 70 | 2100 | 1806 | CRI 31,33,42,48 |
| | | | | 20037 | **FC12T9/WW/RS** | 12 | 15000 | 3000 | 52 | 1950 | 1697 | 31,33,42,48 |
| | | | | 20143 | **FC12T9/CW/RS/6 PACK** | 6 | 15000 | 4200 | 60 | 1925 | 1675 | 31,33,42,48 |
| | | | | 20142 | **FC12T9/CW/RS** | 12 | 15000 | 4200 | 60 | 1925 | 1675 | 31,33,42,48 |
| | | | | 20030 | **FC12T9/D/RS** | 12 | 15000 | 6500 | 76 | 1650 | 1436 | CRI 31,33,42,48 |
| **40** | T9 | 15.6 - 16.0 | 4 PIN | 20057 | **FC16T9/WW/RS** | 12 | 18000 | 3000 | 52 | 2800 | 2436 | 31,33,42,48 |
| | | | | 20132 | **FC16T9/CW/RS** | 12 | 18000 | 4200 | 60 | 2750 | 2393 | 31,33,42,48 |
| | | | | 20072 | **FC16T9/D/RS** | 12 | 18000 | 6500 | 76 | 2350 | 2045 | CRI 31,33,42,48 |

## High Output (800mA) SUPERSAVER® Rapid Start Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **55** | T12 | 48 | 46 | Recessed DC | 25137 | **F48T12D35/HO/SS** | 30 | 12000 | 3500 | 70 | 3750 | 3375 | CRI 27,31,33,97 |
| **95** | T12 | 96 | 93.91 | Recessed DC | 25011 | **F96T12/WW/HO/SS** | 15 | 12000 | 3000 | 52 | 7700 | 6237 | E 27,31,33,97 |
| | | | | | 25024 | **F96T12/D35/HO/SS** | 15 | 12000 | 3500 | 48 | 8350 | 7515 | E CRI 27,31,33,97 |
| | | | | | 25023 | **F96T12/D41/HO/SS** | 15 | 12000 | 4100 | 70 | 8350 | 7515 | E CRI 27,31,33,97 |
| | | | | | 25025 | **F96T12/LW/HO/SS** | 15 | 12000 | 4150 | 48 | 8000 | 6480 | E 27,31,33,97 |
| | | | | | 25010 | **F96T12/CW/HO/SS** | 15 | 12000 | 4200 | 60 | 8000 | 6480 | E 27,31,33,97 |
| | | | | | 25001 | **F96T12/CW/HO/SS/ECO** | 15 | 12000 | 4200 | 60 | 8000 | 6480 | E 27,31,33,76,97 |

## High Output (800mA) Standard Rapid Start Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **25** | T12 | 18 | 15.91 | Recessed DC | 25303 | **F18T12/DSGN50/HO** | 30 | 9000 | 5000 | 90 | 850 | 740 | CRI 31,33,48 |
| **35** | T12 | 24 | 21.91 | Recessed DC | 25313 | **F24T12/CW/HO** | 30 | 9000 | 4200 | 60 | 1650 | 1337 | 31,33,48 |
| | | | | | 25312 | **F24T12/DSGN50/HO** | 30 | 9000 | 5000 | 90 | 1200 | 1044 | CRI 31,33,48 |
| | | | | | 25314 | **F24T12/D/HO** | 30 | 9000 | 6500 | 76 | 1400 | 1134 | CRI 31,33,48 |

# RAPID START LAMPS

## High Output (800mA) Standard Rapid Start Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **42** | T12 | 30 | 27.91 | Recessed DC | 25322 | **F30T12/CW/HO** | 30 | 9000 | 4200 | 60 | 2250 | 1825 | 31,33,48 |
| **45** | T12 | 36 | 33.91 | Recessed DC | 25333 | **F36T12/CW/HO** | 30 | 9000 | 4200 | 60 | 2850 | 2309 | 31,33,48 |
| | | | | | 25334 | **F36T12/DSGN50/HO** | 30 | 9000 | 5000 | 90 | 2100 | 1701 | CRI 31,33,48 |
| | | | | | 25332 | **F36T12/D/HO** | 30 | 9000 | 6500 | 76 | 2500 | 2025 | CRI 31,33,48 |
| **55** | T12 | 42 | 39.91 | Recessed DC | 25342 | **F42T12/CW/HO** | 30 | 9000 | 4200 | 60 | 3400 | 2754 | 31,33,48 |
| | | | | | 25344 | **F42T12/DSGN50/HO** | 30 | 9000 | 5000 | 90 | 2550 | 2066 | CRI 31,33,48 |
| | | | | | 25343 | **F42T12/D/HO** | 30 | 9000 | 6500 | 76 | 3050 | 2471 | CRI 31,33,48 |
| **60** | T12 | 48 | 46 | Recessed DC | 25147 | **F48T12/WW/HO** | 30 | 12000 | 3000 | 52 | 4130 | 3345 | 31,33,48,97 |
| | | | | | 25148 | **F48T12/D830/HO** | 30 | 12000 | 3000 | 80 | 4400 | 4048 | CRI 31,33,48,97 |
| | | | | | 25154 | **F48T12/D35/HO** | 30 | 12000 | 3500 | 70 | 4250 | 3825 | CRI 31,33,48,97 |
| | | | | | 25136 | **F48T12/D41/HO** | 30 | 12000 | 4100 | 70 | 4250 | 3443 | CRI 31,33,48,97 |
| | | | | | 25146 | **F48T12/CW/HO** | 30 | 12000 | 4200 | 60 | 4050 | 3281 | 31,33,48,97 |
| | | | | | 25122 | **F48T12/CW/HO/ECO** | 30 | 12000 | 4200 | 60 | 4050 | 3281 | 31,33,48,76,97 |
| | | | | | 25153 | **F48T12/DSGN50/HO** | 30 | 12000 | 5000 | 90 | 3050 | 2471 | CRI 31,33,48,97 |
| | | | | | 25150 | **F48T12/D/HO** | 30 | 12000 | 6500 | 76 | 3600 | 2916 | CRI 31,33,48,97 |
| **75** | T12 | 60 | 57.91 | Recessed DC | 25128 | **F60T12/D35/HO** | 30 | 12000 | 3500 | 70 | 5600 | 5040 | CRI 31,33,48,97 |
| | | | | | 25126 | **F60T12/CW/HO** | 30 | 12000 | 4200 | 60 | 5200 | 4212 | 31,33,48,97 |
| | | | | | 25119 | **F60T12/DSGN50/HO** | 30 | 12000 | 5000 | 90 | 3850 | 3119 | CRI 31,33,48,97 |
| | | | | | 25120 | **F60T12/D/HO** | 30 | 12000 | 6500 | 76 | 4600 | 3826 | CRI 31,33,48,97 |
| **80** | T12 | 64 | 61.91 | Recessed DC | 25352 | **F64T12/CW/HO** | 30 | 12000 | 4200 | 60 | 5750 | 4658 | 31,33,48,97 |
| | | | | | 25355 | **F64T12/DSGN50/HO** | 30 | 12000 | 5000 | 90 | 4200 | 3402 | CRI 31,33,48,97 |
| | | | | | 25353 | **F64T12/D/HO** | 30 | 12000 | 6500 | 76 | 4900 | 3969 | CRI 31,33,48,97 |
| **85** | T12 | 72 | 69.91 | Recessed DC | 25098 | **F72T12/D830/HO** | 15 | 12000 | 3000 | 80 | 6750 | 6210 | CRI 1,31,33,48,97 |
| | | | | | 25177 | **F72T12/WW/HO** | 15 | 12000 | 3000 | 52 | 6400 | 5184 | 1,31,33,48,97 |
| | | | | | 27249 | **F72T12/D35/HO** | 15 | 12000 | 3500 | 70 | 6650 | 5985 | CRI 1,31,33,48,97 |
| | | | | | 25281 | **F72T12/D835/HO** | 15 | 12000 | 3500 | 80 | 6750 | 6210 | CRI 1,31,33,48,97 |
| | | | | | 25182 | **F72T12/N/HO** | 15 | 12000 | 3600 | 86 | 4400 | 3564 | CRI 1,31,33,48,97 |
| | | | | | 27245 | **F72T12/D41/HO** | 15 | 12000 | 4100 | 70 | 6650 | 5985 | CRI 1,31,33,48,97 |
| | | | | | 25176 | **F72T12/CW/HO** | 15 | 12000 | 4200 | 60 | 6250 | 5063 | 1,31,33,48,97 |
| | | | | | 25171 | **F72T12/CW/HO/ECO** | 15 | 12000 | 4200 | 60 | 6250 | 5063 | 1,31,33,48,76 |
| | | | | | 25190 | **F72T12/DSGN50/HO** | 15 | 12000 | 5000 | 90 | 4600 | 3726 | CRI 1,31,33,48,97 |
| | | | | | 25189 | **F72T12/D/HO** | 15 | 12000 | 6500 | 76 | 5550 | 4496 | CRI 1,31,33,48,97 |
| **100** | T12 | 84 | 81.91 | Recessed DC | 25384 | **F84T12/CW/HO** | 15 | 12000 | 4200 | 60 | 7550 | 6115 | 31,33,48,97 |
| | | | | | 25386 | **F84T12/DSGN50/HO** | 15 | 12000 | 5000 | 90 | 5600 | 4536 | CRI 31,33,48,97 |
| | | | | | 25385 | **F84T12/D/HO** | 15 | 12000 | 6500 | 76 | 6700 | 5427 | CRI 31,33,48,97 |
| **110** | T12 | 96 | 93.91 | Recessed DC | 25149 | **F96T12/D30/HO** | 15 | 12000 | 3000 | 70 | 9050 | 8145 | E CRI 31,33,48,97 |
| | | | | | 25152 | **F96T12/D830/HO** | 15 | 12000 | 3000 | 80 | 9400 | 8648 | E CRI 31,33,48,97 |
| | | | | | 25165 | **F96T12/D35/HO** | 15 | 12000 | 3500 | 70 | 9050 | 8145 | E CRI 31,33,48,97 |
| | | | | | 25166 | **F96T12/D835/HO** | 15 | 12000 | 3500 | 80 | 9400 | 8648 | E CRI 31,33,48,97 |
| | | | | | 25162 | **F96T12/N/HO** | 15 | 12000 | 3600 | 86 | 6050 | 4900 | CRI 31,33,48,97 |
| | | | | | 25184 | **F96T12/D41/HO** | 15 | 12000 | 4100 | 70 | 9050 | 8145 | E CRI 31,33,48,97 |


T12 RDC


T12 Single Pin

# RAPID START LAMPS

## High Output (800mA) Standard Rapid Start Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **110** | T12 | 96 | 93.91 | Recessed DC | 25164 | **F96T12/DSGN50/HO** | 15 | 12000 | 5000 | 90 | 6450 | 5225 | CRI 31,33,48,97 |
| | | | | | 25185 | **F96T12/D865/HO** | 15 | 12000 | 6500 | 80 | 8800 | 7920 | Ⓔ CRI 31,33,48,97 |

## High Output (800mA) Rapid Start Lamps for Cold Temperature Operation

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **110** | | 96 | 93.91 | Recessed DC | 25118 | **F96T12/CW/HO/COLD/10/CVP** | 10 | 12000 | 4200 | 60 | 8600 | 6966 | 31,33,48,91,97 |
| | | | | | 25129 | **F96T12/CW/HO/CT/ECO** | 15 | 12000 | 4200 | 60 | 8600 | 6966 | 31,33,48,76,91,97 |
| | | | | | 25134 | **F96T12/CW/HO/COLD TEMP** | 15 | 12000 | 4200 | 60 | 8600 | 6966 | 31,33,48,91,97 |
| | | | | | 25135 | **F96T12/D/HO/COLD TEMP** | 15 | 12000 | 6500 | 76 | 7600 | 6156 | CRI 31,33,48,91,97 |

## Very High Output (1500mA) SUPERSAVER® Rapid Start Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **195** | T12 | 96 | 93.91 | Recessed DC | 25296 | **F96T12/CW/VHO/SS** | 15 | 10000 | 4200 | 60 | 13000 | 9100 | 28,31,33,48,108 |

## Very High Output (1500mA) Standard Rapid Start Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **115** | T12 | 48 | 46 | Recessed DC | 25248 | **F48T12/CW/VHO** | 30 | 10000 | 4200 | 60 | 6600 | 4620 | 31,33,48,108 |
| | | | | | 25249 | **F48T12/CW/VHO/LT** | 30 | 10000 | 4200 | 60 | 6750 | 5250 | 31,33,48,58,88,108 |
| | | | | | 25244 | **F48T12/D/VHO** | 30 | 10000 | 6500 | 76 | 5600 | 3920 | CRI 31,33,48,108 |
| **135** | T12 | 60 | 57.91 | Recessed DC | 25262 | **F60T12/CW/VHO** | 30 | 10000 | 4200 | 60 | 8700 | 6090 | 31,33,48,108 |
| **141** | T12 | 60 | 57.91 | Recessed DC | 25263 | **F60T12/CW/VHO/LT** | 30 | 10000 | 4200 | 60 | 8700 | 6090 | 31,33,48,58,88,108 |
| **160** | T12 | 72 | 69.91 | Recessed DC | 25272 | **F72T12/CW/VHO** | 15 | 10000 | 4200 | 60 | 10600 | 7420 | 31,33,48,108 |
| | | | | | 25274 | **F72T12/CW/VHO/LT** | 15 | 10000 | 4200 | 60 | 11000 | 7700 | 31,33,48,58,88,108 |
| | | | | | 25270 | **F72T12/D/VHO** | 15 | 10000 | 6500 | 76 | 9400 | 6580 | CRI 31,33,48,108 |
| **215** | T12 | 96 | 93.91 | Recessed DC | 25209 | **F96T12/CW/VHO** | 15 | 10000 | 4200 | 60 | 14000 | 9800 | 31,33,48,108 |
| | | | | | 25292 | **F96T12/CW/VHO/LT** | 15 | 10000 | 4200 | 60 | 15000 | 10500 | 31,33,48,58,88,108 |
| | | | | | 25210 | **F96T12/D/VHO** | 15 | 10000 | 6500 | 76 | 11600 | 8120 | CRI 31,33,48,108 |

# INSTANT START LAMPS

## Slimline SUPERSAVER® Instant Start Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | T12 | 48 | 46.00 | Single Pin | 24829 | **F48T12/D35/SS** | 30 | 9000 | 3500 | 70 | 2575 | 2369 | CRI 26,31,33 |
| | | | | | 24825 | **F48T12/D41/SS** | 30 | 9000 | 4100 | 70 | 2575 | 2369 | CRI 26,31,33 |
| | | | | | 24823 | **F48T12/CW/SS** | 30 | 9000 | 4200 | 60 | 2450 | 2200 | 26,31,33 |
| **57** | T12 | 96 | 94 | Single Pin | 29900 | **F96T12/D41/SSP/ECO** | 15 | 12000 | 4100 | 82 | 5600 | 5152 | Ⓔ CRI 26,31,33, 76,97 |

T12 Single Pin | T6 Single Pin | T8 Single Pin



# INSTANT START LAMPS

## Slimline SUPERSAVER® Instant Start Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **60** | T12 | 96 | 94 | Single Pin | 29795 | **F96T12/WW/SS/ECO** | 15 | 12000 | 3000 | 52 | 5500 | 4840 | E 26,31,33,76,97 |
| | | | | | 29809 | **F96T12/D30/SS/ECO** | 15 | 12000 | 3000 | 70 | 5600 | 5152 | E CRI 26,31,33,76,97 |
| | | | | | 29854 | **F96T12/D830/SS/ECO** | 15 | 12000 | 3000 | 80 | 5800 | 5452 | E CRI 26,31,33,76,97 |
| | | | | | 29819 | **F96T12/D35/SS** | 15 | 12000 | 3500 | 70 | 5600 | 5152 | E CRI 26,31,33,97 |
| | | | | | 29808 | **F96T12/D35/SS/ECO** | 15 | 12000 | 3500 | 70 | 5600 | 5152 | E CRI 26,31,33,76,97 |
| | | | | | 29811 | **F96T12/D835/SS** | 15 | 12000 | 3500 | 80 | 5800 | 5452 | E CRI 26,31,33,97 |
| | | | | | 29859 | **F96T12/D835/SS/ECO** | 15 | 12000 | 3500 | 80 | 5800 | 5452 | E CRI 26,31,33,76,97 |
| | | | | | 29853 | **F96T12/D41/SS/ECO** | 15 | 12000 | 4100 | 70 | 5600 | 5152 | E CRI 26,31,33,76,97 |
| | | | | | 29860 | **F96T12/D841/SS/ECO** | 15 | 12000 | 4100 | 80 | 5800 | 5452 | E CRI 26,31,33,76,97 |
| | | | | | 29820 | **F96T12/LW/SS** | 15 | 12000 | 4150 | 48 | 5600 | 4928 | E 26,31,33,97 |
| | | | | | 29815 | **F96T12/CW/SS** | 15 | 12000 | 4200 | 60 | 5300 | 4664 | E 26,31,33,97 |
| | | | | | 29805 | **F96T12/CW/SS/CVP** | 10 | 12000 | 4200 | 60 | 5300 | 4664 | E 26,31,33,97 |
| | | | | | 29816 | **F96T12/CW/SS/UPC** | 15 | 12000 | 4200 | 60 | 5300 | 4664 | E 26,31,33,97 |
| | | | | | 29555 | **F96T12/CW/SS/SL** | 15 | 12000 | 4200 | 60 | 5140 | 4420 | E 26,31,33,96,97,98 |
| | | | | | 29505 | **F96T12/CW/SS/ECO** | 15 | 12000 | 4200 | 60 | 5300 | 4664 | E 26,31,33,76,97 |
| | | | | | 29851 | **F96T12/D865/SS** | 15 | 12000 | 6500 | 80 | 5300 | 4770 | E CRI 26,31,33,97 |
| | | | | | 29828 | **F96T12/DX/SS** | 15 | 12000 | 6500 | 88 | 3860 | 3397 | CRI 26,31,33,97 |
| | | | | | 29868 | **F96T12/DX/SS/ECO** | 15 | 12000 | 6500 | 88 | 3860 | 3397 | CRI 26,31,33,76,97 |

## Slimline Standard Instant Start Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **21** | T12 | 24 | 22 | Single Pin | 22403 | **F24T12/CW** | 30 | 7500 | 4200 | 60 | 1150 | 1000 | 31,33,48 |
| **25** | T6 | 42 | 40 | Single Pin | 24270 | **F42T6/WW** | 24 | 7500 | 3032 | 52 | 1825 | 1606 | 31,33,48 |
| | | | | | 24269 | **F42T6/D35** | 24 | 7500 | 3500 | 70 | 1830 | 1684 | CRI 31,33,48 |
| | | | | | 24266 | **F42T6/CW** | 24 | 7500 | 4200 | 60 | 1750 | 1540 | 31,33,48 |
| **30** | T12 | 36 | 34 | Single Pin | 23618 | **F36T12/CW** | 30 | 7500 | 4200 | 60 | 1970 | 1734 | 31,33,48 |
| **38** | T6 | 64 | 62 | Single Pin | 26470 | **F64T6/WW** | 24 | 7500 | 3000 | 52 | 2900 | 2552 | 31,33,48 |
| | | | | | 26466 | **F64T6/CW** | 24 | 7500 | 4200 | 60 | 2800 | 2464 | 31,33,48 |
| | T8 | 72 | 70 | Single Pin | 27270 | **F72T8/WW** | 24 | 7500 | 3000 | 52 | 3100 | 2728 | 31,33,48 |
| | | | | | 27266 | **F72T8/CW** | 24 | 7500 | 4200 | 60 | 3050 | 2684 | 31,33,48 |
| | | | | | 27200 | **F72T8/D** | 24 | 7500 | 6500 | 76 | 2600 | 2288 | CRI 31,33,48 |
| **39** | T12 | 48 | 46 | Single Pin | 24832 | **F48T12/D35** | 30 | 9000 | 3500 | 70 | 3000 | 2760 | CRI 31,33,48 |
| | | | | | 24827 | **F48T12/CW/ECO** | 30 | 9000 | 4200 | 60 | 2820 | 2482 | 31,33,48,76 |
| | | | | | 24830 | **F48T12/CW** | 30 | 9000 | 4200 | 60 | 2820 | 2482 | 31,33,48 |

T8 Single Pin

T12 Single Pin



# INSTANT START LAMPS

## Slimline Standard Instant Start Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **39** | T12 | 48 | 46 | Single Pin | 24834 | **F48T12/D** | 30 | 9000 | 6500 | 76 | 2450 | 2156 | CRI 31,33,48 |
| | | | | | 24836 | **F48T12D/ECO** | 30 | 9000 | 6500 | 76 | 2450 | 2156 | CRI 31,33,48,76 |
| **50** | T12 | 60 | 58 | Single Pin | 26018 | **F60T12/D35** | 30 | 12000 | 3500 | 70 | 3850 | 3542 | CRI 31,33,48,97 |
| | | | | | 26001 | **F60T12/CW** | 30 | 12000 | 4200 | 60 | 3700 | 3256 | 31,33,48,97 |
| | | | | | 26002 | **F60T12/D** | 30 | 12000 | 6500 | 76 | 3000 | 2640 | CRI 31,33,48,97 |
| **51** | T8 | 96 | 94 | Single Pin | 29666 | **F96T8/CW** | 24 | 7500 | 4200 | 60 | 4000 | 3520 | 31,33,48 |
| | | | | | 29650 | **F96T8/D** | 24 | 7500 | 6500 | 76 | 3550 | 3124 | CRI 31,33,48 |
| **52** | T12 | 64 | 62 | Single Pin | 26403 | **F64T12/CW** | 30 | 12000 | 4200 | 60 | 3900 | 3432 | 31,33,48,97 |
| | | | | | 26404 | **F64T12/D** | 30 | 12000 | 6500 | 76 | 3300 | 2904 | CRI 31,33,48,97 |
| **55** | T12 | 72 | 70 | Single Pin | 27255 | **F72T12/D830** | 15 | 12000 | 3000 | 80 | 4800 | 4512 | CRI 31,33,48,97 |
| | | | | | 27250 | **F72T12/D35** | 15 | 12000 | 3500 | 70 | 4700 | 4324 | CRI 31,33,48,97 |
| | | | | | 27243 | **F72T12/D41** | 15 | 12000 | 4100 | 70 | 4700 | 4324 | CRI 31,33,48,97 |
| | | | | | 27256 | **F72T12/CW** | 15 | 12000 | 4200 | 60 | 4500 | 3960 | 31,33,48,97 |
| | | | | | 27259 | **F72T12/D** | 15 | 12000 | 6500 | 76 | 3800 | 3432 | CRI 31,33,48,97 |
| **70** | T12 | 84 | 82 | Single Pin | 28417 | **F84T12/CW** | 15 | 12000 | 4200 | 60 | 5300 | 4664 | 31,33,48,97 |
| **75** | T12 | 96 | 94 | Single Pin | 29796 | **F96T12/D30/ECO** | 15 | 12000 | 3000 | 70 | 6420 | 5906 | E CRI 31,33,48, 76,97 |
| | | | | | 29827 | **F96T12/D830** | 15 | 12000 | 3000 | 80 | 6550 | 6157 | E CRI 31,33,48,97 |
| | | | | | 29856 | **F96T12/D830/ECO** | 15 | 12000 | 3000 | 80 | 6550 | 6157 | E CRI 31,33,48, 76,97 |
| | | | | | 29685 | **F96T12/D35** | 15 | 12000 | 3500 | 70 | 6420 | 5906 | E CRI 31,33,48,97 |
| | | | | | 29686 | **F96T12/D35/ECO** | 15 | 12000 | 3500 | 70 | 6420 | 5906 | E CRI 31,33,48, 76,97 |
| | | | | | 29843 | **F96T12/D835** | 15 | 12000 | 3500 | 80 | 6550 | 6157 | E CRI 31,33,48,97 |
| | | | | | 29838 | **F96T12/D835/ECO** | 15 | 12000 | 3500 | 80 | 6550 | 6157 | E CRI 31,33,48, 76,97 |
| | | | | | 29797 | **F96T12/D41/CVP** | 10 | 12000 | 4100 | 70 | 6420 | 5906 | E CRI 31,33,48,97 |
| | | | | | 29478 | **F96T12/CWX** | 15 | 12000 | 4100 | 87 | 4400 | 3872 | CRI 31,33,48,97 |
| | | | | | 29858 | **F96T12/CWX/CVP** | 10 | 12000 | 4100 | 87 | 4400 | 3872 | CRI 31,33,48,97 |
| | | | | | 29489 | **F96T12/CWX/UPC** | 15 | 12000 | 4100 | 87 | 4400 | 3872 | CRI 31,33,48,97 |
| | | | | | 29852 | **F96T12/D41/UPC** | 15 | 12000 | 4100 | 70 | 6420 | 5906 | E CRI 31,33,48,97 |
| | | | | | 29798 | **F96T12/D41/ECO** | 15 | 12000 | 4100 | 70 | 6420 | 5906 | E CRI 31,33,48, 76,97 |
| | | | | | 29857 | **F96T12/D841** | 15 | 12000 | 4100 | 80 | 6550 | 6157 | E CRI 31,33,48,97 |
| | | | | | 29850 | **F96T12/D841/ECO** | 15 | 12000 | 4100 | 80 | 6550 | 6157 | E CRI 31,33,48, 76,97 |
| | | | | | 29833 | **F96T12/DSGN50** | 15 | 12000 | 5000 | 90 | 4400 | 3872 | CRI 31,33,48,97 |
| | | | | | 29849 | **F96T12/D865** | 15 | 12000 | 6500 | 80 | 6000 | 5520 | E CRI 31,33,48,97 |
| | | | | | 29500 | **F96T12/DX** | 15 | 12000 | 6500 | 88 | 4360 | 3837 | CRI 31,33,48,97 |

T5 Mini Bipin | T8 Med Bipin | T12 Med Bipin

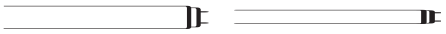
# PREHEAT LAMPS

## Miniature T5 Preheat Lamps (Starter Required)

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **4** | T5 | 6 | 5.91 | Mini Bipin | 20416 | **F4T5/CW** | 24 | 6000 | 4200 | 60 | 135 | 117 | 31,33 |
| | | | | | 20415 | **F4T5CW/BL/1/6** | 6 | 6000 | 4200 | 60 | 135 | 117 | 31,33 |
| **6** | T5 | 9 | 8.91 | Mini Bipin | 20617 | **F6T5/WW** | 24 | 7500 | 3000 | 52 | 275 | 239 | 31,33 |
| | | | | | 20619 | **F6T5CW/BL/1/6** | 6 | 7500 | 4200 | 60 | 270 | 235 | 31,33 |
| | | | | | 20616 | **F6T5/CW** | 24 | 7500 | 4200 | 60 | 270 | 235 | 31,33 |
| **8** | T5 | 12 | 11.91 | Mini Bipin | 20817 | **F8T5/WW** | 24 | 7500 | 3000 | 52 | 400 | 348 | 31,33 |
| | | | | | 20819 | **F8T5/SW/BL/1/6** | 6 | 7500 | 3000 | 52 | 400 | 348 | 31,33 |
| | | | | | 20837 | **F8T5/CWX** | 24 | 7500 | 4100 | 87 | 270 | 235 | CRI 31,33 |
| | | | | | 20816 | **F8T5/CW** | 24 | 7500 | 4200 | 60 | 390 | 339 | 31,33 |
| | | | | | 20834 | **F8T5CW/BL/1/6** | 6 | 7500 | 4200 | 60 | 390 | 339 | 31,33 |
| | | | | | 20820 | **F8T5/D** | 24 | 7500 | 6500 | 76 | 350 | 305 | CRI 31,33 |
| **13** | T5 | 21 | 20.91 | Mini Bipin | 21317 | **F13T5/WW** | 24 | 7500 | 3000 | 52 | 880 | 766 | 31,33 |
| | | | | | 21316 | **F13T5/CW** | 24 | 7500 | 4200 | 60 | 860 | 748 | 31,33 |
| | | | | | 21315 | **F13T5CW/BL/1/6** | 6 | 7500 | 4200 | 60 | 860 | 748 | 31,33 |

## Standard T8 and T12 Preheat Lamps (Starter Required)

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **13** | T8 | 12 | 11.71 | Med Bipin | 21766 | **F13T8/CW** | 24 | 7500 | 4200 | 60 | 530 | 461 | 31,33 |
| **14** | T8 | 15 | 14.78 | Med Bipin | 21486 | **F14T8/CW** | 24 | 7500 | 4200 | 60 | 685 | 644 | 31,33 |
| | | | | | 21488 | **F14T8/D** | 24 | 7500 | 6500 | 76 | 575 | 561 | CRI 31,33 |
| | T12 | 15 | 14.78 | Med Bipin | 21435 | **F14T12/WW** | 30 | 9000 | 3000 | 52 | 660 | 574 | 31,33 |
| | | | | | 21451 | **F14T12/DSW/RP** | 6 | 9000 | 3000 | 70 | 720 | 648 | CRI 31,33 |
| | | | | | 21536 | **F14T12/DCW/1/6/RP** | 6 | 9000 | 4100 | 70 | 720 | 648 | 31,33 |
| | | | | | 21409 | **F14T12/CW** | 30 | 9000 | 4200 | 60 | 650 | 566 | 31,33 |
| | | | | | 21410 | **F14T12/CW/6/RP** | 6 | 9000 | 4200 | 60 | 650 | 566 | 31,33 |
| | | | | | 21411 | **F14T12/D** | 30 | 9000 | 6500 | 76 | 590 | 513 | CRI 31,33 |
| **15** | T8 | 18 | 17.78 | Med Bipin | 21656 | **F15T8/DSW/RP** | 6 | 7500 | 3000 | 70 | 900 | 810 | CRI 31,33 |
| | | | | | 21610 | **F15T8/D830** | 24 | 7500 | 3000 | 82 | 920 | 846 | CRI 31,33 |
| | | | | | 21701 | **F15T8/WW** | 24 | 7500 | 3000 | 52 | 845 | 735 | 31,33 |
| | | | | | 21765 | **F15T8/SW/RP** | 6 | 7500 | 3000 | 52 | 845 | 735 | 31,33 |
| | | | | | 21609 | **F15T8/D35** | 24 | 7500 | 3500 | 70 | 940 | 846 | CRI 31,33 |
| | | | | | 21682 | **F15T8/N** | 24 | 7500 | 3600 | 86 | 560 | 487 | CRI 31,33 |
| | | | | | 21603 | **F15T8/DCW/RP** | 6 | 7500 | 4100 | 70 | 900 | 810 | CRI 31,33 |
| | | | | | 21616 | **F15T8/CW** | 24 | 7500 | 4200 | 60 | 825 | 718 | 31,33 |
| | | | | | 21619 | **F15T8/CW/6PK** | 6 | 7500 | 4200 | 60 | 825 | 718 | 31,33 |
| | | | | | 21642 | **F15T8/DSGN50** | 24 | 7500 | 5000 | 90 | 600 | 539 | CRI 31,33 |
| | | | | | 21600 | **F15T8/D** | 24 | 7500 | 6500 | 76 | 700 | 653 | CRI 31,33 |
| | T12 | 18 | 17.78 | Med Bipin | 21542 | **F15T12/WW** | 30 | 9000 | 3000 | 52 | 770 | 670 | 31,33 |
| | | | | | 21551 | **F15T12/DSW/RP** | 6 | 9000 | 3000 | 70 | 770 | 693 | CRI 31,33 |
| | | | | | 21532 | **F15T12/CW** | 30 | 9000 | 4200 | 60 | 750 | 653 | 31,33 |



T12 Med Bipin T8 Med Bipin



# PREHEAT LAMPS

## Standard T8 and T12 Preheat Lamps (Starter Required)

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **15** | T12 | 18 | 17.78 | Med Bipin | 21513 | **F15T12/CW/6PK** | 6 | 9000 | 4200 | 60 | 750 | 653 | 31,33 |
| | | | | | 21535 | **F15T12/DCW/RP** | 6 | 9000 | 4100 | 76 | 770 | 693 | CRI 31,33 |
| | | | | | 21534 | **F15T12/D** | 30 | 9000 | 6500 | 76 | 660 | 574 | CRI 31,33 |
| **18** | T8 | 24 | 23.78 | Med Bipin | 23014 | **F18T8CW/K24** | 24 | 7500 | 4200 | 60 | 1190 | 1035 | 31,33 |
| | | | | | 23012 | **F18T8CW/K24/1/12/UPC** | 12 | 7500 | 4200 | 60 | 1190 | 1035 | 31,33 |
| | | 26 | 25.78 | Med Bipin | 23027 | **F18T8CW/K26** | 24 | 7500 | 4200 | 60 | 1280 | 1079 | 31,33 |
| | | | | | 23025 | **F18T8/CW/K26PLT** | 3168 | 7500 | 4200 | 60 | 1280 | 1079 | 31,33 |
| | | | | | 21728 | **F18T8/D/K26** | 24 | 7500 | 6500 | 76 | 1100 | 957 | CRI 31,33 |
| | | 28 | 27.78 | Med Bipin | 23028 | **F18T8CW/K28** | 24 | 7500 | 4200 | 60 | 1360 | 1131 | 31,33 |
| | | 30 | 29.78 | Med Bipin | 23030 | **F18T8CW/K30** | 24 | 7500 | 4200 | 60 | 1400 | 1200 | 31,33 |
| **20** | T12 | 24 | 23.78 | Med Bipin | 22131 | **F20T12/WW** | 30 | 9000 | 3000 | 52 | 1250 | 1088 | 31,33 |
| | | | | | 22134 | **F20T12/WW/RP** | 6 | 9000 | 3000 | 52 | 1250 | 1088 | 31,33 |
| | | | | | 22252 | **F20T12/DSW/RP** | 6 | 9000 | 3000 | 70 | 1300 | 1170 | CRI 31,33 |
| | | | | | 22251 | **F20T12/D35** | 30 | 9000 | 3500 | 70 | 1300 | 1170 | CRI 31,33 |
| | | | | | 22256 | **F20T12/DCW/RP** | 6 | 9000 | 4100 | 70 | 1300 | 1170 | CRI 31,33 |
| | | | | | 22078 | **F20T12/CW** | 30 | 9000 | 4200 | 60 | 1200 | 1044 | 31,33 |
| | | | | | 22074 | **F20T12/CW/CVP/10** | 10 | 9000 | 4200 | 60 | 1200 | 1044 | 31,33 |
| | | | | | 22015 | **F20T12/CW/RP** | 6 | 9000 | 4200 | 60 | 1200 | 1044 | 31,33 |
| | | | | | 22073 | **F20T12/CW/UPC** | 30 | 9000 | 4200 | 60 | 1200 | 1044 | 31,33 |
| | | | | | 22119 | **F20T12/DSGN50** | 30 | 9000 | 5000 | 90 | 880 | 766 | CRI 31,33 |
| | | | | | 22083 | **F20T12/D** | 30 | 9000 | 6500 | 76 | 1075 | 935 | CRI 31,33 |
| **25** | T12 | 28 | 27.78 | Med Bipin | 22527 | **F25T12/CW/28** | 30 | 7500 | 4200 | 60 | 1670 | 1453 | 31,33 |
| | | 30 | 29.78 | Med Bipin | 22333 | **F25T12/WW/30** | 30 | 7500 | 3000 | 52 | 1750 | 1523 | 31,33 |
| | | | | | 22528 | **F25T12/CW/30** | 30 | 7500 | 4200 | 60 | 1730 | 1505 | 31,33 |
| | | 33 | 32.78 | Med Bipin | 22529 | **F25T12/CW/33** | 30 | 7500 | 4200 | 60 | 1850 | 1610 | 31,33 |
| **30** | T8 | 36 | 35.78 | Med Bipin | 23701 | **F30T8/WW** | 24 | 7500 | 3000 | 52 | 2150 | 1871 | 31,33 |
| | | | | | 23140 | **F30T8/DWW/RP** | 6 | 7500 | 3000 | 70 | 2360 | 2124 | CRI 31,33 |
| | | | | | 23182 | **F30T8/N** | 24 | 7500 | 3600 | 86 | 1500 | 1305 | CRI 31,33 |
| | | | | | 23127 | **F30T8/CWX** | 24 | 7500 | 4100 | 87 | 1550 | 1349 | CRI 31,33 |
| | | | | | 23116 | **F30T8/CW** | 24 | 7500 | 4200 | 60 | 2180 | 1897 | 31,33 |
| | | | | | 23121 | **F30T8CW 6/CS** | 6 | 7500 | 4200 | 60 | 2180 | 1897 | 31,33 |
| | | | | | 23100 | **F30T8/D** | 24 | 7500 | 6500 | 76 | 1850 | 1653 | CRI 31,33 |
| **40** | T12 | 48 | 47.2 | Med Bipin | 24409 | **L40W/30-1** | 25 | | 3000 | 50 | | | 31 |
| **58** | T8 | 60 | 59.6 | Med Bipin | 24729 | **L58W/840** | 25 | 20000 | 4000 | 80 | 5200 | 4785 | CRI 31,33,48 |
| **70** | T8 | 70 | 70 | Med Bipin | 20804 | **L70W / 21 - 840** | 25 | 15000 | 4000 | 80 | 6550 | 6026 | CRI 31,33,48 |

# SPECIALTY FLUORESCENT LAMPS

## SAFELINE® Shatter Resistant Coated Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | T8 | 48 | 47.78 | Med Bipin | 21678 | **FO32/735/SL** | 30 | 25000 | 3500 | 78 | 2716 | 2444 | E CRI 31,33,52,96, 98,119 |

T8 Med Bipin | T12 Med Bipin | T5 Mini Bipin | T12 Single Pin | T14 1/2 RDC | T2 Axial Base



# SPECIALTY FLUORESCENT LAMPS

## SAFELINE® Shatter Resistant Coated Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | T8 | 48 | 47.78 | Med Bipin | 21547 | **FO32/741ECO/SL** | 30 | 25000 | 4100 | 78 | 2716 | 2444 | E CRI 31,33,52, 76,96,98, 119 |
| **34** | T12 | 48 | 47.78 | Med Bipin | 24396 | **F34CW/SS/SL** *formerly F40CW/SS/SL* | 30 | 20000 | 4200 | 60 | 2570 | 2313 | E 2,24,30,31,33,96, 98 |
| **54** | T5 | 48 | 45.8 | Mini Bipin | 21020 | **FP54/835/HO/ECO/SL** | 40 | 25000 | 3500 | 85 | 4316 | 4014 | CRI 31,33,38,48, 74,76,96,98 |
| | | | | | 21021 | **FP54/841/HO/ECO/SL** | 40 | 25000 | 4100 | 85 | 4316 | 4014 | CRI 31,33,48,74, 76,96,98 |
| | | | | | 21022 | **FP54/850/HO/ECO/SL** | 40 | 25000 | 5000 | 85 | 4243 | 3946 | CRI 31,33,48,74, 76,96,98 |
| **60** | T12 | 96 | 94 | Single Pin | 29555 | **F96T12/CW/SS/SL** | 15 | 12000 | 4200 | 60 | 5140 | 4420 | E 26,31,33,96,97,98 |

## Weather-Shielded Jacketed Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **70** | T14.5 | 60 | 57.91 | Recessed DC | 21124 | **FJ60T12/CW/HO** | 8 | 12000 | 4200 | 60 | 5300 | 4293 | 31,33,48,97,116 |
| **110** | T12 | 96 | 93.1 | Recessed DC | 21356 | **FJ96T12/CW/HO** | 8 | 12000 | 4200 | 60 | 8500 | 6885 | 31,33,48,97,116 |
| **115** | T12 | 48 | 45.91 | Recessed DC | 21330 | **FJ48T12/CW/VHO/LT** | 12 | 10000 | 4200 | 60 | 6750 | 4725 | 31,33,48,88,108,116 |
| **165** | T12 | 72 | 69.91 | Recessed DC | 21335 | **FJ72T12/CW/VHO/LT** | 8 | 10000 | 4200 | 60 | 10700 | 7490 | 31,33,48,88,108,116 |
| **215** | T12 | 96 | 93.1 | Recessed DC | 21340 | **FJ96T12/CW/VHO/LT** | 8 | 10000 | 4200 | 60 | 15300 | 10710 | 31,33,48,88,108,116 |

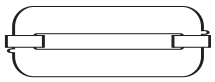
## GRO-LUX® Lamps for Plant Growth & Aquariums

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **15** | T8 | 18 | 17.78 | Med Bipin | 21657 | **F15T8/GRO/AQ/RP** | 6 | 7500 | | 66 | 325 | | 31,33,48,57 |
| **20** | T12 | 24 | 23.78 | Med Bipin | 22013 | **F20T12/GRO/AQ/WS/RP** | 6 | 9000 | 3400 | 89 | 750 | | 31,33,48,57 |
| | | | | | 22029 | **F20T12/GRO/AQ/RP** | 6 | 9000 | | | 480 | | 31,33,48,57 |
| **40** | T12 | 48 | 47.78 | Med Bipin | 24671 | **F40/GRO/AQ/WS/RP** | 6 | 20000 | 3400 | 89 | 1700 | | 2,30,31,33,48,56, 64 |
| | | | | | 24660 | **F40/GRO/AQ/RP** | 6 | 20000 | | | 1200 | | 2,30,31,33,48,56, 64 |

## Miniature T2 Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **6** | T2 | 8.6 | 8.6 | Axial | 26204 | **FM6/830** | 20 | 10000 | 3000 | 80 | 330 | 297 | CRI 3,31,33,38,48,74, 118 |
| | | | | | 26213 | **FM6/841** | 20 | 10000 | 4100 | 80 | 330 | 297 | CRI 3,31,33,38,48,74, 118 |
| **8** | T2 | 12.6 | 12.6 | Axial | 26237 | **FM8/830** | 20 | 10000 | 3000 | 80 | 540 | 486 | CRI 3,31,33,38,48,74, 118 |
| | | | | | 26232 | **FM8/841** | 20 | 10000 | 4100 | 80 | 540 | 486 | CRI 3,31,33,38,48,74, 118 |
| **11** | T2 | 16.6 | 16.6 | Axial | 26239 | **FM11/830** | 20 | 10000 | 3000 | 80 | 750 | 675 | CRI 3,31,33,38,48,74, 118 |

T2 Axial Base



Icetron

# SPECIALTY FLUORESCENT LAMPS

## Miniature T2 Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **11** | T2 | 16.6 | 16.6 | Axial | 26235 | **FM11/835** | 20 | 10000 | 3000 | 80 | 750 | 675 | CRI 3,31,33,38,48,74,118 |
| | | | | | 26231 | **FM11/841** | 20 | 10000 | 4100 | 80 | 750 | 675 | CRI 3,31,33,38,48,74,118 |
| **13** | T2 | 20.6 | 20.6 | Axial | 26253 | **FM13/830** | 20 | 10000 | 3000 | 80 | 930 | 837 | CRI 3,31,33,38,48,74,118 |
| | | | | | 26291 | **FM13/835** | 20 | 10000 | 3500 | 80 | 930 | 837 | CRI 3,31,33,38,48,74,118 |
| | | | | | 26230 | **FM13/841** | 20 | 10000 | 4100 | 80 | 930 | 837 | CRI 3,31,33,38,48,74,118 |

## ICETRON® Inductively Coupled, Electrodeless Lamps

The ICETRON® System is a unique adaptation of the inductively coupled electrodeless technology delivering high luminous efficacy and extremely long system life of 100,000 hours in a shape uniquely suited for a variety of lighting applications. The ICETRON lamps and ballasts are designed as dedicated systems and are not interchangeable with other lamps and ballasts. Please consult OSRAM SYLVANIA for fixture design and application assistance. An ICETRON Design Guide is available on request.

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **70** | T17 | | 12.32 | Mount Brkts | 26087 | **ICE70/835/2P/ECO** | 1 | 100000 | 3500 | 80 | 6200 | 4605 | CRI 6,31,33,38,51,76,78,100,101 |
| | | | | | 26081 | **ICE70/835** | 1 | 100000 | 3500 | 80 | 6200 | 4605 | CRI 8,31,33,38,51,78,100,101 |
| | | | | | 26088 | **ICE70/841/2P/ECO** | 1 | 100000 | 4100 | 80 | 6200 | 4605 | CRI 6,31,33,38,51,76,78,100,101 |
| | | | | | 26082 | **ICE70/841** | 1 | 100000 | 4100 | 80 | 6200 | 4605 | CRI 8,31,33,38,51,78,100,101 |
| | | | | | 26089 | **ICE70/850/2P/ECO** | 1 | 100000 | 5000 | 80 | 5950 | 4420 | CRI 6,31,33,38,51,76,78,100,101 |
| **100** | T17 | | 12.32 | Mount Brkts | 26102 | **ICE100/835/2P/ECO** | 1 | 100000 | 3500 | 80 | 8000 | 5945 | CRI 6,31,33,38,51,76,78,100,101 |
| | | | | | 26103 | **ICE100/841/2P/ECO** | 1 | 100000 | 4100 | 80 | 8000 | 5945 | CRI 6,31,33,38,51,76,78,100,101 |
| | | | | | 26105 | **ICE100/850/2P/ECO** | 1 | 100000 | 5000 | 80 | 7600 | 5645 | CRI 6,31,33,38,51,76,78,100,101 |
| | | | | | 26106 | **ICE100/BL/2P** | 1 | | | | | | 6,31,33,38,51,78,100,101,109 |
| **150** | T17 | | 16.28 | Mount Brkts | 26152 | **ICE150/835/2P/ECO** | 1 | 100000 | 3500 | 80 | 12000 | 8915 | CRI 6,31,33,38,51,76,78,100,101 |
| | | | | | 26153 | **ICE150/841/2P/ECO** | 1 | 100000 | 4100 | 80 | 12000 | 8915 | CRI 6,31,33,38,51,76,78,100,101 |
| | | | | | 26155 | **ICE150/850/2P/ECO** | 1 | 100000 | 5000 | 80 | 11650 | 8655 | CRI 6,31,33,38,51,76,78,100,101 |
| | | | | | 26154 | **ICE150/BL/2P** | 1 | | | | | | 31,33,38,51,78,100,101,109 |

## ICETRON® Inductively Coupled Electrodeless Reflector Lamp

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial @25°C/77°F | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **100** | T17 | | 12.32 | Mount Brkts | 26161 | **ICE100/841/R/2P/ECO** | 1 | 100000 | 4100 | 80 | 7300 | 5014 | CRI 6,31,33,38,51,76,78,100,101 |

T12 Med Bipin | T8 Med Bipin | T12 RDC | T5 Mini Bipin | CFL 2Pin | CFL 4 Pin



# SPECIALTY FLUORESCENT LAMPS

## Diazo (SDB)

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **65** | T12 | 48 | 47.78 | Med Bipin | 24465 | **F40T12/SDB/65W** | 30 | 1000 | | | | | 115 |

## Blacklight, Preheat Lamps (Starter Required)

These lamps are not intended and should not be used for diagnostic, therapeutic or cosmetic purposes.

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **15** | T8 | 18 | 17.78 | Med Bipin | 21623 | **F15T8/350BL** | 24 | 7500 | | | | | 31,33,59,60,105 |
| **20** | T12 | 24 | 23.78 | Med Bipin | 22113 | **F20T12/350BL** | 24 | 9000 | | | | | 31,33,59,60,106 |
| **22** | T12 | 15 | 14.78 | Med Bipin | 21445 | **F15T12/350BL/500/PH** | 30 | | | | | | 31,33,59,60,111 |
| **25** | T8 | 18 | 17.78 | Med Bipin | 21703 | **F25T8/350BL/18in** | 24 | 7500 | | | | | 31,33,59,60,107 |
| **30** | T8 | 36 | 35.78 | Med Bipin | 23113 | **F30T8/350BL** | 24 | 7500 | | | | | 31,33,59,60,109 |
| **32** | T12 | 18 | 17.78 | Med Bipin | 21525 | **F18T12/350BL/700/PH** | 30 | | | | | | 31,33,59,60,112 |

## Blacklight, Rapid Start Lamps (No Starter Required)

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **40** | T12 | 48 | 47.78 | Med Bipin | 24922 | **F40/350BL** | 30 | 20000 | | | | | 2,30,31,33,56,60,64,110 |
| **115** | T12 | 48 | 45.91 | Recessed DC | 25251 | **FR48T12/350BL/VHO/180** | 30 | 10000 | | | | | 31,33,60,90,113 |

## Blacklight Blue, Preheat Lamps (Starter Required)

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **4** | T5 | 6 | 5.91 | Mini Bipin | 20425 | **F4T5/BLB** | 24 | 6000 | | | | | 31,33,59,60,99 |
| **8** | T5 | 12 | 11.91 | Mini Bipin | 20825 | **F8T5/BLB** | 24 | 7500 | | | | | 31,33,59,60,99 |
| **15** | T8 | 18 | 17.78 | Med Bipin | 21625 | **F15T8/BLB** | 6 | 7500 | | | | | 31,33,59,60,99 |

## Blacklight Blue, Rapid Start Lamps (No Starter Required)

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **40** | T12 | 48 | 47.78 | Med Bipin | 24026 | **F40/BLB/RP** | 6 | 20000 | | | | | 2,30,31,33,56,60,64,102 |

# GERMICIDAL LAMPS

## Germicidal Compact Fluorescent Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **7** | T5 | | | G23 | 23372 | **GCF7DS/G23/SE/OF** | 10 | 8000 | | | | | 31,33,45,47,50,82 |
| **9** | T5 | | | G23 | 23373 | **GCF9DS/G23/SE/OF** | 10 | 8000 | | | | | 31,33,45,47,50,82 |
| **11** | T4 | | | G23 | 23377 | **GCF11DS/G23/SE/OF** | 10 | 8000 | | | | | 31,33,45,47,50,82 |
| **18** | T5 | | | 2G11 | 23378 | **GFT18DL/2G11/SE/OF** | 10 | 8000 | | | | | 31,33,36,48,74,82 |
| **24** | T5 | | | 2G11 | 23379 | **GFT24DL/2G11/SE/OF** | 10 | 8000 | | | | | 31,33,36,48,74,82 |

CFL 4 Pin | T5 Mini Bipin | T8 Med Bipin | T5 Single End, T6 Single End | T5 Single Pin



# GERMICIDAL LAMPS

## Germicidal Compact Fluorescent Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **36** | T6 | | | 2G11 | 23380 | **GFT36DL/2G11/SE/OF** | 10 | 8000 | | | | | 31,33,36,48,74,82 |

## Germicidal, Preheat Lamps (Starter Required)

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **6** | T5 | | | Mini Bipin | 23375 | **G6T5/OF** | 10 | 6000 | | | | | 31,33,45,57,82 |
| **8** | T5 | | | Mini Bipin | 20811 | **G8T5/OF** | 24 | 6000 | | | | | 31,33,45,59,82 |
| **10** | T8 | | | Med Bipin | 23374 | **G10T8/OF** | 10 | 6000 | | | | | 31,33,59,82 |
| **15** | T8 | | | Med Bipin | 21612 | **G15T8/OF** | 24 | 7500 | | | | | 31,33,45,59,82 |
| **16** | T5 | | | 4 PIN | 23384 | **G10T5/4P/SE/OF** | 10 | 9000 | | | | | 31,33,59,82 |
| | | | | Mini Bipin | 23387 | **G20T5/G5/OF** | 10 | 9000 | | | | | 31,33,59,82 |
| **25** | T5 | | | Med Bipin | 23376 | **G25T8/OF** | 10 | 8000 | | | | | 31,33,59,82 |
| **30** | T8 | | | Med Bipin | 23112 | **G30T8/OF** | 24 | 7500 | | | | | 31,33,45,59,82 |
| **39** | T5 | | | 4 PIN | 23381 | **G36T5/4P/SE/OF** | 10 | 9000 | | | | | 31,33,57,82 |
| | | | | Mini Bipin | 23382 | **G36T5/G5/OF** | 10 | 9000 | | | | | 31,33,59,82 |
| **55** | T5 | | | Med Bipin | 23388 | **G55T8/OF** | 10 | 8000 | | | | | 31,33,59,82 |
| **65** | T5 | | | 4 PIN | 23386 | **G64T5/4P/SE/OF** | 10 | 9000 | | | | | 31,33,82 |

## Germicidal Instant Start Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **14** | T5 | | | Single Pin | 23383 | **G14T5/SP/OF** | 10 | 8000 | | | | | 31,33,82 |
| **16** | T5 | | | Single Pin | 23385 | **G10T5/SP/OF** | 10 | 9000 | | | | | 31,33,82 |
| **39** | T5 | | | Single Pin | 23443 | **G36T5/SP/OF** | 10 | 9000 | | | | | 31,33,82 |
| **65** | T5 | | | Single Pin | 23442 | **G64T5/SP/OF** | 10 | 9000 | | | | | 31,33,82 |

## Germicidal Amalgam Lamps

| Nominal Wattage | Bulb | Nominal Length (in) | MOL (in) | Base | Product Number | Ordering Abbreviation | Pkg Qty | Avg Rated Life @3hrs/start | CCT (K) | CRI | Approx Lumens Initial | Approx Lumens Mean @25°C/77°F | Symbols & Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **120** | T6 | | | 4 PIN | 23364 | **G120T6/4P/SE/OF** | 5 | 8000 | | | | | 31,33,82 |
| **190** | T6 | | | 4 PIN | 23365 | **G190T6/4P/SE/OF** | 5 | 8000 | | | | | 31,33,82 |

# FLUORESCENT PREHEAT LAMP STARTERS

## GLOSTAT Starters

| Product Number | Ordering Abbreviation | Pkg Qty | Description | Symbols & Footnotes |
|---|---|---|---|---|
| 42812 | **FS-2** | 100 | Fluorescent starter for use with F14, F15 and F20 preheat fluorescent lamps. UL, CSA | |
| 42901 | **FS-2/BL/2PK** | 12 | Fluorescent starter for use with F14, F15 and F20 preheat fluorescent lamps, bulk pack with 2 starters. UL, CSA | |
| 44812 | **FS-4 100/CS** | 100 | Fluorescent starter for use with F13, F30 and F40 preheat lamps. UL, CSA | |

# FLUORESCENT PREHEAT LAMP STARTERS

## GLOSTAT Starters

| Product Number | Ordering Abbreviation | Pkg Qty | Description | Symbols & Footnotes |
|---|---|---|---|---|
| 44902 | **FS-4/BL/2PK** | 12 | Fluorescent starter for use with F13, F30 and F40 preheat lamps, blister pack with 2 starters. UL, CSA | |
| 45812 | **FS-5** | 100 | Fluorescent starter for use with F4, F6 and F8 preheat fluorescent lamps. UL, CSA | |
| 45813 | **FS-5/BL/2PK** | 12 | Fluorescent starter for use with F4, F6 and F8 preheat fluorescent lamps, blister pack with 2 starters. UL, CSA | |
| 43813 | **FS-12/BL/2PK** | 12 | Fluorescent starter for use with FC12 Circline lamps when operated by preheat ballasts and F22T8 preheat lamps, blister pack with 2 starters. UL, CSA | |
| 42512 | **FS-25** | 100 | Fluorescent starter for use with FC6 (20W) & FC8 (22W) Circline lamps when operated by preheat ballasts; F25 and F18T8 preheat lamps. UL, CSA | |
| 42513 | **FS-25/BL/2PK** | 12 | Fluorescent starter for use with FC6 (20W) & FC8 (22W) Circline lamps when operated by preheat ballasts; F25 and F18T8 preheat lamps, blister pack with 2 starters. UL, CSA | |

## COP Starters With Cutout And Manual Reset

| Product Number | Ordering Abbreviation | Pkg Qty | Description | Symbols & Footnotes |
|---|---|---|---|---|
| 42302 | **FS-20 (COP-20)** | 100 | Fluorescent starter with cutout and manual reset for use with F15 & F20 preheat lamps. UL, CSA | |
| 44102 | **FS-40/400 (COP-40/400)** | 100 | Fluorescent starter with cutout and manual reset for use with F40 preheat lamps. UL, CSA | |

# SYMBOLS & FOOTNOTES FOR FLUORESCENT LAMPS

| Symbol | Description |
|---|---|
| | New item introduced within the past year. |
| | Item will be discontinued when inventory is depleted. |
| | Rating given for 200mA operation. |
| | This fluorescent lamp generates radiant energy which is most beneficial for plant propagation and enhances vegetative and reproductive growth of many plants for home and commercial use. |
| | This lamp or ballast meets minimum Federal efficiency standards. |
| | This ECOLOGIC® lamp was designed to pass the Federal TCLP criteria for classification as non-hazardous waste in most states. Disposal regulations may vary; check local and state regulations. |
| CRI | This lamp is a High Color Rendering Lamp |

| Footnote | Description |
|---|---|
| 1 | May be operated at 100 watts (1000MA) same as F84T12/HO. |
| 2 | Average life rating at 12 hours operation per start is 28,800 hours. |
| 3 | Due to their small diameter, T2 miniature fluorescent lamps operate at higher surface temperatures than other fluorescent lamps. To avoid possible burns, do not touch the lamp during operration and allow sufficient cooling time before removing the lamp from the fixture. The typical bulb wall temperature during operation is 120 degrees at the ends. The maximum allowable bulb wall temperature is 150 degrees C. To avoid electrical shock, turn electrical power off before removing or installing the lamp. |
| 4 | The 30,000 hour average rated of the OCTRON (R) XPS CURVALUME (R) lamp is based on operation at 3 hours per start by a dedicated QUICKTRONIC(R) PSX ballast. If operated by other ballasts for T8 OCTRON lamps, life will be the same as that of the XP version of the lamp: typically 24,000 hours for rapid or programmed rapid start operation and 18,000 hours for instant start operation at 3 hours per start. |
| 5 | The lamp lumen maintenance factor used to determine the mean lumen value was 95%. This is the lamp lumen maintenance factor at 8,000 hours, 40% of 20,000 hours. It was used to allow comparison to standard OCTRON(R) lamps with an average rated life of 20,000 hours. The lamp lumen maintenance factor at 40% of 24,000 hours, 9600 hours, would be 94%; the lamp lumen maintenance factor at 40% of 30,000 hours, 12000 hours, would be 93%. |
| 6 | The /2P version of the ICETRON lamp is supplied with a 24 inch lead wire terminated by a 2-Pin connector rather than the old 12 inch lead, 3-Pin connector design. The /2P versions are powered by QT1X100 ICE/UNV-T or QT1X150 ICE/UNV-T ballasts. |
| 7 | Recommended to be used on any F96 T8 Instant Start circuit. It is not recommended to be used: (1) at lamp ambient temperatures below 60 degrees F or in drafty locations, (2) on low power factor ballast, or (3) inverter operated emergency lighting systems unless any of the above equipment is specifically listed for use with the OCTRON FO96 SUPERSAVER 55 watt T8 lamp. Any of the above situations could result in lamp starting and stabilization problems. |
| 8 | Current ballast design incorporates a modular 2-Pin connector plugin from the lamp. An adapter, NAED code 26240, is available to connect 3-Pin lamp types to current (2-Pin) design ballasts. |
| 9 | This lamp may also be operated by the OSRAM SYLVANIA QUICKTRONIC(R) PSN ballast (.88 BF), or the QUICTRONIC PSX ballast (.71 BF). |
| 10 | The lumen maintenance factor used to determine the mean lumens value was 92%, measured at 40% of the average rated life, 15,000 hours. The lumen maintenance factor at 4,000-4,800 hours (for comparison to F96T12 HO and F96T12 Slimline instant start lamps) is 93%. |
| 11 | Minimum starting temperature for DULUX EL lamps is 0 degrees F |
| 12 | For operation in fixtures designed only for 24 ", 30 watt, T-12 Fluorescent lamps. |
| 13 | Life rating is based on rapid start operation. Life rating on instant start operation is 15,000 hrs. |
| 14 | Caution: Although DURA-ONE lamps can be used with occupancy sensors that have a fluorescent volt-amp rating, DURA-ONE lamps cannot be used on any other dimming circuits, emergency exit fixtures or lights, electronic timers, photocells, lighted switches or any other switches that do not meet UL20 Sec. 7.6.15. In outdoor applications, use only in enclosed fixtures to avoid exposure to weather. Use only on 120V, 60 Hz circuits. Never disassemble or modify lamp. Install or remove unit from fixture by grasping plastic base. Best performance achieved when operated at 77˚F (25˚C). Operating temperature range of DURA-ONE lamps is -20˚F/-29˚C to 122˚F/50˚C. |
| 15 | Service life (that amount of time where light output remains greater than or equal to 80% of initial lumens) is 16,000 hours for FP28/RED, FP28/GREEN, FP54/RED/HO and FP54/GREEN/HO and 10,000 hours for FP28/BLUE and FP54/BLUE/HO. |
| 16 | The life of this lamp, operated on instant start electronic ballasts is 24,000 hours based on the industry standard life test standard of 3 hours per start. |
| 17 | Recommended to be used on any F32 T8 instant start circuit. It is not recommended to be used: (1) with rapid Start circuits unless the open circuit voltage is greater than 570V, (2) at lamp ambient temperatures below 70˚F or in drafty locations, (3) in air handling fixtures, (4) on dimming ballasts, (5) on inverter operated emergency lighting systems unless any of the above equipment is specifically listed for 25W lamps, or (6) below 60˚F starting temperature. Any of the above situations could result in lamp starting and stabilization problems or system compatibility issues. |

## SYMBOLS & FOOTNOTES FOR FLUORESCENT LAMPS

| Footnote | Description |
|---|---|
| 18 | IF AN OPERATING LAMP IS EXPOSED TO TEMPERATURES BELOW 70˚F OR MOVING AIR (WIND, DRAFTS OR AIR FLOW FROM AN AIR CONDITIONING OR VENTILATION SYSTEM) STRIATION, A RHYTHMIC PULSING PATTERN OF LIGHT RUNNING THE LENGTH OF THE TUBE AND/OR A REDUCTION IN LIGHT OUTPUT MAY OCCUR. While visually disconcerting, neither behavior is damaging to lamp life and removing the cause (draft or temperature) will return the lamp to normal operation. |
| 19 | The 36,000 hour average rated life of the FO32/800XPS/ECO OCTRON(R) lamp is based on operation at 3 hours per start on a QUICKTRONIC(R) programmed start ballast. If operated on other ballasts for T8 OCTRON lamps, lamp life will be 36,000 hours for programmed rapid start operation and 24,000 hours for instant start operation at 3 hours per start. |
| 20 | The 36,000 hour average rated life of the FO32/800XP/ECO, FO30/800XP/SS/ECO, FO28/800XP/SS/ECO and FO32/25W/800XP/SS/ECO OCTRON(R)lamps is based on operation at 3 hours per start on a QUICKTRONIC(R) programmed start ballast. If operated on other ballasts for T8 OCTRON lamps, lamp life will be 36,000 hours for programmed rapid start operation and 24,000 hours for instant start operation at 3 hours per start. |
| 21 | The life rating of FO32/800/ECO OCTRON® lamps operated on rapid start ballasts is 30,000 hours. The life rating of FO32/800/ECO OCTRON lamps operated on instant start ballasts is 24,000 hours. |
| 22 | Recommended only for use on 2-lamp, 30 watt rapid-start high power factor lead, indoor ballasts that meet ANSI standards. Not intended for use: (1) at lamp ambient temperatures below 60 degrees F or in drafty locations, (2) on low power factor ballasts, (3) reduced current/reduced light output ballasts, (4) dimming ballasts, or (5) on inverter operated emergency lighting systems unless any of the above equipment is specifically listed for use with 25 watt lamps. |
| 23 | If an operating lamp is exposed to drafts or the ambient temperature falls below 60 degrees F, striation (a rhythmic pulsing pattern of light running down the tube) and/or reduction in lamp brightness may occur. While visually disconcerting, neither behavior is damaging to the lamp and removing the cause (draft or temperature) will return the lamp to normal operation. |
| 24 | Recommended for use on one or two lamp 40 watt rapid start, high power factor, lead, indoor ballasts that meet ANSI standards. Not intended for use: (1) at lamp ambient temperatures below 60 degrees F or in drafty locations, (2) on low power factor ballasts, (3) reduced current/reduced light output ballasts, (4) dimming ballasts, or (5) on inverter operated emergency lighting systems unless any of the above equipment is specifically listed for use with 34 watt lamps. |
| 25 | Recommended for use on two lamp 40 watt rapid start, high power factor, lead indoor ballasts that meet ANSI standards. Not intended for use: (1) at lamp ambient temperatures below 60 degrees F or in drafty locations, (2) on low power factor ballasts, (3) reduced current/reduced light output ballasts, (4) dimming ballasts, (5) on inverter operated emergency lighting systems, or (6) on high frequency electronic ballasts. Use one Thrift/Mate with one F40/SS in each two lamp circuit. |
| 26 | Recommended for use on one or two lamp high power factor, lead, instant-start, indoor ballasts that meet ANSI standards. Not intended for use: (1) at lamp ambient temperatures below 60 degrees F or in drafty locations, (2) on low power factor ballasts, (3) reduced current/reduced light output ballasts, (4) dimming ballasts, or (5) on inverter operated emergency lighting systems unless any of the above equipment is specifically listed for use with 32 watt or 60 watt lamps. |
| 27 | Recommended for use on one or two lamp high power factor, lead, 8-foot lamp, high output, indoor ballasts that meet ANSI standards. Not intended for use: (1) at lamp ambient temperatures below 60 degrees F or in drafty locations, (2) on low powerfactor ballasts, (3) reduced current/reduced light output ballasts, (4) dimming ballasts, or (5) on inverter operated emergency lighting systems unless any of the above equipment is specifically listed for use with 95 watt lamps. |
| 28 | Recommended for use on 2-lamp high power factor, lead, 8-foot lamp, very high output, indoor ballasts that meet ANSI standards. Not intended for use: (1) at lamp ambient temperatures below 60 degrees F or in drafty locations, (2) on low power factor ballasts, (3) reduced current/reduced light output ballasts, (4) dimming ballasts, or (5) on inverter operated emergency lighting systems unless equipment is specifically listed for use with 195 watt lamps. |
| 29 | Recommended for use on two-lamp high power factor, lead-lag, Preheat, indoor ballasts that meet ANSI standards and installed in open type fixtures. Not intended for use: (1) at lamp ambient temperatures below 60 degrees F or in drafty locations (unstable operation or starting difficulties may be experienced below 60 degrees F or in strong drafts); (2) on low power factor ballasts, reduced current, reduced light output ballasts, dimming ballasts, or in inverter operated emergency lighting systems. |
| 30 | Average rated life is measured at 3 hours per start on 2-lamp, rapid start magnetic ballasts per IES recommended practice. Lamp life on single-lamp rapid start ballasts may be reduced. |
| 31 | Approximate initial lumens after 100 hours operation. |
| 32 | Recommended for use on one or two lamp 40 watt rapid start, high power factor, lead, indoor ballasts that meet ANSI standards. Not intended for use: (1) at lamp ambient temperatures below 60 degrees F or in drafty locations, (2) on low power factor ballasts, (3) reduced current/reduced light output ballasts, (4) dimming ballasts, or (5) on inverter operated emergency lighting systems unless any of the above equipment is specifically listed for use with 34 watt lamps. Not to be used on electronic ballasts nor with any other impedance modifying devices. |
| 33 | The life ratings of fluorescent lamps are based on 3 hr. burning cycles under specified conditions and with ballast meeting ANSI specifications. If burning cycle is increased, there will be a corresponding increase in the average hours life. |
| 34 | Average rated life is based on 3 hours per start operated on rapid start circuits. Average rated life is 7,500 hours on preheat circuits and 5,000 hours on instant start circuits. |
| 35 | The life rating of OCTRON and OCTRON Curvalume lamps operated on magnetic rapid start ballasts is 20,000 hours. The life rating of OCTRON and OCTRON Curvalume lamps operated on instant start electronic ballasts is 15,000 hours. |

## SYMBOLS & FOOTNOTES FOR FLUORESCENT LAMPS

| Footnote | Description |
|---|---|
| 36 | These lamps may also be operated on rapid start circuits. On rapid start circuits the 24 watt lamp operates at 27 watts and the 36 watt lamp operated at 39 watts. Rated lamp life is unchanged. |
| 37 | Lumen output rated on high frequency operation. 60 HZ operation would result in lower lumen output. |
| 38 | Lumen output and life rated on high frequency operation. |
| 39 | DULUX F lamps can typically be operated on DULUX L and PENTRON HO ballasts of the same/similar wattage. Check with the ballast manufacturer to verify lamp/ballast compatibility. |
| 40 | Rule of Thumb for Compact Fluorescent Lamps: Divide wattage of incandescent lamp by 4 to determine approximate wattage of compact fluorescent lamp that will provide similar light output. |
| 41 | Guarded OCTRON lamp has plastic tube guard, which filters 95% of the UV emissions and provides shatter protection. |
| 42 | Rating for OSRAM SYLVANIA Circline lamps are based on operation in Rapid Start circuits. They will also operate on preheat circuits. |
| 43 | Gold OCTRON lamp has plastic tube guard which filters wavelengths less than 525nm and provides shatter protection. |
| 44 | Life rating of OCTRON XP lamps operated on instant start electronic ballasts is 18,000 hours based on the industry standard life test cycle of 3 hours per start. |
| 45 | Germicidal lamps can be operated on corresponding wattage preheat ballasts. |
| 46 | Amalgam compact fluorescent lamps provide at least 90% light output from 40-140 degrees F. Non-amalgam compact fluorescent lamps provide at least 90% light output from 60-100 degrees F in the base up position, the temperature range is narrower for horizontal or base down. |
| 47 | Minimum starting temperature: CF5: -22 degrees F; CF7: -4 degrees F; CF9: 14 degrees F; CF13DS: 14 degrees F; CF13DD: -4 degrees F; CF18DD: 5 degrees F; CF18DT: -4 degrees F; CF26: 14 degrees F. |
| 48 | Minimum starting temperature is a function of the ballast; consult the ballast manufacturer. |
| 49 | Minimum starting temperature for DULUX EL lamps is 0˚ F, unless otherwise specified in product literature. . |
| 50 | 2 pin CF lamps are not suitable for use in frequently cycled applications or with occupancy sensors. 2 pin CF lamps should never be installed in 4 pin sockets regardless if lamp will fit. |
| 51 | Color and CRI at amalgam tip temperature of 149 degrees F (65 degrees C) for ICETRON 70 and ICETRON 100 and at 158 degrees F (70 degrees C) amalgam tip temperature for ICETRON 150. |
| 52 | OCTRON lamps should be operated only with magnetic rapid start ballasts designed to operate 265 mA, T-8 lamps or high frequency (electronic) ballasts that are either instant start, or rapid start, or programmed rapid start specifically designed to operate T8 lamps. OCTRON lamps may be operated on instant start ballasts with ballast factors ranging from a minimum of 0.71 to a maximum of 1.20 at the nominal ballast input voltage. When OCTRON lamps are operated in the instant start mode, the two wires or two contacts of each socket should be connected to each other. They should then be connected to the appropriate ballast lead wire using National Electric Code techniques. |
| 53 | For operation on instant start circuits. Use only in fixtures equipped with Instant Start Ballasts. |
| 54 | Approximate length of OCTRON CURVALUME lamps is measured from base face to outside of glass bend. |
| 55 | For optimum performance OCTRON CURVALUME 1 5/8 inch leg spacing lamps in the 3000K, 3500K and 4100K color temperatures are now available only in the 82CRI version (800 series). These lamps are made to the same color standards and may be used in combination with other SYLVANIA OCTRON lamps to meet the needs of lighting installations where T8 lamps are used. |
| 56 | The "RS" designation has been eliminated to simplify the ordering abbreviation. |
| 57 | Preheat lamp, starter required. |
| 58 | Low temperature performance rated at 35 degrees F ambient. |
| 59 | Starter required. |
| 60 | These lamps are not intended and should not be used for diagnostic, therapeutic, or cosmetic purposes. |
| 61 | For use with 4,6 & 8 watt lamps. |
| 62 | For use with 13,30 & 40 watt lamps. |
| 63 | For use with 14,15 & 20 watt lamps. |
| 64 | 40W Rapid Start Lamps may be used in starter operated fixtures designed for 40W preheat lamps. Life rating for preheat service is approximately 15,000 hours average. |
| 65 | For use with 22 watt Circline lamps, 25 watt Std. Lp., FC6 & F18T8. |
| 66 | For use with 32 watt Circline lamps, F22T8. |
| 67 | For use with 15 & 20 watt lamps. |
| 68 | For use with 20 watt lamps. |
| 69 | For use with 30 watt lamps. |
| 70 | For use with 40 watt lamps. |
| 71 | For use with 90 & 100 watt lamps. |
| 72 | For use with 90 & 100 watt lamps (4-Pin type). |

## SYMBOLS & FOOTNOTES FOR FLUORESCENT LAMPS

| Footnote | Description |
|---|---|
| 73 | For use with GL-1302 GRO-LUX fixture. |
| 74 | There is a NEMA supported, industry issue where T2, T4, and T5 fluorescent and compact fluorescent lamps operated on high frequency ballasts may experience an abnormal end-of-life phenomenon. This end-of-life phenomenon can resulting one or both of the following: 1. Bulb wall cracking near the lamp base. 2. The lamp can overheat in the base area and possibly melt the base and socket. NEMA recommends that high frequency compact fluorescent ballasts have an end-of-life shutdown circuit which will safely and reliably shut down the system in the rare event of an abnormal end-of-life failure mode described above. The final requirements of this system are yet to be defined by ANSI. For additional information refer to NEMA papers on their WEBSITE at www.NEMA.org. |
| 75 | When base pins or R.D.C. bases are horizontal, window opening is centered downward or upward. |
| 76 | SYLVANIA ECOLOGIC fluorescent lamps are designed to pass the Federal Toxic Characteristic Leaching Procedure (TCLP) criteria for classification as non-hazardous waste in most states. TCLP test results are available upon request. Lamp disposal regulations may vary, check your local & state regulations. For more information, please visit www.lamprecycle.org |
| 77 | This 4-pin DULUX lamp has an internal end-of-life mechanism (EOL) that shuts down the lamp preventing abnormal end-of life failure modes. This lamp was designed for use with high frequency ballasts that do not have their own end-of-life (lamp)sensing circuits, but it is also compatible with high frequency ballasts that have their own end-of-life (lamp) sensing circuits. |
| 78 | ICETRON diameter is the outside diameter of the ferrite coil. ICETRON MOL is the length from the outside edge of the mounting bracket on one end to the outside edge of the mounting bracket on the opposite end. |
| 79 | DULUX Els meet CSA, FCC and UL requirements. |
| 80 | Caution: DULUX EL units cannot be used on dimming circuits, emergency exit fixtures or lights, electronic timers, photocells, lighted switches or any other switches that do not meet UL20 Sec. 7.6.15. In outdoor applications, use only in enclosed fixtures to avoid exposure to weather. Use only on 120V, 60 Hz circuits. Never disassemble or modify lamp. Install or remove unit from fixture by grasping plastic base. Best performance achieved when operated at 77degrees F (25 degrees C). 40 Watt lamp is designed for base down orientation only. |
| 81 | Caution: DULUX EL Circline units cannot be used on dimming circuits, emergency exit fixtures or lights, electronic timers, photocells or lighted switches. In outdoor applications, use only in enclosed fixtures to avoid exposure to weather. Use only on 120V, 60 Hz circuits. |
| 82 | WARNING: To prevent possible serious injury, eyes and skin should not be exposed to direct or reflected ultraviolet power emitted by this lamp. This lamp is in Risk Group 3 per ANSI/IESNA RP-27.3-96. Adequate protection should be provided by clothing, gloves, opaque materials, and ordinary window glass. Although this lamp will operate in standard fluorescent fixtures, it should not be used for general lighting applications. |
| 83 | Mean lumens at 8,000 hours (40% of 20,000 hours for comparison to standard OCTRON and F40 rapid start lamps). The lumen maintenance factor at 40% of average rated life (9,600 hours) is 94%. |
| 84 | The lumen maintenance factor used to determine the mean lumens value was 90%, measured at 40% of the average rated life, 15,000 hours. The lumen maintenance factor at 4,000-4,800 hours (for comparison to F96T12 HO and F96T12 Slimline instant start lamps) is 91%. |
| 85 | The lumen maintenance factor used to determine the mean lumen value was 95%. This is the lamp lumen maintenance factor at 6000 hours, 40% of 15,000 hours. It was used to allow comparison to standard OCTRON(R) lamps with an average rated life of 15000 hours. The lamp lumen maintenance factor at 40% of the 18,000 hour average rated life of this lamp, 7200 hours, would be 94%. |
| 86 | When base pins or R.D.C. bases are horizontal, window opening is centered to either side. |
| 87 | The lamp lumen maintenance factor used to determine the mean lumen value was 95%. This is the lamp lumen maintenance factor at 8,000 hours, 40% of 20,000 hours. It was used to allow comparison to standard OCTRON(R) lamps with an average rated life of 20,000 hours. The lamp lumen maintenance factor at 40% of the 24,000 hour average rated life of this lamp, 9600 hours, would be 94%. |
| 88 | Low temperature performance rated at 35 degrees F ambient. |
| 89 | Cool White lamp with 30 degree aperture (Power Beam). |
| 90 | Blacklight lamp with 180 degree reflector> |
| 91 | Labeled for cold temperature (below 60 degrees F) operation only per EPACT. |
| 92 | Under ideal conditions, an average rated life of 10,000 hours at 3 hours/start is possible. |
| 93 | The 30,000 hour average rated life of the FO17/800XPS/ECO and FO25/800XPS/ECO OCTRON(R) lamps is based on operation at 3 hours start on a QUICKTRONIC(R) Programmed Start ballast. If operated on other ballasts for T8 OCTRON lamps, lamp life will be 30,000 hours for rapid start operation, and 18,000 hours for instant start operation at 3 hours per start. |
| 94 | The lamp lumen maintenance factor used to determine the mean lumen value was 95%. This is the lamp lumen maintenance factor at 8000 hours, 40% of 20,000 hours. It was used for comparison to standard OCTRON(R) lamps with an average rated life of 20,000 hours. The lamp lumen maintenance factor at 40% of 24,000 hours, 9600 hours, would be 94%; the lamp lumen maintenance factor at 40% of 30,000 hours, 12,000 hours, would be 93% |
| 95 | Recommended to be used on any F32 T8 Instant Start circuit. It is not recommended to be used:(1) with Rapid Start circuits unless the open circuit voltage is greater than 550V, (2) at lamp ambient temperatures below 60 degrees F or in drafty locations, (3) on dimming ballast or (4) inverter operated emergency lighting systems unless any of the above equipment is specifically listed for use with the OCTRON(R) SUPERSAVER(R) 28 or 30 watt, 4 foot or 30W U-bent T8 lamp. Any of the above situations could result in lamp starting and stabilization problems |

## SYMBOLS & FOOTNOTES FOR FLUORESCENT LAMPS

| Footnote | Description |
|---|---|
| 96 | SAFELINE lamps satisfy the criteria of having a non-shattering covering for prevention of glass and other lamp components in your product by containment within the safety coating material. The covering must be intact or the lamp must be replaced to be in compliance. An onsite inspector will require correction if the lamps are installed improperly or not maintained properly. |
| 97 | Average life rating at 12 hours operation per start is 18,000 hours. |
| 98 | SAFELINE lamps are intended for indoor use only. Lamps must be used in ambient temperatures below 135 degreed F. The coating is designed to withstand constant operating temperatures up to 239 degrees F and has a melting point in excess of 500 degrees F. Lamps must be used with sockets that provide adequate lamp pin to socket contact. Lamps must not be used with defective ballasts sockets, or fixtures with improper wiring. |
| 99 | CAUTION: This lamp emits ultraviolet (UV) power during operation and is in Risk Group 1 per ANSI/IESNA RP-27.3-96. Exposure at less than 0.25 meters (10 inches) should be limited; for example exposure at 0.14m (6 inches) should not exceed 4 hours in an 8 hour interval (see ANSI/IESNA RP-27.1-96). Certain medications and chemicals can increase an individual's sensitivity. Consult your physician for specific information. Protective eyewear should be worn in occupational situations involving long term exposure in close proximity to the lamp. This lamp is not intended and should not be used for diagnostic, therapeutic or cosmetic purposes. |
| 100 | WARNING: ICETRON® Inductively Coupled Electrodeless Fluorescent lamp. Read these warnings and instructions before installing and using this lamp. 1. This lamp operates at a higher temperature (130 C) than standard fluorescent lamps. To avoid the possibility of minor skin burns, do not touch lamp or metal mounting brackets during operation and allow sufficient cooling time prior to servicing, handling, or replacing lamp. 2. This lamp generates electric and magnetic fields during operation. The electric and magnetic fields generated by this lamp during operation in typical lighting applicatons do not pose exposure risks relative to the limits documented in ANSI C95.1. 3. To prevent electric shock, shut off the main power to the fixture and allow at least two minutes for ballast voltage to discharge before attempting to service or replace lamp. 4. To obtain optimum safety and system performance, use only with OSRAM SYLVANIA ballast. 5. To avoid potential electric shock hazard, do not use lamp if wires or insulation are cut or pulled out of connector. |
| 101 | WARNING: ICETRON® Inductively Coupled Electrodeless Fluorescent lamp. Read these warnings and instructions before installing and using this lamp. Instructions for Installation and Use. 1) To avoid premature lamp or ballast failure and ensure proper lamp, ballast, and system performance, make sure lamp, ballast, and fixture are properly installed. Electrical interconnects, electrical grounds, thermal management, and heatsinking specifications and requirements must be fully adhered to in all applications. (See OSRAM SYLVANIA ICETRON DESIGN GUIDE.) 2. Do not alter the electrical connector on lamp and/or ballast. To do so may adversely affect lamp operation, ballast life, and/or emission of EMI (electromagnetic interference). 3. This product may cause interference with radios, cordless telephones, and remote control devices. If interference occurs, relocate the radios, cordless telephones, and/or remote control devices away from this product. |
| 102 | CAUTION: This lamp emits ultraviolet (UV) power during operation and is in Risk Group 1 per ANSI/IESNA RP-27.3-96. Exposure at less than 0.3 meters (12 inches) should be limited; for example exposure at 0.14m (6 inches) should not exceed 4 hours in an 8 hour interval (see ANSI/IESNA RP-27.1-96). Certain medications and chemicals can increase an individual's sensitivity. Consult your physician for specific information. Protective eyewear should be worn in occupational situations involving long term exposure in close proximity to the lamp. This lamp is not intended and should not be used for diagnostic, therapeutic or cosmetic purposes. |
| 103 | CAUTION: This lamp emits ultraviolet (UV) power during operation and is in Risk Group 1 per ANSI/IESNA RP-27.3-96. Exposure at less than 0.35 meters (14 inches) should be limited; for example exposure at 0.25m (10 inches) should not exceed 4 hours in an 8 hour interval (see ANSI/IESNA RP-27.1-96). Certain medications and chemicals can increase an individual's sensitivity. Consult your physician for specific information. Protective eyewear should be worn in occupational situations involving long term exposure in close proximity to the lamp. This lamp is not intended and should not be used for diagnostic, therapeutic or cosmetic purposes. |
| 104 | CAUTION: This lamp emits ultraviolet (UV) power during operation and is in Risk Group 2 per ANSI/IESNA RP-27.3-96. Exposure at less than 0.45 meters (18 inches) should be limited; for example exposure at 0.3m (12 inches) should not exceed 4 hours in an 8 hour interval (see ANSI/IESNA RP-27.1-96). Certain medications and chemicals can increase an individual's sensitivity. Consult your physician for specific information. Protective eyewear should be worn in occupational situations involving long term exposure in close proximity to the lamp. This lamp is not intended and should not be used for diagnostic, therapeutic or cosmetic purposes. |
| 105 | CAUTION: This lamp emits ultraviolet (UV) power during operation and is in Risk Group 2 per ANSI/IESNA RP-27.3-96. Exposure at less than 0.55 meters (22 inches) should be limited; for example exposure at 0.4m (16 inches) should not exceed 4 hours in an 8 hour interval (see ANSI/IESNA RP-27.1-96). Certain medications and chemicals can increase an individual's sensitivity. Consult your physician for specific information. Protective eyewear should be worn in occupational situations involving long term exposure in close proximity to the lamp. This lamp is not intended and should not be used for diagnostic, therapeutic or cosmetic purposes. |
| 106 | CAUTION: This lamp emits ultraviolet (UV) power during operation and is in Risk Group 2 per ANSI/IESNA RP-27.3-96. Exposure at less than 0.65 meters (26 inches) should be limited; for example exposure at 0.45m (18 inches) should not exceed 4 hours in an 8 hour interval (see ANSI/IESNA RP-27.1-96). Certain medications and chemicals can increase an individual's sensitivity. Consult your physician for specific information. Protective eyewear should be worn in occupational situations involving long term exposure in close proximity to the lamp. This lamp is not intended and should not be used for diagnostic, therapeutic or cosmetic purposes. |
| 107 | CAUTION: This lamp emits ultraviolet (UV) power during operation and is in Risk Group 2 per ANSI/IESNA RP-27.3-96. Exposure at less than 0.7 meters (28 inches) should be limited; for example exposure at 0.54m (20 inches) should not exceed 4 hours in an 8 hour interval (see ANSI/IESNA RP-27.1-96). Certain medications and chemicals can increase an individual's sensitivity. Consult your physician for specific information. Protective eyewear should be worn in occupational situations involving long term exposure in close proximity to the lamp. This lamp is not intended and should not be used for diagnostic, therapeutic or cosmetic purposes. |

## SYMBOLS & FOOTNOTES FOR FLUORESCENT LAMPS

| Footnote | Description |
|---|---|
| 108 | Average life rating at 12 hours operation per start is 15,000 hours. |
| 109 | CAUTION: This lamp emits ultraviolet (UV) power during operation and is in Risk Group 2 per ANSI/IESNA RP-27.3-96. Exposure at less than 0.75 meters (30 inches) should be limited; for example exposure at 0.55m (22 inches) should not exceed 4 hours in an 8 hour interval (see ANSI/IESNA RP-27.1-96). Certain medications and chemicals can increase an individual's sensitivity. Consult your physician for specific information. Protective eyewear should be worn in occupational situations involving long term exposure in close proximity to the lamp. This lamp is not intended and should not be used for diagnostic, therapeutic or cosmetic purposes. |
| 110 | CAUTION: This lamp emits ultraviolet (UV) power during operation and is in Risk Group 2 per ANSI/IESNA RP-27.3-96. Exposure at less than 1.0 meters (39 inches) should be limited; for example exposure at 0.64m (24 inches) should not exceed 4 hours in an 8 hour interval (see ANSI/IESNA RP-27.1-96). Certain medications and chemicals can increase an individual's sensitivity. Consult your physician for specific information. Protective eyewear should be worn in occupational situations involving long term exposure in close proximity to the lamp. This lamp is not intended and should not be used for diagnostic, therapeutic or cosmetic purposes. |
| 111 | CAUTION: This lamp emits ultraviolet (UV) power during operation and is in Risk Group 2 per ANSI/IESNA RP-27.3-96. Exposure at less than 0.6 meters (24 inches) should be limited; for example exposure at 0.45m (18 inches) should not exceed 4 hours in an 8 hour interval (see ANSI/IESNA RP-27.1-96). Certain medications and chemicals can increase an individual's sensitivity. Consult your physician for specific information. Protective eyewear should be worn in occupational situations involving long term exposure in close proximity to the lamp. This lamp is not intended and should not be used for diagnostic, therapeutic or cosmetic purposes. |
| 112 | CAUTION: This lamp emits ultraviolet (UV) power during operation and is in Risk Group 2 per ANSI/IESNA RP-27.3-96. Exposure at less than 0.8 meters (31 inches) should be limited; for example exposure at 0.55m (22 inches) should not exceed 4 hours in an 8 hour interval (see ANSI/IESNA RP-27.1-96). Certain medications and chemicals can increase an individual's sensitivity. Consult your physician for specific information. Protective eyewear should be worn in occupational situations involving long term exposure in close proximity to the lamp. This lamp is not intended and should not be used for diagnostic, therapeutic or cosmetic purposes. |
| 113 | CAUTION: This lamp emits ultraviolet (UV) power during operation and is in Risk Group 2 per ANSI/IESNA RP-27.3-96. Exposure at less than 2.0 meters (79 inches) should be limited; for example exposure at 1.4m (55 inches) should not exceed 4 hours in an 8 hour interval (see ANSI/IESNA RP-27.1-96). Certain medications and chemicals can increase an individual's sensitivity. Consult your physician for specific information. Protective eyewear should be worn in occupational situations involving long term exposure in close proximity to the lamp. This lamp is not intended and should not be used for diagnostic, therapeutic or cosmetic purposes. |
| 114 | CAUTION: This lamp emits ultraviolet (UV) power during operation and is in Risk Group 1 per ANSI/IESNA RP-27.3-96. Exposure at less than 0.3 meters (12 inches) should be limited; for example exposure at 0.2m (8 inches) should not exceed 4 hours in an 8 hour interval (see ANSI/IESNA RP-27.1-96). Certain medications and chemicals can increase an individual's sensitivity. Consult your physician for specific information. Protective eyewear should be worn in occupational situations involving long term exposure in close proximity to the lamp. This lamp is not intended and should not be used for diagnostic, therapeutic or cosmetic purposes. |
| 115 | CAUTION: This lamp emits ultraviolet (UV) power during operation and is in Risk Group 1 per ANSI/IESNA RP-27.3-96. Exposure at less than 0.3 meters (12 inches) should be limited; for example exposure at 0.15m (6 inches) should not exceed 4 hours in an 8 hour interval (see ANSI/IESNA RP-27.1-96). Certain medications and chemicals can increase an individual's sensitivity. Consult your physician for specific information. Protective eyewear should be worn in occupational situations involving long term exposure in close proximity to the lamp. This lamp is not intended and should not be used for diagnostic, therapeutic or cosmetic purposes. |
| 116 | A fluorescent jacketed lamp consists of a T12 (1 1/2" diameter) lamp enclosed inside a T14.5 (1 13/16" diameter) glass jacket. A jacketed fluorescent lamp operates efficiently over a wide range of climatic conditions, including extremes of cold and strong wind in which an unjacketed (bare) lamp would be inefficient or inoperable. The jacket size provides the clearance necessary to minimize damaging lamp-jacket contact; narrow bands of rubber placed between the lamp and the jacket further prevent contact. A weather-tight seal is formed by neoprene rubber end caps. |
| 117 | Mean lumens at 7,200 hours (40% of 18,000 hour average rated life) equal 4,371. For comparison to an F72T12 Slimline lamp with an average rated life of 12,000 hours use a mean lumen value of 4418 based on 95% lumen maintenance at 4,800 hours,(40% of 12,000 hours). |
| 118 | Use only with electronic ballasts which have been specifically designed to operate T2 miniature fluorescent lamps and to reliably and safely control all lamp operating modes including end-of-lamp-life sensing circuitry. If a non-conforming ballast is used, very high temperatures (350 degrees C typical) may be generated at the ends of the lamp especially during end-of-lamp-life operation, causing the lamp to crack and resulting in potential fire, electrical shock, or burn hazards. |
| 119 | The life rating of FO32/700/ECO OCTRON® lamps operated on rapid start ballasts is 25,000 hours. The life rating of FO32/700/ECO OCTRON lamps operated on instant start ballasts is 24,000 hours. |

# Manufacturers' Cross Reference Guide (continued)

## FLUORESCENT LAMPS

| SYLVANIA | GE | PHILIPS |
|---|---|---|
| **OCTRON®** | | |
| FO17/830/ECO | F17T8/SPX30/ECO | F17T8/TL830/ALTO |
| FO17/835/ECO | F17T8/SPX35/ECO | F17T8/TL835/ALTO |
| FO17/841/ECO | F17T8/SPX41/ECO | F17T8/TL841/ALTO |
| | | F17T8/TL850/ALTO |
| FO17/827/XP/ECO | | |
| FO17/830/XP/ECO | F17T8/XL/SPX30/ECO | F17T8/TL830/PLUS/ALTO |
| FO17/835/XP/ECO | F17T8/XL/SPX35/ECO | F17T8/TL835/PLUS/ALTO |
| FO17/841/XP/ECO | F17T8/XL/SPX41/ECO | F17T8/TL841/PLUS/ALTO |
| FO17/850/XP/ECO | F17T8/XL/SPX50/ECO | F17T8/TL850/PLUS/ALTO |
| FO17/865/XP/ECO | F17T8/XL/SPX65/ECO | F17T8/TL865 /PLUS/ALTO |
| FO17/830XPS/ECO | | |
| FO17/835XPS/ECO | | |
| FO17/841XPS/ECO | | |
| FO25/830/ECO | F25T8/SPX30/ECO | F25T8/TL830/ALTO |
| FO25/835/ECO | F25T8/SPX35/ECO | F25T8/TL835/ALTO |
| FO25/841/ECO | F25T8/SPX41/ECO | F25T8/TL841/ALTO |
| | | F25T8/TL850/ALTO |
| FO25/827/XP/ECO | | |
| FO25/830/XP/ECO | F25T8/XP/SPX30/ECO | F25T8/TL830/PLUS/ALTO |
| FO25/835/XP/ECO | F25T8/XP/SPX35/ECO | F25T8/TL835/PLUS/ALTO |
| FO25/841/XP/ECO | F25T8/XP/SPX41/ECO | F25T8/TL841/PLUS/ALTO |
| FO25/850/XP/ECO | F25T8/XP/SPX50/ECO | F25T8/TL850/PLUS/ALTO |
| FO25/865/XP/ECO | F25T8/XP/SPX65/ECO | F25T8/TL865/PLUS/ALTO |
| FO25/830XPS/ECO | | |
| FO25/835XPS/ECO | | |
| FO25/841XPS/ECO | | |
| FO32/25W/830XP/SS/ECO | | F32T8/ADV830/XEW/LL/ALTO 25Watt |
| FO32/25W/835XP/SS/ECO | | F32T8/ADV835/XEW/LL/ALTO 25Watt |
| FO32/25W/8410XP/SS/ECO | | F32T8/ADV841/XEW/LL/ALTO 25Watt |
| FO32/25W/850XP/SS/ECO | | F32T8/ADV850/XEW/LL/ALTO 25Watt |
| FO28/830XP/SS/ECO | F28T8/SP30UMX/ECO | F32T8/ADV830/EW/LL/ALTO 28Watt |
| FO28/835XP/SS/ECO | F28T8/SP35UMX/ECO | F32T8/ADV835/EW/LL/ALTO 28Watt |
| FO28/841XP/SS/ECO | F28T8/SP41UMX/ECO | F32T8/ADV841/EW/LL/ALTO 28Watt |
| FO28/850XP/SS/ECO | F28T8/SP50UMX/ECO | F32T8/ADV850/EW/LL/ALTO 28Watt |
| FO30/830XP/SS/ECO | F32T8XL/SP30/WM/ECO | F32T8/ADV830/EW/LL/ALTO 30Watt |
| FO30/835XP/SS/ECO | F32T8XL/SP35/WM/ECO | F32T8/ADV835/EW/LL/ALTO 30Watt |
| FO30/841XP/SS/ECO | F32T8XL/SP41/WM/ECO | F32T8/ADV841/EW/LL/ALTO 30Watt |
| FO30/850XP/SS/ECO | F32T8XL/SP50/WM/ECO | F32T8/ADV850/EW/LL/ALTO 30Watt |
| FO32/730/ECO | F32T8/SP30/ECO | F32T8/TL730/ALTO |
| FO32/735/ECO | F32T8/SP35/ECO | F32T8/TL735/ALTO |
| FO32/741/ECO | F32T8/SP41/ECO | F32T8/TL741/ALTO |
| FO32/750/ECO | F32T8/SP50/ECO | F32T8/TL750/ALTO |
| FO32/765/ECO | F32T8/SP65/ECO | |
| FO32/730/XP/ECO | F32T8/XL/SP30/ECO | F32T8/TL730/PLUS/ALTO |
| FO32/735/XP/ECO | F32T8/XL/SP35/ECO | F32T8/TL735/PLUS/ALTO |
| FO32/741/XP/ECO | F32T8/XL/SP41/ECO | F32T8/TL741/PLUS/ALTO |
| | - | F32T8/TL750/PLUS/ALTO |
| FO32/830/ECO | F32T8/SPX30/ECO | F32T8/TL830/ALTO |
| FO32/835/ECO | F32T8/SPX35/ECO | F32T8/TL835/ALTO |
| FO32/841/ECO | F32T8/SPX41/ECO | F32T8/TL841/ALTO |
| FO32/850/ECO | F32T8/SPX50/ECO | F32T8/TL850/ALTO |
| FO32/827/XP/ECO | - | - |
| FO32/830/XP/ECO | F32T8/XL/SPX30/ECO | F32T8/TL830 PLUS/ALTO |
| FO32/835/XP/ECO | F32T8/XL/SPX35/ECO | F32T8/TL835 PLUS/ALTO |
| FO32/841/XP/ECO | F32T8/XL/SPX41/ECO | F32T8/TL841 PLUS/ALTO |
| FO32/850/XP/ECO | F32T8/XL/SPX50/ECO | F32T8/TL850 PLUS/ALTO |
| FO32/865/XP/ECO | F32T8/XL/SPX65/ECO | F32T8/TL865 PLUS/ALTO |
| FO32/830XPS/ECO | F32T8SXL/SPX30/ECO | |
| FO32/835XPS/ECO | F32T8SXL/SPX35/ECO | |
| FO32/841XPS/ECO | F32T8SXL/SPX41/ECO | |
| FO32/830XPS/ECO | F32T8/XL/SPX30/HL/ECO | F32T8/ADV830/ALTO |
| FO32/835XPS/ECO | F32T8/XL/SPX35/HL/ECO | F32T8/ADV835/ALTO |
| FO32/841XPS/ECO | F32T8/XL/SPX41/HL/ECO | F32T8/ADV841/ALTO |
| FO32/850XPS/ECO | F32T8/XL/SPX50/HL/ECO | F32T8/ADV850/ALTO |
| FO32/865XPS/ECO | | |

# Manufacturers' Cross Reference (continued)

## FLUORESCENT LAMPS

| SYLVANIA | GE | PHILIPS |
|---|---|---|
| **OCTRON®** | | |
| FO40/830/ECO | F40T8/SPX30 | F40T8/TL830/ALTO |
| FO40/835/ECO | F40T8/SPX35 | F40T8/TL835/ALTO |
| FO40/841/ECO | F40T8/SPX41 | F40T8/TL841/ALTO |
| FO40/830/XP/ECO | - | - |
| FO40/835/XP/ECO | - | - |
| FO40/841/XP/ECO | - | - |
| FO96/830XP/SS/ECO | F96T8/XL/SP30/WM | |
| FO96/835XP/SS/ECO | F96T8/XL/SP35/WM | |
| FO96/841XP/SS/ECO | F96T8/XL/SP41/WM | |
| FO96/830/ECO | F96T8/SPX30 | F96T8/TL830/ALTO |
| FO96/835/ECO | F96T8/SPX35 | F96T8/TL835/ALTO |
| FO96/841/ECO | F96T8/SPX41 | F96T8/TL841/ALTO |
| FO96/850/ECO | F96T8/SPX50 | F96T8/TL850/ALTO |
| FO96/830/XP/ECO | F96T8/XL/SPX30 | F96T8/TL830PLUS/ALTO |
| FO96/835/XP/ECO | F96T8/XL/SPX35 | F96T8/TL835PLUS/ALTO |
| FO96/841/XP/ECO | F96T8/XL/SPX41 | F96T8/TL841PLUS/ALTO |
| FO96/850/XP/ECO | F96T8/XL/SPX50 | F96T8/TL850PLUS/ALTO |
| - | F96T8/SPX30/HO | F96T8/TL830/HO/PLUS |
| FO96/835/HO | F96T8/SPX35/HO | F96T8/TL835/HO/PLUS |
| FO96/841/HO | F96T8/SPX41/HO | F96T8/TL841/HO/PLUS |
| **OCTRON® CURVALUME®** | | |
| FBO16/830 | - | - |
| FBO16/835 | - | - |
| FBO16/841 | - | - |
| FBO16/865/XP | - | - |
| FBO24/830 | - | - |
| FBO24/835 | - | - |
| FBO24/841 | - | - |
| FBO31/830 | F31T8/SPX30/U | - |
| FBO31/835 | F31T8/SPX35/U | - |
| FBO31/841 | F31T8/SPX41/U | - |
| FBO29/830/XP/SS/ECO | | |
| FBO29/835/XP/SS/ECO | | |
| FBO29/841/XP/SS/ECO | | |
| FBO31/830/XP/ECO | - | - |
| FBO31/835/XP/ECO | - | - |
| FBO31/841/XP/ECO | - | - |
| FBO30/830/XP/6/SS/ECO | | |
| FBO30/835/XP/6/SS/ECO | | |
| FBO30/841/XP/6/SS/ECO | | |
| FBO32/830/6/ECO | F32T8/SPX30/U/6 | FB32T8/TL830/6/ALTO |
| FBO32/835/6/ECO | F32T8/SPX35/U/6 | FB32T8/TL835/6/ALTO |
| FBO32/841/6/ECO | F32T8/SPX41/U/6 | FB32T8/TL841/6/ALTO |
| | | FB32T8/TL850/6/ALTO |
| FBO32/830/6/XP/ECO | - | - |
| FBO32/835/6/XP/ECO | - | - |
| FBO32/841/6/XP/ECO | - | - |
| **PENTRON® & PENTRON® HO** | | |
| FP14/830/ECO | F14W/T5/830/ECO | F14T5/830/ALTO |
| FP14/835/ECO | F14W/T5/835/ECO | F14T5/835/ALTO |
| FP14/841/ECO | F14W/T5/841/ECO | F14T5/841/ALTO |
| | F14W/T5/850/ECO | |
| FP14/865/ECO | F14W/T5/865/ECO | |
| FP21/830/ECO | F21W/T5/830/ECO | F21T5/830/ALTO |
| FP21/835/ECO | F21W/T5/835/ECO | F21T5/835/ALTO |
| FP21/841/ECO | F21W/T5/841/ECO | F21T5/841/ALTO |
| | F21W/T5/850/ECO | |
| FP21/865/ECO | F21W/T5/865/ECO | |
| FP28/830/ECO | F28W/T5/830/ECO | F28T5/830/ALTO |
| FP28/835/ECO | F28W/T5/835/ECO | F28T5/835/ALTO |
| FP28/841/ECO | F28W/T5/841/ECO | F28T5/841/ALTO |
| FP21/850/ECO | F28W/T5/850/ECO | |
| FP21/865/ECO | F28W/T5/865/ECO | |
| FP35/830/ECO | F35W/T5/830/ECO | F35T5/830 |
| FP35/835/ECO | F35W/T5/835/ECO | F35T5/835 |

# Manufacturers' Cross Reference Guide (continued)

## FLUORESCENT LAMPS

| SYLVANIA | GE | PHILIPS |
|---|---|---|
| **OCTRON® CURVALUME®** | | |
| FP35/841/ECO | F35W/T5/841/ECO | F35T5/841 |
| | F35W/T5/850/ECO | |
| | F35W/T5/865/ECO | |
| FP24/830/HO/ECO | F24W/T5/830/ECO | F24T5/830/HO/ALTO |
| FP24/835/HO/ECO | F24W/T5/835/ECO | F24T5/835/HO/ALTO |
| FP24/841/HO/ECO | F24W/T5/841/ECO | F24T5/841/HO/ALTO |
| | F24W/T5/850/ECO | |
| | F24W/T5/865/ECO | |
| FP39/830/HO/ECO | F39W/T5/830/ECO | FP39/830/HO/ECO/ALTO |
| FP39/835/HO/ECO | F39W/T5/835/ECO | FP39/835/HO/ECO/ALTO |
| FP39/841/HO/ECO | F39W/T5/841/ECO | FP39/841/HO/ECO/ALTO |
| | F39W/T5/850/ECO | |
| | F39W/T5/865/ECO | |
| FP54/830/HO/ECO | F54W/T5/830/ECO | F54T5/830/HO/ALTO |
| FP54/835/HO/ECO | F54W/T5/835/ECO | F54T5/835/HO/ALTO |
| FP54/841/HO/ECO | F54W/T5/841/ECO | F54T5/841/HO/ALTO |
| FP54/850/HO/ECO | F54W/T5/850/ECO | F54T5/850/HO/ALTO |
| FP54/865/HO/ECO | F54W/T5/865/ECO | F54T5/865/HO/ALTO |
| FP54/835/C/HO/ECO | | |
| FP54/841/C/HO/ECO | | |
| FP54/850/C/HO/ECO | | |
| FP80/830/HO/ECO | F80W/T5/830/ECO | F80T5/830/HO |
| FP80/835/HO/ECO | F80W/T5/835/ECO | F80T5/835/HO |
| FP80/841/HO/ECO | F80W/T5/841/ECO | F80T5/841/HO |
| | F54W/T5/850/ECO | |
| | F54W/T5/865/ECO | |
| **PENTRON® CIRCLINE** | | |
| FPC22/830 | - | TL5C 22W/830 |
| FPC22/835 | - | TL5C 22W/831 |
| FPC22/841 | - | TL5C 22W/832 |
| FPC40/830 | - | TL5C 40W/833 |
| FPC40/835 | - | TL5C 40W/834 |
| FPC40/841 | - | TL5C 40W/835 |
| FPC55/830/HO | - | TL5C 55W/833 |
| FPC55/835/HO | - | TL5C 55W/834 |
| FPC55/841/HO | - | TL5C 55W/835 |
| **F40 TYPES (STD & SS)** | | |
| F34/D30/SS/ECO | F34/SP30/RS/WM/ECO | |
| F34/D35/SS/ECO | F34/SP35/RS/WM/ECO | |
| F34/D41/SS/ECO | F34/SP41/RS/WM/ECO | |
| F34/D830/SS/ECO | F34/SPX30/RS/WM/ECO | F34/830/RS/EW/ALTO |
| F34/D835/SS/ECO | F34/SPX35/RS/WM/ECO | F34/835/RS/EW/ALTO |
| F34/D841/SS/ECO | F34/SPX41/RS/WM/ECO | F34/841/RS/EW/ALTO |
| | | F34/850/RS/EW/ALTO |
| F40/D30/ECO | F40/SP30/RS/ECO | F40/SPEC30/RS/ALTO |
| F40/D35/ECO | F40/SP35/RS/ECO | F40/SPEC35/RS/ALTO |
| F40/D41/ECO | F40/SP41/RS/ECO | F40/SPEC41/RS/ALTO |
| F40/D830/ECO | F40/SPX30/RS/ECO | F40/830/8RS/ALTO |
| F40/D835/ECO | F40/SPX35/RS/ECO | F40/835/RS/ALTO |
| F40/D841/ECO | F40/SPX41/RS/ECO | F40/841/RS/ALTO |
| - | F40/XL/SP30, 35, 41 | |
| - | F40/XL/SPX30, 35, 41, 50 | - |
| **CURVALUME® 3"** | | |
| - | F40/SP30/U/3 | - |
| - | F40/SP41/U/3 | - |
| **CURVALUME® 6"** | | |
| FB34/D30/6/SS | - | FB34/SPEC30/6/EW/ALTO |
| FB34/D35/6/SS | - | FB34/SPEC35/6/EW/ALTO |
| FB34/D41/6/SS | - | FB34/SPEC41/6/EW/ALTO |
| FB40/D30/6 | F40/SP30/U/6 | FB40/SPEC30/6/ALTO |
| FB40/D30/6 | F40/SP35/U/6 | FB40/SPEC35/6/ALTO |
| FB40/D41/6 | F40/SP41/U/6 | FB40/SPEC41/6/ALTO |
| FB40/D830/6 | F40/SPX30/U/6 | FB40/30U/6/ALTO |
| - | F40/SPX35/U/6 | FB40/35U/6/ALTO |
| - | - | FB40/41U/6/ALTO |

# Manufacturers' Cross Reference (continued)

## FLUORESCENT LAMPS

| SYLVANIA | GE | PHILIPS |
|---|---|---|
| **SLIMLINE** | | |
| - | F96T12/SP35/WMP | - |
| F96T12/D30/SS/ECO | F96T12/SP30/WM/ECO | |
| F96T12/D35/SS/ECO | F96T12/SP35/WM/ECO | |
| F96T12/D41/SS/ECO | F96T12/SP41/WM/ECO | |
| F96T12/D830/SS/ECO | F96T12/SPX30/WM/ECO | F96T12/830/EW/ALTO |
| F96T12/D835/SS/ECO | F96T12/SPX35/WM/ECO | F96T12/835/EW/ALTO |
| F96T12/D841/SS/ECO | F96T12/SPX41/WM/ECO | F96T12/841/EW/ALTO |
| - | F96T12/XL/SP35/WM | - |
| - | F96T12/XL/SP41/WM | - |
| F96T12/D30/ECO | F96T12/SP30/ECO | |
| F96T12/D35/ECO | F96T12/SP35/ECO | |
| F96T12/D41/ECO | F96T12/SP41/ECO | |
| F96T12/D830/ECO | F96T12/SPX30/ECO | F96T12/830/ALTO |
| F96T12/D835/ECO | F96T12/SPX35/ECO | F96T12/835/ALTO |
| F96T12/D841/ECO | F96T12/SPX41/ECO | F96T12/841/ALTO |
| - | F96T12/XL/SP35, 41 | - |
| - | F96T12/XL/SPX35, 41, 50 | - |
| **HIGH OUTPUT** | | |
| F72T12/D830/HO | F72T12/SPX30/HO | F72T12/30U/HO |
| - | - | |
| F96T12/D35/HO/SS | F96T12/SP35/HO/WM | |
| F96T12/D41/HO/SS | F96T12/SP41/HO/WM | |
| F96T12/D830/HO/SS | F96T12/SPX830/HO/WM | F96T12/830/HO/EW/ALTO |
| F96T12/D835/HO/SS | F96T12/SPX35/HO/WM | F96T12/835/HO/EW/ALTO |
| F96T12/D841/HO/SS | F96T12/SPX41/HO/WM | F96T12/841/HO/EW/ALTO |
| F96T12/D30/HO | F96T12/SP30/HO | |
| F96T12/D35/HO | F96T12/SP35/HO | |
| F96T12/D41/HO | F96T12/SP41/HO | |
| F96T12/D830/HO | F96T12/SPX830/HO | F96T12/830/HO/ALTO |
| F96T12/D835/HO | F96T12/SPX35/HO | F96T12/835/HO/ALTO |
| F96T12/D841/HO | F96T12/SPX41/HO | F96T12/841/HO/ALTO |
| **APPLIANCE** | | |
| F18T8CW/K24 | F24"T8/CW/4 | |
| F18T8CW/K26 | F26"T8/CW/4 | F16T8/CW/26 |
| F18T8CW/K28 | F28"T8/CW/4 | F17T8/CW/28 |
| F18T8CW/K30 | F30"T8/CW/4 | F18T8/CW/30/ALTO |
| F18T8/D/K26 | - | - |
| **OTHER RAPID START** | | |
| F25T12/D30/RS/SS | F25T12/SP30/RS/WM | - |
| F25T12/D35/RS/SS | F25T12/SP35/RS/WM | - |
| F30T12/D35/RS | F30T12/SP35/RS | F30T12/SPEC35/RS |
| F30T12/D41/RS | F30T12/SP41/RS | F30T12/SPEC41/RS |
| F30T12/D830/RS | F30T12/SPX30/RS | F30T12/30U/RS |
| F30T12/D835/RS | F30T12/SPX35/RS | F30T12/35U/RS |

## Notes:


# SYLVANIA QUICKTRONIC®

## Electronic & Magnetic Ballasts

# OSRAM OPTOTRONIC®

## LED Power Supplies


# The System is the Solution

## QUICKTRONIC® High Efficiency

High Efficiency Series products are energy-saving electronic T8 ballasts that save additional 6% (2 to 5 watts) over standard electronic ballasts. Features also include <10%THD and Universal Voltage. **SYLVANIA QUICKTRONIC High Efficiency (QHE)** ballast operate OCTRON® T8 lamps with maximum efficacy and high lumen output, and provides 30-50% energy savings when compared to F40T12 magnetic systems.

- High Efficiency Systems over 90% efficient (maximize energy savings)
- Over 100 LPW (lumens/watt) with OCTRON SUPERSAVER® lamps
- Lowest power T8 Instant Start Systems
- Same Light, Less Power

## Universal Voltage (120-277V)

Universal voltage models operate from 120-277 Volts, eliminating “incorrect line voltage” wiring errors and reducing the number of models in inventory by half.

## QUICKTRONIC

T8 Instant Start <20% THD Products.

**OSRAM SYLVANIA** is the global leader in lighting systems. The most important trend in lighting technology is the move toward systems … we started this trend with the system solution®, a family of optimally balanced energy saving lamps and electronic ballast combinations.

OSRAM SYLVANIA has the competitive advantage with years of experience in designing, developing and supporting integrated systems — both in ballasts and lamps. Our global network of design and manufacturing brings ballast and lamp knowledge together to produce innovative and cost-effective energy saving systems.

- Committed to providing energy efficient ballasts & lamps
- Our innovative system solutions exceed customer expectations
- New energy saving, higher efficiency, lower power systems
- These systems are covered by our **QUICK 60+®** warranty, the first and most comprehensive system warranty in the industry

## QUICKTRONIC Professional

Professional Series products incorporate one or more value added features such as <10%THD, PROStart® Programmed Rapid Start, Universal Voltage and QUICKSENSE® end-of–lamp-life sensing.

**Complete performance data is available in the SYLVANIA QUICKTRONIC Electronic Ballast Technology & Specification Guide and at www.sylvania.com.**

## Table of Contents



# QUICKTRONIC Electronic Ballasts

### QUICKTRONIC Instant Start Ballasts for OCTRON® T8 Lamps



### QUICKTRONIC PROStart® Ballasts for OCTRON T8 Lamps



### QUICKTRONIC Ballasts for 8 Foot Lamps (T8)



### QUICKTRONIC Ballasts for CANADIAN 347Volt T8 Systems



### QUICKTRONIC Ballasts for T5HO, T5, DL40, T4 Systems



### QUICKTRONIC® DIMMING & DALI Ballasts



### QUICKTRONIC Ballasts for 8 foot T12 lamps & F40T12 Systems



### QUICKTRONIC Specialty Systems

## The *Original* System Solution

**The first matched T8 lamp and ballast systems for optimized performance and longer life.**

### QUICKTRONIC® High Efficiency Type CC & Lamp Striation Control (LSC) Models

Offer the same energy saving benefits as the High Efficiency QHE ballasts with two additional advantages:

- **Meets UL Type CC (Commercial Cabinet) Rating:** New microcontroller circuitry reduces arcing caused by loose or improper lamp pin to socket connections.
- **Lamp Striation Control, (LSC):** LSC circuitry minimizes lamp striations/strobing that can occur at lower temperatures and especially in T8 energy saving lamps. *(Please consult manufacturers for additional details.)*

### Banded Packaging


New Banded Packaging has replaced the shrink-wrap product for added benefits:

- Distributor friendly; easy stocking for individual ballast sales
- Contractor friendly; easy handling; no tangled wires
- Reduce waste
- Easily removable bands

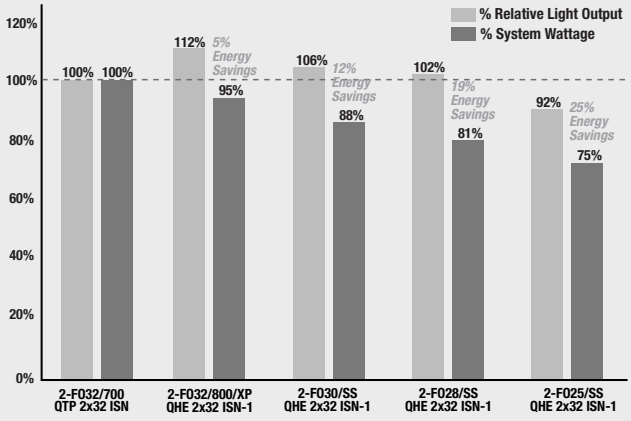
### High Efficiency DL40/28W/SS Systems

New exclusive QHE energy saving electronic DL40/28W/IS SUPERSAVER® Systems:

- SAME LIGHT, LESS POWER
- Saves up to 14% over standard systems
- Universal Input Voltage (120-277V)
- QUICKSENSE® end of lamp life sensing
- Auto reset

### Key System Features:

- Lowest power T8 Instant Start Systems
- Over 100 LPW (lumens/watt) with OCTRON® SUPERSAVER lamps
- Provides 30-50% energy savings when compared to F40T12 Magnetic Systems
- QHE/SS Systems provide up to 25% savings compared to standard T8 systems
- Universal Input Voltage (120-277)




### PROStart®


A programmed rapid starting method for fluorescent lamps that achieves up to 100,000 switching cycles which is ideal for use on **occupancy sensors.**

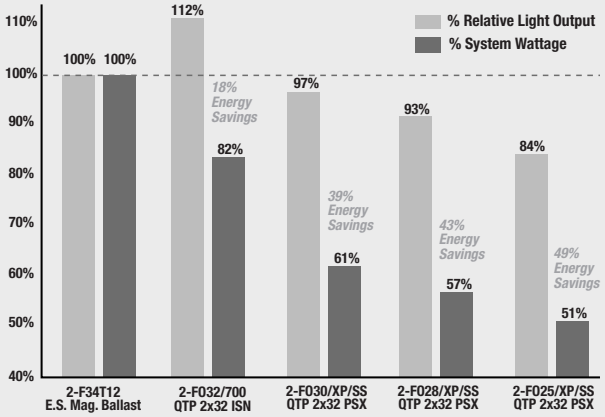
- *Exclusive lamp warranty for occupancy sensor applications*

### SUPERSAVER® Xtreme Systems

New High Efficiency QUICKTRONIC PROStart PSX Universal Voltage ballasts when combined with OCTRON SUPERSAVER energy saving high performance T8 lamps provide the lowest power PROStart T8 systems available.

### Key System Features:

- PROStart Xtreme: For frequent switching, Longest lamp life
- Universal Input Voltage (120-277)
- Available in 0.71 ballast factor






SYLVANIA

## MULTIWATT

New electronic ballasts that offer the versatility to operate multiple lamp types of various wattages. These multi-watt and multi-lamp models also can vary the number of lamps operated (i.e. 1 or 2 lamps), reducing the amount of ballast types required.

## Dual Entry CFL

Dual entry, color coded connectors located on the side and bottom allow for increased mounting flexibility with one ballast and also increased ease of installation.

## T5HO HELIOS™ Dimming

Electronic ballast with continuous 100-1% dimming range. They can be controlled by a wide variety of 0-10 volt DC control devices, including daylight sensors, building automation systems and compatible wall box dimming controllers.

## DALI Digital Dimming

DALI digital control technology offers full-range continuous dimming, individual fixture control and feedback. The communications protocol is "DALI", an acronym for "Digital Addressable Lighting Interface". DALI is the worldwide standard for digital lighting control.

## T8 & T5 POWERSENSE® DIMMING

The industry's first product to operate from either Power-line Fluorescent controllers or low-voltage (0-10 Vdc) controls.

- Efficient - Highest Energy Efficiency dimming system
- Versatile - Controls flexibility & universal-voltage
- Intelligent - Senses faulty wiring and lamp failure

## PENTRON® HO

New T5 high output fluorescent lamp systems provide almost twice the lumen output of standard lamps and allow new low profile fixtures to be designed.

## QUICKSENSE®

The patented end-of-lamp-life sensing technology that helps prevent lamp overheating and established the benchmark for industry recommendations for T5 and smaller diameter lamps.

## PLUS (High Ballast Factor) Systems

T8 lamps are run at higher lumen levels to allow fewer lamps or higher light levels.

## ICETRON® Systems

Unique "Inductively Coupled Electrodeless Fluorescent Lamp Systems" that provide 100,000 hour rated lamp life for use in high maintenance cost areas.

## Electronic Metal Halide Systems

QUICKTRONIC® MH features a state of the art electronic design to deliver performance levels unattainable with standard magnetic based lighting systems. Provides energy savings up to 50% compared to magnetic ballasts. *New high wattage systems coming soon!*

## LED Power Supplies & DIMMING Modules

OSRAM OPTOTRONIC® power supplies are available in wide range of input voltages for worldwide use on single-phase AC power lines. These supplies are available with constant voltage or constant current outputs.

The OPTOTRONIC OTDIM are dimming modules that can be used with LED power supply modules.

For Complete power supply and LED module details, refer to the OSRAM SYLVANIA LED Systems Specification Guide or www.sylvania.com.

## The QUICK 60+® System Warranty

It's the simple way to make sure you're completely covered.

It starts with the ballast. When you purchase any QUICKTRONIC ballast, it's warranted for a period of up to 60 months. Then, when you add SYLVANIA lamps, you benefit from additional coverage for those lamps; that's the PLUS. (For lamp replacements, OSRAM SYLVANIA will send lamps to your facility – no labor for lamps.)

With our lamps and ballasts, your installation will enjoy the highest levels of performance. If there is an issue, there's only one phone call to make; you won't get caught in the middle!

It's that simple.

For detailed warranty information, call 1-800-LIGHTBULB, (1-800-544-4828) and request warranty service or visit www.sylvania.com.

All data shown is for primary lamp types only. Complete performance data is available in the SYLVANIA QUICKTRONIC® Electronic Ballast Technology & Specification Guide and at www.sylvania.com



| Item Number | OSRAM SYLVANIA Description | Input Voltage (VAC) | Input Current (AMPS) | Lamp Type | Rated Lumens (lm) | No. of Lamps | Ballast Factor (BF) | System Lumens | Mean Lumens[1] | Input Wattage (W) | System Efficacy (lm/W) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **QUICKTRONIC® *HIGH EFFICIENCY* 32 T8 INSTANT START UNIVERSAL VOLTAGE SYSTEMS** | | | | | | | | | | | |
| ***LOW BALLAST FACTOR*** | | | | | | | | | | | |
| | QHE 1X32T8/UNV ISL-SC | | 0.21/0.09 | F032/700 | 2800 | 1 | 0.78 | 2185 | 1965 | 25 | 87 |
| 49837 | *Banded Pack* | | 0.21/0.09 | F032/XP | 3000 | 1 | 0.78 | 2340 | 2225 | 25 | 94 |
| *49861* | *10-Pack* | 120-277 | 0.20/0.09 | F030/SS | 2850 | 1 | 0.78 | 2220 | 2110 | 24 | 93 |
| *49862* | *Pallet Pack* | | **0.19/0.08** | **F028/SS** | **2725** | **1** | **0.78** | **2125** | **2020** | **22** | **97** |
| | | | 0.17/0.08 | F025/SS | 2475 | 1 | 0.78 | 1930 | 1835 | 20 | 97 |
| | QHE 2X32T8/UNV ISL-SC | | 0.41/0.18 | F032/700 | 2800 | 2 | 0.78 | 4370 | 3930 | 48 | 91 |
| 49838 | *Banded Pack* | | 0.41/0.18 | F032/XP | 3000 | 2 | 0.78 | 4680 | 4445 | 48 | 98 |
| *49863* | *10-Pack* | 120-277 | 0.38/0.16 | F030/SS | 2850 | 2 | 0.78 | 4445 | 4225 | 45 | 99 |
| *49864* | *Pallet Pack* | | **0.35/0.15** | **F028/SS** | **2725** | **2** | **0.78** | **4250** | **4040** | **42** | **101** |
| | | | 0.32/0.14 | F025/SS | 2475 | 2 | 0.78 | 3860 | 3665 | 37 | 104 |
| | QHE 3X32T8/UNV ISL-SC | | 0.61/0.27 | F032/700 | 2800 | 3 | 0.78 | 6550 | 5895 | 71 | 92 |
| 49839 | *Banded Pack* | | 0.61/0.27 | F032/XP | 3000 | 3 | 0.78 | 7020 | 6670 | 71 | 99 |
| *49865* | *10-Pack* | 120-277 | 0.58/0.25 | F030/SS | 2850 | 3 | 0.78 | 6670 | 6335 | 68 | 98 |
| *49866* | *Pallet Pack* | | **0.53/0.23** | **F028/SS** | **2725** | **3** | **0.78** | **6380** | **6060** | **63** | **101** |
| | | | 0.48/0.21 | F025/SS | 2475 | 3 | 0.78 | 5790 | 5500 | 55 | 105 |
| | QHE 4X32T8/UNV ISL-SC | | 0.80/0.35 | F032/700 | 2800 | 4 | 0.78 | 8735 | 7860 | 95 | 92 |
| 49840 | *Banded Pack* | | 0.80/0.35 | F032/XP | 3000 | 4 | 0.78 | 9360 | 8890 | 95 | 99 |
| *49867* | *10-Pack* | 120-277 | 0.75/0.32 | F030/SS | 2850 | 4 | 0.78 | 8890 | 8445 | 89 | 100 |
| *49868* | *Pallet Pack* | | **0.71/0.31** | **F028/SS** | **2725** | **4** | **0.78** | **8500** | **8075** | **84** | **101** |
| | | | 0.62/0.27 | F025/SS | 2475 | 4 | 0.78 | 7720 | 7335 | 74 | 104 |
| ***NORMAL BALLAST FACTOR*** | | | | | | | | | | | |
| | QHE 1X32T8/UNV ISN-SC | | 0.25/0.11 | F032/700 | 2800 | 1 | 0.88 | 2465 | 2220 | 28 | 88 |
| 49968 | *Banded Pack* | | 0.25/0.11 | F032/XP | 3000 | 1 | 0.88 | 2640 | 2510 | 28 | 94 |
| *49851* | *10-Pack* | 120-277 | 0.22/0.09 | F030/SS | 2850 | 1 | 0.88 | 2510 | 2385 | 26 | 97 |
| *49852* | *Pallet Pack* | | **0.21/0.09** | **F028/SS** | **2725** | **1** | **0.88** | **2400** | **2280** | **25** | **96** |
| | | | 0.19/0.09 | F025/SS | 2475 | 1 | 0.88 | 2175 | 2065 | 22 | 99 |
| | QHE 2X32T8/UNV ISN-SC | | 0.47/0.20 | F032/700 | 2800 | 2 | 0.88 | 4925 | 4430 | 55 | 90 |
| 49969 | *Banded Pack* | | 0.47/0.20 | F032/XP | 3000 | 2 | 0.88 | 5280 | 5015 | 55 | 96 |
| *49853* | *10-Pack* | 120-277 | 0.44/0.19 | F030/SS | 2850 | 2 | 0.88 | 5015 | 4765 | 52 | 96 |
| *49854* | *Pallet Pack* | | **0.40/0.18** | **F028/SS** | **2725** | **2** | **0.88** | **4800** | **4560** | **48** | **100** |
| | | | 0.36/0.16 | F025/SS | 2475 | 2 | 0.88 | 4355 | 4135 | 43 | 101 |
| | QHE 3X32T8/UNV ISN-SC | | 0.69/0.30 | F032/700 | 2800 | 3 | 0.88 | 7390 | 6650 | 83/82 | 89/90 |
| 49970 | *Banded Pack* | | 0.69/0.30 | F032/XP | 3000 | 3 | 0.88 | 7920 | 7525 | 83/82 | 95/97 |
| *49855* | *10-Pack* | 120-277 | 0.66/0.28 | F030/SS | 2850 | 3 | 0.88 | 7525 | 7150 | 78/77 | 96/98 |
| *49856* | *Pallet Pack* | | **0.61/0.26** | **F028/SS** | **2725** | **3** | **0.88** | **7195** | **6835** | **72** | **100** |
| | | | 0.55/0.23 | F025/SS | 2475 | 3 | 0.88 | 6530 | 6205 | 65/64 | 101/102 |
| | QHE 4X32T8/UNV ISN-SC | | 0.91/0.39 | F032/700 | 2800 | 4 | 0.88 | 9855 | 8870 | 108/107 | 91/92 |
| 49971 | *Banded Pack* | | 0.91/0.39 | F032/XP | 3000 | 4 | 0.88 | 10560 | 10030 | 108/107 | 98/99 |
| *49857* | *10-Pack* | 120-277 | 0.86/0.37 | F030/SS | 2850 | 4 | 0.88 | 10030 | 9530 | 102/101 | 98/99 |
| *49858* | *Pallet Pack* | | **0.80/0.35** | **F028/SS** | **2725** | **4** | **0.88** | **9590** | **9110** | **95** | **101** |
| | | | 0.71/0.30 | F025/SS | 2475 | 4 | 0.88 | 8710 | 8275 | 85 | 102 |
| *Instant Start QHE ISL and ISN models above also operate these lamps: FB032, FB031, F025, FB024, F017, FB016, FB030/SS (30W), FB029/SS (29W) & F040T8* | | | | | | | | | | | |
| ***HIGH BALLAST FACTOR*** | | | | | | | | | | | |
| | QHE 1X32T8/UNV ISH-SC | | 0.32/0.14 | F032/700 | 2800 | 1 | 1.20 | 3360 | 3025 | 38 | 88 |
| 49919 | *Banded Pack* | | 0.32/0.14 | F032/XP | 3000 | 1 | 1.20 | 3600 | 3420 | 38 | 95 |
| *49871* | *10-Pack* | 120-277 | 0.30/0.13 | F030SS | 2850 | 1 | 1.20 | 3420 | 3250 | 36 | 95 |
| *49872* | *Pallet Pack* | | **0.27/0.12** | **F028SS** | **2725** | **1** | **1.20** | **3270** | **3105** | **33** | **99** |
| | | | 0.26/0.12 | F025/SS | 2475 | 1 | 1.20 | 2970 | 2820 | 30 | 99 |
| | QHE 2X32T8/UNV ISH-SC | | 0.65/0.28 | F032/700 | 2800 | 2 | 1.20 | 6720 | 6050 | 74/73 | 91/92 |
| 49920 | *Banded Pack* | | 0.65/0.28 | F032/XP | 3000 | 2 | 1.20 | 7200 | 6840 | 74/73 | 97/99 |
| *49873* | *10-Pack* | 120-277 | 0.59/0.25 | F030SS | 2850 | 2 | 1.20 | 6840 | 6500 | 70/69 | 98/99 |
| *49874* | *Pallet Pack* | | **0.55/0.23** | **F028SS** | **2725** | **2** | **1.20** | **6540** | **6210** | **65/64** | **101/102** |
| | | | 0.50/0.22 | F025/SS | 2475 | 2 | 1.20 | 5940 | 5640 | 58/57 | 102/104 |
| | QHE 3X32T8/UNV ISH-SC | | 0.93/0.40 | F032/700 | 2800 | 3 | 1.18 | 9910 | 8920 | 111/109 | 89/90 |
| 49921 | *Banded Pack* | | 0.93/0.40 | F032/XP | 3000 | 3 | 1.18 | 10620 | 10090 | 111/109 | 96/97 |
| *49875* | *10-Pack* | 120-277 | 0.87/0.38 | F030SS | 2850 | 3 | 1.18 | 10090 | 9585 | 104/103 | 97/98 |
| *49876* | *Pallet Pack* | | **0.82/0.35** | **F028SS** | **2725** | **3** | **1.18** | **9650** | **9170** | **98/96** | **98/101** |
| | | | 0.72/0.31 | F025/SS | 2475 | 3 | 1.18 | 8760 | 8320 | 87/86 | 101/102 |
| | QHE 4X32T8/UNV ISH | | 1.21/0.52 | F032/700 | 2800 | 4 | 1.15 | 12880 | 11590 | 144/141 | 89/91 |
| 49922 | *Banded Pack* | | 1.21/0.52 | F032/XP | 3000 | 4 | 1.15 | 13800 | 13110 | 144/141 | 96/98 |
| *49877* | *10-Pack* | 120-277 | 1.13/0.49 | F030SS | 2850 | 4 | 1.15 | 13110 | 12455 | 135/133 | 97/99 |
| *49878* | *Pallet Pack* | | **1.06/0.46** | **F028SS** | **2725** | **4** | **1.15** | **12535** | **11910** | **127/124** | **99/101** |
| | | | 0.94/0.41 | F025/SS | 2475 | 4 | 1.15 | 11385 | 10815 | 112/111 | 102/103 |
| *Instant Start QHE ISH models above also operate these lamps: FB032, FB031, FB030/SS (30W) & FB029/SS (29W)* | | | | | | | | | | | |

1: Mean Lumens @ 8000 hours

| Item Number | OSRAM SYLVANIA Description | Input Voltage (VAC) | Input Current (AMPS) | Lamp Type | Rated Lumens (lm) | No. of Lamps | Ballast Factor (BF) | System Lumens | Mean Lumens[1] | Input Wattage (W) | System Efficacy (lm/W) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **QUICKTRONIC® *PROFESSIONAL* 32 T8 INSTANT START UNIVERSAL VOLTAGE SYSTEMS** | | | | | | | | | | | |
| | | | | ***LOW BALLAST FACTOR*** | | | | | | | |
| | QTP1x32T8/UNV ISL-SC | | 0.22/0.10 | F032/700 | 2800 | 1 | 0.78 | 2185 | 1965 | 28/26 | 70/76 |
| 49832 | *Banded Pack* | | 0.22/0.10 | F032/XP | 3000 | 1 | 0.78 | 2340 | 2220 | 28/26 | 84/90 |
| *49741* | *10-Pack* | 120-277 | 0.22/0.09 | F030/SS | 2850 | 1 | 0.78 | 2220 | 2110 | 26/24 | 86/93 |
| *49742* | *Pallet Pack* | | **0.21/0.08** | **F028/SS** | **2725** | **1** | **0.78** | **2125** | **2020** | **25/23** | **85/92** |
| | | | 0.17/0.08 | F025/SS | 2475 | 1 | 0.78 | 1930 | 1835 | 22/20 | 88/97 |
| | QTP2x32T8/UNV ISL-SC | | 0.44/0.19 | F032/700 | 2800 | 2 | 0.78 | 4370 | 3930 | 51 | 86 |
| 49834 | *Banded Pack* | | 0.44/0.19 | F032/XP | 3000 | 2 | 0.78 | 4680 | 4445 | 51 | 92 |
| *49743* | *10-Pack* | 120-277 | 0.41/0.18 | F030/SS | 2850 | 2 | 0.78 | 4445 | 4220 | 48 | 93 |
| *49744* | *Pallet Pack* | | **0.38/0.17** | **F028/SS** | **2725** | **2** | **0.78** | **4250** | **4040** | **45** | **94** |
| | | | 0.34/0.15 | F025/SS | 2475 | 2 | 0.78 | 3860 | 3665 | 40 | 97 |
| | QTP3x32T8/UNV ISL-SC | | 0.65/0.27 | F032/700 | 2800 | 3 | 0.78 | 6550 | 5895 | 75 | 87 |
| 49835 | *Banded Pack* | | 0.65/0.27 | F032/XP | 3000 | 3 | 0.78 | 7020 | 6670 | 75 | 94 |
| *49745* | *10-Pack* | 120-277 | 0.60/0.26 | F030/SS | 2850 | 3 | 0.78 | 6670 | 6335 | 71 | 94 |
| *49746* | *Pallet Pack* | | **0.57/0.25** | **F028/SS** | **2725** | **3** | **0.78** | **6380** | **6060** | **67** | **95** |
| | | | 0.50/0.21 | F025/SS | 2475 | 3 | 0.78 | 5790 | 5500 | 59 | 98 |
| | QTP4x32T8/UNV ISL-SC | | 0.80/0.35 | F032/700 | 2800 | 4 | 0.78 | 8735 | 7860 | 98 | 89 |
| 49836 | *Banded Pack* | | 0.80/0.35 | F032/XP | 3000 | 4 | 0.78 | 9360 | 8890 | 98 | 96 |
| *49747* | *10-Pack* | 120-277 | 0.78/0.34 | F030/SS | 2850 | 4 | 0.78 | 8890 | 8445 | 92 | 97 |
| *49748* | *Pallet Pack* | | **0.73/0.32** | **F028/SS** | **2725** | **4** | **0.78** | **8500** | **8075** | **86** | **99** |
| | | | 0.63/0.28 | F025/SS | 2475 | 4 | 0.78 | 7720 | 7335 | 77 | 100 |
| | | | | ***NORMAL BALLAST FACTOR*** | | | | | | | |
| | QTP1x32T8/UNV ISN-SC | | 0.26/0.11 | F032/700 | 2800 | 1 | 0.88 | 2465 | 2220 | 30 | 82 |
| 49905 | *Banded Pack* | | 0.26/0.11 | F032/XP | 3000 | 1 | 0.88 | 2640 | 2510 | 30 | 88 |
| *49941* | *10-Pack* | 120-277 | 0.25/0.11 | F030/SS | 2850 | 1 | 0.88 | 2510 | 2385 | 28 | 90 |
| *49942* | *Pallet Pack* | | **0.23/0.10** | **F028/SS** | **2725** | **1** | **0.88** | **2400** | **2280** | **26** | **91** |
| | | | 0.20/0.09 | F025/SS | 2475 | 1 | 0.88 | 2180 | 2070 | 23 | 95 |
| | QTP2x32T8/UNV ISN-SC | | 0.50/0.21 | F032/700 | 2800 | 2 | 0.88 | 4930 | 4435 | 59 | 84 |
| 49906 | *Banded Pack* | | 0.50/0.21 | F032/XP | 3000 | 2 | 0.88 | 5280 | 5015 | 59 | 89 |
| *49943* | *10-Pack* | 120-277 | 0.46/0.20 | F030/SS | 2850 | 2 | 0.88 | 5015 | 4765 | 55 | 91 |
| *49944* | *Pallet Pack* | | **0.43/0.19** | **F028/SS** | **2725** | **2** | **0.88** | **4800** | **4560** | **52** | **92** |
| | | | 0.39/0.16 | F025/SS | 2475 | 2 | 0.88 | 4360 | 4140 | 46 | 95 |
| | QTP3x32T8/UNV ISN-SC | | 0.75/0.32 | F032/700 | 2800 | 3 | 0.88 | 7390 | 6650 | 86 | 86 |
| 49907 | *Banded Pack* | | 0.75/0.32 | F032/XP | 3000 | 3 | 0.88 | 7920 | 7525 | 86 | 92 |
| *49945* | *10-Pack* | 120-277 | 0.69/0.30 | F030/SS | 2850 | 3 | 0.88 | 7520 | 7145 | 81 | 93 |
| *49946* | *Pallet Pack* | | **0.65/0.28** | **F028/SS** | **2725** | **3** | **0.88** | **7190** | **6830** | **76** | **95** |
| | | | 0.58/0.25 | F025/SS | 2475 | 3 | 0.88 | 6530 | 6205 | 67 | 98 |
| | QTP4x32T8/UNV ISN-SC | | 0.95/0.40 | F032/700 | 2800 | 4 | 0.88 | 9855 | 8870 | 112 | 88 |
| 49908 | *Banded Pack* | | 0.95/0.40 | F032/XP | 3000 | 4 | 0.88 | 10560 | 10030 | 112 | 94 |
| *49947* | *10-Pack* | 120-277 | 0.91/0.39 | F030/SS | 2850 | 4 | 0.88 | 10030 | 9530 | 105 | 96 |
| *49948* | *Pallet Pack* | | **0.85/0.37** | **F028/SS** | **2725** | **4** | **0.88** | **9590** | **9110** | **98** | **98** |
| | | | 0.74/0.31 | F025/SS | 2475 | 4 | 0.88 | 8710 | 8275 | 88 | 99 |
| *Instant Start QTP ISL and ISN models above also operate these lamps: FB032, FB031, F025, FB024, F017, FB016, FB030/SS (30W), FB029/SS (29W) & F040T8* | | | | | | | | | | | |
| | | | | ***HIGH BALLAST FACTOR*** | | | | | | | |
| | QTP1x32T8/UNV ISH-SC | | 0.33/0.15 | F032/700 | 2800 | 1 | 1.20 | 3360 | 3025 | 41 | 82 |
| 49829 | *Banded Pack* | | 0.33/0.15 | F032/XP | 3000 | 1 | 1.20 | 3600 | 3420 | 41 | 88 |
| *49841* | *10-Pack* | 120-277 | 0.31/0.14 | F030/SS | 2850 | 1 | 1.20 | 3420 | 3250 | 39 | 89 |
| *49842* | *Pallet Pack* | | **0.29/0.13** | **F028/SS** | **2725** | **1** | **1.20** | **3270** | **3105** | **36** | **91** |
| | | | 0.27/0.12 | F025/SS | 2475 | 1 | 1.20 | 2970 | 2820 | 32 | 93 |
| | QTP2x32T8/UNV ISH-SC | | 0.65/0.28 | F032/700 | 2800 | 2 | 1.20 | 6720 | 6050 | 78 | 86 |
| 49830 | *Banded Pack* | | 0.65/0.28 | F032/XP | 3000 | 2 | 1.20 | 7200 | 6840 | 78 | 92 |
| *49843* | *10-Pack* | 120-277 | 0.61/0.26 | F030/SS | 2850 | 2 | 1.20 | 6840 | 6500 | 73 | 93 |
| *49844* | *Pallet Pack* | | **0.57/0.25** | **F028/SS** | **2725** | **2** | **1.20** | **6540** | **6210** | **69** | **95** |
| | | | 0.51/0.22 | F025/SS | 2475 | 2 | 1.20 | 5940 | 5640 | 61 | 97 |
| | QTP3x32T8/UNV ISH-SC | | 0.95/0.41 | F032/700 | 2800 | 3 | 1.18 | 9910 | 8920 | 114/111 | 87/89 |
| 49831 | *Banded Pack* | | 0.95/0.41 | F032/XP | 3000 | 3 | 1.18 | 10620 | 10090 | 114/111 | 93/96 |
| *49845* | *10-Pack* | 120-277 | 0.89/0.39 | F030/SS | 2850 | 3 | 1.18 | 10090 | 9585 | 107/104 | 94/97 |
| *49846* | *Pallet Pack* | | **0.84/0.36** | **F028/SS** | **2725** | **3** | **1.18** | **9650** | **9170** | **100/98** | **97/98** |
| | | | 0.75/0.32 | F025/SS | 2475 | 3 | 1.18 | 8760 | 8320 | 89/88 | 98/99 |
| *Instant Start QTP ISH models above also operate these lamps: FB032, FB031, FB030/SS (30W) & FB029/SS (29W)* | | | | | | | | | | | |

**SPECIFICATIONS:**

Information is subject to change at anytime without prior notice.





1: Mean Lumens @ 8000 hours

| Item Number | OSRAM SYLVANIA Description | Input Voltage (VAC) | Input Current (AMPS) | Lamp Type | Rated Lumens (lm) | No. of Lamps | Ballast Factor (BF) | System Lumens | Mean Lumens[1] | Input Wattage (W) | System Efficacy (lm/W) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **QUICKTRONIC® *HIGH EFFICIENCY SYSTEMS* 32 T8 PROStart® PSX UNIVERSAL VOLTAGE SYSTEMS** | | | | | | | | | | | |
| ***Xtreme SYSTEMS – LOW BALLAST FACTOR*** | | | | | | | | | | | |
| 51224 | QTP 1x32T8/UNV PSX-TC *Banded Pack* | 120-277 | 0.21/0.09 | F032/700 | 2800 | 1 | 0.71 | 1990 | 1790 | 25 | 80 |
| *51420* | *10-Pack* | | 0.21/0.09 | F032/XPS | 3100 | 1 | 0.71 | 2200 | 2090 | 25 | 88 |
| 51225 | QTP 2x32T8/UNV PSX-TC *Banded Pack* | 120-277 | 0.40/0.17 | F032/700 | 2800 | 2 | 0.71 | 3975 | 3580 | 47/46 | 85/86 |
| *51425* | *10-Pack* | | 0.40/0.17 | F032/XPS | 3100 | 2 | 0.71 | 4400 | 4180 | 47/46 | 94/96 |
| 51226 | QTP 3x32T8/UNV PSX-SC *Banded Pack* | 120-277 | 0.59/0.25 | F032/700 | 2800 | 3 | 0.71 | 5965 | 5370 | 73/71 | 82/84 |
| *51430* | *10-Pack* | | 0.59/0.25 | F032/XPS | 3100 | 3 | 0.71 | 6600 | 6270 | 73/71 | 90/93 |
| 51227 | QTP 4x32T8/UNV PSX-SC *Banded Pack* | 120-277 | 0.78/0.33 | F032/700 | 2800 | 4 | 0.71 | 7950 | 7155 | 93/91 | 85/87 |
| *51435* | *10-Pack* | | 0.78/0.33 | F032/XPS | 3100 | 4 | 0.71 | 8800 | 8360 | 93/91 | 95/96 |
| ***Xtreme SUPERSAVER® SYSTEMS – LOW BALLAST FACTOR*** | | | | | | | | | | | |
| 51224 | QTP 1x32T8/UNV PSX-TC *Banded Pack* | 120-277 | 0.21/0.09 | F032/700 | 2800 | 1 | 0.71 | 1990 | 1790 | 25 | 80 |
| *51420* | *10-Pack* | | 0.21/0.09 | F030/SS | 2850 | 1 | 0.71 | 2020 | 1920 | 24 | 84 |
| *51421* | *Pallet Pack* | | **0.19/0.09** | **F028/SS** | **2725** | **1** | **0.71** | **1935** | **1840** | **22** | **88** |
| | | | 0.18/0.08 | F025/SS | 2475 | 1 | 0.71 | 1760 | 1670 | 20 | 88 |
| 51225 | QTP 2x32T8/UNV PSX-TC *Banded Pack* | 120-277 | 0.37/0.16 | F032/700 | 2800 | 2 | 0.71 | 3975 | 3580 | 47/46 | 85/86 |
| *51425* | *10-Pack* | | 0.37/0.16 | F030/SS | 2850 | 2 | 0.71 | 4045 | 3840 | 44/43 | 92/94 |
| *51426* | *Pallet Pack* | | **0.35/0.15** | **F028/SS** | **2725** | **2** | **0.71** | **3870** | **3675** | **41/40** | **94/97** |
| | | | 0.32/0.14 | F025/SS | 2475 | 2 | 0.71 | 3515 | 3340 | 37/36 | 95/98 |
| 51226 | QTP 3x32T8/UNV PSX-SC *Banded Pack* | 120-277 | 0.58/0.24 | F032/700 | 2800 | 3 | 0.71 | 5965 | 5370 | 73/71 | 82/84 |
| *51430* | *10-Pack* | | 0.58/0.24 | F030/SS | 2850 | 3 | 0.71 | 6070 | 5765 | 69/67 | 88/91 |
| *51431* | *Pallet Pack* | | **0.55/0.23** | **F028/SS** | **2725** | **3** | **0.71** | **5805** | **5515** | **64/62** | **91/94** |
| | | | 0.48/0.31 | F025/SS | 2475 | 3 | 0.71 | 5270 | 5010 | 57/56 | 93/94 |
| 51227 | QTP 4x32T8/UNV PSX-SC *Banded Pack* | 120-277 | 0.74/0.31 | F032/700 | 2800 | 4 | 0.71 | 7950 | 7155 | 93/91 | 85/87 |
| *51435* | *10-Pack* | | 0.74/0.31 | F030/SS | 2850 | 4 | 0.71 | 8090 | 7685 | 88/86 | 92/94 |
| *51436* | *Pallet Pack* | | **0.70/0.30** | **F028/SS** | **2725** | **4** | **0.71** | **7740** | **7350** | **82/80** | **94/97** |
| | | | 0.63/0.27 | F025/SS | 2475 | 4 | 0.71 | 7030 | 6680 | 75/74 | 94/95 |
| ***PROStart QTP PSX models above also operate these lamps: FB032, FB031, F025, FB024, F017, FB016, FB030/SS(30W) & FB029/SS(29W)*** | | | | | | | | | | | |
| **QUICKTRONIC *PROFESSIONAL* 32 T8 PROStart PSN UNIVERSAL VOLTAGE SYSTEMS** | | | | | | | | | | | |
| ***NORMAL BALLAST FACTOR*** | | | | | | | | | | | |
| 51399 | QTP 1x32T8/UNV PSN-TC *Banded Pack* | 120-277 | 0.26/0.11 | F032/700 | 2800 | 1 | 0.88 | 2465 | 2220 | 31/30 | 79/82 |
| *51400* | *10-Pack* | | 0.26/0.11 | F032/XP | 3000 | 1 | 0.88 | 2640 | 2510 | 31/30 | 85/88 |
| *51401* | *Pallet Pack* | | 0.24/0.10 | F030/SS | 2850 | 1 | 0.88 | 2510 | 2385 | 29/28 | 87/90 |
| | | | **0.23/0.09** | **F028/SS** | **2725** | **1** | **0.88** | **2400** | **2280** | **27/26** | **89/92** |
| | | | 0.20/0.09 | F025/SS | 2475 | 1 | 0.88 | 2175 | 2065 | 24/23 | 91/95 |
| 51402 | QTP 2x32T8/UNV PSN-TC *Banded Pack* | 120-277 | 0.50/0.21 | F032/700 | 2800 | 2 | 0.88 | 4930 | 4437 | 59/56 | 84/88 |
| *51405* | *10-Pack* | | 0.50/0.21 | F032/XP | 3000 | 2 | 0.88 | 5280 | 5015 | 59/56 | 89/94 |
| *51406* | *Pallet Pack* | | 0.47/0.20 | F030/SS | 2850 | 2 | 0.88 | 5015 | 4765 | 55/53 | 91/95 |
| | | | **0.45/0.19** | **F028/SS** | **2725** | **2** | **0.88** | **4800** | **4560** | **52/49** | **92/98** |
| | | | 0.39/0.17 | F025/SS | 2475 | 2 | 0.88 | 4355 | 4135 | 46/44 | 95/99 |
| 51403 | QTP 3x32T8/UNV PSN-SC *Banded Pack* | 120-277 | 0.74/0.31 | F032/700 | 2800 | 3 | 0.88 | 7390 | 6650 | 88/85 | 84/87 |
| *51410* | *10-Pack* | | 0.74/0.31 | F032/XP | 3000 | 3 | 0.88 | 7920 | 7525 | 88/85 | 90/93 |
| *51411* | *Pallet Pack* | | 0.70/0.29 | F030/SS | 2850 | 3 | 0.88 | 7525 | 7150 | 83/80 | 91/94 |
| | | | **0.65/0.27** | **F028/SS** | **2725** | **3** | **0.88** | **7195** | **6835** | **77/75** | **93/96** |
| | | | 0.58/0.25 | F025/SS | 2475 | 3 | 0.88 | 6530 | 6205 | 69/68 | 95/96 |
| 51404 | QTP 4x32T8/UNV PSN-SC *Banded Pack* | 120-277 | 0.99/0.41 | F032/700 | 2800 | 4 | 0.88 | 9855 | 8870 | 118/113 | 83/87 |
| *51415* | *10-Pack* | | 0.99/0.41 | F032/XP | 3000 | 4 | 0.88 | 10,560 | 10,030 | 118/113 | 90/94 |
| *51416* | *Pallet Pack* | | 0.93/0.39 | F030/SS | 2850 | 4 | 0.88 | 10,030 | 9530 | 111/106 | 90/95 |
| | | | **0.88/0.36** | **F028/SS** | **2725** | **4** | **0.88** | **9590** | **9110** | **104/99** | **92/97** |
| | | | 0.77/0.32 | F025/SS | 2475 | 4 | 0.88 | 8710 | 8275 | 92/90 | 95/97 |
| ***PROStart QTP PSN models above also operate these lamps: FB032, FB031, F025, FB024, F017, FB016, FB030/SS (30W) & FB029/SS (29W)*** | | | | | | | | | | | |

### PROStart

A programmed rapid starting method for fluorescent lamps that achieves up to 100,000 switching cycles which is ideal for use on occupancy sensors.

- Exclusive lamp warranty for occupancy sensor applications.


1: Mean Lumens @ 8000 hours

| Item Number | OSRAM SYLVANIA Description | Input Voltage (VAC) | Input Current (AMPS) | Lamp Type | Rated Lumens (lm) | No. of Lamps | Ballast Factor (BF) | System Lumens | Mean Lumens | Input Wattage (W) | System Efficacy (lm/W) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **QUICKTRONIC® *HIGH EFFICIENCY* 32 T8 PROStart® UNIVERSAL VOLTAGE SYSTEMS** | | | | | | | | | | | |
| ***HIGH BALLAST FACTOR (90°C Case Temperature – Parallel Operation)¹*** | | | | | | | | | | | |
| 49450 ❂ | QHE2x32T8/UNV-PSH-HT | 120-277 | 0.63/0.27 | F032/700 | 2800 | 2 | 1.15 | 6440 | 5795 | 75/74 | 86/87 |
| *49459* | *Banded Pack* | | 0.63/0.27 | F032/XP | 3000 | 2 | 1.15 | 6900 | 6555 | 75/74 | 92/93 |
| | *Pallet Pack* | | 0.60/0.25 | F030/SS | 2830 | 2 | 1.15 | 6510 | 6185 | 70/69 | 93/94 |
| | | | **0.55/0.24** | **F028/SS** | **2725** | **2** | **1.15** | **6270** | **5955** | **66/65** | **95/96** |
| | | | 0.50/0.21 | F025/SS | 2475 | 2 | 1.15 | 5695 | 5410 | 59/58 | 96/98 |
| 49453 ❂ | QHE3x32T8/UNV-PSH-HT | 120-277 | 0.94/0.40 | F032/700 | 2800 | 3 | 1.15 | 9660 | 8695 | 110/109 | 88/89 |
| *49460* | *Banded Pack* | | 0.94/0.40 | F032/XP | 3000 | 3 | 1.15 | 10,350 | 9830 | 110/109 | 94/95 |
| | *Pallet Pack* | | 0.88/0.38 | F030/SS | 2830 | 3 | 1.15 | 9765 | 9275 | 103/102 | 95/96 |
| | | | **0.82/0.35** | **F028/SS** | **2725** | **3** | **1.15** | **9400** | **8930** | **96/95** | **98/99** |
| | | | 0.73/0.31 | F025/SS | 2475 | 3 | 1.15 | 8540 | 8110 | 86/85 | 99/100 |
| 49455 ❂ | QHE4x32T8/UNV-PSH-HT | 120-277 | 1.24/0.53 | F032/700 | 2800 | 4 | 1.15 | 12,880 | 11,590 | 146/144 | 88/89 |
| *49470* | *Banded Pack* | | 1.24/0.53 | F032/XP | 3000 | 4 | 1.15 | 13,800 | 13,110 | 146/144 | 95/96 |
| | *Pallet Pack* | | 1.16/0.50 | F030/SS | 2830 | 4 | 1.15 | 13,020 | 13,370 | 137/135 | 95/96 |
| | | | **1.09/0.46** | **F028/SS** | **2725** | **4** | **1.15** | **12,535** | **11,910** | **128/126** | **98/99** |
| | | | 0.97/0.41 | F025/SS | 2475 | 4 | 1.15 | 11,385 | 10,815 | 114/113 | 100/101 |
| *PROStart® QHE PSH models above also operate these lamps: FB032, FB031, FB030/SS (30W) & FB029/SS (29W)* | | | | | | | | | | | |
| **QUICKTRONIC *HIGH EFFICIENCY* 32 T8 INSTANT START UNIVERSAL VOLTAGE SYSTEMS** | | | | | | | | | | | |
| ***NORMAL BALLAST FACTOR - UL Type CC - Lamp Striation Control/LSC¹*** | | | | | | | | | | | |
| 49381 | QHE1x32T8/UNV-ISN-SC-1 | 120-277 | 0.25/0.11 | F032/700 | 2800 | 1 | 0.87 | 2435 | 2190 | 28 | 87 |
| *49382* | *Banded Pack* | | 0.25/0.11 | F032/XP | 3000 | 1 | 0.87 | 2610 | 2480 | 28 | 93 |
| | *Pallet Pack* | | 0.23/0.09 | F030/SS | 2850 | 1 | 0.87 | 2480 | 2355 | 27/26 | 92/95 |
| | | | **0.21/0.09** | **F028/SS** | **2725** | **1** | **0.87** | **2370** | **2250** | **25/24** | **95/99** |
| | | | 0.20/0.90 | F025/SS | 2475 | 1 | 0.87 | 2155 | 2045 | 23/22 | 94/98 |
| 49383 | QHE2x32T8/UNV-ISN-SC-1 | 120-277 | 0.47/0.20 | F032/700 | 2800 | 2 | 0.87 | 4870 | 4385 | 55 | 89 |
| *49384* | *Banded Pack* | | 0.47/0.20 | F032/XP | 3000 | 2 | 0.87 | 5220 | 4960 | 55 | 95 |
| | *Pallet Pack* | | 0.44/0.19 | F030/SS | 2850 | 2 | 0.87 | 4960 | 4710 | 52 | 95 |
| | | | **0.40/0.18** | **F028/SS** | **2725** | **2** | **0.87** | **4740** | **4500** | **48/47** | **99/101** |
| | | | 0.37/0.16 | F025/SS | 2475 | 2 | 0.87 | 4305 | 4090 | 44/43 | 98/100 |
| 49385 | QHE3x32T8/UNV-ISN-SC-1 | 120-277 | 0.68/0.30 | F032/700 | 2800 | 3 | 0.87 | 7305 | 6940 | 82/81 | 89/90 |
| *49386* | *Banded Pack* | | 0.68/0.30 | F032/XP | 3000 | 3 | 0.87 | 7830 | 7440 | 82/81 | 96/97 |
| | *Pallet Pack* | | 0.65/0.28 | F030/SS | 2850 | 3 | 0.87 | 7440 | 7070 | 77/76 | 97/98 |
| | | | **0.61/0.26** | **F028/SS** | **2725** | **3** | **0.87** | **7110** | **6755** | **72/71** | **99/100** |
| | | | 0.55/0.23 | F025/SS | 2475 | 3 | 0.87 | 6460 | 6135 | 65/64 | 99/101 |
| 49387 | QHE4x32T8/UNV-ISN-SC-1 | 120-277 | 0.92/0.39 | F032/700 | 2800 | 4 | 0.87 | 9745 | 9255 | 109/107 | 89/91 |
| *49388* | *Banded Pack* | | 0.92/0.39 | F032/XP | 3000 | 4 | 0.87 | 10,440 | 9920 | 109/107 | 96/98 |
| | *Pallet Pack* | | 0.86/0.37 | F030/SS | 2850 | 4 | 0.87 | 9920 | 9425 | 102 | 97 |
| | | | **0.80/0.35** | **F028/SS** | **2725** | **4** | **0.87** | **9485** | **9010** | **95/94** | **100/101** |
| | | | 0.74/0.31 | F025/SS | 2475 | 4 | 0.87 | 8615 | 8185 | 87/86 | 99/100 |
| *Instant Start QHE ISN models above also operate these lamps: FB032, FB031, F025, FB024, F017, FB016, FB030/SS (30W), FB029/SS (29W) & F040T8* | | | | | | | | | | | |
| **QUICKTRONIC *HIGH EFFICIENCY* 59 T8 (8 foot) INSTANT START UNIVERSAL VOLTAGE SYSTEMS** | | | | | | | | | | | |
| ***LOW BALLAST FACTOR²*** | | | | | | | | | | | |
| 50239* | QHE2x59T8/UNV-ISL-SC | 120-277 | 0.80/0.34 | F096T8/700 (59W) | 5700 | 2 | 0.77 | 8780 | 7900 | 95/94 | 92/93 |
| *49869* | *10-Pack* | | 0.80/0.34 | F096T8/XP (59W) | 6100 | 2 | 0.77 | 9380 | 8910 | 95/94 | 99/100 |
| *49870* | *Pallet Pack* | | **0.74/0.32** | **F096T8/XP/SS (55W)** | **5700** | **2** | **0.77** | **8780** | **8340** | **89/88** | **99/100** |
| ***NORMAL BALLAST FACTOR²*** | | | | | | | | | | | |
| 50237* | QHE2x59T8/UNV-ISN-SC | 120-277 | 0.92/0.40 | F096T8/700 (59W) | 5700 | 2 | 0.88 | 10,030 | 9025 | 109/107 | 92/94 |
| *49859* | *10-Pack* | | 0.92/0.40 | F096T8/XP (59W) | 6100 | 2 | 0.88 | 10,735 | 10,200 | 109/107 | 98/100 |
| *49860* | *Pallet Pack* | | **0.84/0.36** | **F096T8/XP/SS (55W)** | **5700** | **2** | **0.88** | **10,030** | **9530** | **102/100** | **99/100** |
| ***HIGH BALLAST FACTOR²*** | | | | | | | | | | | |
| 50238* | QHE2x59T8/UNV-ISH | 120-277 | 1.20/0.52 | F096T8/700 (59W) | 5700 | 2 | 1.15 | 13,110 | 11,800 | 144/141 | 91/93 |
| *49879* | *10-Pack* | | 1.20/0.52 | F096T8/XP (59W) | 6100 | 2 | 1.15 | 14,030 | 13,330 | 144/141 | 97/100 |
| *49880* | *Pallet Pack* | | **1.08/0.47** | **F096T8/XP/SS (55W)** | **5700** | **2** | **1.15** | **13,110** | **12,455** | **134/131** | **98/100** |
| *QHE2x59T8-ISL-SC and QHE2x59T8-ISN-SC models also operate these lamps: F072T8 & F048T8* | | | | | | | | | | | |
| **QUICKTRONIC *PROFESSIONAL* 59 T8 (8 foot) INSTANT START UNIVERSAL VOLTAGE SYSTEMS** | | | | | | | | | | | |
| ***NORMAL BALLAST FACTOR²*** | | | | | | | | | | | |
| 49590* | QTP 2x59T8/UNV ISN-SC | 120-277 | 0.93/0.40 | F096T8/700 (59W) | 5700 | 2 | 0.88 | 10,030 | 9027 | 112/110 | 90/91 |
| *49598* | *10-Pack* | | 0.93/0.40 | F096T8/XP (59W) | 6100 | 2 | 0.88 | 10,735 | 10,200 | 112/110 | 96/98 |
| *49599* | *Pallet Pack* | | | **F096T8/XP/SS (55W)** | **5700** | **2** | **0.88** | **10,030** | **9530** | **104/102** | **96/98** |
| *Instant Start QTP ISN models above also operate these lamps: F072T8 & F048T8* | | | | | | | | | | | |
| **QUICKTRONIC *HIGH EFFICIENCY* 86 T8/HO (8 foot) PROStart UNIVERSAL VOLTAGE SYSTEMS** | | | | | | | | | | | |
| ***NORMAL BALLAST FACTOR (90°C Case Temperature – Parallel Operation)²*** | | | | | | | | | | | |
| 50304 ❂* | QHE 2x86T8HO/UNV-PSN-HT-SCL | 120-277 | ❑ | F096T8/700/HO | 8000 | 2 | ❑ | ❑ | ❑ | ❑ | ❑ |
| *50305* | *Pallet Pack* | | ❑ | F096T8/800/HO | 8200 | 2 | ❑ | ❑ | ❑ | ❑ | ❑ |
| *PROStart® QHE 2x86T8HO also operates these lamps: F72, F60T8HO & F48T8HO* | | | | | | | | | | | |

1: Mean Lumens @ 8000 hours, 2: Mean Lumens for T8 (8 foot) @ 6000 hours , *10 Piece Banded Pack Item Number, ❑ Contact OSRAM SYLVANIA for product information.

| Item Number | OSRAM SYLVANIA Description | Rated Voltage (VAC) | Input Current (AMPS) | Lamp Type | Rated Lumens (lm) | No. of Lamps | Ballast Factor (BF) | System Lumens | Mean Lumens[1] | Input Wattage (W) | System Efficacy (lm/W) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **QUICKTRONIC® *HIGH EFFICIENCY* 32 T8 INSTANT START 347 VOLT SYSTEMS – CANADA** | | | | | | | | | | | |
| | | | | ***LOW BALLAST FACTOR*** | | | | | | | |
| 49471 | QHE 1X32T8/347 ISL-SC | 347 | 0.08 | FO32/700 | 2800 | 1 | 0.78 | 2185 | 1965 | 25 | 87 |
| | | | 0.08 | FO32/XP | 3000 | 1 | 0.78 | 2340 | 2220 | 25 | 94 |
| | | | 0.07 | FO30/SS | 2850 | 1 | 0.78 | 2220 | 2110 | 24 | 93 |
| | | | **0.07** | **FO28/SS** | **2725** | **1** | **0.78** | **2125** | **2020** | **22** | **97** |
| | | | 0.06 | FO25/SS | 2475 | 1 | 0.78 | 1930 | 1835 | 20 | 97 |
| 49473 | QHE 2X32T8/347 ISL-SC | 347 | 0.14 | FO32/700 | 2800 | 2 | 0.78 | 4370 | 3930 | 48 | 91 |
| | | | 0.14 | FO32/XP | 3000 | 2 | 0.78 | 4680 | 4445 | 48 | 98 |
| | | | 0.13 | FO30/SS | 2850 | 2 | 0.78 | 4445 | 4220 | 46 | 97 |
| | | | **0.12** | **FO28/SS** | **2725** | **2** | **0.78** | **4250** | **4040** | **43** | **99** |
| | | | 0.12 | FO25/SS | 2475 | 2 | 0.78 | 3860 | 3665 | 38 | 102 |
| 49475 | QHE 3X32T8/347 ISL-SC | 347 | 0.21 | FO32/700 | 2800 | 3 | 0.78 | 6550 | 5895 | 71 | 92 |
| | | | 0.21 | FO32/XP | 3000 | 3 | 0.78 | 7020 | 6670 | 71 | 99 |
| | | | 0.20 | FO30/SS | 2850 | 3 | 0.78 | 6670 | 6340 | 67 | 100 |
| | | | **0.18** | **FO28/SS** | **2725** | **3** | **0.78** | **6380** | **6060** | **62** | **103** |
| | | | 0.17 | FO25/SS | 2475 | 3 | 0.78 | 5790 | 5500 | 55 | 105 |
| 49477 | QHE 4X32T8/347 ISL-SC | 347 | 0.28 | FO32/700 | 2800 | 4 | 0.78 | 8735 | 7860 | 96 | 91 |
| | | | 0.28 | FO32/XP | 3000 | 4 | 0.78 | 9360 | 8890 | 96 | 98 |
| | | | 0.26 | FO30/SS | 2850 | 4 | 0.78 | 8890 | 8445 | 90 | 99 |
| | | | **0.25** | **FO28/SS** | **2725** | **4** | **0.78** | **8500** | **8075** | **84** | **101** |
| | | | 0.23 | FO25/SS | 2475 | 4 | 0.78 | 7720 | 7335 | 74 | 104 |
| | | | | ***NORMAL BALLAST FACTOR*** | | | | | | | |
| 49461 | QHE 1X32T8/347 ISN-SC | 347 | 0.08 | FO32/700 | 2800 | 1 | 0.88 | 2465 | 2220 | 28 | 88 |
| | | | 0.08 | FO32/XP | 3000 | 1 | 0.88 | 2640 | 2510 | 28 | 94 |
| | | | 0.08 | FO30/SS | 2850 | 1 | 0.88 | 2510 | 2385 | 27 | 93 |
| | | | **0.07** | **FO28/SS** | **2725** | **1** | **0.88** | **2400** | **2280** | **25** | **96** |
| | | | 0.07 | FO25/SS | 2475 | 1 | 0.88 | 2175 | 2065 | 22 | 99 |
| 49463 | QHE 2X32T8/347 ISN-SC | 347 | 0.16 | FO32/700 | 2800 | 2 | 0.88 | 4925 | 4430 | 55 | 90 |
| | | | 0.16 | FO32/XP | 3000 | 2 | 0.88 | 5280 | 5015 | 55 | 96 |
| | | | 0.15 | FO30/SS | 2850 | 2 | 0.88 | 5015 | 4765 | 52 | 96 |
| | | | **0.14** | **FO28/SS** | **2725** | **2** | **0.88** | **4800** | **4560** | **48** | **100** |
| | | | 0.13 | FO25/SS | 2475 | 2 | 0.88 | 4355 | 4135 | 43 | 101 |
| 49465 | QHE 3X32T8/347 ISN-SC | 347 | 0.25 | FO32/700 | 2800 | 3 | 0.88 | 7390 | 6650 | 83 | 89 |
| | | | 0.25 | FO32/XP | 3000 | 3 | 0.88 | 7920 | 7525 | 83 | 95 |
| | | | 0.24 | FO30/SS | 2850 | 3 | 0.88 | 7525 | 7150 | 78 | 96 |
| | | | **0.22** | **FO28/SS** | **2725** | **3** | **0.88** | **7195** | **6835** | **74** | **97** |
| | | | 0.20 | FO25/SS | 2475 | 3 | 0.88 | 6530 | 6205 | 66 | 99 |
| 49467 | QHE 4X32T8/347 ISN-SC | 347 | 0.33 | FO32/700 | 2800 | 4 | 0.88 | 9855 | 8870 | 109 | 90 |
| | | | 0.33 | FO32/XP | 3000 | 4 | 0.88 | 10,560 | 10,030 | 109 | 97 |
| | | | 0.31 | FO30/SS | 2850 | 4 | 0.88 | 10,030 | 9530 | 103 | 97 |
| | | | **0.29** | **FO28/SS** | **2725** | **4** | **0.88** | **9590** | **9110** | **97** | **99** |
| | | | 0.26 | FO25/SS | 2475 | 4 | 0.88 | 8710 | 8275 | 87 | 100 |
| *Instant Start QHE ISL and ISN models above also operate these lamps: FB032, FB031, F025, FB024, F017, FB016, FB030/SS (30W), FB029/SS (29W) & F040T8* | | | | | | | | | | | |
| **QUICKTRONIC 32 T8 INSTANT START 347 VOLT SYSTEMS – CANADA** | | | | | | | | | | | |
| | | | | ***LOW BALLAST FACTOR*** | | | | | | | |
| 49241 | QT2X32T8/347 ISL-SC | 347 | 0.15 | FO32/XP | 3000 | 2 | 0.77 | 4620 | 4390 | 51 | 91 |
| 49939 | QT4X32T8/347 ISL-SC | 347 | 0.28 | FO32/XP | 3000 | 4 | 0.77 | 9240 | 8775 | 98 | 94 |
| **QUICKTRONIC *PROFESSIONAL* 32 T8 INSTANT START 347 VOLT SYSTEMS – CANADA** | | | | | | | | | | | |
| | | | | ***NORMAL BALLAST FACTOR*** | | | | | | | |
| 49711 | QTP1X32T8/347 ISN-SC | 347 | 0.089 | FO32/XP | 3000 | 1 | 0.88 | 2700 | 2565 | 31 | 90 |
| 49713 | QTP2X32T8/347 ISN-SC | 347 | 0.165 | FO32/XP | 3000 | 2 | 0.88 | 5280 | 5015 | 59 | 89 |
| **QUICKTRONIC 32 T8 INSTANT START 347 VOLT SYSTEMS – CANADA** | | | | | | | | | | | |
| | | | | ***NORMAL BALLAST FACTOR*** | | | | | | | |
| 49993 | QT3X32T8/347 ISN-SC | 347 | 0.25 | FO32/XP | 3000 | 3 | 0.90 | 8100 | 7695 | 87 | 93 |
| 49994 | QT4X32T8/347 ISN-SC | 347 | 0.34 | FO32/XP | 3000 | 4 | 0.90 | 10,800 | 10,260 | 112 | 96 |
| *Instant Start QTP ISN and QT ISL and ISN models above also operate these lamps: FB032, FB031, F025, F040, FB024, F017, FB016, F030/SS(30W), FB030/SS, FB029/SS, F028/SS(28W) & F025/SS(25W)* | | | | | | | | | | | |
| | | | | ***HIGH BALLAST FACTOR*** | | | | | | | |
| 49927 | QT2X32T8/347 ISH-SC | 347 | 0.23 | FO32/XP | 3000 | 2 | 1.2 | 7200 | 6840 | 78 | 92 |
| *Instant Start QT ISH model above also operates these lamps: F030/SS, F028/SS, F025/SS, FB032, FB031, FB030/SS & FB029/SS* | | | | | | | | | | | |
| **QUICKTRONIC 59 T8 (8 foot) INSTANT START 347 VOLT SYSTEMS – CANADA** | | | | | | | | | | | |
| | | | | ***NORMAL BALLAST FACTOR*** | | | | | | | |
| 49217 | QT2X59/347 IS | 347 | 0.33 | FO96T8 XP(59W) | 6100 | 2 | 0.88 | 10,735 | 10,200 | 110 | 98 |
| *Instant Start QT IS model above also operates the FO96/SS lamp (55W)* | | | | | | | | | | | |

1: Mean Lumens @ 8000 hours



❂ New Product. Contact OSRAM SYLVANIA for product availability.

| Item Number | OSRAM SYLVANIA Description | Input Voltage (VAC) | Input Current (AMPS) | Lamp Type | Rated Lumens (lm) | No. of Lamps | Ballast Factor (BF) | System Lumens | Input Wattage (W) | System Efficacy (lm/W) |
|---|---|---|---|---|---|---|---|---|---|---|
| **QUICKTRONIC® *PROFESSIONAL* T5HO PROStart® PSN UNIVERSAL VOLTAGE SYSTEMS** | | | | | | | | | | |
| | | | | ***NORMAL BALLAST FACTOR[3]*** | | | | | | |
| 49111<br>*(49110)*◆ | QTP 2x39-24T5HO/UNV PSN NL | 120-277 | 0.47/0.20 | FP24T5HO | 2000 | 2<br>1 | 1.00<br>1.00 | 4000<br>2000 | 55/54<br>29 | 73/74<br>70 |
| 49111<br>*(49110)*◆ | QTP 2x39-24T5HO/UNV PSN NL | 120-277 | 0.76/0.32 | FP39T5HO | 3500 | 2<br>1 | 1.00<br>1.00 | 7000<br>3500 | 85/83<br>42 | 82/84<br>83 |
| 49131<br>*(49130)*◆ | QTP 2x54T5HO/UNV PSN NL | 120-277 | 1.00/0.43 | FP54T5HO | 5000 | 2<br>1 | 1.00<br>1.00 | 10000<br>5000 | 121/118<br>61 | 83/85<br>82 |
| 49151<br>*(49150)*◆ | QTP 1x80T5HO/UNV PSN NL | 120-277 | 0.74/0.32 | FP80T5HO<br>FT80T5DL | 6000<br>7000 | 1<br>1 | 1.00<br>1.00 | 7000<br>6000 | 90<br>90 | 78<br>67 |
| ◆ *(Item Number) = Item Number/NAED in parentheses are models with leads/wires. See Ballast Technology & Specification Guide for additional lamp types and full specifications.* | | | | | | | | | | |
| **QUICKTRONIC *PROFESSIONAL* T5 PROStart PSN UNIVERSAL VOLTAGE SYSTEMS** | | | | | | | | | | |
| | | | | ***NORMAL BALLAST FACTOR[3]*** | | | | | | |
| 49181<br>*(49180)*◆ | QTP 2x28T5/UNV PSN NL | 120-277 | 0.55/0.23 | FP28T5 | 2900 | 2<br>1 | 1.00<br>1.00 | 5800<br>2900 | 65/63<br>32 | 89/92<br>90 |
| *PROStart® QTP PSN models above also operate these lamps: FP14, FP21 & FP35*<br>◆ *(Item Number) = Item Number/NAED in parentheses are models with leads/wires.* | | | | | | | | | | |
| **QUICKTRONIC *PROFESSIONAL* T5HO PROStart UNIVERSAL VOLTAGE HIGH AMBIENT TEMP. SYSTEMS** | | | | | | | | | | |
| | | | | ***FIXED OUTPUT[3]*** | | | | | | |
| 49136<br>*(49135)*◆ | QTP 2x54T5HO/UNV PSN HT NL | 120-277 | 1.00/0.43 | FP54T5HO | 5000 | 2<br>1 | 1.00<br>1.00 | 10000<br>5000 | 121/118<br>61 | 83/85<br>82 |
| | | | | ***SWITCHABLE MODEL[3]*** | | | | | | |
| 49161<br>*(49160)*◆ | QTP 4x54T5HO/UNV PSN HTW NL | 120-277 | 2.00/0.85 | FP54T5HO | 5000 | 4<br>3<br>2<br>1 | 1.00<br>1.00<br>1.00<br>1.00 | 20000<br>15000<br>10000<br>5000 | 241/236<br>182/178<br>121/118<br>61 | 83/85<br>83/85<br>83/85<br>82 |
| *PROStart® QTP PSN models above also operate these lamps: FT55DL, FPC55, L58*<br>◆ *(Item Number) = Item Number/NAED in parentheses are models with leads/wires.* | | | | | | | | | | |
| **QUICKTRONIC *PROFESSIONAL* T5HO PROStart 347- 480V HIGH AMBIENT TEMP. SYSTEMS** | | | | | | | | | | |
| | | | | ***NORMAL BALLAST FACTOR[3]*** | | | | | | |
| 49146<br>*(49145)*◆ | QTP 2x54T5HO/347-480 PSN HT NL | 347-480 | 0.35/0.25 | FP54T5HO | 5000 | 2<br>1 | 1.00<br>1.00 | 10000<br>5000 | 121/120<br>61 | 83<br>82 |
| *PROStart® QTP PSN models above also operate these lamps: FT55DL, FPC55, L58*<br>◆ *(Item Number) = Item Number/NAED in parentheses are models with leads/wires.* | | | | | | | | | | |
| **QUICKTRONIC *HIGH EFFICIENCY* INSTANT START DL40 UNIVERSAL VOLTAGE SYSTEMS[4]** | | | | | | | | | | |
| 49428 ❂ | QHE 1x40DL/UNV ISN-SC | 120-277 | 0.30/0.13<br>0.27/0.12 | FT40T5<br>FT40DL/28W/SS/IS | 3150<br>2800 | 1<br>1 | 0.90<br>1.07 | 2835<br>2995 | 35<br>32 | 81<br>94 |
| 49429 | QHE 2x40DL/UNV ISN-SC | 120-277 | 0.56/0.26<br>0.54/0.24 | FT40T5<br>FT40DL/28W/SS/IS | 3150<br>2800 | 2<br>2 | 0.90<br>1.07 | 5670<br>5990 | 68/67<br>64/63 | 83/84<br>94/95 |
| 49430 | QHE 3x40DL/UNV ISN-SC | 120-277 | 0.84/0.36<br>0.79/0.35 | FT40T5<br>FT40DL/28W/SS/IS | 3150<br>2800 | 3<br>3 | 0.90<br>1.07 | 8505<br>8990 | 100/99<br>95/94 | 85/86<br>95/96 |
| *[4] Ballast factor based upon 225mA nominal lamp current for FT40DL lamp and 190mA nominal lamp current for FT40DL/28W/SS/IS lamp.* | | | | | | | | | | |
| **QUICKTRONIC *PROFESSIONAL* PROStart DL40** | | | | | | | | | | |
| | | | | ***NORMAL BALLAST FACTOR*** | | | | | | |
| 50320 | QTP 1x40TT5/120 PSN-F<br>*Formerly: M1-PN-TT5/40-F-120* | 120 | 0.32 | FT40T5 | 3150 | 1 | 0.88 | 2770 | 38 | 73 |
| 50330 | QTP 1x40TT5/277 PSN-F<br>*Formerly: M1-PN-TT5/40-F-277* | 277 | 0.13 | FT40T5 | 3150 | 1 | 0.88 | 2770 | 37 | 75 |
| 50340 | QTP 2x40TT5/120 PSN-F<br>*Formerly: M2-PN-TT5/40-F-120* | 120 | 0.63 | FT40T5 | 3150 | 2 | 0.88 | 5545 | 76 | 73 |
| 50350 | QTP 2x40TT5/277 PSN-F<br>*Formerly: M2-PN-TT5/40-F-277* | 277 | 0.27 | FT40T5 | 3150 | 2 | 0.88 | 5545 | 73 | 76 |
| 50360 | QTP 3x40TT5/120 PSN-B<br>*Formerly: M3-PN-TT5/40-B-120* | 120 | 0.92 | FT40T5 | 3150 | 3 | 0.88 | 8315 | 110 | 76 |
| 50370 | QTP 3x40TT5/277 PSN-B<br>*Formerly: M3-PN-TT5/40-B-277* | 277 | 0.39 | FT40T5 | 3150 | 3 | 0.88 | 8315 | 108 | 77 |

3: Rated lamp lumens and performance data based on PENTRON® HO lamps. Rated lumens at 35°C lamp ambient temperature

| Item Number | OSRAM SYLVANIA Description | Input Voltage (VAC) | Input Current (AMPS) | Lamp Type | Rated Lumens (lm) | No. of Lamps | Ballast Factor (BF) | System Lumens | Input Wattage (W) | System Efficacy (lm/W) |
|---|---|---|---|---|---|---|---|---|---|---|
| **QUICKTRONIC® *PROFESSIONAL* PROStart® COMPACT FLUORESCENT - UNIVERSAL VOLTAGE DUAL ENTRY[5,6]** | | | | | | | | | | |
| ***NORMAL BALLAST FACTOR*** | | | | | | | | | | |
| 51818 ✪ | QTP 1/2x13CF/UNV | 120-277 | 0.25/0.11 | 13W DD/E,T/E | 900 | 1 | 1.00 | 900 | 16 | 56 |
| *51850* ✪ | *QTP 1/2x13CF/UNV-KIT* ▲ | | | 13W DD/E,T/E | 900 | 2 | 1.00 | 1800 | 29 | 62 |
| 51823 ✪ | QTP 1/2x18CF/UNV | 120-277 | 0.32/0.14 | 18W DD/E,T/E | 1200 | 1 | 1.00 | 1200 | 20 | 60 |
| *51851* ✪ | *QTP 1/2x18CF/UNV-KIT* ▲ | | | 18W DD/E,T/E | 1200 | 2 | 1.00 | 2400 | 38 | 63 |
| 51833 ✪ | QTP 2x26CF/UNV | 120-277 | 0.50/0.22 | 26W DD/E,T/E | 1800 | 1 | 1.00 | 1800 | 28 | 64 |
| *51852* ✪ | *QTP 2x26CF/UNV-KIT* ▲ | | | 26W DD/E,T/E | 1800 | 2 | 1.00 | 3600 | 54 | 67 |
| 51898 | QTP 2x26CF/UNV PEM | | | 32W DT/E | 2400 | 1 | 0.98 | 2350 | 35 | 67 |
| | | | | 42W DT/E | 3200 | 1 | 1.00 | 3200 | 45 | 71 |
| 51843 | QTP 2x26/32/42CF/UNV M | 120-277 | 0.90/0.40 | 26W DT/E | 1800 | 2 | 1.02 | 3670 | 54 | 68 |
| *51853* ✪ | *QTP 2x26/32/42CF/UNV M-KIT* ▲ | | | 32W DT/E | 2400 | 2 | 0.96 | 4600 | 69 | 67 |
| 51863 | QTP 2x26/32/42CF/UNV M PEM | | 0.53/0.23 | 42W DT/E | 3200 | 2 | 0.95 | 6080 | 94 | 65 |
| | | | 0.57/0.25 | 57W DT/E | 4300 | 1 | 1.00 | 4300 | 62 | 69 |
| | | | | 70W DT/E | 5200 | 1 | 0.92 | 4780 | 71 | 67 |
| *Also operates: see Ballast Technology & Specification Guide for additional lamp types.* | | | | | | | | ▲CF Kits include a ballast, screws, wire, mounting bracket, an instruction sheet and a wire removal tool. | | |
| ***NORMAL BALLAST FACTOR - QTP CF models above replace shaded item numbers below*** | | | | | | | | | | |
| 51718 | QTP 1/2x13CF/UNV BS | 120-277 | 0.25/0.11 | 13W DD/E,T/E | 900 | 1 | 1.00 | 900 | 16 | 56 |
| 51748 | QTP 1/2x13CF/UNV TS | | | 13W DD/E,T/E | 900 | 2 | 1.00 | 1800 | 29 | 62 |
| 51723 | QTP 1/2x18CF/UNV BS | 120-277 | 0.32/0.14 | 18W DD/E,T/E | 1200 | 1 | 1.00 | 1200 | 20 | 60 |
| 51753 | QTP 1/2x18CF/UNV TS | | | 18W DD/E,T/E | 1200 | 2 | 1.00 | 2400 | 38 | 63 |
| 51733 | QTP 2x26CF/UNV BS | 120-277 | 0.50/0.22 | 26W DD/E,T/E | 1800 | 1 | 1.00 | 1800 | 28 | 64 |
| 51763 | QTP 2x26CF/UNV TS | | | 26W DD/E,T/E | 1800 | 2 | 1.00 | 3600 | 54 | 67 |
| | | | | 32W DT/E | 2400 | 1 | 0.98 | 2350 | 35 | 67 |
| | | | | 42W DT/E | 3200 | 1 | 1.00 | 3200 | 45 | 71 |
| 51738 | QTP 1/2xCF/UNV BM | 120-277 | 0.57/0.25 | 26W DD/E,T/E | 1800 | 1 | 1.02 | 1830 | 28 | 65 |
| 51798 | QTP 1/2xCF/UNV PM | | | 26W DD/E,T/E | 1800 | 2 | 1.02 | 3670 | 57 | 64 |
| 51768 | QTP 1/2xCF/UNV TM | | | 32W DT/E | 2400 | 1 | 0.97 | 2330 | 36 | 65 |
| | | | | 42W DT/E | 3200 | 1 | 1.00 | 3200 | 46 | 70 |
| 51743 | QTP 2x26/32/42CF/UNV BM | 120-277 | 0.90/0.40 | 26W DT/E | 1800 | 2 | 1.02 | 3670 | 54 | 68 |
| 51803 | QTP 2x26/32/42CF/UNV PM | | | 32W DT/E | 2400 | 2 | 0.96 | 4600 | 69 | 67 |
| 51773 | QTP 2x26/32/42CF/UNV TM | | | 42W DT/E | 3200 | 2 | 0.95 | 6080 | 94 | 65 |
| | Also operates one 57W or 70W CFL lamps | | 0.53/0.23 | 57W DT/E | 4300 | 1 | 1.00 | 4300 | 62 | 69 |
| | | | 0.57/0.25 | 70W DT/E | 5200 | 1 | 0.92 | 4780 | 71 | 67 |
| **QUICKTRONIC *HIGH EFFICIENCY* POWERSENSE® 32 T8 DIMMING SYSTEMS - A list of controllers is available from OSRAM SYLVANIA** | | | | | | | | | | |
| ***Power-line control (2-wire) or 0-10Vdc control (4-wire) - 100-5% Dimming Range - <10% THD*** | | | | | | | | | | |
| 50705 | QTP 1x32T8/UNV DIM-TC | 120-277 | 0.27/0.12 | F032XP | 3000 | 1 | 0.88 | 2640 | 30 | 88 |
| | | | | | | | 0.05 | 150 | 8 | |
| 50707 | QTP 2x32T8/UNV DIM-TC | 120-277 | 0.54/0.24 | F032XP | 3000 | 2 | 0.88 | 5280 | 60/58 | 88/91 |
| | | | | | | | 0.05 | 300 | 15 | |
| 50714 | QTP 3x32T8/UNV DIM-TCL | 120-277 | 0.73/0.30 | F032XP | 3000 | 3 | 0.88 | 7920 | 87/84 | 91/94 |
| | | | | | | | 0.05 | 450 | 20 | |
| 50716 | QTP 4x32T8/UNV DIM-TCL | 120-277 | 0.96/0.40 | F032XP | 3000 | 4 | 0.88 | 10560 | 114/110 | 92/96 |
| | | | | | | | 0.05 | 600 | 27 | |
| *POWERSENSE™ QTP models above also operate these lamps: F025, F017 & FB032. POWERSENSE T8 replaces former Helios T8 dimming products.* | | | | | | | | | | |
| **QUICKTRONIC *HIGH EFFICIENCY* HELIOS™ 32 T8 DIMMING SYSTEMS - A list of controllers is available from OSRAM SYLVANIA** | | | | | | | | | | |
| ***High Ballast Factor - "PLUS" High Light Output System - For 277V, 0-10Vdc Control Applications Only*** | | | | | | | | | | |
| 50718 ✪ | QTP 4x32T8/277 DIM PLUS-TCL | 277 | 0.53 | F032XP | 3000 | 4 | 1.20 | 14400 | 145 | 99 |
| | | | | | | | 0.05 | 600 | 28 | |
| **QUICKTRONIC *HIGH EFFICIENCY* POWERSENSE 28 T5 DIMMING SYSTEMS - A list of controllers is available from OSRAM SYLVANIA** | | | | | | | | | | |
| ***Power-line control (2-wire) or 0-10Vdc control (4-wire) - 100-1% Dimming Range - <10% THD*** | | | | | | | | | | |
| 50726 ✪ | QTP 2x28T5/UNV DIM-TCL | 120-277 | 0.53/0.23 | FP28 | 2900 | 2 | 1.00 | 5800 | 63/62 | 92/94 |
| | | | | | | | 0.01 | 58 | 10 | |
| *POWERSENSE™ QTP model above also operate these lamps: FP35, FP21 & FP14* | | | | | | | | | | |
| **QUICKTRONIC *PROFESSIONAL* HELIOS 54 T5 HO DIMMING SYSTEMS[3] - A list of controllers is available from OSRAM SYLVANIA** | | | | | | | | | | |
| ***(0-10Vdc control) - 100-1% Dimming Range - <10% THD*** | | | | | | | | | | |
| 49671 | QT1x54/120PHO-DIM | 120 | 0.54 | FP54T5HO | 5000 | 1 | 1.00 | 5000 | 62 | 81 |
| | | | | | | | 0.01 | 50 | 8 | |
| 49672 | QT1x54/277PHO-DIM | 277 | 0.23 | FP54T5HO | 5000 | 1 | 1.00 | 5000 | 61 | 82 |
| | | | | | | | 0.01 | 50 | 8 | |
| 49673 | QT2x54/120PHO-DIM | 120 | 1.07 | FP54T5HO | 5000 | 2 | 1.00 | 10000 | 120 | 83 |
| | | | | | | | 0.01 | 100 | 18 | |
| 49674 | QT2x54/277PHO-DIM | 277 | 0.45 | FP54T5HO | 5000 | 2 | 1.00 | 10000 | 117 | 85 |
| | | | | | | | 0.01 | 100 | 18 | |
| *HELIOS QT models above also operate these lamps: FT55DL & FPC55* | | | | | | | | | | |

3: Rated lamp lumens and performance data based on PENTRON® HO lamps. Rated lumens at 35°C lamp ambient temperature.

5: Rated lamp lumens and performance data based on DULUX T/E series 4 pin lamps. 6: Data is for all models within the brackets. The maximum input current is shown for maximum input power. ✪ New Product. Contact OSRAM SYLVANIA for product availability.

| Item Number | OSRAM SYLVANIA Description | Input Voltage (VAC) | Input Current (AMPS) | Lamp Type | Rated Lumens (lm) | No. of Lamps | Ballast Factor (BF) | System Lumens | Input Wattage (W) | System Efficacy (lm/W) |
|---|---|---|---|---|---|---|---|---|---|---|
| **QUICKTRONIC® *PROFESSIONAL* DALI DIMMING SYSTEMS - 100-1% Dimming Range - <10% THD -** For a list of DALI controllers, contact OSRAM SYLVANIA | | | | | | | | | | |
| | | | | ***T8*** | | | | | | |
| 51350 | QTP 1x32T8/UNV DALI | 120-277 | 0.31/0.13 | FO32XP | 3000 | 1 | 1.00<br>0.01 | 3000<br>30 | 36<br>6 | 83 |
| 51352 | QTP 2x32T8/UNV DALI | 120-277 | 0.61/0.26 | FO32XP | 3000 | 2 | 1.00<br>0.01 | 6000<br>60 | 72/70<br>12 | 83/86 |
| *DALI QTP models above also operate these lamps: FBO32* | | | | | | | | | | |
| | | | | ***T5HO*** | | | | | | |
| 51364 | QTP 1x54T5HO/UNV DALI | 120-277 | 0.52/0.22 | FP54HO | 5000 | 1 | 1.00<br>0.01 | 5000<br>50 | 62/61<br>9 | 81/82 |
| 51366 | QTP 2x54T5HO/UNV DALI | 120-277 | 1.05/0.44 | FP54HO | 5000 | 2 | 1.00<br>0.01 | 10,000<br>100 | 122/119<br>18 | 82/84 |
| | | | | ***T5*** | | | | | | |
| 51356 | QTP 1x28T5/UNV DALI | 120-277 | 0.27/0.11 | FP28 | 2900 | 1 | 1.00<br>0.01 | 2900<br>29 | 32<br>6 | 91 |
| 51358 | QTP 2x28T5/UNV DALI | 120-277 | 0.55/0.23 | FP28 | 2900 | 2 | 1.00<br>0.01 | 5800<br>58 | 64/62<br>12 | 91/94 |
| 51357 | QTP 1x14T5/UNV DALI | 120-277 | 0.15/0.07 | FP14 | 1350 | 1 | 1.00<br>0.01 | 1350<br>14 | 18 | 75 |
| 51359 | QTP 2x14T5/UNV DALI | 120-277 | 0.29/0.13 | FP14 | 1350 | 2 | 1.00<br>0.01 | 2700<br>27 | 34/33 | 79/82 |
| 51360 | QTP 1x35T5/UNV DALI | 120-277 | 0.34/0.14 | FP35 | 3650 | 1 | 1.00<br>0.01 | 3650<br>37 | 40/39 | 91/94 |
| 51361 | QTP 2x35T5/UNV DALI | 120-277 | 0.67/0.28 | FP35 | 3650 | 2 | 1.00<br>0.01 | 7300<br>73 | 79/76 | 92/96 |
| **QUICKTRONIC *PROFESSIONAL* DALI COMPACT FLUORESCENT DIMMING SYSTEMS -** For a list of DALI controllers, contact OSRAM SYLVANIA | | | | | | | | | | |
| | | | | ***T4 and TT5 DALI - 100-3% Dimming Range - <10% THD*** | | | | | | |
| 51370 | QTP 1x18CF/UNV DALI | 120-277 | 0.18/0.08 | 18W DD/E, T/E | 1200 | 1 | 1.00<br>0.03 | 1200<br>35 | 20 | 60 |
| 51372 | QTP 2x18CF/UNV DALI | 120-277 | 0.33/0.14 | 18W DD/E, T/E | 1200 | 2 | 1.00<br>0.03 | 2400<br>70 | 39/38 | 61/63 |
| 51375 | QTP 1x26CF/UNV DALI | 120-277 | 0.24/0.10 | 26W DD/E, T/E | 1800 | 1 | 1.00<br>0.03 | 1800<br>55 | 28 | 64 |
| 51377 | QTP 2x26CF/UNV DALI | 120-277 | 0.49/0.22 | 26W DD/E, T/E | 1800 | 2 | 1.00<br>0.03 | 3600<br>110 | 55/54 | 65/67 |
| 51380 | QTP 1x32CF/UNV DALI | 120-277 | 0.34/0.15 | 32W DT/E | 2400 | 1 | 1.00<br>0.03 | 2400<br>70 | 38 | 63 |
| 51382 | QTP 2x32CF/UNV DALI | 120-277 | 0.60/0.26 | 32W DT/E | 2400 | 2 | 1.00<br>0.03 | 4800<br>140 | 71/70 | 68/69 |
| 51384 | QTP 1x42CF/UNV DALI | 120-277 | 0.43/0.19 | 42W DT/E | 3200 | 1 | 1.00<br>0.03 | 3200<br>95 | 49 | 65 |
| 51386 | QTP 2x42CF/UNV DALI | 120-277 | 0.82/0.36 | 42W DT/E | 3200 | 2 | 1.00<br>0.03 | 6400<br>190 | 92/91 | 69/70 |
| 51390 | QTP 1x40TT5/UNV DALI | 120-277 | 0.41/0.17 | 40W DL | 3150 | 1 | 1.00<br>0.03 | 3150<br>95 | 45/44 | 70/72 |
| 51392 | QTP 2x40TT5/UNV DALI | 120-277 | 0.83/0.37 | 40W DL | 3150 | 2 | 1.00<br>0.03 | 6300<br>190 | 97/94 | 65/67 |
| **QUICKTRONIC 96IS & 96HO** | | | | | | | | | | |
| | | | | ***F96T12 Instant Start - Normal Ballast Factor- <20%THD*** | | | | | | |
| 49881 | QT 2x96/120 IS | 120 | 1.12 | F96SS<br>F96 | 5300<br>6420 | 2<br>2 | 0.85<br>0.85 | 9010<br>10910 | 107<br>132 | 84<br>83 |
| 49882 | QT 2x96/277 IS | 277 | 0.49 | F96SS<br>F96 | 5300<br>6420 | 2<br>2 | 0.85<br>0.85 | 9010<br>10910 | 107<br>132 | 84<br>83 |
| *QT IS models above also operate these lamps: F84T12, F72T12 & F60T12* | | | | | | | | | | |
| | | | | ***F96T12 High Output- Normal Ballast Factor- <20%THD*** | | | | | | |
| 49883 | QT 2x96/120 HO | 120 | 1.74 | F96HOSS<br>F96HO | 8000<br>9050 | 2<br>2 | 0.89<br>0.89 | 14240<br>16109 | 170<br>205 | 84<br>79 |
| 49884 | QT 2x96/277 HO | 277 | 0.76 | F96HOSS<br>F96HO | 8000<br>9050 | 2<br>2 | 0.85<br>0.85 | 13600<br>15385 | 170<br>205 | 80<br>75 |
| *QT HO models above also operate these lamps: F84T12/HO, F72T12/HO, F60T12/HO, & F48T12/HO* | | | | | | | | | | |

| Item Number | OSRAM SYLVANIA Description | Input Voltage (VAC) | Input Current (AMPS) | Lamp Type | Rated Lumens (lm) | No. of Lamps | Ballast Factor (BF) | System Lumens | Input Wattage (W) | System Efficacy (lm/W) |
|---|---|---|---|---|---|---|---|---|---|---|
| **QUICKTRONIC® *PROFESSIONAL* 40 T12 RAPID START** | | | | | | | | | | |
| ***NORMAL BALLAST FACTOR - <10%THD, (3 lamp <20%THD)*** | | | | | | | | | | |
| 50684 | QTP 1x40T12/120 RSN-SC | 120 | 0.30 | F40T12/D41 | 3200 | 1 | 0.85 | 2720 | 35 | 78 |
| 50685 | QTP 1x40T12/277 RSN-SC | 277 | 0.13 | F40T12/D41 | 3200 | 1 | 0.85 | 2720 | 35 | 78 |
| 50686 | QTP 2x40T12/120 RSN-SC | 120 | 0.62 | F40T12/D41 | 3200 | 2 | 0.85 | 5440 | 71 | 77 |
| 50687 | QTP 2x40T12/277 RSN-SC | 277 | 0.24 | F40T12/D41 | 3200 | 2 | 0.85 | 5440 | 71 | 77 |
| 50688 | QTP 3x40T12/120 RSN | 120 | 0.91 | F40T12/D41 | 3200 | 3 | 0.87 | 8352 | 107 | 78 |
| 50689 | QTP 3x40T12/277 RSN | 277 | 0.39 | F40T12/D41 | 3200 | 3 | 0.87 | 8352 | 107 | 78 |
| *QTP T12/RS models above also operate these lamps: F30T12 & F25T12* | | | | | | | | | | |
| **QUICKTRONIC ICE** | | | | | | | | | | |
| ***ICETRON® Universal Voltage - <15% THD -*** *Contact OSRAM SYLVANIA for ICETRON® lamp information* | | | | | | | | | | |
| 49753 | QT 1x100 ICE/UNV-T | 120-277 | 0.88/0.37 | ICE100 | 8000 | 1 | 1.00 | 8000 | 106/103 | 75/77 |
| 49756 | QT 1x100 ICE/UNV-W | | 0.66/0.29 | ICE70 | 6200 | 1 | 1.05 | 6500 | 79/77 | 82/84 |
| 49772 | QT 1x150 ICE/UNV-T | 120-277 | 1.34/0.58 | ICE150 | 12000 | 1 | 1.00 | 12000 | 161/156 | 74/76 |
| 49773 | QT 1x150 ICE/UNV-W | | 1.28/0.54 | ICE100 | 8000 | 1 | 1.38 | 11000 | 154/149 | 71/73 |
| **QUICKTRONIC® FM – DEDICATED VOLTAGE (120V)** | | | | | | | | | | |
| ***Electronic T2 Fluorescent Subminiature Systems*** | | | | | | | | | | |
| 49735 ❂ | QT1x6-8FM/120 | 120 | 0.11 | FM 6/H | 330 | 1 | 1.00 | 330 | 8 | 41 |
| | | 120 | 0.14 | FM 8/H | 540 | 1 | 1.00 | 540 | 10 | 54 |
| 49736 ❂ | QT1x11-13FM/120 | 120 | 0.18 | FM 11/H | 750 | 1 | 1.00 | 750 | 13 | 58 |
| | | 120 | 0.22 | FM 13/H | 930 | 1 | 1.00 | 930 | 16 | 58 |
| **QUICKTRONIC *PROFESSIONAL* MH** | | | | | | | | | | |
| ***Electronic Metal Halide - Universal Voltage*** | | | | | | | | | | |
| 51908 | QTP1x20MH/UNV-F | 120-277 | 0.21/0.085 | 20W T4.5 | 1700 | 1 | 1.0 | 1700 | 23 | 74 |
| 51909 | QTP1x20MH/UNV-J | | | | | | | | | |
| 51968 ❂ ☆ | QTP2X20MH UNV F | 120-277 | 0.38/0.16 | 20W T4.5 | 1700 | 2 | 1.0 | 3400 | 46 | 74 |
| 51969 ❂ ☆ | QTP2X20MH UNV J | | | | | | | | | |
| 51910 | QTP1x39MH/UNV-F | 120-277 | 0.39/0.17 | 39W T6 | 3400 | 1 | 1.0 | 3400 | 44 | 77 |
| 51911 | QTP1x39MH/UNV-J | | | | | | | | | |
| 51970 ❂ ☆ | QTP2X39MH UNV F | 120-277 | 0.75/0.33 | 39W T6 | 3400 | 2 | 1.0 | 6800 | 89 | 76 |
| 51971 ❂ ☆ | QTP2X39MH UNV J | | | | | | | | | |
| 51912 ❂ ☆ | QTP1x70MH/UNV-F | 120-277 | 0.67/0.29 | 70W T6 | 6700 | 1 | 1.0 | 6700 | 79 | 85 |
| 51913 ❂ ☆ | QTP1x70MH/UNV-J | | | | | | | | | |
| 51914 ❂ ☆ | QTP1x100MH/UNV-F | 120-277 | 0.96/0.41 | 100W E17 | 9000 | 1 | 1.0 | 9000 | 110 | 82 |
| 51915 ❂ ☆ | QTP1x100MH/UNV-J | | | | | | | | | |
| **QUICKTRONIC MH** | | | | | | | | | | |
| ***Electronic Metal Halide*** | | | | | | | | | | |
| 51958 ❂ ☆ | QT1x20MH 120V SLIM | 120 | 0.20 | 20W T4.5 | 1700 | 1 | 1.0 | 1700 | 23 | 74 |
| 51959 ❂ ☆ | QT1x20MH UNV SQ | 120-277 | 0.19/0.09 | 20W T4.5 | 1700 | 1 | 1.0 | 1700 | 23 | 74 |
| 51960 ❂ ☆ | QT1x39MH 120V SLIM | 120 | 0.38 | 39W T6 | 3400 | 1 | 1.0 | 3400 | 44 | 77 |
| 51961 ❂ ☆ | QT1x39MH UNV SQ | 120-277 | 0.38/0.17 | 39W T6 | 3400 | 1 | 1.0 | 3400 | 44 | 77 |
| 51962 ❂ ☆ | QT1x70MH 120V SLIM | 120 | 0.64 | 70W T6 | 6700 | 1 | 1.0 | 6700 | 79 | 85 |
| 51963 ❂ ☆ | QT1x70MH 120V SQ | 120 | 0.64 | 70W T6 | 6700 | 1 | 1.0 | 6700 | 79 | 85 |
| 51930 ❂ ☆ | QT1x150MH/UNV F | 120-277 | 1.40/0.60 | 150W T7.5 | 15500 | 1 | 1.0 | 15500 | 167 | 93 |
| 51931 ❂ ☆ | QT1x150MH/UNV J | 120-277 | 1.40/0.60 | 150W T7.5 | 15500 | 1 | 1.0 | 15500 | 167 | 93 |
| **QUICKTRONIC *HIGH EFFICIENCY* MH** | | | | | | | | | | |
| ***Electronic Metal Halide - 208-277V*** | | | | | | | | | | |
| 51980 ❂ ☆ | QHE1X200MH 208-277V | 208-277 | 1.06/0.79 | 200W E39 | 19000 | 1 | 1.0 | 19000 | 215 | 88 |
| 51981 ❂ ☆ | QHE1X250MH 208-277V | 208-277 | 1.32/0.99 | 250W E39 | 23500 | 1 | 1.0 | 23500 | 269 | 87 |
| 51982 ❂ ☆ | QHE1X320MH 208-277V | 208-277 | 1.69/1.27 | 320W E39 | 32000 | 1 | 1.0 | 32000 | 344 | 93 |
| 51983 ❂ ☆ | QHE1X350MH 208-277V | 208-277 | 1.85/1.39 | 350W EX39 | 33000 | 1 | 1.0 | 33000 | 376 | 88 |
| 51984 ❂ ☆ | QHE1X400MH 208-277V | 208-277 | 2.12/1.58 | 400W E39 | 42000 | 1 | 1.0 | 42000 | 430 | 98 |
| *Also operates: For all of the above Metal Halide Ballasts, see Ballast Technology & Specification Guide for additional lamp types* | | | | | | | | | | |

☆ Preliminary Data – check with OSRAM SYLVANIA for detailed specifications.



❂ New Product. Contact OSRAM SYLVANIA for product availability.

| Item Number | OSRAM SYLVANIA Description | Nominal Input Voltage (VAC) | Nominal Input Current (Amps) | Output Current (mA) | Remote Mounting (ft) | Location Rating | Dimming Range | Control Voltage |
|---|---|---|---|---|---|---|---|---|
| **OPTOTRONIC® Electronic DRAGON Power Supplies** | | | | | | | | |
| ***OSRAM Constant Current LED DRAGON Power Supplies (DC Output) - Contact OSRAM SYLVANIA for DRAGON™ LED module ordering information*** | | | | | | | | |
| **AC Input** | | | | | | | | |
| 51524 ❂ | OT3/120-240/350 | 120-240 (AC) | 0.1A@120V | 350 | 50 | Dry | N/A | N/A |
| 51525 | OT9/100-120/350 E | 100-120 (AC) | 0.18A@120V | 350 | 30 | Dry+Damp | N/A | N/A |
| **DC Input** | | | | | | | | |
| 51526 | OT9/10-24/350 DIM E | 10-24 (DC) | 1.1A@10V 0.5A@24V | 350 | 30 | Dry+Damp | 100% to 0% | 10V to 0V DC |

| Item Number | OSRAM SYLVANIA Description | Nominal Input Voltage (VAC) | Nominal Input Current (Amps) | Output Voltage (Vdc) | Min. Output Power (W) | Max. Output Power (W) | Max. Line Ripple (V) | Remote Mounting (ft) | Compatible With OT9 Dim | Compatible With OT Dim | Compatible With OT RGB Controls | Location Rating |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OPTOTRONIC Electronic LED Power Supplies** | | | | | | | | | | | | |
| ***OSRAM LED Power Supplies (DC Output) - 10.5 V DC - Contact OSRAM SYLVANIA for LED (Light Emitting Diodes) ordering information*** | | | | | | | | | | | | |
| 51502 ❂ | OT6/100-120/10CE | 100-120 | 0.120@120V | 10.5±0.5 | 0.4 | 6 | ±0.2V | 32 | YES | YES | YES | Dry+Damp |
| 51505 | OT25/120/10 | 120 | 0.26@120V | 10.5±1.0 | 3 | 25 | ±1.1V | 10 | NO | NO | NO | Dry |
| 51508 | OT50/120/10 | 120 | 0.52@120V | 10.5±1.0 | 10 | 50 | ±1.1V | 8 | NO | NO | NO | Dry+Damp |
| 51509 | OT50/120-277/10E | 120-277 | 0.51@120V 0.22@277V | 10.5±1.0 | 0.4 | 50 | ±0.2V | 32 | YES | YES | YES | Dry+Damp |
| 51506 | OT25/120/10CORD | 120 | 0.42@120V | 10.5±0.5 | 0.5 | 25 | ±0.5V | 58 | YES | YES | YES | Dry+Damp |
| ***OSRAM LED Power Supplies (DC Output) - 24 V DC - Contact OSRAM SYLVANIA for LED (Light Emitting Diodes) ordering information*** | | | | | | | | | | | | |
| 51503 ❂ | OT6/100-120/24CE | 100-120 | 0.15@120V | 24.0±0.5 | 0.9 | 6 | ±0.4V | 32 | YES | YES | YES | Dry+Damp |
| 51512 | OT20/120-240/24S | 120-240 | 0.35@120V 0.23@240V | 24.0±0.5 | 0.9 | 20 | ±0.2V | 32 | YES | YES | YES | Dry |
| 51513 | OT75/120/24 | 120 | 1.2@120V | 24.0±0.5 | 10 | 75 | ±1.0V | 30 | YES | NO | YES | Dry+Damp |
| 51514 | OT75/120-277/24E | 120-277 | 0.75@120V 0.32@277V | 24.0±0.5 | 0.9 | 75 | ±0.2V | 32 | YES | YES | YES | Dry+Damp |
| 51511 ❂ | OT96/120-277/24 | 120-277 | 0.91@120V 0.39@277V | 24.0±0.5 | 0.8 | 96 | ±1.0V | 10 | YES | YES | YES | WET |
| 51515 ❂ | OT240/120-240/24/CH3 | 120-240 | 2.39@120V 1.19@240V | 24.0±0.5 | 0.8 | 240 | ±1.0V | 10 | YES | YES | YES | WET |

| Item Number | OSRAM SYLVANIA Description | Nominal Input Voltage (VDC) | Max. Input Current (A) | Control Voltage (VDC) | Output Power per channel (W) | Max. Output Power (W) | Max. Power Loss (W) | Max. Output Current per channel (A) |
|---|---|---|---|---|---|---|---|---|
| **OPTOTRONIC Electronic LED Dim/Sequencer Modules** | | | | | | | | |
| ***OSRAM LED Dim/Sequencer Modules - OTRGB operates in conjunction with the LED power supplies listed above*** | | | | | | | | |
| 51517<br>51518 | OT RGB DIM<br>OT RGB SEQUENCER | 10.5 / 24 | 6 | 0-10 | 0-21 / 0-48 | 60 / 140 | 4 | 2 |

| Item Number | OSRAM SYLVANIA Description | Nominal Input Voltage (VDC) | Nominal Input Current (A) | Control Voltage (VDC) | Max. Output Power (W) | Max. Output Current (A) |
|---|---|---|---|---|---|---|
| **OPTOTRONIC Electronic LED Dimming Modules** | | | | | | |
| ***OSRAM LED Dimming Modules - OTDIM operates in conjunction with the LED power supplies listed above*** | | | | | | |
| 51516 | OT DIM | 10.5<br>24 | 5.3<br>5.3 | 0-10VDC<br>0-10VDC | 0–52.5<br>0–120 | 5<br>5 |

***Complete performance data is available in the SYLVANIA QUICKTRONIC® LED Systems Specification Guide and at www.sylvania.com.***

| DISCONTINUED BALLASTS | | | NEAREST REPLACEMENT UNIVERSAL VOLTAGE BALLASTS | |
|---|---|---|---|---|
| | Item Number | OSRAM SYLVANIA Description | Item Number | OSRAM SYLVANIA Description |
| **T8, 1-Lamp, Instant Start** | | | | |
| ISN | 49911 | QT1X32T8/120 ISN-SC | 49941 | QTP 1x32T8/UNV ISN-SC |
| | 49912 | QT1X32T8/277 ISN-SC | | |
| | 49951 | QT1X32T8/120 ISN-SC-PAL | 49942 | QTP 1x32T8/UNV ISN-SC-PAL |
| | 49952 | QT1X32T8/277 ISN-SC-PAL | | |
| | 49811 | QT1X32T8/120 ISN-SC SRNK | 49905 | QTP 1x32T8/UNV-ISN-SC-B |
| | 49812 | QT1X32T8/277 ISN-SC SRNK | | |
| | 49901 | QTP 1x32T8/UNV ISN-SC SRNK | | |
| ISL | 49931 | QT1X32T8/120 ISL-SC | 49741 | QTP 1x32T8/UNV ISL-SC |
| | 49932 | QT1X32T8/277 ISL-SC | | |
| | 49701 | QTP1X32T8/UNV-ISL-SC-SRNK | 49832 | QTP 1x32T8/UNV-ISL-SC-B |
| **T8, 2-Lamp, Instant Start** | | | | |
| ISN | 49913 | QT2X32T8/120 ISN-SC | 49943 | QTP 2x32T8/UNV ISN-SC |
| | 49914 | QT2X32T8/277 ISN-SC | | |
| | 49953 | QT2X32T8/120 ISN-SC-PAL | 49944 | QTP 2x32T8/UNV ISN-SC-PAL |
| | 49954 | QT2X32T8/277 ISN-SC-PAL | | |
| | 49813 | QT2X32T8/120 ISN-SC SRNK | 49906 | QTP 2x32T8/UNV-ISN-SC-B |
| | 49814 | QT2X32T8/277 ISN-SC SRNK | | |
| | 49902 | QTP 2x32T8/UNV ISN-SC SRNK | | |
| ISL | 49933 | QT2X32T8/120 ISL-SC | 49743 | QTP 2x32T8/UNV ISL-SC |
| | 49934 | QT2X32T8/277 ISL-SC | | |
| | 49823 | QT2X32T8120ISLSCPAL | 49744 | QTP 2x32T8/UNV ISL-SC-PAL |
| | 49803 | QT2X32T8/120 ISL-SC SRNK | 49834 | QTP 2x32T8/UNV-ISL-SC-B |
| | 49804 | QT2X32T8/277 ISL-SC SRNK | | |
| | 49702 | QTP 2x32T8/UNV-ISL-SC-SRNK | | |
| ISH | 49923 | QT2X32T8/120 ISH-SC | 49843 | QTP 2x32T8/UNV ISH-SC |
| | 49924 | QT2X32T8/277 ISH-SC | | |
| | 49973 | QT2X32T8/120 ISH-SC-PAL | 49844 | QTP 2x32T8/UNV ISH-SC-PAL |
| | 49974 | QT2X32T8/277 ISH-SC-PAL | | |
| **T8, 3-Lamp, Instant Start** | | | | |
| ISN | 49915 | QT3X32T8/120 ISN-SC | 49945 | QTP 3x32T8/UNV ISN-SC |
| | 49916 | QT3X32T8/277 ISN-SC | | |
| | 49955 | QT3X32T8/120 ISN-SC-PAL | 49946 | QTP 3x32T8/UNV ISN-SC-PAL |
| | 49956 | QT3X32T8/277 ISN-SC-PAL | | |
| | 49815 | QT3X32T8/120 ISN-SC SRNK | 49907 | QTP 3x32T8/UNV-ISN-SC-B |
| | 49816 | QT3X32T8/277 ISN-SC SRNK | | |
| | 49903 | QTP 3x32T8/UNV-ISN-SC SRNK | | |
| ISL | 49935 | QT3X32T8/120 ISL-SC | 49745 | QTP 3x32T8/UNV ISL-SC |
| | 49936 | QT3X32T8/277 ISL-SC | | |
| | 49825 | QT3X32T8120T8ISLSCPAL | 49746 | QTP 3x32T8/UNV ISL-SC-PAL |
| | 49805 | QT3X32T8/120 ISL-SC SRNK | 49835 | QTP 3x32T8/UNV-ISL-SC-B |
| | 49806 | QT3X32T8/277 ISL-SC SRNK | | |
| | 49703 | QTP 3x32T8/UNV-ISL-SC-SRNK | | |
| ISH | 49525 | QT3x32/120 PLUS | 49845 | QTP 3x32T8/UNV ISH-SC |
| | 49526 | QT3x32/277 PLUS | | |
| **T8, 4-Lamp, Instant Start** | | | | |
| ISN | 49917 | QT4X32T8/120 ISN-SC | 49947 | QTP 4x32T8/UNV ISN-SC |
| | 49918 | QT4X32T8/277 ISN-SC | | |
| | 49517 | QT4X32120 IS | | |
| | 49957 | QT4X32T8/120 ISN-SC-PAL | 49948 | QTP 4x32T8/UNV ISN-SC-PAL |
| | 49958 | QT4X32T8/277 ISN-SC-PAL | | |
| | 49557 | QT4X32120-PAL | | |
| | 49817 | QT4X32T8/120 ISN-SC SRNK | 49908 | QTP 4x32T8/UNV-ISN-SC-B |
| | 49818 | QT4X32T8/277 ISN-SC SRNK | | |
| | 49904 | QTP4x32T8/UNV-ISN-SC SRNK | | |
| ISL | 49537 | QT4X32/120 LP | 49747 | QTP 4x32T8/UNV ISL-SC |
| | 49538 | QT4X32/277 LP | | |
| | 49307 | QT4X32/120 LP SRNK | 49836 | QTP 4x32T8/UNV-ISL-SC-B |
| | 49308 | QT4X32/277 LP SRNK | | |
| | 49704 | QTP4x32T8/UNV-ISL-SC-SRNK | | |
| ISH | 49521 | QHE4x32T8/277 ISH | 49877 | QHE 4X32T8/UNV ISH |
| | 49522 | QHE4x32T8/277 ISH-PAL | 49878 | QHE 4X32T8/UNV ISH-PAL |
| **T8, 1-Lamp, Programmed Start** | | | | |
| PSN | 50804 | QTP1X32T8/120 PSN-TC | 51400 | QTP 1x32T8/UNV PSN-TC |
| | 50806 | QTP1X32T8/277 PSN-TC | | |
| | 50805 | QTP1X32T8/120 PSN-TC-PAL | 51401 | QTP 1x32T8/UNV PSN-TC-PAL |
| | 50807 | QTP1X32T8/277 PSN-TC-PAL | | |
| **T8, 2-Lamp, Programmed Start** | | | | |
| PSN | 50814 | QTP2X32T8/120 PSN-SC | 51405 | QTP 2x32T8/UNV PSN-TC |
| | 50824 | QTP2X32T8/277 PSN-SC | | |
| | 50815 | QTP2X32T8/120 PSN-SC-PAL | 51406 | QTP 2x32T8/UNV PSN-TC-PAL |
| | 50825 | QTP2X32T8/277 PSN-SC-PAL | | |

| DISCONTINUED BALLASTS | | | NEAREST REPLACEMENT UNIVERSAL VOLTAGE BALLASTS | |
|---|---|---|---|---|
| | Item Number | OSRAM SYLVANIA Description | Item Number | OSRAM SYLVANIA Description |
| **T8, 3-Lamp, Programmed Start** | | | | |
| PSN | 50830 | QTP3X32T8/120 PSN-SC | 51410 | QTP 3x32T8/UNV PSN-SC |
| | 50840 | QTP3X32T8/277 PSN-SC | | |
| | 50832 | QTP3X32T8/120 PSN-SC-PAL | 51411 | QTP 3x32T8/UNV PSN-SC-PAL |
| | 50842 | QTP3X32T8/277 PSN-SC-PAL | | |
| **T8, 4-Lamp, Programmed Start** | | | | |
| PSN | 50850 | QTP4X32T8/120 PSN-SC | 51415 | QTP 4x32T8/UNV PSN-SC |
| | 50860 | QTP4X32T8/277 PSN-SC | | |
| | 50852 | QTP4X32T8/120 PSN-SC-PAL | 51416 | QTP 4x32T8/UNV PSN-SC-PAL |
| | 50862 | QTP4X32T8/277 PSN-SC-PAL | | |
| **8' T8, 2-Lamp, Instant Start** | | | | |
| ISN | 49581 | QT2X59T8/120 IS | 49598 | QTP 2x59T8/UNV ISN-SC |
| | 49582 | QT2X59T8/277 IS | | |
| | 49585 | QT2X59T8/120 IS-PAL | 49599 | QTP 2x59T8/UNV ISN-SC-PAL |
| | 49586 | QT2X59T8/277 IS-PAL | | |
| | 49587 | QT2X59T8/120 IS-SRNK | 49590 | QTP 2x59T8/UNV-ISN-SC-B |
| | 49588 | QT2X59T8/277 IS-SRNK | | |
| | 49028 | QT2X59T8/120 IS-SRNK-IN 4Pk | | |
| | 49597 | QTP2x59T8/UNV ISN-SC-SRNK | | |
| ISH | 49583 | QT2X59T8/120 PLUS | 49879 | QHE 2X59T8/UNV ISH |
| | 49584 | QT2X59T8/277 PLUS | | |
| **T5HO, 1-Lamp, Programmed Start** | | | | |
| | 49121 | QTP 1x54T5HO/UNV PSN | 49131 | QTP 2x54T5HO/UNV PSN |
| **FT40T5, 1-Lamp, Instant Start** | | | | |
| ISN | 49641 | QT 1X40/120 DL | 49428 | QHE 1x40DL/UNV ISN-SC |
| | 49642 | QT 1X40/277 DL | | |
| **FT40T5, 2-Lamp, Instant Start** | | | | |
| ISN | 49643 | QT 2X40/120 DL | 49429 | QHE 2x40DL/UNV ISN-SC |
| | 49644 | QT 2X40/277 DL | | |
| **FT40T5, 3-Lamp, Instant Start** | | | | |
| ISN | 49645 | QT 3X40/120 DL | 49430 | QHE 3x40DL/UNV ISN-SC |
| | 49646 | QT 3X40/277 DL | | |
| **T4, 1 and 2-Lamp, Programmed Rapid Start** | | | | |
| | 51778 | QTP 1/2x13CF/UNV QS | 51818 | QTP 1/2x13CF/UNV |
| | 51783 | QTP 1/2x18CF/UNV QS | 51823 | QTP 1/2x18CF/UNV |
| | 51793 | QTP 2x26CF/UNV QS | 51833 | QTP 2x26CF/UNV |
| | 51810 | QTP 1/2x13CF/UNV DS | 51850 | QTP 1/2x13CF/UNV Kit |
| | 51811 | QTP 1/2x18CF/UNV DS | 51851 | QTP 1/2x18CF/UNV Kit |
| | 51812 | QTP 2x26/1x42/32CF/UNV DS | 51852 | QTP 2x26/1x42/32CF/UNV Kit |
| | 51813 | QTP 2x26/1x42/32CF/UNV DM | 51853 | QTP 2x26/1x42/32CF/UNV M Kit |
| **T8, 1-Lamp, Dimming Systems** | | | | |
| | 50700 | QTP 1x32T8/120 DIM5-B | 50705 | QTP 1x32T8/UNV DIM-TC |
| | 50701 | QTP 1x32T8/120 DIM5-B NL | | |
| | 50710 | QTP 1x32T8/277 DIM5-B | | |
| | 50711 | QTP 1x32T8/277 DIM5-B NL | | |
| **T8, 2-Lamp, Dimming Systems** | | | | |
| | 50720 | QTP 2x32T8/120 DIM5-B | 50707 | QTP 2x32T8/UNV DIM-TC |
| | 50721 | QTP 2x32T8/120 DIM5-B NL | | |
| | 50730 | QTP 2x32T8/277 DIM5-B | | |
| | 50731 | QTP 2x32T8/277 DIM5-B NL | | |
| **T8, 3-Lamp, Dimming Systems** | | | | |
| | 50750 | QTP 3x32T8/120 DIM5-B | 50714 | QTP 3x32T8/UNV DIM-TCL |
| | 50751 | QTP 3x32T8/120 DIM5-B NL | | |
| | 50760 | QTP 3x32T8/277 DIM5-B | | |
| | 50761 | QTP 3x32T8/277 DIM5-B NL | | |
| **T8, 4-Lamp, Dimming Systems** | | | | |
| | 50770 | QTP 4x32T8/120 DIM10-Q | 50716 | QTP 4x32T8/UNV DIM-TCL |
| | 50771 | QTP 4x32T8/120 DIM10-Q NL | | |
| | 50780 | QTP 4x32T8/277 DIM10-Q | | |
| | 50781 | QTP 4x32T8/277 DIM10-Q NL | | |
| **T2, 1 and 2-Lamp, Programmed Start** | | | **(Replacement Ballasts are 120V, 1-Lamp)** | |
| | 49734 | QT-FM | 49735 | QT1X6-8FM/120 (120V, 1 LAMP ONLY) |
| | | | 49736 | QT1X11-13FM/120 (120V, 1 LAMP ONLY) |
| **LED Power Supplies (DC Output), 10V DC** | | | | |
| | 51500 | OT6/100-240/10COS | 51502 | OT6/100-120/10CE |
| **LED Power Supplies (DC Output), 24V DC** | | | | |
| | 51501 | OT6/100-240/24COS | 51503 | OT6/100-120/24CE |

| Item Number | OSRAM SYLVANIA | Advance | U.L.T. Universal Lighting Technologies (formerly Magnetek) | GE | Howard |
|---|---|---|---|---|---|
| **QUICKTRONIC HIGH EFFICIENCY 32 T8 INSTANT START UNIVERSAL VOLTAGE SYSTEMS** | | | | | |
| 32 T8 High Efficiency Instant Start - Low Ballast Factor - Small Can - <10% THD | | | | | |
| 49861 | QHE 1X32T8/UNV ISL-SC | IOP-1P32-LW-SC | B132IUNVEL-A | GE-132-MAX-L/ULTRA | N/A |
| 49863 | QHE 2X32T8/UNV ISL-SC | IOP-2P32-LW-SC | B232IUNVEL-A | GE-232-MAX-L/ULTRA | N/A |
| 49865 | QHE 3X32T8/UNV ISL-SC | IOP-3P32-LW-SC | B332IUNVEL-A | GE-332-MAX-L/ULTRA | N/A |
| 49867 | QHE 4X32T8/UNV ISL-SC | IOP-4P32-LW-SC | B432IUNVEL-A | GE-432-MAX-L/ULTRA | N/A |
| 32 T8 High Efficiency Instant Start - Normal Ballast Factor - Small Can - <10% THD | | | | | |
| 49851 | QHE 1X32T8/UNV ISN-SC | IOP-1P32-SC | B132IUNVHE-A | GE-132-MAX-N/ULTRA | N/A |
| 49853 | QHE 2X32T8/UNV ISN-SC | IOP-2P32-SC | B232IUNVHE-A | GE-232-MAX-N/ULTRA | N/A |
| 49855 | QHE 3X32T8/UNV ISN-SC | IOP-3P32-SC | B332IUNVHE-A | GE-332-MAX-N/ULTRA | N/A |
| 49857 | QHE 4X32T8/UNV ISN-SC | IOP-4P32-SC | B432IUNVHE-A | GE-432-MAX-N/ULTRA | N/A |
| 32 T8 High Efficiency Instant Start - High Ballast Factor - Small Can - <10% THD | | | | | |
| 49871 | QHE 1X32T8/UNV ISH-SC | IOP-1P32-HL-SC | N/A | N/A | N/A |
| 49873 | QHE 2X32T8/UNV ISH-SC | IOP-2P32-HL-SC | B232IUNVHEH-A | GE-232-MAX-H/ULTRA | N/A |
| 49875 | QHE 3X32T8/UNV ISH-SC | IOP-3P32-HL-90C-SC | B332IUNVHEH-A | GE-332-MAX-H/ULTRA | N/A |
| 49877 | QHE 4X32T8/UNV ISH | IOP-4P32-HL-90C-G | N/A | GE-432-MAX-H/ULTRA | N/A |
| **QUICKTRONIC PROFESSIONAL 32 T8 INSTANT START UNIVERSAL VOLTAGE SYSTEMS** | | | | | |
| 32 T8 Instant Start - Low Ballast Factor - Small Can - <10%THD | | | | | |
| 49741 | QTP 1x32T8/UNV ISL-SC | ICN-1P32-LWSC | N/A | N/A | EPL1/32IS/120-277 |
| 49743 | QTP 2x32T8/UNV ISL-SC | ICN-2P32-LWSC | N/A | GE-232-MV-L | EPL2/32IS/120-277 |
| 49745 | QTP 3x32T8/UNV ISL-SC | ICN-3P32-LWSC | N/A | GE-332-MV-L | EPL3/32IS/120-277 |
| 49747 | QTP 4x32T8/UNV ISL-SC | ICN-4P32-LWSC | N/A | GE-432-MV-L | EPL4/32IS/120-277 |
| 32 T8 Instant Start - Normal Ballast Factor - Small Can - <10% THD | | | | | |
| 49941 | QTP 1x32T8/UNV ISN-SC | ICN-1P32-SC | B132IUNVHP-B | GE-132-MV-N | EP1/32IS/120-277 |
| 49943 | QTP 2x32T8/UNV ISN-SC | ICN-2P32-SC | B232IUNVHP-B | GE-232-MV-N | EP2/32IS/120-277 |
| 49945 | QTP 3x32T8/UNV ISN-SC | ICN-3P32-SC | B332IUNVHP-A | GE-332-MV-N | EP3/32IS/120-277 |
| 49947 | QTP 4x32T8/UNV ISN-SC | ICN-4P32-SC | B432IUNVHP-A | GE-432-MV-N | EP4/32IS/120-277 |
| 32 T8 Instant Start - High Ballast Factor - Small Can - <10% THD | | | | | |
| 49841 | QTP 1x32T8/UNV ISH-SC | N/A | N/A | N/A | N/A |
| 49843 | QTP 2x32T8/UNV ISH-SC | N/A | N/A | GE-232-MV-H | N/A |
| 49845 | QTP 3x32T8/UNV ISH-SC | N/A | N/A | GE-332-MV-H | N/A |
| **QUICKTRONIC 32 T8 PROStart® PSX UNIVERSAL VOLTAGE SYSTEMS** | | | | | |
| 32 T8 Programmed Rapid Start - High Efficiency - Low Ballast Factor - <10%THD | | | | | |
| 51420 | QTP 1x32T8/UNV PSX-TC | IOP-1S32-LW-SC | N/A | N/A | N/A |
| 51425 | QTP 2x32T8/UNV PSX-TC | IOP-2S32-LW-SC | N/A | N/A | N/A |
| 51430 | QTP 3x32T8/UNV PSX-SC | IOP-3S32-LW-SC | N/A | N/A | N/A |
| 51435 | QTP 4x32T8/UNV PSX-SC | IOP-4S32-LW-SC | N/A | N/A | N/A |
| **QUICKTRONIC PROFESSIONAL 32 T8 PROStart PSN UNIVERSAL VOLTAGE SYSTEMS** | | | | | |
| 32 T8 Programmed Rapid Start - Normal Ballast Factor - <10%THD | | | | | |
| 51400 | QTP 1x32T8/UNVPSN-TC | IOP-1S32-SC | B132PUNVHP-A | N/A | N/A |
| 51405 | QTP 2x32T8/UNVPSN-TC | IOP-2S32-SC | B232PUNVHP-A | N/A | N/A |
| 51410 | QTP 3x32T8/UNVPSN-SC | IOP-3S32-SC | B332PUNVHP-A | N/A | N/A |
| 51415 | QTP 4x32T8/UNVPSN-SC | IOP-4S32-SC | B432PUNVHP-A | N/A | N/A |

| Item Number | OSRAM SYLVANIA | Advance | U.L.T. Universal Lighting Technologies (formerly Magnetek) | GE | Howard |
|---|---|---|---|---|---|
| **QUICKTRONIC HIGH EFFICIENCY 32 T8 PROStart® UNIVERSAL VOLTAGE SYSTEMS** | | | | | |
| 32 T8 Programmed Rapid Start - High Ballast Factor (90°C Case Temperature - Parallel Operation) | | | | | |
| 49450 | QHE2x32T8/UNV-PSH-HT | N/A | N/A | GE-232-MV-PS-H | N/A |
| 49453 | QHE3x32T8/UNV-PSH-HT | N/A | N/A | GE-332-MV-PS-H | N/A |
| 49455 | QHE4x32T8/UNV-PSH-HT | N/A | N/A | GE-432-MV-PS-H | N/A |
| **QUICKTRONIC HIGH EFFICIENCY 32 T8 INSTANT START UNIVERSAL VOLTAGE SYSTEMS** | | | | | |
| 32 T8 Instant Start - Normal Ballast Factor - UL Type CC - Lamp Striation Control/LSC | | | | | |
| 49381 | QHE1x32T8/UNV-ISN-SC-1 | IOP-1P32-SC | N/A | GE-132-MAX-N/ULTRA | N/A |
| 49383 | QHE2x32T8/UNV-ISN-SC-1 | IOP-2P32-SC | N/A | GE-232-MAX-N/ULTRA | N/A |
| 49385 | QHE3x32T8/UNV-ISN-SC-1 | IOP-3P32-SC | N/A | GE-332-MAX-N/ULTRA | N/A |
| 49387 | QHE4x32T8/UNV-ISN-SC-1 | IOP-4P32-SC | N/A | GE-432-MAX-N/ULTRA | N/A |
| **QUICKTRONIC HIGH EFFICIENCY 59 T8 & QUICKTRONIC PROFESSIONAL 8 FOOT UNIVERSAL VOLTAGE** | | | | | |
| 59W F96 T8 Instant Start - Low Ballast Factor - <10% THD | | | | | |
| 50239 | QHE 2x59T8/UNV-ISL-SC | N/A | N/A | N/A | N/A |
| 59W F96 T8 Instant Start - Normal Ballast Factor - <10% THD | | | | | |
| 49859 | QHE 2x59T8/UNV-ISN-SC | IOP-2P59-SC | N/A | GE-259-MAX-N/ULTRA | N/A |
| 59W F96 T8 Instant Start - High Ballast Factor - <10% THD | | | | | |
| 49879 | QHE 2x59T8/UNV-ISH | N/A | N/A | N/A | N/A |
| 59W F96 T8 Instant Start - Normal Ballast Factor - <10% THD - Universal Voltage | | | | | |
| 49598 | QTP 2X59T8/UNV ISN-SC | N/A | B259IUNVHP-A | GE-259-MV-N | N/A |
| **QUICKTRONIC HIGH EFFICIENCY 86 T8/HO (8 FOOT) PROSTART UNIVERSAL VOLTAGE SYSTEMS** | | | | | |
| 86W F96 T8/HO (8 foot) PROStart® - Normal Ballast Factor -(90°C Case Temperature - Parallel Operation) | | | | | |
| 50304 | QHE 2x86T8HO/UNV-PSN-HT-SCL | ICN-2S86 | N/A | N/A | N/A |
| **QUICKTRONIC HIGH EFFICIENCY, PROFESSIONAL & T8 INSTANT START 347 VOLT - CANADA** | | | | | |
| 32 T8 High Efficiency Instant Start- Normal Ballast Factor - Small Can - <10% THD | | | | | |
| 49461 | QHE 1x32T8/347 ISN-SC | N/A | N/A | N/A | N/A |
| 49463 | QHE 2x32T8/347 ISN-SC | N/A | N/A | N/A | N/A |
| 49465 | QHE 3x32T8/347 ISN-SC | N/A | N/A | N/A | N/A |
| 49467 | QHE 4x32T8/347 ISN-SC | N/A | N/A | N/A | N/A |
| 32 T8 High Efficiency Instant Start- Low Ballast Factor - Small Can - <10% THD | | | | | |
| 49471 | QHE 1x32T8/347 ISL-SC | N/A | N/A | N/A | N/A |
| 49473 | QHE 2x32T8/347 ISL-SC | N/A | N/A | N/A | N/A |
| 49475 | QHE 3x32T8/347 ISL-SC | N/A | N/A | N/A | N/A |
| 49477 | QHE 4x32T8/347 ISL-SC | N/A | N/A | N/A | N/A |
| 32 T8 Instant Start- Normal Ballast Factor - Small Can - <10% THD | | | | | |
| 49711 | QTP 1x32T8/347 ISN-SC | N/A | N/A | N/A | N/A |
| 49713 | QTP 2x32T8/347 ISN-SC | N/A | B2321347HP-A | N/A | N/A |
| 32 T8 Instant Start- Low Ballast Factor - Small Can - <20% THD - Small Can/Standard "F" Can | | | | | |
| 49241 | QT 2x32T8/347 ISL-SC | GEL-2P32-LW-RH-TP (F-Can) | B2321347L-A | N/A | N/A |
| 49939 | QT 4x32T8/347 ISL-SC | N/A | N/A | N/A | N/A |
| 32 T8 Instant Start- Normal Ballast Factor - Small Can - <20% THD - Small Can/Standard "F" Can | | | | | |
| 49993 | QT 3x32T8/347 ISN-SC | GEL-3P32-RH-TP (F-Can) | B3321347RH (F-Can) | N/A | E3/32IS/347 (F-Can) |
| 49994 | QT 4x32T8/347 ISN-SC | GEL-4P32-RH-TP (F-Can) | B4321347RH (F-Can) | N/A | E4/32IS-347 (F-Can) |
| 32 T8 Instant Start- High Ballast Factor - Small Can - <20% THD | | | | | |
| 49927 | QT 2x32T8/347 ISH-SC | N/A | N/A | N/A | N/A |
| **QUICKTRONIC 59 T8 8 FOOT SYSTEM - 347 VOLT - CANADA** | | | | | |
| 59W F96 T8 Instant Start - Normal Ballast Factor - <20% THD | | | | | |
| 49217 | QT2x59/347IS | GEL-2P59 | N/A | N/A | N/A |

| Item Number | OSRAM SYLVANIA | Advance | U.L.T. Universal Lighting Technologies (formerly Magnetek) | Howard |
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| **QUICKTRONIC PROFESSIONAL T5HO PROStart® UNIVERSAL VOLTAGE SYSTEMS** | | | | |
| T5 HO - Normal Ballast Factor - <10% THD - (Ballast Can Size varies between manufacturers - please refer to specifications for details) | | | | |
| 49111 | QTP2x39-24T5HO/UNVPSN (1 Lamp)<br>(14.17"L x 1.18"W x 0.87"H)<br>(Mounting 13.74") | ICN-2S39 (1 Lamp)<br>(16.70"L x 1.18"W x 1.0"H)<br>(Mounting 16.34") | B239PUNV-D (1 Lamp)<br>(16.88"L x 1.18"W x 1.0"H)<br>(Mounting 16.28") | N/A |
| 49111 | QTP2x39-24T5HO/UNVPSN (FP39T5HO)<br>(14.17"L x 1.18"W x 0.87"H)<br>(Mounting 13.74") | ICN-2S39<br>(16.70"L x 1.18"W x 1.0"H)<br>(Mounting 16.34") | B239PUNV-D<br>(16.88"L x 1.18"W x 1.0"H)<br>(Mounting 16.28") | N/A |
| 49111 | QTP2x39-24T5HO/UNVPSN (1 Lamp)<br>(14.17"L x 1.18"W x 0.87"H)<br>(Mounting 13.74") | ICN-2S24 (1 Lamp)<br>(16.70"L x 1.18"W x 1.0"H)<br>(Mounting 16.34") | B224PUNV-C (1 Lamp)<br>(14.25"L x 1.18"W x 1.0"H)<br>(Mounting 13.75") | N/A |
| 49111 | QTP2x39-24T5HO/UNVPSN (FP24T5HO)<br>(14.17"L x 1.18"W x 0.87"H)<br>(Mounting 13.74") | ICN-2S24<br>(16.70"L x 1.18"W x 1.0"H)<br>(Mounting 16.34") | B224PUNV-C<br>(14.25"L x 1.18"W x 1.0"H)<br>(Mounting 13.75") | N/A |
| 49131 | QTP2x54T5HO/UNVPSN<br>(16.73"L x 1.18"W x 0.87"H)<br>(Mounting 16.34") | ICN-2S54<br>(16.70"L x 1.18"W x 1.0"H)<br>(Mounting 16.34") | B254PUNV-D<br>(16.88"L x 1.18"W x 1.0"H)<br>(Mounting 16.28") | EP2/54HO/PRS/120-277<br>(16.7"L x 1.18"W x 1.0"H) |
| 49151 | QTP1x80T5HO/UNVPSN<br>(14.17"L x 1.18"W x 0.87"H)<br>(Mounting 13.74") | ICN-1S80<br>(16.70"L x 1.18"W x 1.0"H)<br>(Mounting 16.34") | ES4515K<br>(16.65"L x 1.24"W x 1.0"H)<br>(Mounting 16.3") | N/A |
| **QUICKTRONIC PROFESSIONAL T5 PROStart UNIVERSAL VOLTAGE SYSTEMS** | | | | |
| 28W T5 - Normal Ballast Factor - <10% THD - (Ballast Can Size varies between manufacturers - please refer to specifications for details) | | | | |
| 49181 | QTP2x28T5/UNVPSN (1 Lamp) | ICN-2S28 (1 Lamp) | B228PUNV-C (1 Lamp) | N/A |
| 49181 | QTP2x28T5/UNVPSN<br>(14.17"L x 1.18"W x 0.87"H)<br>(Mounting 13.74") | ICN-2S28<br>(16.70"L x 1.18"W x 1.0"H)<br>(Mounting 16.34") | B228PUNV-C<br>(14.25"L x 1.18"W x 1.0"H)<br>(Mounting 13.75") | N/A |
| **QUICKTRONIC PROStart T5HO UNIVERSAL High Ambient Temp.** | | | | |
| T5 HO - Normal Ballast Factor - <10% THD - (Ballast Can Size varies between manufacturers - please refer to specifications for details) | | | | |
| 49136 | QTP 2x54T5HO/UNV PSN HT | ICN-2S54-90C | B254PUNV-D | EP2/54HO/PRS/MV/90C |
| T5 HO - Normal Ballast Factor - <10% THD - (Ballast Can Size varies between manufacturers - please refer to specifications for details) | | | | |
| 49161 | QTP 4x54T5HO/UNV PSN HTW | ICN-4S54-90C | B454PUNV-E | N/A |
| **QUICKTRONIC PROStart T5HO 347-480V High Ambient Temp.** | | | | |
| T5 HO - Normal Ballast Factor - <10% THD - (Ballast Can Size varies between manufacturers - please refer to specifications for details) | | | | |
| 49146 | QTP 2x54T5HO/347-480 PSN HT<br>(16.73"L x 1.18"W x 1.0"H)<br>(Mounting 16.34") | HCN-2S54-90C<br>(16.70"L x 1.18"W x 1.0"H)<br>(Mounting 16.34") | B254PHRV-E<br>(16.88"L x 1.74"W x 1.18"H)<br>(Mounting 16.28") | N/A |

| Item Number | OSRAM SYLVANIA | Advance | U.L.T. Universal Lighting Technologies (formerly Magnetek) | GE | Howard |
|---|---|---|---|---|---|
| **QUICKTRONIC HIGH EFFICIENCY INSTANT START DL40 UNIVERSAL VOLTAGE SYSTEMS** | | | | | |
| 40W TT5 High Efficiency Instant Start - Small Can | | | | | |
| 49428 | QHE 1x40DL/UNV ISN-SC | N/A | N/A | N/A | N/A |
| 49429 | QHE 2x40DL/UNV ISN-SC | N/A | N/A | N/A | N/A |
| 49430 | QHE 3x40DL/UNV ISN-SC | N/A | N/A | N/A | N/A |
| **QUICKTRONIC PROFESSIONAL PROStart DL40** | | | | | |
| 40W TT5 Programmed Rapid Start - Normal Ballast Factor - <10% THD | | | | | |
| 50320 | QTP1x40TT5/120PSN-F | REL-1TTS40 | C240PUNVHP-B (1 Lamp) | C240PUNVHP-B (1 Lamp) | N/A |
| 50330 | QTP1x40TT5/277PSN-F | VEL-1TTS40 | C240PUNVHP-B (1 Lamp) | C240PUNVHP-B (1 Lamp) | N/A |
| 50340 | QTP2x40TT5/120PSN-F | REL-2TTS40 | C240PUNVHP-B | C240PUNVHP-B | N/A |
| 50350 | QTP2x40TT5/277PSN-F | VEL-2TTS40 | C240PUNVHP-B | C240PUNVHP-B | N/A |
| 50360 | QTP3x40TT5/120PSN-B | N/A | N/A | N/A | N/A |
| 50370 | QTP3x40TT5/277PSN-B | N/A | N/A | N/A | N/A |

| Item Number | OSRAM SYLVANIA | Advance | U.L.T. | ESI (Energy Savings Inc is out of business) | Robertson |
|---|---|---|---|---|---|
| **QUICKTRONIC PROFESSIONAL CF - UNIVERSAL VOLTAGE DUAL ENTRY** | | | | | |
| CF T4 PROStart® - Programmed Rapid Start - Normal Ballast Factor - <10%THD[1] - CFL products run multiple lamp combinations and have various mounting/case styles - please refer to actual product specs. | | | | | |
| 51818 | QTP 1/2x13CF/UNV | ICF-2S13-H1-LD | C213UNV-BE<br>C213UNV-SE | ES-2/1-CFQ-13/10-UNV-C | PSM213CQMVB |
| 51823 | QTP 1/2x18CF/UNV | ICF-2S18-H1-LD<br>ICF-2S18-H1-LD | C218UNV-BE<br>C218UNV-SE | ES-2/1-CFQ-18-UNV-C<br>ES-2/1-CFQ-18-UNV-D | PSM218CQMVB<br>PSM218CQMV |
| 51833 | QTP 2x26CF/UNV | ICF-2S26-H1-LD | C2642UNV-SE | ES-2/1-CFQ-26-UNV-D | PSG242TRMV |
| 51898 | QTP 2x26CF/UNV PEM | ICF-2S26-H1-LD | C2642UNV-SE | ES-2/1-CFQ-26-UNV-D | PSG242TRMV |
| 51843 | QTP 2x26/32/42CF/UNV M | ICF-2S42-M2-LS ICF- 2S42-M2-LD | C242UNV-BE | ES-2-CFH-42/32/26-UNV-H | PSG242TRMVB |
| 51863 | QTP 2x26/32/42CF/UNV M PEM | ICF-2S42-M2-BS | C242UNV-BES | N/A | PSG242TRMVBS |
| CF T4 PROStart - Programmed Rapid Start - Normal Ballast Factor - <10%THD [1]QTP CF models above replace shaded item numbers below. CFL products run multiple lamp combinations and have various mounting/case styles - please refer to actual product specs. | | | | | |
| 51718 | QTP1/2x13CF/UNVBS | ICF-2S13-H1-LD | C213UNV-BE | ES-2/1-CFQ-13/10-UNV-C | PSM213CQMVB |
| 51748 | QTP1/2x13CF/UNVTS | ICF-2S13-H1-LD | C213UNV-SE | ES-2/1-CFQ-13/10-UNV-D | PSM213CQMV |
| 51723 | QTP1/2x18CF/UNVBS | ICF-2S18-H1-LD | C218UNV-BE | ES-2/1-CFQ-18-UNV-C | PSM218CQMVB |
| 51753 | QTP1/2x18CF/UNVTS | ICF-2S18-H1-LD | C218UNV-SE | ES-2/1-CFQ-18-UNV-D | PSM218CQMV |
| 51733 | QTP2x26CF/UNVBS | ICF-2S26-H1-LD | C2642UNV-BE | ES-2/1-CFQ-26-UNV-C | PSG242TRMVB |
| 51763 | QTP2x26CF/UNVTS | ICF-2S26-H1-LD | C2642UNV-SE | ES-2/1-CFQ-26-UNV-D | PSG242TRMV |
| 51743 | QTP2x26/32/42CF/UNVBM | ICF-2S42-M2-LS | C242UNV-BE | ES-2-CFH-42/32/26-UNV-H | PSG242TRMVB |
| 51803 | QTP2x26/32/42CF/UNVPM | ICF-2S42-M2-BS | C242UNV-BES | N/A | PSG242TRMVBS |
| 51773 | QTP2x26/32/42CF/UNVTM | ICF-2S42-M2-LD | C242UNV-SE | ES-2-CFH-42/32/26-UNV-G | N/A |
| 51740 | QTP1x57CF/UNVBM (1X57) | ICF-2S42-M2-LS | C242UNV-BE | N/A | N/A |
| 51740 | QTP1x57CF/UNVBM (1X70) | ICF-1Q70-M3-LD | C242UNV-BE | N/A | N/A |
| 51800 | QTP1x57CF/UNVPM (1X57) | ICF-2S42-M2-BS | C242UNV-BES | N/A | N/A |
| 51800 | QTP1x57CF/UNVPM (1X70) | ICF-1Q70-M3-BS | C242UNV-BES | N/A | N/A |

| Item Number | OSRAM SYLVANIA | Advance | U.L.T. Universal Lighting Technologies (formerly Magnetek) |
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| **QUICKTRONIC PROFESSIONAL 40T12** | | | |
| 40 T12 Rapid Start - Normal Ballast Factor - <10% THD | | | |
| 50684 | QTP1x40T12/120RSN-SC | REL-1S40-SC (REL-1S40-RH-TP) | B140R120HP |
| 50685 | QTP1x40T12/277RSN-SC | VEL-2S40-SC (VEL-1S40-RH-TP) | B140R277HP |
| 50686 | QTP2x40T12/120RSN-SC | REL-2S40-SC , RCN-2S40, REL-2S40-RH-TP | B240R120HP |
| 50687 | QTP2x40T12/277RSN-SC | VEL-2S40-SC, VCN-2S40, VEL-2S40-RH-TP | B240R277HP |
| 50688 | QTP3x40T12/120RSN | REL-3S40-RH-TP | B340R120HP |
| 50689 | QTP3x40T12/277RSN | VEL-3S40-RH-TP | B340R277HP |
| **QUICKTRONIC 8 foot T12 Systems** | | | |
| 96 T12 Instant Start - Normal Ballast Factor - Large Can - <20% THD | | | |
| 49881 | QT2x96/120IS | REL-2P60-S | B2601120RH |
| 49882 | QT2x96/277IS | VEL-2P75-S | B2601277RH |
| 96 T12/HO Rapid Start - Normal Ballast Factor - Large Can - <20% THD | | | |
| 49883 | QT2x96/120HO | REL-2S110 | B295SR120HP |
| 49884 | QT2x96/277HO | VEL-2S110 | B295SR277HP |

| Item Number | OSRAM SYLVANIA POWERSENSE® (2 wire Powerline & 0-10V) (120-277V) | Advance Mark 10 (2 wire) Powerline (Dedicated Voltage) | Advance Mark 7 (0-10V) (120-277V) | U.L.T. (formerly Magnetek) Universal Lighting Technologies Ballastar (0-10V) (Dedicated Voltage) | U.L.T. (formerly Magnetek) Universal Lighting Technologies Superdim (0-10V) (120-277V) | LUTRON Tu-wire (Powerline) Dedicated Voltage Models Only | LUTRON Eco-10 TVE (0-10V) Dedicated Voltage Models Only |
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| **QUICKTRONIC POWERSENSE T8 DIMMING UNIVERSAL VOLTAGE** | | | | | | | |
| 32 T8 Dimming Systems - High Efficiency | | | | | | | |
| 50705 | QTP 1x32T8/UNV DIM-TC | REZ-132-SC (120V)<br>VEZ-132-SC (277V) | IZT- 132-SC | B132R120V5<br>B132R277V5 | ES5821B<br>ES5835K<br>ES5833B<br>ES5818K | 2W-T832-120-1 | TVE-T832-120-1<br>TVE-T825-120-1<br>TVE-T817-120-1<br>TVE-T832-277-1 |
| 50707 | QTP 2x32T8/UNV DIM-TC | REZ-2S32-SC(120V)<br>VEZ-2S32-SC (277V) | IZT-2S32-SC | B232SR120V5<br>B232SR277V5 | ES5822B<br>ES5836K<br>ES5834B<br>ES5817K | 2W-T832-120-2 | TVE-T832-120-2<br>TVE-T832-277-2 |
| 50714 | QTP 3x32T8/UNV DIM-TCL | REZ-3S32-SC (120V)<br>VEZ-3S32-SC (277V) | IZT-3S32-SC | B332SR120V5<br>B332SR277V5 | | | TVE-T832-120-3<br>TVE-T832-277-3 |
| 50716 | QTP 4x32T8/UNV DIM-TCL | | IZT-4S32 | N/A<br>B432P277V5-E | | | |

| Item Number | OSRAM SYLVANIA POWERSENSE (2 wire Powerline & 0-10V) (120-277V) | Advance Mark 10 (2 wire) Powerline (Dedicated Voltage) | Advance Mark 7 (0-10V) (120-277V) | U.L.T. (formerly Magnetek) Universal Lighting Technologies Ballastar (0-10V) (Dedicated Voltage) | U.L.T. (formerly Magnetek) Universal Lighting Technologies Superdim (0-10V) (120-277V) | LUTRON Tu-wire (Powerline) Dedicated Voltage Models Only | LUTRON Eco-10 TVE (0-10V) Dedicated Voltage Models Only |
|---|---|---|---|---|---|---|---|
| **QUICKTRONIC POWERSENSE T5 DIMMING UNIVERSAL VOLTAGE** | | | | | | | |
| 28 T5 Dimming Systems - High Efficiency | | | | | | | |
| 50726 | QTP 2x28T5/UNV DIM-TCL | N/A | | N/A | ES5851K<br>ES5861K<br>ES5847K | | E3 T514 C120 2<br>E3 T514 C 277 2<br>E3 T521 C 120 2<br>E3 T521 C 277 2<br>ECO-T528-120-2<br>ECO-T528-277-2 |

| Item Number | OSRAM SYLVANIA | Advance | U.L.T. Universal Lighting Technologies (formerly Magnetek) | Lutron |
|---|---|---|---|---|
| **QUICKTRONIC PROFESSIONAL 54 T5HO HELIOS™ DIMMING - A list of 0-10V controllers is available from OSRAM SYLVANIA** | | | | |
| 54 T5 HO Dimming Systems (0-10Vdc control) - 100-1% Dimming Range -<10% THD at full output, <20% THD at full dim | | | | |
| 49671 | QT1x54/120PHO-DIM | RZT-154 | N/A | ECO T554-120-1 |
| 49672 | QT1x54/277PHO-DIM | VZT-154 | N/A | ECO T554-277-1 |
| 49673 | QT2x54/120PHO-DIM | RZT-2S54 | N/A | ECO T554-120-2 |
| 49674 | QT2x54/277PHO-DIM | VZT-2S54 | N/A | ECO T554-277-2 |

| Item Number | OSRAM SYLVANIA | Advance | U.L.T. Universal Lighting Technologies (formerly Magnetek) | AROMAT | Hatch |
|---|---|---|---|---|---|
| **QUICKTRONIC PROFESSIONAL MH⁘** | | | | | |
| METALARC® Metal Halide Universal Voltage - Operates Ceramic and Most Quartz MH Lamp | | | | | |
| 51908 | QTP1X20MH/UNV F | N/A | N/A | M2012-27CK-5EUF | MC20-1-F-UNIU |
| 51909 | QTP1X20MH/UNV J | N/A | N/A | M2012-27CK-5EUJ | MC20-1-J-UNIU |
| 51968 | QTP2X20MH/UNV F | N/A | N/A | N/A | MC20-2-F-UNNU |
| 51969 | QTP2X20MH/UNV J | N/A | N/A | N/A | MC20-2-J-UNNU |
| 51910 | QTP1X39MH/UNV F | IMH-50-A-LF | N/A | M3912-27CK-5EUF | MC39-1-F-UNIU |
| 51911 | QTP1X39MH/UNV J | IMH-50-A-BLS | N/A | M3912-27CK-5EUJ | MC39-1-J-UNIU |
| 51970 | QTP2X39MH/UNV F | IMH-239-A-LF | N/A | N/A | MC39-2-F-UNNU |
| 51971 | QTP2X39MH/UNV J | IMH-239-A-BLS | N/A | N/A | MC39-2-J-UNNU |
| 51912 | QTP1X70MH/UNV F | IMH-70-D-LF | EC70UNVSE | M7012-27CK-5EUF | MC70-1-F-UNIU |
| 51913 | QTP1X70MH/UNV J | IMH-70-D-BLS | EC70UNVBS | M7012-27CK-5EUJ | MC70-1-F-UNIU |
| 51914 | QTP1X100MH/UNV F | IMH-100-D-LF | EC100UNVSE | M10012-27CK-5EUF | MC100-1-F-UNIU |
| 51915 | QTP1X100MH/UNV J | IMH-100-D-BLS | EC100UNVBS | M10012-27CK-5EUJ | MC100-1-J-UNIU |

| Item Number | OSRAM SYLVANIA | Advance | Universal Lighting Technologies (formerly Magnetek) | AROMAT | Hatch | GE | Metrolight | Delta Power |
|---|---|---|---|---|---|---|---|---|
| **QUICKTRONIC MH⁘** | | | | | | | | |
| METALARC® Metal Halide | | | | | | | | |
| 51958 | QT1x20MH 120V SLIM | N/A | N/A | M2012CK-6EUN-F | MC20-1-F-120V | N/A | M20MH-UX-C | N/A |
| 51959 | QT1x20MH UNV SQ | N/A | N/A | M2012CK-6EU-F | MC20-1-F-UNNU | N/A | N/A | N/A |
| 51960 | QT1x39MH 120V SLIM | N/A | N/A | M3912CK-6EUN-F | N/A | N/A | M39MH-UX-C | N/A |
| 51961 | QT1x39MH UNV SQ | IMH-39-G-LF | N/A | M3912CK-6EU-F | MC39-1-F-UNNU | GEMH39-MSF-120 | N/A | N/A |
| 51962 | QT1x70MH 120V SLIM | N/A | N/A | M7012CK-6EUN-F | MC70-1-F-120S | GEMH70-SLF-MV | N/A | N/A |
| 51963 | QT1x70MH 120V SQ | N/A | N/A | M7012CK-6EU-F | N/A | GEMH70-MSF-120 | N/A | N/A |
| 51930 | QT1x150MH/UNV F | IMH-150-H-LF | EC150UNVASE | M15012-27CK-5EUN-F | N/A | N/A | M150MH-C-UX-US | N/A |
| 51931 | QT1x150MH/UNV J | IMH-150-H-BLS | EC150UNVABM | M15012-27CK-5EUN-J | N/A | N/A | M150MH-S-UX-US | N/A |

| Item Number | OSRAM SYLVANIA | Advance | Universal Lighting Technologies (formerly Magnetek) | GE | Metrolight | Delta Power |
|---|---|---|---|---|---|---|
| **QUICKTRONIC HIGH EFFICIENCY MH⁘** | | | | | | |
| Electronic Metal Halide - 208-277V | | | | | | |
| 51980 | QHE1X200MH 208-277V | IMH-200-C-LF | N/A | N/A | N/A | BA200M1A77DQ |
| 51981 | QHE1X250MH 208-277V | N/A | EP250MRVASE | GE-MH-400-MAX-208-277 | N/A | BA250M1A77DQ |
| 51982 | QHE1X320MH 208-277V | IZTEMH4003PS | EP320MRVASE | GE-MH-400-MAX-208-277 | M320MH-3-US-C-ND | BA320M1A77DQ |
| 51983 | QHE1X350MH 208-277V | IZTEMH4003PS | EP350MRVASE | GE-MH-400-MAX-208-277 | M350MH-3-US-C-ND | BA350M1A77DQ |
| 51984 | QHE1X400MH 208-277V | IZTEMH4003PS | EP400MRVASE | GE-MH-400-MAX-208-277 | M400MH-3-US-C-ND | BA400M1A77DQ |

⁘ Line voltage, case sizes, wiring diagrams and performance specifications may vary; please refer to manufacturer's specifications.

PLEASE NOTE:

This cross reference guide is intended as an aid for identifying comparable products as a convenience to the user. OSRAM SYLVANIA does not warrant or guarantee the accuracy or correctness of the content. Case sizes,wiring diagrams and performance specifications may vary, please refer to manufacturers specifications. Please refer to the OSRAM SYLVANIA catalog for verification of product specifications appropriate for the application. Information in this cross reference is subject to change at any time without prior notice. Please contact 1-800-LIGHTBULB or www.sylvania.com for additional information.




# Magnetic Ballasts

## Simplified Solutions

OSRAM SYLVANIA is focused on helping our customers understand our products, and to simplifying their use and applications. SYLVANIA magnetic fluorescent product labels include an industry first — a handy cross-reference guide to help identify the proper ballast for replacing existing installed products. The line voltage is also clearly identified to ensure proper application, and our shipping carton labels are also color coded to indicate the voltage to help avoid misapplication even before the ballasts are out of the box.

SYLVANIA Magnetic HID ballast descriptions are based on the corresponding lamp description to make lamp/ballast matching and identification easier.

All fluorescent and HID carton labels also identify the corresponding lamp/ballast matching to make proper product selection as clear and as simple as possible.

## Magnetic Ballasts

OSRAM SYLVANIA offers a wide range of Magnetic Ballast Products to support our customers with SYLVANIA brand lighting products. This array of products will allow our customers a broad selection of Magnetic ballasts to choose from to operate their SYLVANIA brand lamps.

- HID Magnetic SUPER 5 Kits
- Magnetic Fluorescent Sign Ballasts
- Pulse Start HID Ballasts
- F-Can HID Ballasts
- Indoor Enclosed HID Ballasts

**Complete performance data is available in the Magnetic Ballast Catalog and at www.sylvania.com.**


## Magnetic Fluorescent Ballasts

High quality products for most general applications - i.e. T12, T9, T8, and T5 lamps

### Magnetic Fluorescent Sign Ballasts

T12 high output magnetic ballasts for sign applications are designed to meet or exceed industry standards and requirements for the sign business.

## Magnetic HID Ballasts

### HID Magnetic Ballast Kits

Easy to use replacement kits for the range of metal halide, pulse start metal halide, high pressure sodium and mercury lamps. Kits include core and coil, capacitors and ignitors (where required), brackets and mounting hardware.

Our **SUPER 5 HID Kits** have 120, 208, 240, 277 and 480V input voltage taps to reduce the number of models in inventory.

### F-Can HID Ballasts

F-Can ballasts for indoor applications operate a range of metal halide, pulse start metal halide and high pressure sodium lamps with minimal noise.

### METALARC® Indoor Enclosed HID Ballasts

Indoor Enclosed ballasts for indoor applications where remote mounting is required.

## Table of Contents – Magnetic Ballasts



# Magnetic Ballasts

### Magnetic Fluorescent Ballasts for T8, T12, T10, T9 & T5 lamps



### Magnetic HID Core & Coil Ballasts



### Magnetic HID F-Can Ballasts



### Magnetic HID Indoor Enclosed Ballasts



### HID Magnetic Ballast Replacement Parts and *Lamp & Ballast Kits*





### Ease of Use

The Magnetic section of the Product Line Guide provides our customers with OSRAM SYLVANIA product information as well as competitive manufacturers' cross reference catalog numbers. OSRAM SYLVANIA is focused on providing information to our customers, which will aid in the selection of the appropriate ballast for the desired application. The manufacturer's cross reference will help identify the proper ballast for the replacement of existing installed products.

OSRAM SYLVANIA customers can rely on one source for information on both lamps and ballasts. Having one source for lamps and ballasts reduces the time required for sorting out technical details and product specifications.

### Magnetic Ballast Warranty

All SYLVANIA HID and Fluorescent Sign Ballasts are guaranteed for up to 2 years. SYLVANIA Fluorescent Ballasts are guaranteed for up to 3 years. For Magnetic Ballast Limited Warranty details, go to *www.sylvania.com*

# Energy Legislation Update



**On April 1, 2005** the 2000 Federal Ballast Efficacy Regulations were implemented to raise the minimum Ballast Efficacy Factor (BEF) for T12 fluorescent ballasts. The ruling affects only high power factor fluorescent ballasts for:

- One or two F40T12 and F40T12/U lamps operated on a 120 or 277V ballast
- Two F96T12 lamps operated on a 120 or 277V ballast
- Two F96T12HO lamps operated on a 120 or 277V ballast

**On August 8, 2005,** the Energy Policy Act of 2005 (EPAct 2005) was signed. EPAct 2005 addresses ballasts for reduced wattage T12 lamps not originally covered in the original 2000 Federal Ballast Efficacy Regulations. Minimum ballast efficacy standards for ballasts capable of operating full and reduced wattage F40T12, F40T12/U, F96T12 and F96T12HO lamps have been set in EPAct 2005. The levels set deadlines for the cessation of production of inefficient ballasts and the gradual phase out of replacement units.

Listed below is the essential timetable for the 2000 Federal Ballast Efficacy Regulations and EPAct 2005 for Fixture Manufacturers, Residential Markets and Distributors (Replacement Market).

## Residential Market

T12 magnetic fluorescent normal power factor ballasts designed for residential applications were not affected by either ruling. However, ballasts sold must be marked *"For Residential Use Only".*

| FIXTURE MARKET (OEM) | | |
|---|---|---|
| | 2000 Federal Ballast Efficacy Regulation | EPAct 2005 |
| **Action** | **2005 BEF Standards for Full-Wattage T12 Lamps (F40T12, F40T12/U, F96T12 and F96T12HO)** | **2009 BEF Standards for Energy-Saving T12 Lamps (F40T12, F40T12/U, F96T12 and F96T12HO)** |
| Ballast manufacturers can no longer make ballasts that do not pass the new requirements for use in new fixtures. | April 1, 2005 | July 1, 2009 |
| Ballast manufacturers cannot sell ballasts that do not pass the new requirements to U.S. fixture manufacturers. | July 1, 2005 | October 1, 2009 |
| Fixture manufacturers cannot sell fixtures that include ballasts that do not pass the new requirements. | April 1, 2006 | July 1, 2010 |

# DISTRIBUTOR / REPLACEMENT MARKET

## 2000 Federal Ballast Efficacy Regulations

Ballast manufacturers can manufacture and sell to distributors, fluorescent ballasts for Full-Wattage F40T12, F40T12/U, F96T12 and F96T12HO that do not meet the minimum Ballast Efficacy Factor (BEF) until July 1, 2010. However, the ruling stipulates these ballasts must meet the following criteria:

- Ballasts must be marked *"For Replacement Use Only"*
- Ballasts are only available with short leads
- Ballasts are to be in packages not exceeding ten ballasts

## EPAct 2005 Magnetic Fluorescent Ballasts

On July 1, 2009 EPAct 2005 states that ballast manufacturers can manufacture and sell to distributors, fluorescent ballasts for Energy-Saving F40T12, F40T12/U, F96T12 and F96T12HO that do not meet the minimum Ballast Efficacy Factor (BEF) until July 1, 2010. As of July 1, 2009 energy-saving T12 ballasts manufactured and sold for replacement use must also meet the requirements listed above.

## Mercury Vapor Ballasts

EPACT 2005 also states that Mercury Vapor Ballasts cannot be manufactured after January 1, 2008. Complete information on EPAct 2005 is available in The Impact of EPAct 2005 brochure (SYLVANIA literature code: EPACT2005) and at www.sylvania.com

**OSRAM SYLVANIA will continue to supply the Magnetic Fluorescent Ballasts listed below for T12 lamps until July 1, 2010 (for replacement purposes only):**

| Item # | OSRAM SYLVANIA Description* | Page # |
|---|---|---|
| 48011 | MB1x40/120RS-SRNK | 198 |
| 48120 | MB1x40/277RS-SRNK | 198 |
| 48001 | MB2x40/120RS-SRNK | 198 |
| 48121 | MB2x40/277RS-SRNK | 198 |
| 48025 | MB2x96/HO/120RS-SRNK | 198 |
| 48027 | MB2x96/HO/277RS-SRNK | 198 |
| 48018 | MB2x96/120IS-SRNK | 199 |
| 48126 | MB2x96/277IS-SRNK | 199 |

*These ballasts will all be labeled *"For Replacement Use Only"*, have shorter lead lengths and are individually shrink-wrapped.

**OSRAM SYLVANIA is committed to understanding your lighting needs by offering a variety of lighting solutions. For additional product or industry information contact 1-800-LIGHTBULB or visit our website at www.sylvania.com.**

| Item Number | OSRAM SYLVANIA Description | Input Voltage (VAC) | No. of Lamps | Lamp Types | Input Power (Watts)[1] | Advance Catalog #[2] | Universal Lighting Technologies* Catalog #[2] | Valmont Catalog #[2] |
|---|---|---|---|---|---|---|---|---|
| **T8 RAPID START** | | | | | | | | |
| F017T8 Rapid Start - High Power Factor | | | | | | | | |
| 48312 | MB1x17/120RS | 120 | 1 | **F017T8**, FB016T8/U | 31 | R1P817TP | 707TCP | 8G4177W |
| F025T8 or F032T8 Rapid Start - High Power Factor | | | | | | | | |
| 48096 | MB1x25/32/120RS-LW | 120 | 1 | **F032T8**, FB032T8/U, FB031T8/U, F025T8, FB024T8/U, F040T8 | 35 | --- | M132R120[4] | --- |
| 48240 | MB1x25/32/120RS-SRNK | 120 | 1 | **F032T8**, FB032T8/U, FB031T8/U, F025T8, FB024T8/U, F040T8 | 44 | R1P825TP[4] & R1P32TP Mark III[4] | 727LTCP[4] & M132R120[4] | --- |
| 48241 | MB1x25/32/277RS-SRNK | 277 | 1 | **F032T8**, FB032T8/U, FB031T8/U, F025T8, FB024T8/U, F040T8 | 43 | V1P825TP[4] & V1P32TP Mark III[4] | 728LTCP[4] & M132R277C[4] | --- |
| 48242 | MB2x25/32/120RS-SRNK | 120 | 2 | **F032T8**, FB032T8/U, FB031T8/U, F025T8, FB024T8/U | 74 | R2P825TP[4] & R2P32TP Mark III[4] | 731LTCP[4] & M232SR120C[4] | 8G4126W18 |
| 48243 | MB2x25/32/277RS-SRNK | 277 | 2 | **F032T8**, FB032T8/U, FB031T8/U, F025T8, FB024T8/U | 75 | V2P825TP[4] & V2P32TP Mark III[4] | 732LTCP[4] & M232SR277C[4] | 8G4136W18 |
| **T12 RAPID START** | | | | | | | | |
| F30T12 Rapid Start - High Power Factor | | | | | | | | |
| 48409 | MB2x30/120RS-SRNK | 120 | 2 | **F30T12, F25T12/SS** | 80, 70 | R2SP30TP Mark III | 573LTCP | 8G3971W |
| 48410 | MB2x30/277RS-SRNK | 277 | 2 | **F30T12, F25T12/SS** | 80, 70 | V2SP30TP Mark III | 588LTCP | 8G3972W |
| 48397 | MB2x30/40/120RS | 120 | 2 | **F30T12, F25T12/SS,** F40T10, FC12T9 & FC16T9 | 66, 57 | RC2SP40TP | W589DTCP | --- |
| F40T12 Rapid Start - High Power Factor | | | | | | | | |
| 48011 ▲ | MB1x40/120RS-SRNK | 120 | 1 | **F40T12, F34T12†,** FB34T12/U, FB40T12/U, F40T10, F30T12 | 50, 44 | R140TP Mark III | 412LSLHTCP | 8G1074W |
| 48120 ▲ | MB1x40/277RS-SRNK | 277 | 1 | **F40T12, F34T12†,** FB34T12/U, FB40T12/U, F40T10, F30T12 | 50, 44 | V140TP Mark III | 458LSLHTCP | 8G1084W |
| 48001 ▲ | MB2x40/120RS-SRNK | 120 | 2 | **F40T12, F34T12,** FB34T12/U, FB40T12/U, F40T10 | 87, 73 | R2S40TP Mark III | 446LSLHTCP | 8G1024W |
| 48121 ▲ | MB2x40/277RS-SRNK | 277 | 2 | **F40T12, F34T12,** FB34T12/U, FB40T12/U, F40T10 | 89, 77 | V2S40TP Mark III | 443LSLHTCP | 8G1034W |
| F40T12 Rapid Start - Normal Power Factor - For Residential Use Only | | | | | | | | |
| 48210 | MB1x40/120RES-SRNK | 120 | 1 | **F40T12,** F30T12, FC12T9, FC16T9 | 31 | RL140TP | 413CTCP | 8G1075 |
| **T12/HO RAPID START** | | | | | | | | |
| F96T12/HO Rapid Start - High Power Factor | | | | | | | | |
| 48127 | MB1x96/HO/120RS-SRNK | 120 | 1 | **F96T12/HO, F96T12/HO/SS(95W),** F84T12/HO, F72T12/HO, F64T12/HO, F60T12/HO, F48T12/HO, F42T12/HO, F36T12/HO, F30T12/HO, F24T12/HO, F18T12/HO | 136, 117 | RS110TP | 481LHTCP | 8G3900W |
| 48128 | MB1x96/HO/277RS-SRNK | 277 | 1 | **F96T12/HO, F96T12/HO/SS(95W),** F84T12/HO, F72T12/HO, F64T12/HO, F60T12/HO, F48T12/HO, F42T12/HO, F36T12/HO, F30T12/HO, F24T12/HO, F18T12/HO | 138, 122 | VS110TP | 479LHTCP | 8G4200WF |
| 48025 ▲ | MB2x96/HO/120RS-SRNK | 120 | 2 | **F96T12/HO, F96T12/HO/SS(95W),** F84T12/HO, F72T12/HO, F64T12/HO, F60T12/HO, F48T12/HO, F42T12/HO, F36T12/HO, F30T12/HO, F24T12/HO, F18T12/HO | 243, 211 | R2S110TP Mark III | 480SLHTCP | 8G1144W |
| 48027 ▲ | MB2x96/HO/277RS-SRNK | 277 | 2 | **F96T12/HO, F96T12/HO/SS(95W),** F84T12/HO, F72T12/HO, F64T12/HO, F60T12/HO, F48T12/HO, F42T12/HO, F36T12/HO, F30T12/HO, F24T12/HO, F18T12/HO | 242, 218 | V2S110TP Mark III | 487SLHTCP | 8G1154W |
| 48151 | MB1/2x48/96/HO/120RS-SRNK/IN | 120 | 1 or 2 | **F48T12/HO,** F96T12/HO, F72T12/HO, F60T12/HO, F84T12/HO, F36T12/HO, F24T12/HO | 154 | RS110TP | 490XLHTCP | --- |
| **T12/HO SIGN BALLASTS** | | | | | | | | |
| T12/HO Rapid Start | | | | | | | | |
| 48225 | MSB-12-0412-TP | 120 | 1-2 | Any T12/HO, (800mA) lamp within quantity of lamp and lamp length requirements.[3] | 182 | ASB-0412-12-BL-TP | USB-0412-12 | 6G3901WF |
| 48226 | MSB-24-0620-TP | 120 | 2-4 | Any T12/HO, (800mA) lamp within quantity of lamp and lamp length requirements.[3] | 282 | ASB-0620-24-BL-TP | USB-0816-14 | 6G3814WF |
| 48227 | MSB-24-1224-TP | 120 | 2-4 | Any T12/HO, (800mA) lamp within quantity of lamp and lamp length requirements.[3] | 290 | ASB-1224-24-BL-TP | USB-1024-14 | 6G3959WF |
| 48228 | MSB-24-2040-TP | 120 | 2-4 | Any T12/HO, (800mA) lamp within quantity of lamp and lamp length requirements. See wiring diagram for further wiring instructions.[3] | 471 | ASB-2040-24-BL-TP | USB-1632-24 | 6G3782WF |
| 48229 | MSB-46-1240-TP | 120 | 4-6 | Any T12/HO, (800mA) lamp within quantity of lamp and lamp length requirements. See wiring diagram for further wiring instructions.[3] | 466 | ASB-1240-46-BL-TP | USB-2036-46 | 6G3787AWF |
| 48232 | MSB-46-2448-TP | 120 | 4-6 | Any T12/HO, (800mA) lamp within quantity of lamp and lamp length requirements. See wiring diagram for further wiring instructions.[3] | 588 | ASB-2448-46-BL-TP | USB-2048-46 | 6G3942AW |

| Item Number | OSRAM SYLVANIA Description | Input Voltage (VAC) | No. of Lamps | Lamp Types | Input Power (Watts)[1] | Advance Catalog #[2] | Universal Lighting Technologies* Catalog #[2] | Valmont Catalog #[2] |
|---|---|---|---|---|---|---|---|---|
| **J-BOX COVER** | | | | | | | | |
| For Sign & F-Can Ballasts | | | | | | | | |
| 48275 | JBox Cover | | | | | PC-875W | --- | --- |
| **T12/VHO RAPID START** | | | | | | | | |
| F96T12/VHO Rapid Start - High Power Factor | | | | | | | | |
| 48129 | MB1x96/VHO/120RS-SRNK | 120 | 1 | **F96T12/VHO, F96T12/VHO/SS(195W),** F72T12/VHO, F60T12/VHO, F48T12/VHO | 218, 200 | RC2S102TP[4] | 951STCP | 8G3927WF |
| 48130 | MB1x96/VHO/277RS-SRNK | 277 | 1 | **F96T12/VHO, F96T12/VHO/SS(195W),** F72T12/VHO, F60T12/VHO, F48T12/VHO | 212, 192 | VC2S102TP[4] | 957STCP | 8G3990WF |
| 48131 | MB2x96/VHO/120RS-SRNK | 120 | 2 | **F96T12/VHO, F96T12/VHO/SS(195W),** F72T12/VHO, F60T12/VHO, F48T12/VHO | 452, 408 | RS2S200TP | 930KTCP | 8G1201W |
| 48132 | MB2x96/VHO/277RS-SRNK | 277 | 2 | **F96T12/VHO, F96T12/VHO/SS(195W),** F72T12/VHO, F60T12/VHO, F48T12/VHO | 423, 380 | VS2S200TP | 937KTCP | 8G1211W |
| **T9 CIRCLINE RAPID START** | | | | | | | | |
| FC8T9 Circline Rapid Start - Normal Power Factor | | | | | | | | |
| 48230 | MB1x22/120CIRC-SRNK | 120 | 1 | **FC8T9** | 29 | RLQS122TPW | 547RSWSTCP | 8G1091G11 |
| FC12T9 or FC16T9 Circline Rapid Start - Normal Power Factor | | | | | | | | |
| 48231 | MB1x32/120CIRC-SRNK | 120 | 1 | **FC12T9,** FC16T9 | 31 | RLCS140TPW | 445RSWSTCP | 8G1085G11 |
| 48210 | MB1x40/120RES-SRNK | 120 | 1 | **FC12T9, FC16T9,** F40T12, F30T12 | 31, 32 | RL140TP | --- | --- |
| FC12T9 & FC16T9 Circline Rapid Start - High Power Factor | | | | | | | | |
| 48397 | MB2x30/40/120RS | 120 | 2 | **FC12T9 & FC16T9,** F40T10, F30T12, F25T12/SS | 71 | --- | --- | --- |
| **T12 INSTANT START SLIMLINE** | | | | | | | | |
| F48T12 Instant Start - High Power Factor | | | | | | | | |
| 48122 | MB2x48/120IS-SRNK | 120 | 2 | **F48T12, F48T12/SS(32W)** | 87, 78 | SM2E40STP | 213TCP | 8G1600W |
| 48123 | MB2x48/277IS-SRNK | 277 | 2 | **F48T12, F48T12/SS(32W)** | 88, 81 | VSM2E40STP | 532BRTCP | 8G1710W |
| F96T12 Instant Start - High Power Factor | | | | | | | | |
| 48124 | MB1x96/120IS-SRNK | 120 | 1 | **F96T12, F96T12/SS(60W),** F84T12, F72T12, F64T12, F60T12 | 101, 87 | RSM175STP | 822BRTCP | 8G1762W |
| 48125 | MB1x96/277IS-SRNK | 277 | 1 | **F96T12, F96T12/SS(60W),** F84T12, F72T12, F64T12, F60T12 | 101, 86 | VSM175STP | 828BRTCP | 8G1764W |
| 48018 ▲ | MB2x96/120IS-SRNK | 120 | 2 | **F96T12, F96T12/SS(60W),** F84T12, F72T12, F64T12, F60T12 | 160, 135 | R2E75STP Mark III | 806SLHTCP | 8G1004W |
| 48126 ▲ | MB2x96/277IS-SRNK | 277 | 2 | **F96T12, F96T12/SS(60W),** F84T12, F72T12, F64T12, F60T12 | 162, 140 | V2E75STP Mark III | 827SLHTCP | 8G1014W |
| **T5, T8 and T12 PREHEAT START** | | | | | | | | |
| F8T5 Preheat Start - Normal Power Factor | | | | | | | | |
| 48475 | MB1x8/120PH/TP/S-SRNK | 120 | 1 | **F8T5,** F4T5, F6T5 | 10 | LSX113TP[4] | --- | 89G489 |
| F20T12 Preheat Start - Normal Power Factor | | | | | | | | |
| 48201 | MB1x20/120PH/TP | 120 | 1 | **F20T12,** F14T8, F14T12, F15T8, F15T12 | 22 | LC1420CTP | 200H2P | --- |
| 48202 | MB1x20/120PH | 120 | 1 | **F20T12,** F14T8, F14T12, F15T8, F15T12 | 22 | LC1420C | 200H2 | 89G457 |
| **T8 and T12 TRIGGER START** | | | | | | | | |
| F15T12 Trigger Start - Normal Power Factor | | | | | | | | |
| 48200 | MB1x15/120PH/TP-SRNK | 120 | 1 | **F15T12,** F14T8, F14T12, F15T8, F20T12 | 33 | RLQ120TP | 546BTCP | 8G3560 |
| F20T12 Trigger Start - Normal Power Factor | | | | | | | | |
| 48203 | MB2x20/120PH/TP-SRNK | 120 | 2 | **F20T12,** F14T8, F14T12, F15T8, F15T12 | 41 | RL2SP20TP | 447LRTCP | 8G3912 |

* Formerly MagneTek Lighting

▲ For Replacement Use Only

† Operating only 1 Energy Saver lamp on this ballast may effect the operation and life of the lamp. Consult individual lamp manufacturer for lamp specifications

1: Input Power (Watts) for primary lamp type and SUPERSAVER® equivalent, (where applicable). Primary lamp type and SUPERSAVER® equivalent in bold print.

2: This data is intended as an aid for identifying comparable products for the lamp types listed as a convenience to the user. OSRAM SYLVANIA does not warrant or guarantee the accuracy or correctness of the content. Case sizes, wiring diagrams and performance specifications may vary, please refer to manufacturers specifications. Please refer to the OSRAM SYLVANIA Magnetic Ballast catalog for verification of product specifications appropriate for the application.

3: Refer to SYLVANIA Sign Ballast Specification Sheet for detailed lamp configuration. Maximum Input Power (Watts) are listed.

4: Nearest Equivalent - Performance specifications may vary, please refer to manufacturer's specifications.

More complete product information is available in the SYLVANIA Magnetic Ballast Catalog or at www.sylvania.com

SPECIFICATIONS:

**Information is subject to change at anytime without prior notice.**

| Item Number | OSRAM SYLVANIA Description | Input Voltage (VAC) | Circuit Type | Input Power (Watts) | Advance Catalog #[8] | Universal Lighting Technologies* Catalog #[8] | Venture Lighting Catalog #[8] | Howard Industries Catalog #[8,9] |
|---|---|---|---|---|---|---|---|---|
| **METALARC® METAL HALIDE CORE & COIL BALLAST KITS** | | | | | | | | |
| **175W Metal Halide Lamp - ANSI Code M57** | | | | | | | | |
| 47243 | M175/SUPER5-KIT | 120/208/ 240/277/480 | CWA | 210 | --- | M175ML5AC3M & M175ML5AC3M-500K | --- | M017581C212 |
| 47735 | M175/MULTI-KIT | 120/208/ 240/277 | CWA | 210 | 71A5590 & 71A5570-001D | M175MLTAC3M & M175MLTAC3M-500K | V90D6111K | M017571C211 |
| 47035 | M175/480-KIT | 480 | CWA | 210 | 71A5540 & 71A5540-001D | --- | --- | --- |
| 47253 | M175/480/120T-KIT | 480/120TAP | CWA | 210 | 71A5540T | M17548TAC3M & M17548TAC3M-500K | --- | --- |
| 47254 | M175/120/277-KIT | 120/277 | CWA | 210 | 71A5580 | --- | --- | --- |
| **250W Metal Halide Lamp - ANSI Code M58** | | | | | | | | |
| 47265 | M250/SUPER5-KIT | 120/208/ 240/277/480 | CWA | 290 | 71A5750 & 71A5750-001D | M250ML5AC4M & M250ML5AC4M-500K | --- | M025081C211 |
| 47737 | M250/MULTI-KIT | 120/208/ 240/277 | CWA | 290 | 71A5790 & 71A5770-001D | M250MLTAC4M & M250MLTAC4M-500K | V90D6212K | M025071C211 |
| 47611 | M250/480-KIT | 480 | CWA | 290 | 71A5740 & 71A5740-001D | --- | --- | M025011C211 |
| 47268 | M250/480/120T-KIT | 480/120TAP | CWA | 290 | 71A5740T | M25048TAC4M & M25048TAC4M-500K | V90Y6212TK | M025029C211 |
| 47049 | M250/MULTI 3X4-KIT | 120/208/ 240/277 | CWA | 294 | 71A5791 & 71A5771-001D | M250MLTAC3M & M250MLTAC3M-500K | V90D6211K | M025071C212 |
| 47050 | M250/480-3X4-KIT | 480 | CWA | 294 | 71A5741 & 71A5741-001D | --- | V90Y6211K | M025011C212 |
| **400W Metal Halide Lamp or 360W Metal Halide Lamp[10] - ANSI Code M59** | | | | | | | | |
| 47338 | M400/SUPER5-KIT | 120/208/ 240/277/480 | CWA | 458 | 71A6051 & 71A6051-001D | M400ML5AC4M & M400ML5AC4M-500K | --- | M040081C211 |
| 47739 | M400/MULTI-KIT | 120/208/ 240/277 | CWA | 458 | 71A6091 & 71A6071-001D | M400MLTAC4M & M400MLTAC4M-500K | V90D6413K | M040071C211 |
| 47065 | M400/480-KIT | 480 | CWA | 458 | 71A6041 & 71A6041-001D | M400480AC4M | --- | M040011C211 |
| 47394 | M400/480/120T-KIT | 480/120TAP | CWA | 458 | 71A6041T | M40048TAC4M & M40048TAC4M-500K | V90Y6413TK | M040029C211 |
| 47075 | M2x400/120/240-KIT | 120/240 | CWA | 880 | --- | --- | --- | --- |
| **1000W Metal Halide Lamp - ANSI Code M47** | | | | | | | | |
| 47427 | M1000/SUPER5-KIT | 120/208/ 240/277/480 | CWA | 1080 | 71A6552[6] & 71A6552-001[6] | M1000ML5AC5M & M1000ML5AC5M-500K | V90AM6514K | --- |
| 47744 | M1000/MULTI-KIT | 120/208/ 240/277 | CWA | 1080 | 71A6592[6] & 71A6572-001[6] | M1000MLTAC5M & M1000MLTAC5M-500K | V90D6514K | M0100071C212 |
| 47655 | M1000/480-KIT | 480 | CWA | 1080 | 71A6542[6] & 71A6542-001[6] | M1000480AC5M & M1000480AC5M-500K | --- | M0100011C212 |
| 47432 | M1000/480/120T-KIT | 480/120TAP | CWA | 1080 | 71A6542T[6] | M100048TAC5M & M100048TAC5M-500K | V90Y6514TK | --- |
| **1500W Metal Halide Lamp - ANSI Code M48** | | | | | | | | |
| 46808 | M1500/MULTI-KIT | 120/208/ 240/277 | CWA | 1605 | 71A6792[6] & 71A6772-001[6] | M1500MLTAC5M & M1500MLTAC5M-500K | V90D6612K | M0150071C212 |
| 47095 | M1500/480-KIT | 480 | CWA | 1605 | 71A6742[6] & 71A6742-001[6] | M1500480AC5M & M1500480AC5M-500K | --- | M0150011C212 |
| 47434 | M1500/480/120T-KIT | 480/120TAP | CWA | 1605 | --- | M150048TAC5M & M150048TAC5M-500K | V90Y6612TK | --- |
| **METALARC METAL HALIDE PULSE START CORE & COIL BALLAST KITS** | | | | | | | | |
| **35W Metal Halide Pulse Start Lamp - ANSI Code M130** | | | | | | | | |
| 47001 | M35/MULTI-HQ/CI-KIT | 120/208/ 240/277 | CWA | 58 | --- | --- | --- | --- |
| 47203 | M35/120/277-KIT | 120/277 | HX-HPF | 54 | 71A5081 | --- | --- | --- |
| **50W Metal Halide Pulse Start Lamp - ANSI Code M110** | | | | | | | | |
| 47007 | M50/MULTI-KIT | 120/208/ 240/277 | HX-HPF | 67 | --- | M50MLTLC3M & M50MLTLC3M-500K | V90D5731K | --- |
| 47204 | M50/120/277-KIT | 120/277 | HX-HPF | 67 | 71A5181 & 71A5181-001D | --- | V90H5731K | --- |
| **70W Metal Halide Pulse Start Lamp - ANSI Code M98** | | | | | | | | |
| 47013 | M70/MULTI-KIT | 120/208/ 240/277 | HX-HPF | 95 | 71A5292 & 71A5292-001D | M70MLTLC3M & M70MLTLC3M-500K | V90D5832K | --- |
| 47217 | M70/120/277-KIT | 120/277 | HX-HPF | 95 | 71A5282 | --- | V90H5832K | --- |
| **70W Metal Halide Pulse Start Lamp - ANSI Code M98 or M139 or M85** | | | | | | | | |
| 47645 | M70/MULTI-HQ/CI-KIT | 120/208/ 240/277 | CWA | 95 | --- | --- | V90D5810K | --- |
| **100W Metal Halide Pulse Start Lamp - ANSI Code M90** | | | | | | | | |
| 47019 | M100/MULTI-KIT | 120/208/ 240/277 | HX-HPF | 130 | 71A5390 & 71A5390-001D | M100MLTLC3M & M100MLTLC3M-500K | V90D5932K | M010071C511 |
| 47219 | M100/120/277-KIT | 120/277 | HX-HPF | 130 | 71A5380 | --- | V90H5932K | --- |

| Item Number | OSRAM SYLVANIA Description | Input Voltage (VAC) | Circuit Type | Input Power (Watts) | Advance Catalog #[8] | Universal Lighting Technologies* Catalog #[8] | Venture Lighting Catalog #[8] | Howard Industries Catalog #[8,9] |
|---|---|---|---|---|---|---|---|---|
| **150W Metal Halide Pulse Start Lamp - ANSI Code M102** | | | | | | | | |
| 47682 | M150/MULTI-PS-KIT | 120/208/240/277 | HX-HPF | 185 | 71A5492 & 71A5492-001D | M150MLTLC3M & M150MLTLC3M-500K | V90D7130K | --- |
| 47228 | M150/120/277-PS-KIT | 120/277 | HX-HPF | 185 | 71A5482 | --- | --- | --- |
| **150W Metal Halide Pulse Start Lamp - ANSI Code M102 or M142** | | | | | | | | |
| 47640 | M150/MULTI-PS-CWA-KIT | 120/208/240/277 | CWA | 189 | --- | --- | V90D7110K | --- |
| **150W Metal Halide Pulse Start Lamp - ANSI Code M81** | | | | | | | | |
| 47229 | M150/MULTI-KIT | 120/208/240/277 | HX-HPF | 185 | 71A5490 | M150MLTLC3D & M150MLTLC3D-500K | --- | --- |
| **175W Metal Halide Pulse Start Lamp - ANSI Code M137 or M152** | | | | | | | | |
| 47686 | M175/MULTI-PS-KIT | 120/208/240/277 | CWA | 208 | 71A5593 & 71A5593-001D | P175MLTAC3M & P175MLTAC3M-500K | V90D7210K | --- |
| 46801 | M175/480-PS-KIT | 480 | CWA | 208 | --- | --- | --- | --- |
| **200W Metal Halide Pulse Start Lamp - ANSI Code M136** | | | | | | | | |
| 47690 | M200/MULTI-PS-KIT | 120/208/240/277 | CWA | 232 | 71A5692 & 71A5692-001D | P200MLTAC3M & P200MLTAC3M-500K | V90D7310K | M020071C611 |
| 46802 | M200/480-PS-KIT | 480 | CWA | 232 | --- | --- | --- | M020011C611 |
| 47259 | M200/480/120T-PS-KIT | 480/120TAP | CWA | 232 | 71A5642T | P20048TAC3M & P20048TAC3M-500K | V90Y7310TK | M020029C611 |
| **250W HQI Metal Halide Lamp - ANSI Code M80** | | | | | | | | |
| 47273 | M250/120/277-KIT | 120/277 | HX-HPF | 290 | 71A5880 | --- | --- | --- |
| **250W Metal Halide Pulse Start Lamp - ANSI Code M138 or M153** | | | | | | | | |
| 47282 | M250/SUPER5-PS-KIT | 120/208/240/277/480 | CWA | 288 | --- | P250ML5AC4M | --- | --- |
| 47112 | M250/MULTI-PS-KIT | 120/208/240/277 | CWA | 288 | 71A5792 & 71A5792-001D | P250MLTAC4M & P250MLTAC4M-500K | V90D8410K | M025071C611 |
| 47106 | M250/480-PS-KIT | 480 | CWA | 288 | --- | --- | --- | --- |
| 47283 | M250/480/120T-PS-KIT | 480/120TAP | CWA | 288 | 71A5742T | P25048TAC4M & P25048TAC4M-500K | --- | --- |
| **320W Metal Halide Pulse Start Lamp - ANSI Code M132 or M154** | | | | | | | | |
| 47676 | M320/MULTI-PS-KIT | 120/208/240/277 | CWA | 368 | 71A5892 & 71A5892-001D | P320MLTAC4M & P320MLTAC4M-500K | V90D7411K | M032071C611 |
| 46803 | M320/480-PS-KIT | 480 | CWA | 368 | --- | --- | --- | --- |
| 47303 | M320/480/120T-PS-KIT | 480/120TAP | CWA | 368 | 71A5842T & 71A5842-001DT | P32048TAC4M & P32048TAC4M-500K | V90Y7411TK | --- |
| **350W Metal Halide Pulse Start Lamp - ANSI Code M131** | | | | | | | | |
| 47695 | M350/MULTI-PS-KIT | 120/208/240/277 | CWA | 400 | 71A5993 & 71A5993-001D | P350MLTAC4M & P350MLTAC4M-500K | V90D7512K | M035071C611 |
| 47697 | M350/480-PS-KIT | 480 | CWA | 400 | --- | --- | --- | --- |
| 47337 | M350/480/120T-PS-KIT | 480/120TAP | CWA | 400 | 71A5943T | P35048TAC4M & P35048TAC4M-500K | V90Y7512TK | --- |
| **400W Metal Halide Pulse Start Lamp - ANSI Code M155 or M135** | | | | | | | | |
| 47400 | M400/SUPER5-PS-KIT | 120/208/240/277/480 | CWA | 452 | --- | P400ML5AC4M | --- | --- |
| 47132 | M400/MULTI-PS-KIT | 120/208/240/277 | CWA | 452 | 71A6092 & 71A6092-001D | P400MLTAC4M & P400MLTAC4M-500K | V90D7612K | M040071C611 |
| 47138 | M400/480-PS-KIT | 480 | CWA | 452 | --- | --- | --- | M040011C611 |
| 47403 | M400/480/120T-PS-KIT | 480/120TAP | CWA | 452 | 71A6042T | P40048TAC4M & P40048TAC4M-500K | V90Y7612TK | M040029C611 |
| **450W Metal Halide Pulse Start Lamp - ANSI Code M144** | | | | | | | | |
| 47405 | M450/MULTI-PS-KIT | 120/208/240/277 | CWA | 508 | 71A6393 | P450MLTAC4M & P450MLTAC4M-500K | V90D8512K | --- |
| 46804 | M450/480-PS-KIT | 480 | CWA | 505 | --- | --- | --- | --- |
| 47408 | M450/480/120T-PS-KIT | 480/120TAP | CWA | 505 | 71A6343T | P45048TAC4M & P45048TAC4M-500K | V90Y8511TK | --- |
| **750W Metal Halide Pulse Start Lamp - ANSI Code M149** | | | | | | | | |
| 47717 | M750/MULTI-PS-KIT | 120/208/240/277 | CWA | 818 | 71A64E2[6,7] | P750MLTAC5M & P750MLTAC5M-500K | V90D7910K | --- |
| 47409 | M750/120/277/347/480-PS-KIT | 120/277/347/480 | CWA | 818 | 71A64F2T[6,7] | --- | V90J7910K[7] | --- |
| 47718 | M750/480-PS-KIT | 480 | CWA | 818 | --- | --- | --- | --- |
| **1000W HQI® Metal Halide Lamp** | | | | | | | | |
| 47089 | M1000/120/277/347/480-HQI-RL | 120/277/347/480 | Reg. Lag | 1150 | --- | --- | --- | --- |
| **1000W Metal Halide Pulse Start Lamp - ANSI Code M141** | | | | | | | | |
| 47416 | M1000/MULTI-PS-KIT | 120/208/240/277 | CWA | 1080 | 71A6593[6] | P1000MLTAC5M & P1000MLTAC5M-500K | V90D7810K | --- |
| 47417 | M1000/120/277/347/480-PS-KIT | 120/277/347/480 | CWA | 1080 | 71A65F3T[6,7] | --- | V90J7810K[7] | --- |
| 46805 | M1000/480-PS-KIT | 480 | CWA | 1080 | --- | --- | --- | --- |
| **2000W HQI® Metal Halide Lamp** | | | | | | | | |
| 47090 | M2000/277/347/480-HQI-RL | 277/347/480 | Reg. Lag | 2200 | --- | --- | --- | --- |

| Item Number | OSRAM SYLVANIA Description | Input Voltage (VAC) | Circuit Type | Input Power (Watts) | Advance Catalog #[8] | Universal Lighting Technologies* Catalog #[8] | Venture Lighting Catalog #[8] | Howard Industries Catalog #[8,9] |
|---|---|---|---|---|---|---|---|---|
| **LUMALUX® HIGH PRESSURE SODIUM CORE & COIL REACTOR BALLASTS** | | | | | | | | |
| 35W High Pressure Sodium Lamp - ANSI Code S76 | | | | | | | | |
| 47269 | LU35/120R | 120 | R-NPF | 45 | 71A7707 | 1233-251U | --- | --- |
| 47537 | LU35/120R-INT[5] | 120 | R-NPF | 45 | 71A7707B | --- | --- | --- |
| 50W High Pressure Sodium Lamp - ANSI Code S68 | | | | | | | | |
| 47274 | LU50/120R | 120 | R-NPF | 60 | 71A7807 | 1233-35U | --- | --- |
| 47548 | LU50/120R-INT[5] | 120 | R-NPF | 60 | 71A7807B | --- | --- | --- |
| 70W High Pressure Sodium Lamp - ANSI Code S62 | | | | | | | | |
| 47284 | LU70/120R | 120 | R-NPF | 81 | 71A7907 | 1233-142U | --- | --- |
| 47558 | LU70/120R-INT[5] | 120 | R-NPF | 81 | 71A7907B | --- | --- | --- |
| 100W High Pressure Sodium Lamp - ANSI Code S54 | | | | | | | | |
| 47304 | LU100/120R | 120 | R-NPF | 120 | 71A8007 | 1233-10U | --- | --- |
| 47585 | LU100/120R-INT[5] | 120 | R-NPF | 120 | 71A8007B | --- | --- | --- |
| 150W High Pressure Sodium Lamp - ANSI Code S55 | | | | | | | | |
| 47319 | LU150/120R | 120 | R-NPF | 170 | 71A8107 | 1233-154U | --- | --- |
| 47616 | LU150/120R-INT[5] | 120 | R-NPF | 170 | 71A8107B | --- | --- | --- |
| **LUMALUX HIGH PRESSURE SODIUM CORE & COIL BALLAST KITS** | | | | | | | | |
| 35W High Pressure Sodium Lamp - ANSI Code S76 | | | | | | | | |
| 47271 | LU35/120/240-KIT | 120/240 | HX-HPF | 47 | --- | --- | --- | --- |
| 50W High Pressure Sodium Lamp - ANSI Code S68 | | | | | | | | |
| 47549 | LU50/120/277-KIT | 120/277 | HX-HPF | 66 | 71A7801 & 71A7801-001D | --- | V90H1132K | S005023C511 |
| 70W High Pressure Sodium Lamp - ANSI Code S62 | | | | | | | | |
| 47301 | LU70/MULTI-KIT | 120/208/ 240/277 | HX-HPF | 91 | 71A7991 & 71A7971-001D | S70MLTLC3M & S70MLTLC3M-500K | V90D1233K | S007071C511 |
| 47579 | LU70/480-KIT | 480 | HX-HPF | 91 | 71A7941 | --- | --- | --- |
| 47571 | LU70/120/277-KIT | 120/277 | HX-HPF | 91 | 71A7901 | --- | --- | --- |
| 100W High Pressure Sodium Lamp - ANSI Code S54 | | | | | | | | |
| 47316 | LU100/MULTI-KIT | 120/208/ 240/277 | HX-HPF | 128 | 71A8091 & 71A8071-001D | S100MLTLC3M & S100MLTLC3M-500K | V90D1333K | S010071C511 |
| 47593 | LU100/480-KIT | 480 | HX-HPF | 128 | 71A8041 & 71A8041-001D | --- | --- | --- |
| 47592 | LU100/120/277-KIT | 120/277 | HX-HPF | 128 | 71A8001 | --- | --- | --- |
| 150W High Pressure Sodium Lamp - ANSI Code S55 | | | | | | | | |
| 47335 | LU150/MULTI-KIT | 120/208/ 240/277 | HX-HPF | 188 | 71A8192 & 71A8172-001D | S150MLTLC3M & S150MLTLC3M-500K | V90D1435K | S015071C511 |
| 47619 | LU150/480-KIT | 480 | HX-HPF | 188 | 71A8142 & 71A8142-001D | --- | --- | --- |
| 47621 | LU150/480/120T-KIT | 480/120TAP | HX-HPF | 188 | 71A8142T | S15048TLC3M & S15048TLC3M-500K | --- | --- |
| 47617 | LU150/120/277-KIT | 120/277 | HX-HPF | 188 | 71A8102 | --- | --- | --- |
| 47623 | LU150/480-CWA-KIT | 480 | CWA | 185 | 71A8148 | --- | --- | --- |
| 200W High Pressure Sodium Lamp - ANSI Code S66 | | | | | | | | |
| 47628 | LU200/MULTI-KIT | 120/208/ 240/277 | CWA | 230 | 71A8990 & 71A8970-001D | S200MLTAC4M & S200MLTAC4M-500K | V90D1610K | --- |
| 47631 | LU200/480-KIT | 480 | CWA | 230 | 71A8940 & 71A8940-001D | --- | --- | --- |
| 250W High Pressure Sodium Lamp - ANSI Code S50 | | | | | | | | |
| 47634 | LU250/SUPER5-KIT | 120/208/ 240/277/480 | CWA | 295 | 71A8251 & 71A8251-001D | S250ML5AC4M & S250ML5AC4M-500K | --- | S025081C211 |
| 47357 | LU250/MULTI-KIT | 120/208/ 240/277 | CWA | 295 | 71A8291 & 71A8271-001D | S250MLTAC4M & S250MLTAC4M-500K | V90D1711K | S025071C211 |
| 47358 | LU250/480-KIT | 480 | CWA | 295 | 71A8241 & 71A8241-001D | --- | --- | --- |
| 47637 | LU250/480/120T-KIT | 480/120TAP | CWA | 295 | 71A8241T | S25048TAC4M & S25048TAC4M-500K | --- | --- |
| 47642 | LU250/120/277-KIT | 120/277 | CWA | 295 | 71A8281 | --- | --- | --- |

| Item Number | OSRAM SYLVANIA Description | Input Voltage (VAC) | Circuit Type | Input Power (Watts) | Advance Catalog #[8] | Universal Lighting Technologies* Catalog #[8] | Venture Lighting Catalog #[8] | Howard Industries Catalog #[8,9] |
|---|---|---|---|---|---|---|---|---|
| **310W High Pressure Sodium Lamp - ANSI Code S67** | | | | | | | | |
| 47643 | LU310/MULTI-KIT | 120/208/ 240/277 | CWA | 355 | 71A8391 & 71A8371-001D | --- | V90D1810K | --- |
| 47644 | LU310/480-KIT | 480 | CWA | 355 | 71A8341 | --- | --- | --- |
| **400W High Pressure Sodium Lamp - ANSI Code S51** | | | | | | | | |
| 47647 | LU400/SUPER5-KIT | 120/208/ 240/277/480 | CWA | 464 | 71A8453 & 71A8453-001D | S400ML5AC4M & S400ML5AC4M-500K | --- | --- |
| 47364 | LU400/MULTI-KIT | 120/208/ 240/277 | CWA | 464 | 71A8493 & 71A8473-001D | S400MLTAC4M & S400MLTAC4M-500K | V90D1911K & V90D1912K | S040071C211 |
| 47376 | LU400/480-KIT | 480 | CWA | 464 | 71A8443 & 71A8443-001D | --- | --- | S040011C211 |
| 47657 | LU400/480/120T-KIT | 480/120TAP | CWA | 464 | 71A8443T | S40048TAC4M & S40048TAC4M-500K | --- | --- |
| 47656 | LU400/120/277-KIT | 120/277 | CWA | 464 | --- | --- | --- | --- |
| **750W High Pressure Sodium Lamp - ANSI Code S111** | | | | | | | | |
| 47712 | LU750/MULTI-KIT | 120/208/ 240/277 | CWA | 830 | 71A86E5[6,7] | --- | --- | --- |
| 47658 | LU750/480-KIT | 480 | CWA | 830 | --- | --- | --- | --- |
| **1000W High Pressure Sodium Lamp - ANSI Code S52** | | | | | | | | |
| 47659 | LU1000/SUPER5-KIT | 120/208/ 240/277/480 | CWA | 1100 | 71A8753[6] & 71A8753-001[6] | S1000ML5AC5M & S1000ML5AC5M-500K | --- | --- |
| 47389 | LU1000/MULTI-KIT | 120/208/ 240/277 | CWA | 1100 | 71A8793[6] & 71A8773-001[6] | S1000MLTAC5M & S1000MLTAC5M-500K | V90D2311K | S100071C211 |
| 47391 | LU1000/480-KIT | 480 | CWA | 1100 | 71A8743[6] & 71A8743-001[6] | --- | --- | S100011C211 |
| **METALARC® METAL HALIDE F-CAN HID BALLASTS** | | | | | | | | |
| **175W Metal Halide Lamp - ANSI Code M57** | | | | | | | | |
| 47743 | M175/120/277/F-CAN | 120/277 | CWA | 205 | 72C5581-NP & 72C5581-NP-001 | 1110-245SC-TC | --- | --- |
| **250W Metal Halide Lamp - ANSI Code M58** | | | | | | | | |
| 47751 | M250/120/277/F-CAN | 120/277 | CWA | 295 | 72C5782-NP & 72C5782-NP-001 | 1110-246C-TC[4] | --- | --- |
| **400W Metal Halide Lamp or 360W Metal Halide Lamp[10] - ANSI Code M59** | | | | | | | | |
| 47759 | M400/120/277/F-CAN | 120/277 | CWA | 460 | 72C6082-NP & 72C6082-NP-001 | 1110-247SC-TC | --- | --- |
| **METALARC METAL HALIDE PULSE START F-CAN HID BALLASTS** | | | | | | | | |
| **35W Metal Halide Pulse Start Lamp - ANSI Code M130** | | | | | | | | |
| 47680 | M35/120/277/F-CAN | 120/277 | HX-HPF | 54 | 72C5081-NP | --- | --- | --- |
| **50W Metal Halide Pulse Start Lamp - ANSI Code M110** | | | | | | | | |
| 47195 | M50/120/277/F-CAN | 120/277 | HX-HPF | 67 | 72C5181-NP & 72C5181-NP-001 | 11210-236C-TC | --- | --- |
| **70W Metal Halide Pulse Start Lamp - ANSI Code M139** | | | | | | | | |
| 47693 | M70/120/277/F-CAN | 120/277 | HX-HPF | 95 | 72C5281-NP | --- | --- | --- |
| **70W Metal Halide Pulse Start Lamp - ANSI Code M98 or M143** | | | | | | | | |
| 47694 | M70/120/277/F-CAN | 120/277 | HX-HPF | 94 | 72C5282-NP & 72C5282-NP-001 | 11210-506C-TC | --- | --- |
| **100W Metal Halide Pulse Start Lamp - ANSI Code M90** | | | | | | | | |
| 47734 | M100/120/277/F-CAN | 120/277 | HX-HPF | 125 | 72C5381-NP & 72C5381-NP-001 | 11210-239C-TC | --- | --- |
| **150W Metal Halide Pulse Start Lamp - ANSI Code M102 or M142** | | | | | | | | |
| 47738 | M150-PS/120/277/F-CAN | 120/277 | CWA | 185 | --- | --- | --- | --- |
| **175W Metal Halide Pulse Start Lamp - ANSI Code M137 or M152** | | | | | | | | |
| 47741 | M175-PS/120/277/F-CAN | 120/277 | CWA | 210 | 72C5582-NP & 72C5582-NP-001 | --- | --- | --- |
| **200W Metal Halide Pulse Start Lamp - ANSI Code M136** | | | | | | | | |
| 47747 | M200-PS/120/277/F-CAN | 120/277 | CWA | 240 | --- | --- | --- | --- |
| **250W Metal Halide Pulse Start Lamp - ANSI Code M138 or M153** | | | | | | | | |
| 47749 | M250-PS/120/277/F-CAN | 120/277 | CWA | 295 | 72C5783-NP & 72C5783-NP-001 | --- | --- | --- |
| **320W Metal Halide Pulse Start Lamp - ANSI Code M132 or M154** | | | | | | | | |
| 47753 | M320-PS/120/277/F-CAN | 120/277 | CWA | 375 | 72C5882-NP & 72C5882-NP-001 | P320277AFXM | --- | --- |
| **400W Metal Halide Pulse Start Lamp - ANSI Code M155 or M135** | | | | | | | | |
| 47757 | M400-PS/120/277/F-CAN | 120/277 | CWA | 465 | 72C6182-NP & 72C6182-NP-001 | --- | --- | --- |

| Item Number | OSRAM SYLVANIA Description | Input Voltage (VAC) | Circuit Type | Input Power (Watts) | Advance Catalog #[8] | Universal Lighting Technologies* Catalog #[8] | Venture Lighting Catalog #[8] | Howard Industries Catalog #[8,9] |
|---|---|---|---|---|---|---|---|---|
| **LUMALUX® HIGH PRESSURE SODIUM F-CAN HID BALLASTS** | | | | | | | | |
| 35W High Pressure Sodium Lamp - ANSI Code S76 | | | | | | | | |
| 47761 | LU35/120/277/F-CAN | 120/277 | HX-HPF | 47 | --- | 12210-261C-TC | --- | --- |
| 50W High Pressure Sodium Lamp - ANSI Code S68 | | | | | | | | |
| 47762 | LU50/120/277/F-CAN | 120/277 | HX-HPF | 65 | 72C7884-NP & 72C7884-NP-001 | 12210-236C-TC | --- | --- |
| 70W High Pressure Sodium Lamp - ANSI Code S62 | | | | | | | | |
| 47763 | LU70/120/277/F-CAN | 120/277 | HX-HPF | 90 | 72C7984-NP & 72C7984-NP-001 | 12210-237C-TC | --- | --- |
| 100W High Pressure Sodium Lamp - ANSI Code S54 | | | | | | | | |
| 47764 | LU100/120/277/F-CAN | 120/277 | HX-HPF | 125 | 72C8084-NP & 72C8084-NP-001 | 12210-239C-TC | --- | --- |
| 150W High Pressure Sodium Lamp - ANSI Code S55 | | | | | | | | |
| 47765 | LU150/120/277/F-CAN | 120/277 | HX-HPF | 185 | 72C885-NP | 12210-241C-TC | --- | --- |
| 250W High Pressure Sodium Lamp - ANSI Code S50 | | | | | | | | |
| 47777 | LU250/120/277/F-CAN | 120/277 | CWA | 298 | --- | 1220-246C-TC | --- | --- |
| **METALARC® METAL HALIDE INDOOR ENCLOSED HID BALLASTS** | | | | | | | | |
| 175W Metal Halide Lamp - ANSI Code M57 | | | | | | | | |
| 47153 | M175/MULTI-I/D | 120/208/240/277 | CWA | 210 | 78E5590-001 | --- | --- | --- |
| 250W Metal Halide Lamp - ANSI Code M58 | | | | | | | | |
| 47158 | M250/MULTI-I/D | 120/208/240/277 | CWA | 290 | 78E5790-001 | --- | --- | --- |
| 400W Metal Halide Lamp or 360W Metal Halide Lamp[10] - ANSI Code M59 | | | | | | | | |
| 47172 | M400/MULTI-I/D | 120/208/240/277 | CWA | 458 | 78E6091-001 | --- | --- | --- |
| 1000W Metal Halide Lamp - ANSI Code M47 | | | | | | | | |
| 47207 | M1000/MULTI-I/D | 120/208/240/277 | CWA | 1080 | 78E6592-001 | --- | --- | --- |
| *EPAct 2005 has mandated that no Mercury Vapor Ballasts be manufactured in the US effective January 1, 2008.* | | | | | | | | |
| **MERCURY CORE & COIL BALLAST KITS** | | | | | | | | |
| 50W Mercury Lamp - ANSI Code H46 | | | | | | | | |
| 46518 | H50/MULTI-KIT | 120/208/240/277 | CWA | 68 | --- | --- | --- | --- |
| 75W Mercury Lamp - ANSI Code H43 | | | | | | | | |
| 46519 | H75/MULTI-KIT | 120/208/240/277 | CWA | 92 | 71A2080[7] | --- | --- | --- |
| 100W Mercury Lamp - ANSI Code H38 or H44 | | | | | | | | |
| 46522 | H100/MULTI-KIT | 120/208/240/277 | CWA | 120 | 71A2591 & 71A2571-001D | H100MLTAC3M & H100MLTAC3M-500K | --- | --- |
| 47472 | H100/277-KIT | 277 | CWA | 120 | --- | --- | --- | --- |
| 47471 | H100/DUAL-KIT | 120/240 | CWA | 120 | 71A2501[7] | --- | --- | --- |
| 175W Mercury Lamp - ANSI Code H39 | | | | | | | | |
| 47489 | H175/MULTI-KIT | 120/208/240/277 | CWA | 205 | 71A3092 & 71A3072-001D | H175MLTAC3M & H175MLTAC3M-500K | --- | --- |
| 47490 | H175/480-KIT | 480 | CWA | 205 | 71A3042 & 71A3042 -001D | --- | --- | --- |
| 250W Mercury Lamp - ANSI Code H37 | | | | | | | | |
| 47499 | H250/MULTI-KIT | 120/208/240/277 | CWA | 285 | 71A3592 & 71A3572-001D | H250MLTAC3M & H250MLTAC3M-500K | --- | --- |
| 47500 | H250/480-KIT | 480 | CWA | 285 | 71A3542 & 71A3542-001D | --- | --- | --- |
| 46531 | H250/480/120T-KIT | 480/120TAP | CWA | 285 | 71A3542T | H25048TAC3M & H25048TAC3M-500K | --- | --- |
| 400W Mercury Lamp - ANSI Code H33 | | | | | | | | |
| 47509 | H400/MULTI-KIT | 120/208/240/277 | CWA | 454 | 71A4091 & 71A4071-001D | H400MLTAC4M & H400MLTAC4M-500K | --- | --- |
| 47510 | H400/480-KIT | 480 | CWA | 454 | 71A4041 & 71A4041-001D | --- | --- | --- |
| 46533 | H400/480/120T-KIT | 480/120TAP | CWA | 454 | 71A4041T | H40048TAC4M & H40048TAC4M-500K | --- | --- |
| 47517 | H2X400/120-KIT | 120 | CWA | 880 | --- | --- | --- | --- |
| 47518 | H2X400/277-KIT | 277 | CWA | 880 | --- | --- | --- | --- |
| 1000W Mercury Lamp - ANSI Code H36 | | | | | | | | |
| 47524 | H1000/MULTI-KIT | 120/208/240/277 | CWA | 1080 | 71A5070-001[6] | H1000MLTAC5M & H1000MLTAC5M-500K | --- | --- |
| 47525 | H1000/480-KIT | 480 | CWA | 1080 | 71A5040-001[6] | --- | --- | --- |

| Item Number | OSRAM SYLVANIA Description | Input Voltage (VAC) | Circuit Type | Input Power (Watts) | ANSI Code |
|---|---|---|---|---|---|
| **METALARC® METAL HALIDE LAMP & BALLAST KITS** | | | | | |
| **Lamp & Ballast Kits include SYLVANIA METALARC® Metal Halide lamp** | | | | | |
| 64782 | M175/U LAMP/SUPER5 BALLAST KIT | 120/208/240/277/480 | CWA | 210 | M57/E |
| 64784 | M250/U LAMP/SUPER5 BALLAST KIT | 120/208/240/277/480 | CWA | 290 | M58/E |
| 64847 | MS360/SS LAMP/SUPER5 BALLAST KIT | 120/208/240/277/480 | CWA | 415 | M59/S |
| 64781 | M400/U LAMP/SUPER5 BALLAST KIT | 120/208/240/277/480 | CWA | 458 | M59/S |
| 64848 | M1000/U LAMP/SUPER5 BALLAST KIT | 120/208/240/277/480 | CWA | 1080 | M47/S |
| **LUMALUX® HIGH PRESSURE SODIUM LAMP & BALLAST KITS** | | | | | |
| **Lamp & Ballast Kits include SYLVANIA LUMALUX® High Pressure Sodium lamp** | | | | | |
| 67621 | LU100/ECO LAMP/MULTI-BALLAST KIT | 120/208/240/277 | HX-HPF | 128 | S54 |
| 67629 | LU150/55/ECO LAMP/MULTI BALLAST KIT | 120/208/240/277 | HX-HPF | 188 | S55 |
| 67622 | LU250/ECO LAMP/SUPER5 BALLAST KIT | 120/208/240/277/480 | CWA | 295 | S50 |
| 67623 | LU400/ECO LAMP/SUPER5 BALLAST KIT | 120/208/240/277/480 | CWA | 464 | S51 |
| 67664 | LU1000 LAMP/SUPER5 BALLAST KIT | 120/208/240/277/480 | CWA | 1100 | S52 |

NOTES:

### REPLACEMENT IGNITORS FOR SYLVANIA HID BALLASTS[11]:

| | |
|---|---|
| 47996 | Ignitor/MH/PS/50-150 |
| 47997 | Ignitor/MH/PS/175-450 |
| 47998 | Ignitor/MH/PS/750 |
| 47843 | Ignitor/HPS/50-150 |
| 47844 | Ignitor/HPS/200-400 |
| 47847 | Ignitor/HPS/600-750 |

### REPLACEMENT CAPACITORS FOR SYLVANIA HID BALLASTS:

| | |
|---|---|
| 47912 | CAP 24Mfd 480VAC |
| 47920 | CAP 26Mfd 525VAC |
| 47926 | CAP 40Mfd 280VAC |
| 47927 | CAP 52Mfd 280VAC |
| 47932 | CAP 35Mfd 280VAC |
| 47938 | CAP 28Mfd 330VAC |
| 47942 | CAP 55Mfd 300VAC |
| 47952 | CAP 10Mfd 400VAC |
| 47954 | CAP 15Mfd 400VAC |

### FOOTNOTES:

* Formerly MagneTek Lighting

4: NEAREST EQUIVALENT - Performance specifications may vary, please refer to manufacturers specifications.

5: R-INT = Reactor with Integral Ignitor

6: OSRAM SYLVANIA'S HID Ballast is UL Class H Rated and can be used with the corresponding UL Rated fixtures only. The ADVANCE Ballast listed is Dual Rated UL Class H and N.

7: Ballast Voltage may vary. Always check for required lamp and voltage.

8: This data is intended as an aid for identifying comparable products for the lamp types, ANSI Codes and Voltage listed as a convenience to the user. OSRAM SYLVANIA does not warrant or guarantee the accuracy or correctness of the content. Case sizes, wiring diagrams and performance specifications may vary, please refer to manufacturers specifications. Please refer to the OSRAM SYLVANIA Magnetic Ballast catalog for verification of product specifications appropriate for the application.

9: Replacement Kit is indicated by a K at the end of the catalog number.

10: A 360W Metal Halide lamp ANSI Code M59 operated on this ballast will result in approximately a 10% reduction in Input Power (Watts).

11: Only use with the corresponding SYLVANIA HID Ballasts. Please refer to OSRAM SYLVANIA Magnetic Ballast catalog for verification of product specifications appropriate for the application.

**HID Core & Coil Ballast Kits** include ignitor where applicable, capacitor where applicable, mounting bracket, hardware and installation instructions.

More complete product information is available in the SYLVANIA Magnetic Ballast Catalog or at www.sylvania.com.

### NOTES:

This data/cross reference is intended as an aid for identifying comparable products as a convenience to the user. OSRAM SYLVANIA does not warrant or guarantee the accuracy or correctness of the content. Cases sizes, wiring diagrams and performance specifications may vary, please refer to manufacturers specifications.

Please refer to the OSRAM SYLVANIA Magnetic Ballast catalog for verification of product specifications appropriate for the application.

Please contact 1-800-LIGHTBULB or www.sylvania.com for additional information.

### SPECIFICATIONS:

**Information is subject to change at anytime without prior notice.**

### TRADEMARKS:

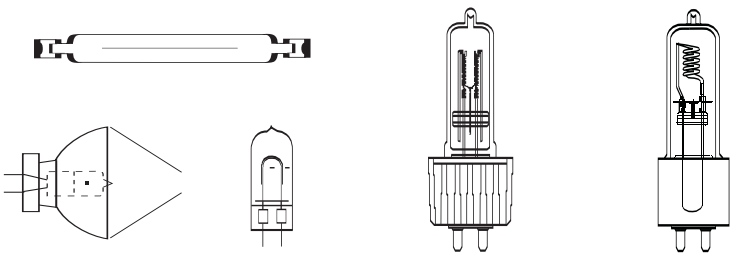
# OSRAM BRAND
# DISPLAY/OPTIC LIGHT SOURCES

Lighting to provide solutions in diverse applications such as cinema film projection, effect lighting, stage, studio, TV, display and projection systems, microlithography, medical/scientific, industrial, and airfield/aircraft.

## Display/Optic Lamp Types

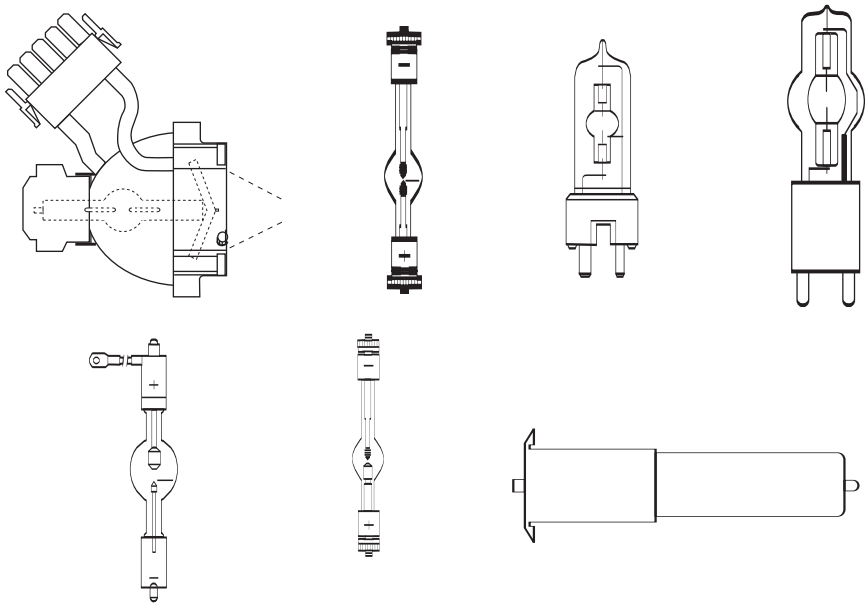
### HALOGEN

**Airfield/Aircraft**
**Audiovisual**
**Special Purpose Heat Lamps**
**Studio, Theatre, TV & Video**
**aluPAR®**
**HLX®**
**HPL**
**HPR®**
**OSRAM STUDIOLINE®**
**XENOPHOT®**



### DISCHARGE

**HBO®**
**HCD® 4ArXS**
**HMI®**
**HMP®**
**HSD® 4ArXS**
**HSR®**
**HXP®**
**HTI® SharXS®**
**LINEX®**
**P-VIP®**
**VIP®**
**XBO®**
**XERADEX®**



**IMPORTANT!**
**DISPLAY/OPTIC WARNINGS**

**In accordance with ANSI/IESNA Standard RP-27, all Display/Optic Discharge lamps are Risk Group 3 products, and all Display/Optic Incandescent and Tungsten Halogen lamps are Risk Group 2 products.**

Please read and understand the Safety and Warning Instructions for each lamp type before use. Safety and Warning Instructions can be found at the end of this Display/Optic section.

# SOLUTIONS FOR TODAY

## UPGRADES FOR POPULAR PROJECTION LAMPS

| IF YOU ARE USING: | UPGRADE TO: | BENEFITS |
|---|---|---|
| BHC/DYS/DYV | BHC/DYS/DYV-5 | Double the life at 120V[3] |
| EHJ 64655 HLX | EHJ 64655 HLX /7X | Increase life by 14 times[2] |
| EHJ 64655 HLX | EVC 64657 HLX | Increased life by 6 times[2] |
| ELC | ELC-HL | Increased brightness by 150 lumnes[4] |
| ENX | ENX-5 | Double the life at 82V[3] |
| ENX | ENX-7 | Increased life by 2.5 times at 82V[3] |
| ENX | FXL | Increased light |
| EVC 64657 HLX | FNT 64656PT HLX | Increased light by 10%[1] |
| EVD 64663 HLX | 64664 HLX | Increased life by 3 times[2] at 36V |
| EVD 64663 HLX | 64665 HLX | Increased life by 6 times[2] at 36V |
| EYB | EYB-5 | Double the life at 82V[3] |
| EYB | EYB-7 | Increased life by 2.5 times at 82V[3] |
| FCR 64625 HLX | EVA 64623 HLX | Increased life by 40 times[2] |
| FCS 64640 HLX | FDV 64642 HLX | Increased life by 6 times[2] |
| FXL or ENX | FXL-HL | Increased light[1] |

## TECHNICAL DATA

| Ordering Abbreviation | Product Number | Watts | Volts | Rated Life (hrs) | Fig. | Base | "l" mm | "a" mm | "d" mm | Bulb Shape | Lumens |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 64664 HLX | 54273 | 400 | 36 | 150 | 2 | G6.35 | 57 | 36 | 18 | T6 | 14,500 |
| 64665 HLX | 54274 | 400 | 36 | 300 | 2 | G6.35 | 60 | 36 | 18 | T6 | 12,200 |
| BHC/DYS/DYV | 54836 | 600 | 120 | 75 | 3 | GZ9.5 | 64 | 36.5 | 20 | T6 | 17,500 |
| BHC/DYS/DYV-5 | 54835 | 600 | 125 | 75 | 3 | GZ9.5 | 63.5 | 36.5 | 20 | T6 | 17,500 |
| EHJ 64655 HLX | 54254 | 250 | 24 | 50 | 2 | G6.35 | 55 | 33 | 13.5 | T4 | 10,000 |
| EHJ 64655 HLX/7X | 54272 | 250 | 24 | 700 | 2 | G6.35 | 55 | 33 | 13.5 | T4 | 8,000 |
| ELC | 54840 | 250 | 24 | 50 | 1 | GX5.3 | 44.8 | 31.7 | 51 | T3.5 | 800[4] |
| ELC 64653 HLX | 54212 | 250 | 24 | 50 | 1 | GX5.3 | 44.5 | 35 | 51 | T3.5 | 800[4] |
| ELC-3/X | 54841 | 250 | 24 | 300 | 1 | GX5.3 | 44.8 | 31.7 | 51 | T3.5 | 550[4] |
| ELC-7/X | 54814 | 250 | 24 | 700 | 1 | GX5.3 | 44.8 | 31.7 | 51 | T3.5 | 475[4] |
| ELC-HL | 54804 | 250 | 24 | 50 | 1 | GX5.3 | 44.8 | 31.7 | 51 | T3.5 | 950[4] |
| ENX | 54984 | 360 | 82 | 75 | 1 | GY5.3 | 45 | 299 | 51 | T3.5 | 460[4] |
| ENX-5 | 54913 | 360 | 86 | 75 | 1 | GY5.3 | 38.1 | 299 | 51 | T3.5 | 540[4] |
| ENX-7 | 54916 | 360 | 87.5 | 75 | 1 | GY5.3 | 38.1 | 299 | 51 | T3.5 | 540[4] |
| EVA 64623 HLX | 54251 | 100 | 12 | 2,000 | 2 | GY6.35 | 44 | 30 | 11.5 | T4 | 2,800 |
| EVC 64657 HLX | 54255 | 250 | 24 | 300 | 2 | G6.35 | 55 | 33 | 13.5 | T4 | 9,000 |
| EVD 64663 HLX | 54259 | 400 | 36 | 50 | 2 | G6.35 | 60 | 36 | 15 | T6 | 16,000 |
| EYB | 54446 | 360 | 82 | 75 | 4 | G5.3 | 57.2 | 31.8 | 11.2 | T3.5 | 10,000 |
| EYB-5 | 54448 | 360 | 85.5 | 75 | 4 | G5.3 | 54 | 31.8 | 11.2 | T3.5 | 10,000 |
| EYB-7 | 54455 | 360 | 87.5 | 75 | 4 | G5.3 | 57.2 | 31.8 | 11.2 | T3.5 | 10,000 |
| FCR 64625 HLX | 54248 | 100 | 12 | 50 | 2 | GY6.35 | 44 | 30 | 11.5 | T3.5 | 3,600 |
| FCS 64640 HLX | 54263 | 150 | 24 | 50 | 2 | G6.35 | 50 | 32 | 13.5 | T4 | 6,000 |
| FDV 64642 HLX | 54264 | 150 | 24 | 300 | 2 | G6.35 | 50 | 32 | 13.5 | T4 | 5,000 |
| FNT 64656PT HLX | 54253 | 275 | 24 | 75 | 2 | G6.35 | 55 | 33 | 13.5 | T4 | 10,000 |
| FXL | 54912 | 410 | 82 | 75 | 1 | GY5.3 | 38.1 | 299 | 51 | T3.5 | 640[4] |
| FXL-HL | 54904 | 410 | 82 | 40 | 1 | GY5.3 | 38.1 | 299 | 51 | T3.5 | 850[4] |

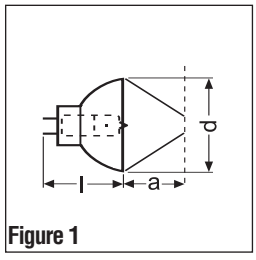


**Figure 1**

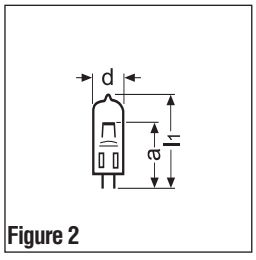


**Figure 2**

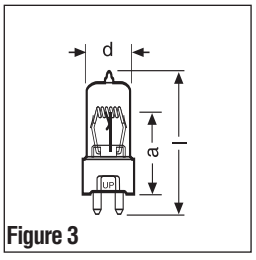


**Figure 3**

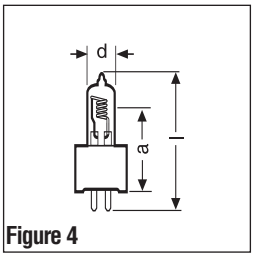


**Figure 4**

[1] Lamps designed for increased light output can have a reduced operating life

[2] Lamps designed with a longer operating life can produce fewer lumens

[3] Lamps operated at less than their rated voltage provide a longer life, reduced light output and lower color temperature. A 5% reduction in voltage can double lamp life, decrease luminous flux by 15% and decrease color temperature by 2%.

[4] Screen Lumens

# OSRAM Airfield Lamps

## Effective solutions for airfield lighting around the globe.


IRC Reflector


IRC PK30d


PK30d


R7s


GZ(Y)9.5

OSRAM lamps for the airfield lighting industry provide reliable solutions for complex optical systems. State-of-the-art manufacturing yields high quality lamps with precision filament alignment that is required in these demanding applications.

### Why are airfield lighting systems necessary?

- Aviation safety
- Essential visual guidance for approach
- Landing
- Taxiing and take-off

### Tungsten halogen technology

Reliability, longevity, and reasonable maintenance costs account for the success of tungsten halogen lamps as light sources for demanding airfield lighting applications.

### Pre-focus technique

Simple replacement and easy adjustment reduces maintenance costs.

### IRC technology (Infrared Reflective Coating)

The innovative IRC technology increases the efficiency of halogen lamps by reflecting a major part of the generated unwanted IR radiation back to the coil where it is converted into visible light. The infrared reflective coating at the outside of the burner acts as an IR mirror but lets nearly 100% of visible light pass.

- More light output
- Less electrical power
- Increased lifetime

or

- A mix of all

### Xenophot® technology (HLX)

Using xenon instead of krypton as the filling gas increases the luminous efficacy of a lamp- that's our basic idea behind our XENOPHOT technology.

# OSRAM aluPAR® Lamps with aluminum reflector

***lighter, brighter, cooler***


## Seeing is believing!

Don't get weighed down with old technology!

## Features and Benefits

- Tungsten halogen aluPAR lamps are made with an aluminum reflector which makes them up to 50% lighter than standard glass PAR lamps.
  - Lower transportation costs
  - Easier handling
- aluPAR is an environmentally preferable ECOLOGIC® product
- Fully compatible with current market standards

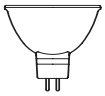
## Applications

- Stage, Studio, Film
- Concert/Disco lighting touring
- Architectural lighting

2006 IES PROGRESS Report SELECTION

ECOLOGIC®

**SEE THE WORLD IN A NEW LIGHT** **OSRAM**


MR11, MR13, MR16


A21, A23


Bi-Pin

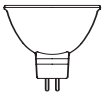

Med 2-pin


GZ9.5


PS25

# AUDIOVISUAL

| ANSI Code | Product Number | Ordering Abbreviation | Application | Watts | Volts | Base | Lumens | Avg Rated Life(hrs) | Bulb | Pkg Qty | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BAA | 54924 | **BAA** | Projector | 75 | 28 | GX5.3 | | 2000 | MR16 | 24 | |
| BBA | 11619 | **BBA 118V** | Photoflood No.1/Enlarger & Printer | 250 | 120 | Med | 8700 | 4 | A21 | 12 | |
| BRJ/EVB | 54250 | **BRJ/EVB 64633 HLX** | Projector, Microfilm, Microscope, Studio | 150 | 15 | G6.35 | 5600 | 50 | T3.25 | 40 | 58 |
| BRL | 54249 | **BRL 64610 HLX** | Projector, Microfilm, Microscope, Studio | 50 | 12 | G6.35 | 1600 | 50 | T3 | 40 | 58 |
| BRN | 54698 | **BRN** | Projector | 1200 | 120 | G17t | | 20 | T7 | 24 | 13,58 |
| BVE | 54812 | **BVE** | Projector, Microfilm, Stage & Studio | 625 | 120 | GY9.5 | | 50 | T6 | 24 | 58 |
| CAX | 58831 | **CAX** | Projector, Microfilm, Microscope, Studio | 50 | 120 | DC Bayonet | 750 | 250 | T4 | 24 | |
| DDL | 54660 | **DDL** | Projector - Microfilm | 150 | 20 | GX5.3 | | 500 | MR16 | 24 | 117 |
| DDM | 54737 | **DDM** | Projector - Slide | 80 | 19 | GX5.3 | 400 | 50 | MR16 | 24 | 117 |
| DDS | 54944 | **DDS** | Projector - Microfilm | 80 | 21 | GX5.3 | | 1000 | MR16 | 24 | 117 |
| DED | 54726 | **DED** | Projector - Microfilm | 85 | 13.8 | GX5.3 | 150 | 1000 | MR16 | 24 | 60,117 |
| DNE | 54409 | **DNE** | Projector | 150 | 120 | G7.9 | 100 | 15 | TB16 | 24 | 60,117 |
| DNF | 54411 | **DNF** | Projector - 8mm | 150 | 21 | GX7.9 | 300 | 25 | MR18 | 24 | 60,117 |
| DYH | 54561 | **DYH** | Projector, Stage & Studio | 600 | 120 | G5.3 | 17000 | 75 | T6 | 24 | |
| DZE/FDS | 54755 | **DZE/FDS** | Projector, Microfilm, Stage & Studio | 150 | 24 | GZ9.5 | 4000 | 100 | T4 | 24 | |
| EBV | 11558 | **EBV 118V** | Super Photoflood/ No.2 | 500 | 120 | Med | 17800 | 8 | PS25 | 24 | |
| ECA | 13365 | **ECA 120V** | Super Photoflood | 250 | 120 | Med Brass | 6500 | 20 | A23 | 24 | |
| ECT | 11560 | **ECT 120V** | Photoflood | 500 | 120 | Med | 13650 | 60 | PS25/5 | 24 | |
| EFM | 54123 | **EFM 64607** | Projector - 8mm | 50 | 8 | GZ6.35 | | 50 | MR16 | 20 | 60,117 |
| EFN | 54126 | **EFN 64615 HLX** | Projector - 8mm | 75 | 12 | GZ6.35 | | 50 | MR16 | 20 | 60,117 |
| EFP | 54189 | **EFP 64627 HLX** | Projector - 8mm | 100 | 12 | GZ6.35 | | 50 | MR16 | 20 | 60,117 |
| EFP/X | 54192 | **EFP/X 64629 HLX** | Projector - 8mm | 100 | 12 | GZ6.35 | | 600 | MR16 | 20 | 60,117 |
| EFR | 54210 | **EFR 64634 HLX** | Projector - 8mm | 150 | 15 | GZ6.35 | | 50 | MR16 | 20 | 60,117 |
| EFR-5/X | 54211 | **EFR-5/X 64620 HLX** | Projector - 8mm | 150 | 15 | GY6.35 | | 500 | MR16 | 20 | 60,117 |
| EHA | 54585 | **EHA** | Projector, Microfilm, Stage & Studio | 500 | 120 | GY9.5 | | 50 | T6 | 24 | 13 |
| EHE | 54038 | **EHE 64626 HLX** | Projector | 100 | 12 | PG22 | 3600 | 50 | T4 | 30 | 58 |
| EHJ | 54254 | **EHJ 64655 HLX** | Projector, Microfilm, Microscope, Studio | 250 | 24 | G6.35 | 10000 | 50 | T4 | 40 | 58 |
| EHJ | 54231☼ | **EHJ 64655 HLX BULK** | Projector, Microfilm, Microscope, Studio | 250 | 24 | G6.35 | 10000 | 50 | T4 | 250 | |
| EHJ | 54272☼ | **EHJ 64655 HLX/7X** | Projector, Microfilm, Microscope, Studio | 250 | 24 | G6.35 | 8000 | 700 | T4 | 24 | 58 |
| EJA | 54753 | **EJA** | Projector - Fiber-optics | 150 | 21 | GX5.3 | 354 | 40 | MR16 | 24 | 117 |
| EJL | 54730 | **EJL** | Projector - 16mm Color printer | 200 | 24 | GX5.3 | 725 | 50 | MR16 | 24 | 117 |
| EJM | 54747 | **EJM** | Projector - 8mm | 150 | 21 | GX5.3 | 170 | 40 | MR16 | 24 | 117 |
| EJV | 54732 | **EJV** | Projector - 8mm, Printer | 150 | 21 | GX5.3 | 270 | 100 | MR16 | 24 | 117 |



MR11, MR13, MR16

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## AUDIOVISUAL

| ANSI Code | Product Number | Ordering Abbreviation | Application | Watts | Volts | Base | Lumens | Avg Rated Life(hrs) | Bulb | Pkg Qty | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EKE | 54842 | **EKE** | Projector - 8mm, Fiber-Optics | 150 | 21 | GX5.3 | 160 | 200 | MR16 | 24 | 117 |
| EKE/X | 58771 | **EKE/X** | Projector - 8mm, Fiber-Optics | 150 | 21 | GX5.3 | 80 | 1000 | MR16 | 24 | 117 |
| EKP/ENA | 54734 | **EKP/ENA** | Projector - 8mm | 80 | 30 | GX5.3 | 115 | 25 | MR16 | 24 | 117 |
| ELC | 54840 | **ELC** | Overhead projection, fiber-optic, entertainment | 250 | 24 | GX5.3 | 800 | 50 | MR16 | 24 | 117 |
| | 54804 | **ELC-HL** | Overhead projection, fiber-optic, entertainment | 250 | 24 | GX5.3 | 950 | 50 | MR16 | 24 | 117 |
| | 54212 | **ELC 64653 HLX** | Overhead projection, fiber-optic, entertainment | 250 | 24 | GX5.3 | 900 | 50 | MR16 | 20 | 60,117 |
| | 54841 | **ELC-3/X** | Overhead projection, fiber-optic, entertainment | 250 | 24 | GX5.3 | 550 | 300 | MR16 | 24 | 117 |
| | 54814 | **ELC-7/X** | Overhead projection, fiber-optic, entertainment | 250 | 24 | GX5.3 | 475 | 700 | MR16 | 24 | 117 |
| | 54811 | **ELC-7/X BULK** | Overhead projection, fiber-optic, entertainment | 250 | 24 | GX5.3 | 475 | 700 | MR16 | 100 | 117 |
| | 54366☼ | **ELC-10 64659 HLX** | Overhead projection, fiber-optic, entertainment | 250 | 24 | GX5.3 | 400 | 1000 | MR16 | 20 | 117 |
| ELD | 54745 | **ELD** | Projector - Microfilm | 150 | 21 | GX5.3 | 350 | 40 | MR16 | 24 | 117 |
| ELH | 54776 | **ELH** | Projector - Overhead | 300 | 120 | GY5.3 | 525 | 35 | MR16 | 24 | 58,117 |
| ENG | 54957 | **ENG** | Projector | 300 | 120 | GY5.3 | 690 | 15 | MR16 | 24 | 58,117 |
| ENH | 54986 | **ENH** | Projector - Slide | 250 | 120 | GY5.3 | 340 | 175 | MR16 | 24 | 58,117 |
| ENH | 55002☼ | **ENH SPOT** | Projector - Slide | 250 | 120 | GY5.3 | 340 | 175 | MR16 | 24 | 58,117 |
| ENH-5 | 54988 | **ENH-5** | Projector - Overhead | 250 | 125 | GY5.3 | 340 | 175 | MR16 | 24 | 58,117 |
| ENL | 58786 | **ENL** | Projector - Display, Fiber-Optics | 50 | 12 | GX5.3 | 85 | 4000 | MR16 | 24 | 117 |
| ENX | 54984 | **ENX** | Projector - Overhead | 360 | 82 | GY5.3 | 460 | 75 | MR16 | 24 | 58,117 |
| ENX-5 | 54913 | **ENX-5** | Projector - Overhead | 360 | 86 | GY5.3 | 540 | 75 | MR16 | 24 | 117 |
| ENX-7 | 54916 | **ENX-7** | Projector - Overhead | 360 | 87.5 | GY5.3 | 540 | 75 | MR16 | 24 | 117 |
| EPT | 58782 | **EPT** | Projector - Fiber-Optics | 42 | 10.8 | GX5.3 | | 8000 | MR16 | 24 | |
| EPX | 54927 | **EPX** | Projector - Microfilm | 90 | 14.5 | GX5.3 | 43 | 500 | MR16 | 24 | 60,117 |
| EPZ | 54743 | **EPZ** | Projector - Microfilm | 50 | 13.8 | GX5.3 | 80 | 3000 | MR16 | 24 | 60,117 |
| ESA/FHD | 54260 | **ESA/FHD 64225** | Projector | 10 | 6 | G4 | 200 | 100 | T3 | 40 | |
| ESB | 54261 | **ESB 64250 HLX** | Projector | 20 | 6 | G4 | 480 | 100 | T3.5 | 40 | |
| ETJ | 54928 | **ETJ** | Projector | 250 | 120 | GY5.3 | 600 | 175 | MR16 | 24 | 58,117 |
| EVA | 54251 | **EVA 64623 HLX** | Projector, Microfilm, Microscope, Studio | 100 | 12 | GY6.35 | 2800 | 2000 | T4 | 40 | 58 |
| EVC | 54255 | **EVC 64657 HLX** | Projector, Microfilm, Microscope, Studio | 250 | 24 | G6.35 | 9000 | 300 | T4 | 40 | 58 |
| EVD | 54259 | **EVD 64663 HLX** | Projector, Microfilm, Studio | 400 | 36 | GX6.35 | 16000 | 50 | T6 | 40 | 58 |
| EVW | 54723 | **EVW** | Projector | 250 | 82 | GY5.3 | 390 | 50 | MR16 | 24 | 58,117 |
| EXR | 54392 | **EXR** | Projector - Slide | 300 | 82 | GX5.3 | 925 | 35 | MR13 | 24 | 58,117 |
| EXW | 54388 | **EXW** | Projector - Slide | 300 | 82 | GX5.3 | 1050 | 15 | MR13 | 24 | 58,117 |
| EXY | 54394 | **EXY** | Projector - Slide | 250 | 82 | GX5.3 | 400 | 200 | MR13 | 24 | 58,117 |


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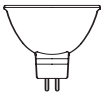
MR11, MR13, MR16


Med 2-pin


GZ9.5


B15d


E14



## AUDIOVISUAL

| ANSI Code | Product Number | Ordering Abbreviation | Application | Watts | Volts | Base | Lumens | Avg Rated Life(hrs) | Bulb | Pkg Qty | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EYB | 54446 | **EYB** | Projector, Stage & Studio | 360 | 82 | G5.3 | 10000 | 75 | T3.5 | 24 | 58 |
| EYB-5 | 54448 | **EYB-5** | Projector, Microfilm, Stage & Studio | 360 | 85.5 | G5.3 | 10000 | 75 | T3.5 | 24 | 58 |
| EYB-7 | 54455 | **EYB-7** | Projector, Microfilm, Stage & Studio | 360 | 87.5 | G5.3 | 10000 | 75 | T3.5 | 24 | 58 |
| EZE | 54386 | **EZE** | Projector, Stage & Studio | 150 | 82 | GX5.3 | 350 | 150 | MR13 | 24 | 58,117 |
| FCR | 54248 | **FCR 64625 HLX** | Projector, Microfilm, Microscope, Studio | 100 | 12 | GY6.35 | 3600 | 50 | T3.5 | 40 | 58 |
| FCS | 54263 | **FCS 64640 HLX** | Projector | 150 | 24 | G6.35 | 6000 | 50 | T4 | 40 | 58 |
| FDS/DZE | 54277☼ | **FDS/DZE 64643** | Projector, Microfilm, Microscope, Studio | 150 | 24 | GY9.5 | 5000 | 100 | T5 | 12 | 58 |
| FDT | 54276☼ | **FDT 64628** | Projector, Stage & Studio | 100 | 12 | GY9.5 | 3000 | 50 | T4 | 12 | 58 |
| FDV | 54264 | **FDV 64642 HLX** | Projector, Microfilm, Microscope, Studio | 150 | 24 | G6.35 | 5000 | 300 | T4 | 40 | 58 |
| FHS | 54979 | **FHS** | Projector - Slide | 300 | 82 | GX5.3 | 650 | 70 | MR16 | 24 | 58,117 |
| FKT/EYH | 54547 | **FKT/EYH** | Projector - Video Camera | 250 | 120 | G5.3 | 5400 | 200 | T6 | 24 | |
| FLE | 54383 | **FLE** | Projector | 360 | 82 | GY5.3 | 1250 | 75 | MR16 | 24 | 9,117 |
| FNS | 58849☼ | **FNS 64512** | Projector, Stage & Studio | 300 | 120 | GX6.35 | 9300 | 15 | T6 | 12 | 58 |
| FNT | 54044 | **FNT 64656 HLX** | Projector, Microfilm, Microscope, Studio | 275 | 24 | G6.35 | 10000 | 75 | T4 | 100 | 58 |
| FNT | 54253 | **FNT 64656 HLX** | Projector, Microfilm, Microscope, Studio | 275 | 24 | G6.35 | 10000 | 75 | T4 | 40 | 58 |
| FSX | 54897 | **FSX/230** | Projector | 400 | 230 | GY9.5 | | 75 | T6 | 24 | 13,58 |
| FSY | 54898 | **FSY** | Projector | 400 | 240 | GY9.5 | | 75 | T6 | 24 | 13,58 |
| FXL | 54912 | **FXL** | Projector - Overhead | 410 | 82 | GY5.3 | 640 | 75 | MR16 | 24 | 58,117 |
| FXL-HL | 54904 | **FXL-HL** | Projector - Overhead | 410 | 82 | GY5.3 | 850 | 40 | MR16 | 24 | 58,117 |
| GCB | 54430 | **GCB** | Projector, Stage & Studio, Video | 200 | 30 | G5.3 | 5300 | 200 | T3 | 24 | |
| | 54246 | **14V/35W/M/GZ4** | Medical Overhead Projection | 35 | 14 | GZ4 | | 50 | MR11 | 20 | 58,117 |
| | 58729 | **60T4QCL** | Medical Overhead Illumination | 60 | 24 | DC Bayonet | 1280 | 500 | T4 | 12 | |
| | 54400 | **85T3/RM** | Projector | 85 | 82 | GX5.3 | | 40 | MR16 | 24 | 117 |
| | 54466 | **120/T4/SPECIAL** | Projector | 120 | 24 | Special | 2750 | 500 | T4 | 24 | |
| | 58939 | **220T4Q/2PPF** | Medical Overhead Illumination | 220 | 22 | GY9.35 | 6200 | 200 | T4 | 12 | |
| | 58941 | **235T4Q/2PPF** | Medical Overhead Illumination | 235 | 33 | GZ9.5 | 5800 | 200 | T4 | 12 | |
| | 76311 | **8013** | Projector | 10 | 6 | BA15d | | 200 | | 100 | 59 |
| | 76313 | **8017** | Projector | 15 | 6 | B15d | | 1000 | | 100 | |
| | 76314 | **8018** | Projector | 15 | 6 | B15d | | 100 | | 100 | 34,59 |
| | 76321 | **8100** | Projector | | 5 | E14 | | 600 | | 100 | 58 |
| | 54256 | **62138 HLX** | Projector | 100 | 12 | G6.35 | 2800 | 50 | T3 | 40 | 60 |


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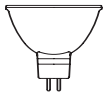

MR11, MR13, MR16


Med 2-pin



## AUDIOVISUAL

| ANSI Code | Product Number | Ordering Abbreviation | Application | Watts | Volts | Base | Lumens | Avg Rated Life(hrs) | Bulb | Pkg Qty | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 54050 | **64223** | Projector | 10 | 6 | G4 | 150 | 300 | T3 | 100 | |
| | 54245☼ | **64223** | Projector | 10 | 6 | G4 | 150 | 300 | T3 | 40 | |
| | 54021 | **64251 HLX** | Projector | 20 | 6 | PG22 | 500 | 100 | T3 | 30 | |
| | 54122 | **64255** | Projector | 20 | 8 | GZX4 | | 50 | MR11 | 20 | 60,117 |
| | 54901☼ | **64258 AHLX** | Projector | 20 | 12 | G4 | 350 | 2000 | T3 | 40 | 58 |
| | 54262 | **64258 HLX** | Projector | 20 | 12 | G4 | 350 | 2000 | T3 | 40 | 58 |
| | 54022 | **64260** | Projector | 30 | 12 | PG22 | 800 | 50 | T3 | 30 | |
| | 54247 | **64261** | Projector | 30 | 12 | G6.35 | 750 | 50 | T3.25 | 40 | |
| | 53999 | **64265 HLX** | Projector | 30 | 6 | G4 | 765 | 100 | T2 | 100 | |
| | 54606☼ | **64265 HLX** | Projector | 30 | 6 | G4 | 765 | 100 | T2 | 40 | |
| | 54258 | **64275** | Projector | 35 | 6 | G4 | 780 | 50 | T3 | 40 | |
| | 54301☼ | **64291 XIR 40W** | Medical | 40 | 22.8 | G6.35 | 1200 | 600 | | 40 | 59,203 |
| | 54302☼ | **64292 XIR 150W** | Medical | 150 | 22.8 | G6.35 | 6000 | 600 | | 40 | 59,203 |
| | 54275 | **64513** | Projector, Stage & Studio | 300 | 120 | GX6.35 | 7700 | 150 | T6 | 12 | 58 |
| | 54354☼ | **64514** | Projector, Stage & Studio | 300 | 120 | GX6.35 | 8100 | 75 | T6 | 12 | 58 |
| | 58524☼ | **64515** | Projector, Stage & Studio | 300 | 230 | GX6.35 | 9600 | 15 | T6 | 12 | 58 |
| | 54356☼ | **64516** | Projector, Stage & Studio | 300 | 230 | GX6.35 | 7400 | 75 | T6 | 12 | 11,58,202,211 |
| | 54138 | **64602** | Projector, Microfilm, Microscope, Studio | 50 | 12 | G6.35 | 1000 | 1100 | T3.25 | 100 | 58 |
| | 54607☼ | **64602** | Projector, Microfilm, Microscope, Studio | 50 | 12 | G6.35 | 1000 | 1100 | T3.25 | 40 | 58 |
| | 54028 | **64611 HLX** | Projector | 50 | 12 | G6.35 | 1350 | 100 | T3.25 | 100 | 58 |
| | 54608☼ | **64611 HLX** | Projector | 50 | 12 | G6.35 | 1350 | 100 | T3.25 | 40 | 58 |
| | 54124 | **64617** | Projector | 75 | 12 | G5.3-4.8 | | 25 | MR11 | 20 | 60,117 |
| | 54121 | **64617 SPOT** | Projector | 75 | 12 | G5.3-4.8 | | 25 | MR11 | 20 | 60,117 |
| | 54032 | **64621 HLX** | Projector, Microfilm, Stage & Studio | 100 | 12 | PG22 | 2750 | 2000 | T3 | 30 | 58 |
| | 54125 | **64624** | Projector | 100 | 12 | G5.3-4.8 | | 25 | MR11 | 20 | 60,117 |
| | 54233 | **64635 HLX** | Projector, Fiber-Optic | 150 | 15 | GZ6.35 | | 50 | MR16 | 20 | 60,117 |
| | 54214 | **64637** | Projector | 100 | 12 | GZ6.35 | | 1500 | MR16 | 20 | 58,117 |
| | 54252 | **64638 HLX** | Projector | 100 | 24 | G6.35 | 2900 | 300 | T3 | 40 | |
| | 54257 | **64650** | Projector, Microfilm, Microscope, Studio | 50 | 23 | G6.35 | 1000 | 1300 | T4 | 40 | |
| | 54278 | **64654 HLX** | Projector, Microfilm, Microscope, Studio | 250 | 24 | GY9.5 | 9000 | 300 | T6 | 12 | 58 |
| | 54273☼ | **64664 HLX** | Projector, Microfilm, Microscope, Studio | 400 | 36 | G6.35 | 14500 | 150 | T6 | 12 | 58,267 |
| | 54274☼ | **64665 HLX** | Projector, Microfilm, Microscope, Studio | 400 | 36 | G6.35 | 400 | 300 | T6 | 12 | 58 |
| | 54303☼ | **64668 XIR 80W** | Medical | 80 | 22.8 | G6.35 | 3000 | 750 | | 40 | 59,203 |
| | 76305 | **70313 (390158)** | Special Purpose | 30 | 6 | P47d | | | | 100 | |
| | 76304 | **70314 (390153)** | Special Purpose | 25 | 6 | P47d | | | | 100 | |


Med 2-pin


A21, A23

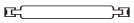

GZ9.5


Bi-Pin


P28s


P40s


PAR36


R7s, RX7s


G22


Med Bi-pin

## AUDIOVISUAL

| ANSI Code | Product Number | Ordering Abbreviation | Application | Watts | Volts | Base | Lumens | Avg Rated Life(hrs) | Bulb | Pkg Qty | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 76302 | **70335 BULK** | Special Purpose | 27 | 6 | Special | | | | 200 | |
| | 54793☼ | **JCP 650W/100V** | Overhead projection, fiber-optic, entertainment | 650 | 100 | GY9.5 | 18750 | 100 | T6 | 12 | |

## STUDIO,THEATRE, TV & VIDEO

| ANSI Code | Product Number | Ordering Abbreviation | Color Temp (K) | Watts | Volts | Base | Lumens | Avg Rated Life(hrs) | Bulb | Pkg Qty | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BCA | 11655 | **BCA 118V** | 4800 | 250 | 120 | Medium | 8912 | 12 | A21 | 12 | |
| BHC/DYS/DYV | 54836 | **BHC/DYS/DYV** | | 600 | 120 | GZ9.5 | 17500 | 75 | T6 | 24 | 58 |
| BHC/DYS/DYV-5 | 54835 | **BHC/DYS/DYV-5** | | 600 | 125 | GZ9.5 | 17500 | 75 | T6 | 24 | 16,58 |
| BCM | 54694 | **BCM** | 3200 | 20000 | 230 | G38 | 580000 | 350 | T32 | 1 | 58 |
| BTL | 54685 | **BTL** | 3050 | 500 | 120 | P28s | 11000 | 750 | T6 | 12 | |
| BTM | 54686 | **BTM** | 3200 | 500 | 120 | P28s | 13000 | 100 | T6 | 12 | 58 |
| BTN | 54687 | **BTN** | 3200 | 750 | 120 | P28s | 17000 | 500 | T7 | 12 | 58 |
| BTP | 54688 | **BTP** | 3200 | 750 | 120 | P28s | 20000 | 200 | T7 | 12 | |
| BTR | 54689 | **BTR** | 3200 | 1000 | 120 | P28s | 27500 | 250 | T6 | 12 | 58 |
| BVM | 58827☼ | **BVM 64540** | 3400 | 650 | 230 | GZ6.35 | 20000 | 15 | T8 | 12 | 11 |
| BVT | 54690 | **BVT** | 3050 | 1000 | 120 | P40s | 23000 | 500 | T7 | 6 | |
| BVV | 54691 | **BVV** | 3200 | 1000 | 120 | P40s | 27500 | 200 | T6 | 6 | |
| BVW | 54692 | **BVW** | 3200 | 2000 | 120 | P40s | 59000 | 280 | T9.5 | 6 | |
| CXZ | 54717 | **CXZ** | 3200 | 1500 | 120 | G38 | 38500 | 325 | T8 | 6 | |
| CYV | 54706 | **CYV** | 3200 | 1000 | 120 | G38 | 27500 | 200 | T7 | 6 | |
| CYX | 54613 | **CYX** | 3200 | 2000 | 120 | G38 | 55000 | 300 | T11 | 6 | 58 |
| DNS/FMC | 54655 | **DNS/FMC** | 3050 | 500 | 120 | P28s | 11000 | 500 | T6 | 24 | |
| DPY | 54647 | **DPY** | 3200 | 5000 | 120 | G38 | 143000 | 500 | T17 | 1 | 58 |
| DTA | 54716 | **DTA** | 3200 | 1500 | 120 | P40s | 39000 | 100 | T8 | 6 | |
| DTY | 54696 | **DTY** | 3200 | 10000 | 120 | G38 | 290500 | 350 | T24 | 1 | 58 |
| DWE | 54500 | **DWE** | 3200 | 650 | 120 | G53 | 24000 | 100 | PAR36 | 1 | |
| DWT | 58937 | **DWT** | 3000 | 1000 | 120 | RX7s | 22000 | 2000 | T6 | 12 | |
| DXW | 53997 | **DXW** | 3200 | 1000 | 120 | R7s | 28000 | 150 | T5 | 12 | 101 |
| | 58497 | **DYS/300** | 3200 | 300 | 120 | GZ9.5 | 7500 | 100 | T4 | 24 | |
| ECR | 54702☼ | **ECR 64815 CP/83 230V** | 3200 | 10000 | 230 | G38 | 280000 | 400 | T22 | 6 | 58 |
| EFX | 54787 | **EFX** | 3000 | 500 | 120 | G22 | 10000 | 2000 | T5 | 12 | |
| EGE | 54648 | **EGE** | 3000 | 500 | 120 | P28s | 10000 | 2000 | T5 | 12 | |
| EGG | 54652 | **EGG** | 3000 | 750 | 120 | P28s | 15000 | 2000 | T5 | 12 | |
| EGJ | 54654 | **EGJ** | 3200 | 1000 | 120 | P28s | 25500 | 400 | T6 | 12 | |
| EGK | 54656 | **EGK** | 3200 | 1000 | 120 | P28s | 24500 | 400 | T6 | 12 | |
| EGN | 54659 | **EGN** | 3200 | 500 | 120 | G22 | 13000 | 100 | T6 | 12 | 58 |
| EGR | 54662 | **EGR** | 3200 | 750 | 120 | G22 | 20000 | 200 | T7 | 12 | 58 |
| EGT | 54664 | **EGT** | 3200 | 1000 | 120 | G22 | 27500 | 250 | T6 | 12 | 58 |
| EGW | 58510☼ | **EGW 64535** | 3400 | 650 | 120 | GY6.35 | 20000 | 15 | T8 | 12 | |
| EHC/EHB | 54506 | **EHC/EHB** | 3200 | 500 | 120 | G9.5 | 13000 | 300 | T4 | 12 | |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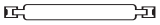

R7s, RX7s


GZ9.5


Bi-Pin


G22


Med 2-pin

## STUDIO,THEATRE, TV & VIDEO

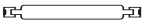
| ANSI Code | Product Number | Ordering Abbreviation | Color Temp (K) | Watts | Volts | Base | Lumens | Avg Rated Life(hrs) | Bulb | Pkg Qty | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EHD | 54508 | **EHD** | 3000 | 500 | 120 | G9.5 | 10600 | 2000 | T4 | 12 | |
| EHF | 54510 | **EHF** | 3300 | 750 | 120 | G9.5 | 20400 | 300 | T5 | 12 | |
| EHG | 54512 | **EHG** | 3000 | 750 | 120 | G9.5 | 15400 | 2000 | T5 | 12 | |
| EHP | 58942 | **EHP** | 2900 | 300 | 120 | R7s | 5000 | 2500 | T4 | 12 | |
| EHR | 58936 | **EHR** | 3000 | 400 | 120 | R7s | 7500 | 2000 | T4 | 12 | |
| EJG | 54598 | **EJG** | 3200 | 750 | 120 | R7s | 20600 | 400 | T3 | 12 | 60 |
| EKB | 54837 | **EKB** | 3200 | 420 | 120 | GZ9.5 | 11000 | 75 | T6 | 24 | 58 |
| FAD | 54574 | **FAD** | 3200 | 650 | 120 | R7s | 16500 | 100 | T4 | 12 | |
| FAL | 58860 | **FAL** | 3200 | 420 | 120 | R7s | 11000 | 75 | T4 | 24 | 24 |
| FCB | 54483 | **FCB** | 3200 | 600 | 120 | R7s | 16500 | 75 | T4 | 24 | |
| FCM | 54442 | **FCM** | 3200 | 1000 | 120 | R7s | 28000 | 400 | T3 | 12 | 60 |
| FDA | 54471 | **FDA** | 3200 | 400 | 120 | R7s | 10400 | 250 | T4 | 12 | 24 |
| FDB | 54435 | **FDB** | 3200 | 1500 | 120 | R7s | 41200 | 400 | T4 | 12 | 60 |
| FDG | 54387 | **64579 115-120V** | 3200 | 1000 | 120 | R7s | 33000 | 15 | T4 | 12 | 12 |
| FDN | 54534 | **FDN** | 3200 | 500 | 120 | R7s | 12800 | 400 | T2.5 | 12 | 60 |
| FEL | 54570 | **FEL** | 3200 | 1000 | 120 | G9.5 | 27500 | 300 | T6 | 12 | |
| FEP | 54515 | **FEP/240** | 3200 | 1000 | 240 | G9.5 | 23000 | 150 | T6 | 12 | |
| FER | 54571 | **FER** | 3200 | 1000 | 120 | RX7s | 27500 | 500 | T6 | 12 | |
| FEV | 54441 | **FEV** | 3200 | 200 | 120 | DC Bayonet | 5500 | 50 | T4 | 12 | |
| FEX | 54514 | **FEX/230** | 3200 | 2000 | 230 | RX7s | 50000 | 300 | T8 | 12 | 11 |
| FEX | 54518 | **FEX/240** | 3200 | 2000 | 240 | RX7s | 50000 | 300 | T8 | 12 | |
| FEY | 54559 | **FEY** | 3200 | 2000 | 120 | RX7s | 57400 | 400 | T8 | 12 | |
| FFJ | 54488 | **FFJ** | 3200 | 600 | 120 | R7s | 16500 | 75 | T4 | 24 | 24 |
| FFM | 58862 | **FFM** | 3200 | 420 | 120 | R7s | 11000 | 75 | T4 | 24 | 24 |
| FFT | 54350 | **FFT** | 3200 | 1000 | 120 | R7s | 27000 | 300 | T3 | 12 | |
| FHM | 54532 | **FHM** | 3200 | 1000 | 120 | R7s | 27300 | 300 | T3 | 12 | 60 |
| FKJ | 54681☼ | **FKJ CP/71** | 3200 | 1000 | 230 | G22 | 26000 | 200 | T6 | 20 | 58 |
| FKK | 54699☼ | **FKK CP/73** | 3200 | 2000 | 230 | G38 | 52000 | 400 | T11 | 1 | 58 |
| FKW | 54711 | **FKW** | 3200 | 300 | 120 | GY9.5 | 7800 | 200 | T6 | 24 | 58 |
| FLK | 54589 | **FLK** | 3200 | 575 | 115 | G9.5 | 16500 | 300 | T5 | 12 | 188 |
| FLK | 54551☼ | **FLK/X 115V** | 3200 | 575 | 115 | G9.5 | 10000 | 2000 | T5 | 12 | 188 |
| | 54549 | **FLK PLUS HPR 575/115** | 3200 | 575 | 115 | G9.5 | 16500 | 300 | T6 | 12 | 187 |
| FMR | 54412 | **FMR** | 3000 | 600 | 120 | GY9.35 | 12500 | 2000 | T5 | 24 | |
| FRG | 54629 | **FRG** | 3200 | 500 | 120 | GY9.35 | 13000 | 150 | T6 | 24 | 58 |
| FRK | 54631 | **FRK** | 3200 | 650 | 120 | GY9.5 | 16900 | 200 | T7 | 24 | 58 |
| FRL | 54638☼ | **FRL CP/89** | 3200 | 650 | 230 | GY9.5 | 16250 | 150 | T7 | 25 | 58 |
| FSH | 54436 | **FSH** | 3200 | 125 | 120 | G5.3 | 2500 | 200 | T3 | 24 | |
| FTK | 54875 | **FTK** | 3200 | 500 | 120 | GY9.5 | 12000 | 200 | T6 | 24 | 58 |
| FVL | 54459 | **FVL** | 3200 | 200 | 120 | GX5.3 | 5200 | 200 | T4 | 24 | |
| FVM | 54900☼ | **FVM** | 3200 | 105 | 120 | GX5.3 | 2250 | 250 | T4 | 24 | |
| GCA | 54428 | **GCA** | 3200 | 250 | 120 | G5.3 | 5700 | 200 | T3 | 24 | |
| GLA | 54516 | **GLA 575/115/2000** | 3050 | 575 | 115 | G9.5 | 10500 | 2000 | T6 | 12 | 18 |


Med Bi-pin


Bi-Pin


S11


S14


R7s, RX7s


PAR36


A21, A23


HPL

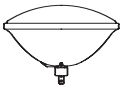

G22

## STUDIO,THEATRE, TV & VIDEO

| ANSI Code | Product Number | Ordering Abbreviation | Color Temp (K) | Watts | Volts | Base | Lumens | Avg Rated Life(hrs) | Bulb | Pkg Qty | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GLC | 54507 | **GLC 575/115/300** | 3250 | 575 | 115 | G9.5 | 15500 | 300 | T6 | 12 | 18,20 |
| GLD | 54522☼ | **GLD 750/115/300** | 3250 | 750 | 115 | G9.5 | 19000 | 300 | T6 | 12 | 18 |
| GLE | 54523☼ | **GLE 750/115/1500** | 3050 | 750 | 115 | G9.5 | 17400 | 1500 | T6 | 12 | |
| GLF | 54460 | **GLF** | 3100 | 235 | 230 | G5.3 | 5100 | 100 | T4 | 24 | |
| | 11624 | **111A** | 2900 | 75 | 120 | SC Bayonet | 1120 | 15 | S11 | 24 | |
| | 11625 | **140** | 2900 | 75 | 120 | Medium | 1150 | 35 | S14 | 24 | |
| | 58930 | **150/25T4** | 2700 | 150 | 25 | R7s | 2700 | 3000 | T4 | 25 | |
| | 55052 | **20PAR/36/CAP/WFL** | | 20 | 12 | G53 | | 4000 | PAR36 | 12 | |
| | 11657 | **211 118V** | 3200 | 75 | 120 | Medium | 1215 | 200 | A21 | 12 | |
| | 11656 | **212 118V** | 3050 | 150 | 120 | Medium | 2700 | 200 | A21 | 12 | |
| | 54499 | **4515 PAR36 30W** | | 30 | 6 | G53 | 67000 | 100 | PAR36 | 12 | |
| | 54001 | **64501** | 3400 | 150 | 120 | GX6.35 | 4500 | 25 | T4 | 25 | |
| | 58639 | **64573** | 3400 | 1000 | 120 | GX6.35 | 33000 | 15 | T8 | 25 | |
| | 58958☼ | **64573** | 3400 | 1000 | 120 | GZ6.35 | 33000 | 15 | T8 | 12 | |
| | 58525☼ | **64575** | 3400 | 1000 | 230 | GX6.35 | 33000 | 15 | T8 | 12 | |
| | 54232 | **64614** | | 75 | 12 | G5.3-4.8 | | 25 | T2.5 | 20 | 60 |
| | 54701☼ | **64805 CP/85 (CP/29)** | 3200 | 5000 | 230 | G38 | 135000 | 400 | T19 | 1 | 58 |
| | 58497☼ | **DYS/300** | 3200 | 300 | 115 | GZ9.5 | 7500 | 100 | T6 | 24 | |
| | 54625 | **HPL 375/115 (UCF)** | 3200 | 375 | 115 | Sp Med Bipin | 10540 | 300 | T6 | 12 | 26 |
| | 54649 | **HPL 375/115/X (UCF)** | 2950 | 375 | 115 | Sp Med Bipin | 8000 | 1000 | T8 | 12 | 26 |
| | 54623 | **HPL 550/77 (UCF)** | 3265 | 550 | 77 | Sp Med Bipin | 16170 | 300 | T6 | 12 | 26 |
| | 54604 | **HPL 550/77/X (UCF)** | 3065 | 550 | 77 | Sp Med Bipin | 12160 | 1500 | T6 | 12 | 26 |
| | 54622 | **HPL 575/115 (UCF)** | 3265 | 575 | 115 | Sp Med Bipin | 16520 | 300 | T6 | 12 | 26 |
| | 54807 | **HPL 575/115/X (UCF)** | 3065 | 575 | 115 | Sp Med Bipin | 12360 | 1500 | T6 | 12 | 26 |
| | 54817 | **HPL 575/120 (UCF)** | 3265 | 575 | 120 | Sp Med Bipin | 16460 | 300 | T6 | 12 | 26 |
| | 54815 | **HPL 575/120/X (UCF)** | 3050 | 575 | 120 | Sp Med Bipin | 12360 | 1500 | T6 | 12 | 26 |
| | 54618 | **HPL 575/230 (UCF)** | 3200 | 575 | 230 | Sp Med Bipin | 14900 | 400 | T6 | 12 | 26 |
| | 54665☼ | **HPL 575/230/X (UCF)** | 3050 | 575 | 230 | Sp Med Bipin | 11780 | 1500 | T6 | 12 | 26 |
| | 54619 | **HPL 575/240 (UCF)** | 3200 | 575 | 240 | Sp Med Bipin | 14900 | 400 | T6 | 12 | 26 |
| | 54703☼ | **HPL 575/240/X (UCF)** | 3050 | 575 | 240 | Sp Med Bipin | 11780 | 1500 | T6 | 12 | 26 |
| | 54602 | **HPL 750/115 (UCF)** | 3265 | 750 | 115 | Sp Med Bipin | 21900 | 300 | T6 | 12 | 26 |
| | 54611 | **HPL 750/115/X (UCF)** | 3050 | 750 | 115 | Sp Med Bipin | 16400 | 1500 | T6 | 12 | 26 |
| | 54605 | **HPL 750/120 (UCF)** | 3250 | 750 | 120 | Sp Med Bipin | 21900 | 300 | T6 | 12 | 26 |
| | 54653 | **HPL 750/120/X (UCF)** | 3065 | 750 | 120 | Sp Med Bipin | 16400 | 1500 | T6 | 12 | 26 |
| | 54603 | **HPL 750/230 (UCF)** | 3200 | 750 | 230 | Sp Med Bipin | 19750 | 300 | T6 | 12 | 26 |
| | 54670☼ | **HPL 750/230/X (UCF)** | 3050 | 750 | 230 | Sp Med Bipin | 15600 | 1500 | T6 | 12 | 26 |
| | 54614 | **HPL 750/240 (UCF)** | 3200 | 750 | 240 | Sp Med Bipin | 19750 | 300 | T6 | 12 | 26 |
| | 54704☼ | **HPL 750/240/X (UCF)** | 3050 | 750 | 240 | Sp Med Bipin | 15600 | 1500 | T6 | 12 | 26 |
| | 54825 | **HPL 750/77 (UCF)** | 3265 | 750 | 77 | Sp Med Bipin | 22950 | 300 | T6 | 12 | 26 |
| | 54798☼ | **HWHV 1200W/220V** | 3200 | 1200 | 220 | GX9.5 | 33500 | 300 | T7 | 12 | 207 |
| | 54799☼ | **HWLV 1200W/80V** | 3200 | 1200 | 80 | G22 | 37500 | 300 | T7 | 12 | 207 |
| | 54796☼ | **HWMV 1200W/115V** | 3200 | 1200 | 115 | GX9.5 | 37000 | 300 | T7 | 12 | 207 |


QXL


STUDIOLINE


PAR 56, 64

# STUDIO,THEATRE, TV & VIDEO

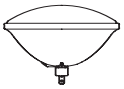
| ANSI Code | Product Number | Ordering Abbreviation | Color Temp (K) | Watts | Volts | Base | Lumens | Avg Rated Life(hrs) | Bulb | Pkg Qty | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 54882 | **QXL 750/77** | 3250 | 750 | 77 | QXL | 22950 | 300 | T6 | 12 | 178,180,181,184 |
| | 54883 | **QXL 750/77/X** | 3050 | 750 | 77 | QXL | 18000 | 1500 | T6 | 12 | 178,180,181,184 |
| | 20607 | **STUDIOLINE 55W/3200** | 3200 | 55 | | 2G11 | 3800 | 8000 | T5 | 10 | |
| | 20608 | **STUDIOLINE 55W/5600** | 5600 | 55 | | 2G11 | 3800 | 8000 | T5 | 10 | |

## LARGE PAR - ALUPAR®

| ANSI Code | Product Number | Ordering Abbreviation | Luminous Intensity (cd) | Watts | Volts | Base | Color Temp (K) | Avg Rated Life(hrs) | Bulb | Pkg Qty | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 56003☼ | **aluPAR 56/NSP/300W/120V** | 68000 | 300 | 120 | GX16d | 2950 | 2000 | PAR56 | 6 | 30,198,199 |
| | 56004☼ | **aluPAR 56/MFL/300W/120V** | 24000 | 300 | 120 | GX16d | 2950 | 2000 | PAR56 | 6 | 29,198,199 |
| | 56005☼ | **aluPAR 56/WFL/300W/120V** | 11000 | 300 | 120 | GX16d | 2950 | 2000 | PAR56 | 6 | 31,198,199 |
| | 56000☼ | **aluPAR 56/NSP/300W/230V** | 70000 | 300 | 230 | GX16d | 2950 | 2000 | PAR56 | 6 | 30,198,199 |
| | 56001☼ | **aluPAR 56/MFL/300W/230V** | 30000 | 300 | 230 | GX16d | 2950 | 2000 | PAR56 | 6 | 29,198,199 |
| | 56002☼ | **aluPAR 56/WFL/300W/230V** | 10000 | 300 | 230 | GX16d | 2950 | 2000 | PAR56 | 6 | 31,198,199 |
| | 56086☼ | **aluPAR 56/NSP/500W/120V** | 96000 | 500 | 120 | GX16d | 2950 | 4000 | PAR56 | 6 | 30,198,199 |
| | 56213☼ | **aluPAR 56/MFL/500W/120V** | 45000 | 500 | 120 | GX16d | 2950 | 4000 | PAR56 | 6 | 29,198,199 |
| | 56006☼ | **aluPAR 56/WFL/500W/120V** | 21000 | 500 | 120 | GX16d | 2950 | 4000 | PAR56 | 6 | 31,198,199 |
| | 56007☼ | **aluPAR 64/NSP/500W/120V** | 110000 | 500 | 120 | GX16d | 2950 | 2000 | PAR64 | 6 | 30,198,199 |
| | 56008☼ | **aluPAR 64/MFL/500W/120V** | 37000 | 500 | 120 | GX16d | 2950 | 2000 | PAR64 | 6 | 29,198,199 |
| | 56009☼ | **aluPAR 64/WFL/500W/120V** | 13000 | 500 | 120 | GX16d | 2950 | 2000 | PAR64 | 6 | 31,198,199 |
| | 56018☼ | **aluPAR 64/NSP/500W/230V** | 140000 | 500 | 230 | GX16d | 3200 | 300 | PAR64 | 6 | 30,198,199 |
| | 56019☼ | **aluPAR 64/MFL/500W/230V** | 65000 | 500 | 230 | GX16d | 3200 | 300 | PAR64 | 6 | 29,198,199 |
| | 56017☼ | **aluPAR 64/VNSP/1000W/120V** | 400000 | 1000 | 120 | GX16d | 3200 | 800 | PAR64 | 6 | 32,198,199 |
| | 56010☼ | **aluPAR 64/NSP/1000W/120V** | 330000 | 1000 | 120 | GX16d | 3200 | 800 | PAR64 | 6 | 30,198,199 |
| | 56011☼ | **aluPAR 64/MFL/1000W/120V** | 12000 | 1000 | 120 | GX16d | 3200 | 800 | PAR64 | 6 | 29,198,199 |
| | 56012☼ | **aluPAR 64/WFL/1000W/120V** | 40000 | 1000 | 120 | GX16d | 3200 | 300 | PAR64 | 6 | 31,198,199 |
| | 56014☼ | **aluPAR 64/NSP/1000W/230V** | 297000 | 1000 | 230 | GX16d | 3200 | 300 | PAR64 | 6 | 30,198,199 |
| | 56015☼ | **aluPAR 64/MFL/1000W/230V** | 138000 | 1000 | 230 | GX16d | 3200 | 300 | PAR64 | 6 | 29,198,199 |
| | 56016☼ | **aluPAR 64/WFL/1000W/230V** | 38000 | 1000 | 230 | GX16d | 3200 | 300 | PAR64 | 6 | 31,198,199 |

## LARGE PAR - OTHER

| ANSI Code | Product Number | Ordering Abbreviation | Luminous Intensity (cd) | Watts | Volts | Base | Color Temp (K) | Avg Rated Life(hrs) | Bulb | Pkg Qty | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EXC | 56280 | **EXC/230** | 320000 | 1000 | 230 | GX16d | 3200 | 300 | PAR64 | 6 | 27,30 |
| EXC | 56232 | **EXC/240** | 320000 | 1000 | 240 | GX16d | 3200 | 300 | PAR64 | 6 | 27,30 |
| EXD | 56281 | **EXD/230** | 270000 | 1000 | 230 | GX16d | 3200 | 300 | PAR64 | 6 | 27 |
| EXD | 56233 | **EXD/240** | 270000 | 1000 | 240 | GX16d | 3200 | 300 | PAR64 | 6 | 27 |
| EXE | 56283 | **EXE/230** | 125000 | 1000 | 230 | GX16d | 3200 | 300 | PAR64 | 6 | 27 |
| EXE | 56234 | **EXE/240** | 125000 | 1000 | 240 | GX16d | 3200 | 300 | PAR64 | 6 | 27 |
| FFN | 56214 | **FFN** | 400000 | 1000 | 120 | GX16d | 3200 | 800 | PAR64 | 6 | 27,32 |
| FFP | 56215 | **FFP** | 330000 | 1000 | 120 | GX16d | 3200 | 800 | PAR64 | 6 | 27,30 |
| FFR | 56217 | **FFR** | 125000 | 1000 | 120 | GX16d | 3200 | 800 | PAR64 | 6 | 27,29 |


PAR 56, 64


RSC


Med Bi-pin


G22


B15d


E14

# STUDIO,THEATRE, TV & VIDEO

## LARGE PAR - OTHER

| ANSI Code | Product Number | Ordering Abbreviation | Luminous Intensity (cd) | Watts | Volts | Base | Color Temp (K) | Avg Rated Life(hrs) | Bulb | Pkg Qty | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FFS | 56216 | **FFS** | 40000 | 1000 | 120 | GX16d | 3200 | 800 | PAR64 | 6 | 27,31 |
| | 14974 | **350PAR56/SP** | | 350 | 75 | MEP | | 750 | PAR56 | 12 | 27 |

## SPECIAL PURPOSE HEAT LAMPS

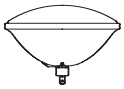
| ANSI Code | Product Number | Ordering Abbreviation | Watts | Volts | Base | Lumens | Avg Rated Life(hrs) | Bulb | Pkg Qty | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|
| | 59850 | **500T3Q/IR 120V** | 500 | 120 | Flex Nick Leads | | 5000 | T3 | 12 | 139 |
| | 59822 | **500T3Q/IR/7 120V** | 500 | 120 | RSC | | 5000 | T3 | 12 | 139 |
| | 54555☼ | **1000Q/T6/RTP/C** | 1000 | 120 | G9.5 | 27500 | 300 | T6 | 12 | 121 |
| | 54584 | **1000Q/T6/RTPFS** | 1000 | 120 | G9.5 | 27500 | 300 | T6 | 12 | |
| | 54752 | **1000T6QRTP/X** | 1000 | 120 | G9.5 | 25000 | 2000 | T6 | 12 | |
| | 54560 | **1000TQ/RTP/CR/BULK** | 1000 | 120 | G9.5 | 25000 | 2000 | T6 | 12 | 127 |
| | 54633 | **1500T6Q/RTP/GS** | 1500 | 120 | G9.5 | 42000 | 300 | T6 | 12 | |
| | 54537 | **2000T8Q/120V/G22** | 2000 | 120 | G22 | 45000 | 2000 | T8 | 12 | 184 |
| FRN | 54588 | **FRN 2000T7Q** | 2000 | 120 | G9.5 | 56500 | 200 | T7 | 12 | |
| | 54548 | **2500T8Q/120V** | 2500 | 120 | GY9.5 | 75000 | 300 | T6 | 12 | |
| | 59934 | **1200T3Q/IR/CL/HT 144V** | 1200 | 144 | Flex Nick Leads | | 3000 | T3 | 12 | 121,125,139 |
| | 59860 | **1000T3Q/IR 230-250V** | 1000 | 240 | Flex Nick Leads | | 5000 | T3 | 12 | 139 |
| | 54521 | **1000/240V/G9.5** | 1000 | 240 | G9.5 | 23000 | 150 | T6 | 12 | |
| | 59864 | **1600T3Q/IR 240V** | 1600 | 240 | Flex Nick Leads | | 5000 | T3 | 12 | 139 |
| | 59841 | **1600T3Q/IR/7 240V** | 1600 | 240 | RSC | | 5000 | T3 | 12 | 139 |
| | 59936 | **1600T3Q/IR 277V** | 1600 | 277 | Flex Nick Leads | | 5000 | T3 | 12 | 139 |
| | 59867 | **2500T3Q/IR 480V** | 2500 | 480 | Flex Nick Leads | | 5000 | T3 | 12 | 139 |
| | 59803 | **2500T3Q/IR/7 480V** | 2500 | 480 | RSC | | 5000 | T3 | 12 | 139 |
| | 59859 | **3650T3Q/IR/CL 480V** | 3650 | 480 | Flex Nick Leads | | 5000 | T3 | 12 | 139 |
| | 59870 | **3800T3Q/IR 570V** | 3800 | 570 | Flex Nick Leads | | 5000 | T3 | 12 | 139 |

## OPTOELECTRONICS

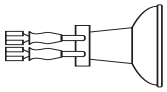
| Ordering Abbreviation | Product Number | Watts | Volts | Base | Operating Position | Avg Rated Life(hrs) | Pkg Qty | Footnotes |
|---|---|---|---|---|---|---|---|---|
| **8013** | 76311 | 10 | 6 | BA15d | h 105 | 200 | 100 | 59 |
| **8017** | 76313 | 15 | 6 | BA15d | Any | 1000 | 100 | |
| **8018** | 76314 | 15 | 6 | BA15d | h 30 | 100 | 100 | 34,59 |
| **8100** | 76321 | | 6 | E14 | s 105 | 600 | 100 | 58 |
| **70314 (390153)** | 76304 | 25 | 6 | P47d | | | 100 | |
| **70335 BULK** | 76302 | 27 | 6 | Special | | | 200 | |

## AIRCRAFT

| Watts | Bulb | Volts | Base | Product Number | Ordering Abbreviation | Application | Beam Type | CBCP | Filament | Avg Rated Life(hrs) | MOL (mm) | Pkg Qty | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **100** | T3 | 12 | PG22 | 54032 | **64621 HLX** | Aircraft | | | | 2000 | 48 | 30 | 58 |



PAR46,64



MR11, MR16 (leads)



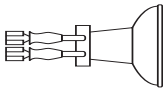
## AIRCRAFT

| Watts | Bulb | Volts | Base | Product Number | Ordering Abbreviation | Application | Beam Type | CBCP | Filament | Avg Rated Life(hrs) | MOL (mm) | Pkg Qty | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **250** | PAR46 | 28 | G53 | 15399 | **4551** | Aircraft Taxiing | VNSP | 75000 | CC-6 | 25 | 95.25 | 12 | 32 |
| **450** | PAR46 | 28 | G53 | 56229 | **Q4681** | Aircraft Landing / Taxiway | VNSP | 310000 | CC-6 | 50 | 63.5 | 12 | 27,32 |
| **600** | PAR64 | 28 | G53 | 14936 | **4559** | Aircraft Landing / Taxiway | VNSP | 600000 | CC-8 | 25 | 101.6 | 6 | 32 |
| | | | | 56222 | **Q4559** | Aircraft Landing / Taxiway | VNSP | 600000 | CC-8 | 100 | 101.6 | 6 | 27,32 |
| | | | | 56223 | **Q4559X** | Aircraft Landing / Taxiway | VNSP | 765000 | CC-8 | 100 | 101.6 | 6 | 27,32 |
| **1000** | PAR64 | 28 | G53 | 14988 | **4557** | Aircraft Landing/Taxiway | VNSP | 540000 | CC-8 | 25 | 101.6 | 6 | 32 |
| | | | | 14994 | **5557** | Aircraft Landing/Taxiway | VNSP | 540000 | CC-8 | 50 | 101.6 | 6 | 32,67 |

## AIRFIELD

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | Application | Current (A) | Lumens | Filament | Avg Rated Life(hrs) | LCL (mm) | MOL (mm) | Pkg Qty | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **30** | MR16 | Leads-A | 58964☼ | **6.6A/30MR16/64331A/FL** | Airfield / Airport | 6.6 | | | 1000 | | 45.6 | 20 | 205 |
| | | | 58506⏢ | **6.6A/30MR16/64331A/SP** | Airfield/Airport | 6.6 | | | 1000 | | 45.6 | 20 | 205 |
| | | Leads-A/C | 58730⏢ | **6.6A/30MR16/64331AC/FL** | Airfield / Airport | 6.6 | | | 1000 | | 45.6 | 10 | 138 |
| | | | 58938☼ | **6.6A/30MR16/64331AC/FL** | Airfield / Airport | 6.6 | | | 1000 | | 45.6 | 20 | 138 |
| | T3.5 | GZ9.5 | 58850☼ | **6.6A/30T3.5/64322/EXL/DL** | Airfield/Airport | 6.6 | 400 | C-8 | 2000 | 25.4 | 44.5 | 12 | |
| | | | 58893☼ | **6.6A/30T3.5/EXL** | Airfield/Airport | 6.6 | 600 | C-8 | 1000 | 25.4 | 44.5 | 12 | |
| | T10 | Med Prefocus | 17980 | **6.6A/30T10/1P** | Airfield/Airport | 6.6 | 400 | C-2V | 1000 | 38.1 | 100 | 60 | |
| **40** | MR11 | Leads-A | 58899☼ | **6.6A/40MR11/64333A** | Airfield / Airport | 6.6 | | | 1500 | | 37 | 20 | 205 |
| | | Leads-B | 58787⏢ | **6.6A/40MR11/64333B** | Airfield / Airport | 6.6 | | | 1500 | | 37 | 10 | 208 |
| | | | 58889☼ | **6.6A/40MR11/64333B** | Airfield / Airport | 6.6 | | | 1500 | | 37 | 20 | 208 |
| **45** | MR16 | Leads-A | 58545 | **6.6A/45MR16/64337A 45-15** | Airfield / Airport | 6.6 | | | 1500 | | 45.6 | 10 | 205 |
| | | | 58907☼ | **6.6A/45MR16/64337A 45-15** | Airfield / Airport | 6.6 | | | 1500 | | 45.6 | 20 | 205 |
| | | Leads-B | 58758⏢ | **6.6A/45MR16/64337B 45-15** | Airfield / Airport | 6.6 | | | 1500 | | 45.6 | 10 | 208 |
| | | | 58908☼ | **6.6A/45MR16/64337B 45-15** | Airfield / Airport | 6.6 | | | 1500 | | 45.6 | 20 | 208 |
| | T3 | R7s | 58704 | **6.6A/45T3/CL/64315** | Airfield/Airport | 6.6 | 750 | C-8 | 1000 | 23 | 47.5 | 25 | |
| | T3.5 | G6.35 | 59928☼ | **6.6A/45T3.5Q/64321** | Airfield / Airport | 6.6 | 840 | C-8 | 1200 | 33 | 45 | 40 | 58,60 |
| | | | 58813⏢ | **6.6A/45T3.5Q/64321** | Airfield / Airport | 6.6 | 840 | C-8 | 1200 | 33 | 45 | 100 | 58,60 |
| | | GZ9.5 | 58846☼ | **6.6A/45T3.5/64320/EXM** | Airfield/Airport | 6.6 | 875 | C-8 | 1000 | 25.4 | 44.5 | 12 | 58,60 |
| | | | 58892☼ | **6.6A/45T3.5/EXM** | Airfield/Airport | 6.6 | 875 | C-8 | 1000 | 25.4 | 44.5 | 12 | 58,60 |
| | T4 | PK30d-A | 58697 | **6.6A/45T4/64319 FEMALE** | Airfield/Airport | 6.6 | 800 | C-8 | 1000 | 20 | 53 | 100 | 58,120,205,271 |
| | | | 58877 | **6.6A/45T4CL/64318** | Airfield/Airport | 6.6 | 800 | C-8 | 1000 | 16 | 58 | 100 | 58,205,271 |
| | | PK30d-C | 58705 | **6.6A/45T4/CL/64317** | Airfield/Airport | 6.6 | 800 | C-8 | 1000 | 16 | 58 | 100 | 58,209 |
| | | | 58722 | **6.6A/45T4/64319Z** | Airfield/Airport | 6.6 | 800 | C-8 | 1000 | 20 | 53 | 100 | 58,121,209,268 |
| | T10 | Med Prefocus | 17981 | **6.6A/45T10/P** | Airfield/Airport | 6.6 | 675 | C-2V | 1000 | 38.1 | 100 | 60 | |
| **48** | MR16 | Leads-A | 58891☼ | **6.6A/48MR16/64337A 48-15** | Airfield/Airport | 6.6 | | | 1500 | | 45.6 | 20 | 205,271 |
| | | | 58905☼ | **6.6A/48MR16/64337A LL IRC** | Airfield/Airport | 6.6 | | | 3000 | | 45.6 | 20 | 205,271 |
| | | Leads-A/C | 58894☼ | **6.6A/48W/MR16/64338AC** | Airfield / Airport | 6.6 | | | 1000 | | 45.6 | 20 | 58 |


PK30d


MR11, MR16 (leads)


Med 2-pin

## AIRFIELD

| Watts | Bulb | Base | Product Number | Ordering Abbreviation | Application | Current (A) | Lumens | Filament | Avg Rated Life(hrs) | LCL (mm) | MOL (mm) | Pkg Qty | Footnotes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **48** | MR16 | Leads-B | 58906☼ | **6.6A/48MR16/64337B LL IRC** | Airfield/Airport | 6.6 | | | 3000 | | 45.6 | 20 | 208,271 |
| | | Leads-C | 58952☼ | **6.6A/48MR16/64337C LL IRC** | Airfield/Airport | 6.6 | | | 3000 | | 45.6 | 20 | 209 |
| **62** | MR16 | Leads-A | 58493 | **6.6A/62W/MR16/64336A** | Airfield/Airport | 6.6 | | | 1500 | | 44 | 20 | 205 |
| **65** | T4 | PK30d-C | 58726 | **6.6A/65T4/64328Z/HLX** | Airfield/Airport | 6.6 | 1450 | C Bar 6 | 1000 | 20 | 53 | 100 | 58,123,209,268 |
| **100** | T4 | PK30d-A | 58709 | **6.6A/100T4/64341/HLX** | Airfield/Airport | 6.6 | | C Bar 6 | 1000 | 20 | 55 | 100 | 58,205,271 |
| | | PK30d-C | 58703 | **6.6A/100T4/64341Z/HLX** | Airfield/Airport | 6.6 | 2700 | C Bar 6 | 1000 | 20 | 55 | 100 | 125,209,268 |
| | | | 58706 | **6.6A/100T4/64342/HLX** | Airfield/Airport | 6.6 | 2700 | C Bar 6 | 1000 | 20 | 58 | 100 | 58,209 |
| **105** | MR16 | Leads-A | 58953☼ | **6.6A/105MR16/64339A** | Airfield / Airport | 6.6 | | | 1000 | | 45.6 | 20 | 205,271 |
| | | Leads-A/C | 58960☼ | **6.6A/105MR16/64339AC** | Airfield/Airport | 6.6 | | | 1000 | | 45.6 | 20 | 138 |
| | | Leads-B | 58759⛆ | **6.6A/105MR16/64339B** | Airfield/Airport | 6.6 | | | 1000 | | 45.6 | 10 | 208 |
| | | | 58961☼ | **6.6A/105MR16/64339B** | Airfield/Airport | 6.6 | | | 1000 | | 45.6 | 20 | 208 |
| | | Leads-C | 58963☼ | **6.6A/105MR16/64339C** | Airfield / Airport | 6.6 | | | 1000 | | 45.6 | 20 | 209,268 |
| **115** | T4 | GY9.5 | 58854☼ | **6.6A/115T4Q/58798/2PPF/EVV** | Airfield/Airport | 6.6 | 2900 | C Bar 6 | 1000 | 39.1 | 57 | 12 | 140 |
| **150** | T4 | GY9.5 | 58855☼ | **6.6A/150T4Q/64354/EWR/DL** | Airfield/Airport | 6.6 | 4000 | C Bar 6 | 1500 | 39.1 | 56.5 | 12 | 140 |
| | | | 58777⛆ | **6.6A/150T4Q/64354/EWR/DL** | Airfield/Airport | 6.6 | 4000 | C Bar 6 | 1500 | 39.1 | 56.5 | 30 | 58,140 |
| | | PK30d-A | 58717 | **6.6A/150T4/64361/HLX** | Airfield/Airport | 6.6 | 3600 | C Bar 6 | 1000 | 20 | 58 | 100 | 58,205,271,274 |
| | | PK30d-C | 58724 | **6.6A/150T4Q/64361Z/HLX** | Airfield/Airport | 6.6 | 3600 | C Bar 6 | 1000 | 20 | 58 | 100 | 58,209,268 |
| **200** | PAR64 | GX16d | 56220⛆ | **6.6A/200PAR64Q/2P** | Airfield/Airport | 6.6 | | CC-6 | 2000 | | 114.3 | 6 | 27,278 |
| | T4 | G6.35 | 59078☼ | **6.6A/200T4Q/64386** | Airfield / Airport | 6.6 | 4700 | C Bar 6 | 1200 | 33 | 47 | 40 | 58,60 |
| | | | 58815 | **6.6A/200T4Q/64386** | Airfield / Airport | 6.6 | 4700 | C Bar 6 | 1200 | 33 | 47 | 100 | 58 |
| | | GY9.5 | 58851☼ | **6.6A/200T4Q/2PPF/58750/EZL/DL** | Airfield/Airport | 6.6 | 5200 | CC-6 | 1000 | 39.1 | 65 | 12 | 140 |
| | | P30d | 58821 | **6.6A/200T4Q/CL/DCR/58746/DL** | Airfield/Airport | 6.6 | 5000 | CC-6 | 1000 | 27 | 80.9 | 100 | 58,60 |
| | | PK30d-A | 58649 | **6.6A/200T4/64382A/HLX** | Airfield/Airport | 6.6 | 4800 | CC-6 | 1000 | 20 | 64 | 100 | 58,205 |
| | | PK30d-C | 58708 | **6.6A/200T4/64382C/HLX** | Airfield/Airport | 6.6 | 4800 | CC-6 | 1000 | 20 | 64 | 100 | 58,209,273 |
| | T5 | R7s | 58707 | **6.6A/200T5/CL/64380** | Airfield/Airport | 6.6 | 4400 | CC-8 | 1000 | 21.3 | 60.2 | 25 | |

# 4ArXS (For Architainment eXtreme Seal)

## Innovative metal halide lamps for creative architectural and effect lighting

4ArXS For Architainment eXtreme Seal

XS

Optimized lamp seal technology to withstand interior base temperatures up to 450 °C.

### 4 ArXS HSD®

4ArXS HSD are new powerful metal halide lamps from OSRAM with innovative eXtreme Seal technology. The 4ArXS opens up new prospects for creative architectural and effect lighting.

### Features and Benefits:

- Average service life of 2000 to 6000 hours
- Outstanding luminous intensity and color consistency throughout the life of the lamp
- Low devitrification of the bulb wall
- Daylight type (6000 K) and “bright light” type (7000 – 8000K)
- Simple and reliable cold starting

### Applications:

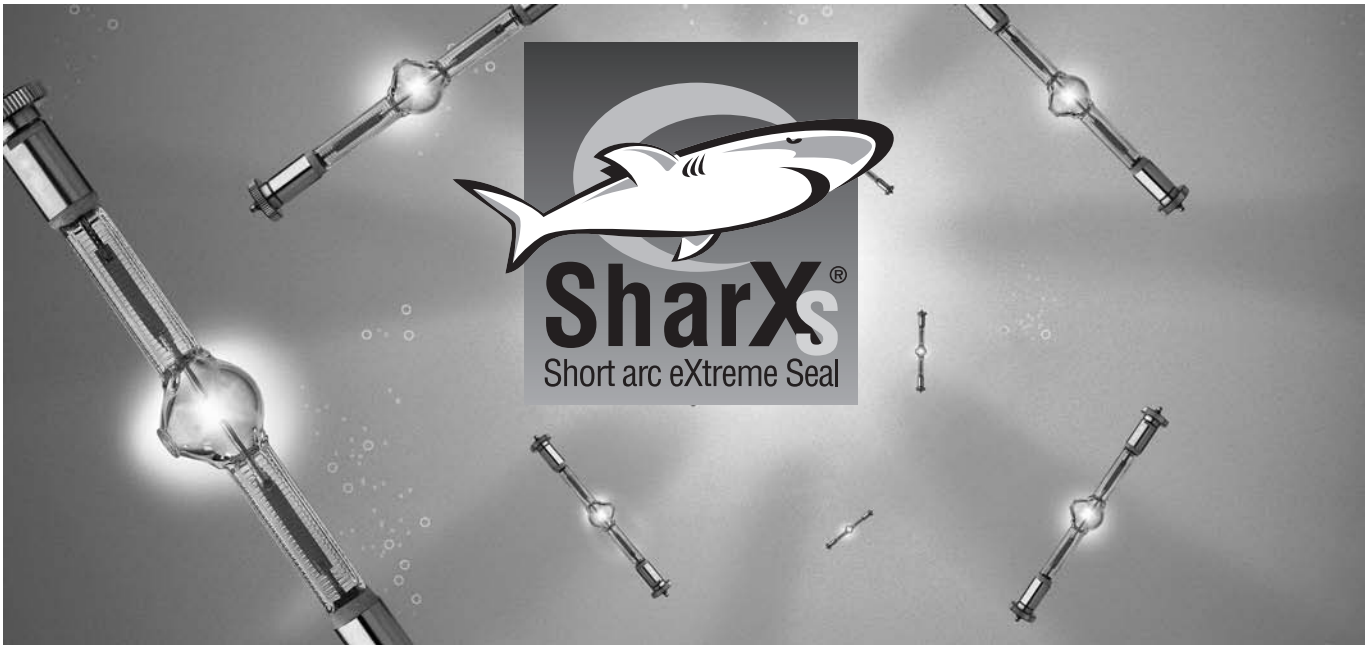
- Architectural lighting
- Projected advertising
- Nightclub lighting
- TV shows, concerts, musicals and theatre

## LIGHT THEM UP!




# SharXS® HTI® from OSRAM

***The original light with a bite***




The SharXS (Short arc eXtreme Seal) HTI family uses state-of-the-art HTI technology to achieve a particularly high luminous efficacy. The arc in these innovative light sources has been reduced to 3-7mm. What this means for you is the SharXS HTI produces a higher luminance from the same wattage and therefore saves electricity and reduces operating costs.

## Features and Benefits

- Less sensitive to heat
- Always ready for a hot restart
- Allows more compact luminaire design
- Pre-focus base for accurate lamp installation
- OSRAM SFc10-4 Pre-focus socket with its unique high performance contact system pairs with all lamp wattages

## eXtreme-Seal (XS) Technology

Optimized lamp seal technology to withstand interior base temperatures up to 450 °C.

## Ideal for intelligent luminaires

- Moving heads
- Scanners
- Projectors
- Color changers

## SharXS HTI in its element

SharXS lamps are at home in all areas of entertainment lighting

- Shows
- Clubs
- Special Events
- Concerts
- TV studios
- Advertising and retail

# Baby SharXS® HTI® from OSRAM

***An offspring with just as sharp of a bite***


## SharXS HTI now in just 93mm

Measuring only 93mm, the latest offspring in the family has all the benefits of the full-size OSRAM SharXS HTI.

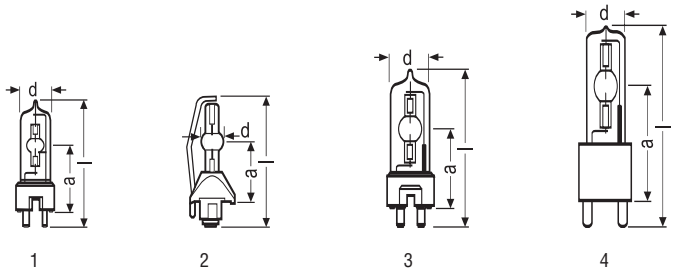
- Short 5mm arc for greater efficiency
- eXtreme Seal(XS) technology for improved thermal loading
- Modular design with the same dimensions for all wattages

## Good genes: the new Baby SharXS

The tiny Baby SharXS develops all its power from just 93mm. The small dimensions of the Baby SharXS will inspire designers to create compact luminaires. Because of their lower weight, not only will these luminarirs be easier to handle but more of them will fit on a lighting rig.

## NOTES:

# HMI® METAL HALIDE




1 2 3 4

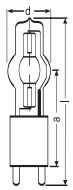
## HMI® SINGLE-ENDED

| Ordering Abbreviation | HMI 200 W/SE | HMI 250 W/SE | HMI 400 W/SE |
|---|---|---|---|
| Product Number | 54061 | 54062 | 54137 |
| Watts (W) | 200 | 270 | 400 |
| Volts (V) | 70 | 50 | 70 |
| Current (A) | 3.0 | 5.0 | 6.9 |
| CRI | >90 | >90 | >90 |
| Lumens (lm) | 16000 | 16200 | 33000 |
| Color Temp (K) | 6000 | 6000 | 6000 |
| Length l max (mm) | 80 | 84 | 110 |
| Distance a (mm) | 39 | 35 | 60 |
| Diameter d (mm) | 20 | 12 | 23 |
| Electrode Gap - cold (mm) | 5 | 5 | 6 |
| Avg Rated Life (hrs) | 200 | 250 | 650 |
| Operating Position | Any | p 45 | Any |
| Base | GZY9.5 | FaX1.5 | GZ9.5 |
| Hot Restart | Yes | Yes | Yes |
| Fig No | 1 | 2 | 3 |
| Symbols & Footnotes | 1 | 1,60 | 90 |

## HMI® SINGLE-ENDED

| Ordering Abbreviation | HMI 575 W/SEL XS | HMI 700 W/SE XS | HMI 1200 W/SEL XS |
|---|---|---|---|
| Product Number | 54063 | 54310☼ | 54067 |
| Watts (W) | 575 | 700 | 1200 |
| Volts (V) | 95 | 95 | 100 |
| Current (A) | 7.0 | 9.0 | 13.8 |
| CRI | >90 | >90 | >90 |
| Lumens (lm) | 49000 | 55000 | 110000 |
| Color Temp (K) | 6000 | 6000 | 6000 |
| Length l max (mm) | 145 | 145 | 200 |
| Distance a (mm) | 70 | 70 | 107 |
| Diameter d (mm) | 30 | 30 | 42 |
| Electrode Gap - cold (mm) | 7 | 7 | 10 |
| Avg Rated Life (hrs) | 1000 | 750 | 1000 |
| Operating Position | Any | Any | Any |
| Base | G22 | G22 | G38 |
| Hot Restart | Yes | Yes | Yes |
| Fig No | 4 | 4 | 4 |
| Symbols & Footnotes | 90,161 | 161 | 90,161 |

# HMI® METAL HALIDE

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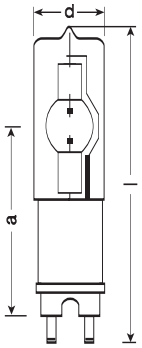



2

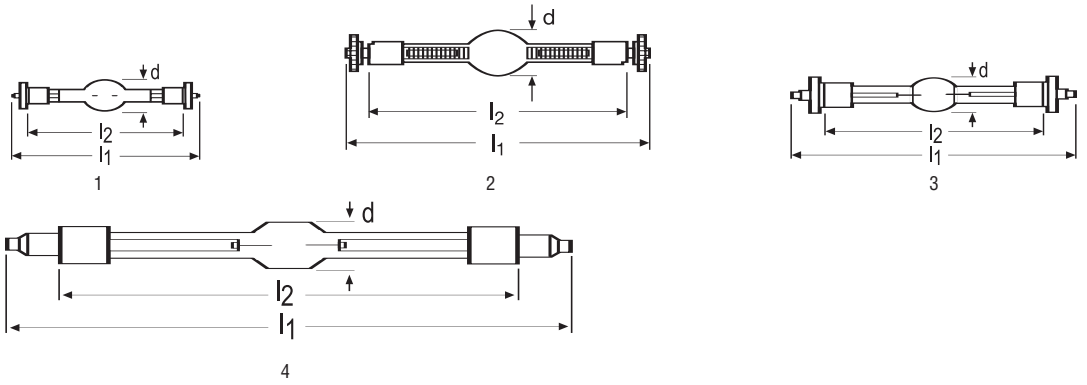
## HMI® SINGLE-ENDED

| Ordering Abbreviation | HMI 2500 W/SE XS | HMI 4000 W/SE XS | HMI 6000 W/SE XS |
|---|---|---|---|
| Product Number | 54070 | 54321☼ | 54099 |
| Watts (W) | 2500 | 4000 | 6000 |
| Volts (V) | 115 | 200 | 123 |
| Current (A) | 25.6 | 24.0 | 55.0 |
| CRI | >90 | >90 | >90 |
| Lumens (lm) | 240000 | 380000 | 600000 |
| Color Temp (K) | 6000 | 6000 | 6000 |
| Length l max (mm) | 225 | 250 | 360 |
| Distance a (mm) | 127 | 142 | 210 |
| Diameter d (mm) | 60 | 75 | 75 |
| Electrode Gap - cold (mm) | 14 | 20 | 23 |
| Avg Rated Life (hrs) | 500 | 500 | 500 |
| Operating Position | Any | Any | s 135 |
| Base | G38 | G38 | GX38 |
| Hot Restart | Yes | Yes | Yes |
| Fig No | 1 | 1 | 2 |
| Symbols & Footnotes | 90,161 | 90,161 | 58,90,139,161 |

## HMI® SINGLE-ENDED

| Ordering Abbreviation | HMI 12000 W/SE XS | HMI 12000W/SE/GX51 | HMI 18000 W/SE/GX51 |
|---|---|---|---|
| Product Number | 54113 | 54357☼ | 54289☼ |
| Watts (W) | 12000 | 12000 | 18000 |
| Volts (V) | 160 | 160 | 225 |
| Current (A) | 84.0 | 84.0 | 88.0 |
| CRI | >90 | >90 | >90 |
| Lumens (lm) | 1150000 | 1150000 | 1600000 |
| Color Temp (K) | 6000 | 6000 | 6000 |
| Length l max (mm) | 450 | 460 | 495 |
| Distance a (mm) | 255 | 260 | 260 |
| Diameter d (mm) | 100 | 100 | 100 |
| Electrode Gap - cold (mm) | 27 | 27 | 44 |
| Avg Rated Life (hrs) | 300 | 300 | 300 |
| Operating Position | s 135 | s 135 | s 135 |
| Base | GX38 | GX51 | GX51 |
| Hot Restart | Yes | Yes | Yes |
| Fig No | 2 | 2 | 2 |
| Symbols & Footnotes | 58,90,139,161 | 58,90,161 | 58,90,161 |

# HMI® METAL HALIDE



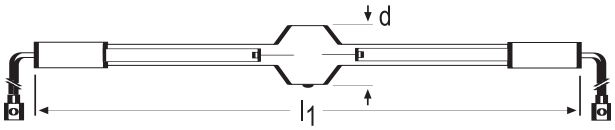

## HMI® DOUBLE-ENDED

| Ordering Abbreviation | HMI 575 W/DXS | HMI 575 W/GS | HMI 1200 W/DXS | HMI 1200 W/GS | HMI 1200 W/S XS |
|---|---|---|---|---|---|
| Product Number | 54313 | 54098 | 55139 | 54066 | 54088 |
| Watts (W) | 575 | 575 | 1200 | 1200 | 1200 |
| Volts (V) | 95 | 95 | 100 | 100 | 100 |
| Current (A) | 7.0 | 7.0 | 13.8 | 13.8 | 13.8 |
| CRI | >90 | >90 | >90 | >90 | >90 |
| Lumens (lm) | 49000 | 49000 | 110000 | 110000 | 110000 |
| Color Temp (K) | 6000 | 6000 | 6000 | 6000 | 6000 |
| Length l1 max (mm) | 135 | 135 | 220 | 220 | 135 |
| Length l2 max (mm) | 115 | 115 | 180 | 180 | 115 |
| Diameter d (mm) | 21 | 21 | 27 | 27 | 21 |
| Electrode Gap - cold (mm) | 7 | 7 | 10 | 10 | 7 |
| Avg Rated Life (hrs) | 1000 | 1000 | 750 | 750 | 750 |
| Operating Position | Any | Any | Any | Any | Any |
| Base | SFc10-4 | SFc10-4 | SFc15.5 | SFc15.5 | SFc10-4 |
| Hot Restart | Yes | Yes | Yes | Yes | Yes |
| Fig No | 1 | 1 | 2 | 2 | 3 |
| Symbols & Footnotes | 55,90,161 | 52,90 | 55,90,161 | 52,90 | 43,90,161,196,201 |

## HMI® DOUBLE-ENDED

| Ordering Abbreviation | HMI 2500 W/DXS | HMI 2500 W/S XS | HMI 4000 W | HMI 4000 W/DXS |
|---|---|---|---|---|
| Product Number | 54265 | 54068 | 54071 | 54314 |
| Watts (W) | 2500 | 2500 | 4000 | 4000 |
| Volts (V) | 115 | 115 | 200 | 200 |
| Current (A) | 25.6 | 25.6 | 24.0 | 24.0 |
| CRI | >90 | >90 | >90 | >90 |
| Lumens (lm) | 240000 | 240000 | 380000 | 380000 |
| Color Temp (K) | 6000 | 6000 | 6000 | 6000 |
| Length l1 max (mm) | 355 | 210 | 405 | 405 |
| Length l2 max (mm) | 290 | 150 | 340 | 340 |
| Diameter d (mm) | 31.5 | 31.5 | 36 | 36 |
| Electrode Gap - cold (mm) | 14 | 14 | 34 | 34 |
| Avg Rated Life (hrs) | 500 | 500 | 500 | 500 |
| Operating Position | p 30 | p 30 | p 15 | p 15 |
| Base | SFa21 | SFa21 | SFa21 | SFa21 |
| Hot Restart | Yes | Yes | Yes | Yes |
| Fig No | 4 | 4 | 4 | 4 |
| Symbols & Footnotes | 55,60,161 | 43,60,90,161,201 | 60,90,219 | 55,60,90,161,219 |

# HMI® METAL HALIDE




2

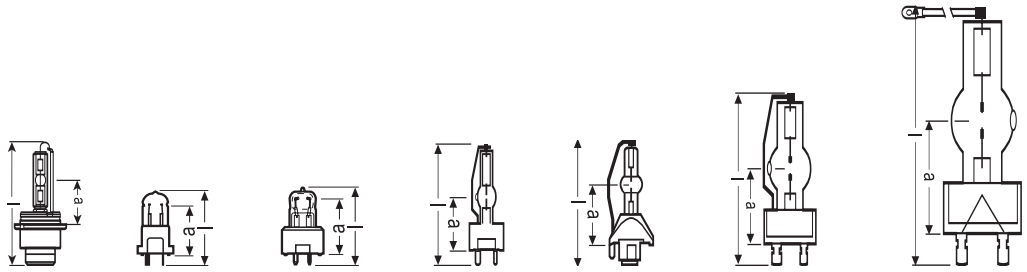
## HMI® DOUBLE-ENDED

| Ordering Abbreviation | HMI 6000 W | HMI 6000 W/DXS | HMI 12000 W/DXS | HMI 12000 W/XS |
|---|---|---|---|---|
| Product Number | 54073 | 54315 | 54316 | 54074 |
| Watts (W) | 6000 | 6000 | 12000 | 12000 |
| Volts (V) | 123 | 123 | 160 | 160 |
| Current (A) | 55.0 | 55.0 | 84.0 | 84.0 |
| CRI | >90 | >90 | >90 | >90 |
| Lumens (lm) | 570000 | 570000 | 1150000 | 1150000 |
| Color Temp (K) | 6000 | 6000 | 6000 | 6000 |
| Length l1 max (mm) | 450 | 450 | 470 | 470 |
| Length l2 max (mm) | | | | |
| Diameter d (mm) | 54 | 54 | 64 | 64 |
| Electrode Gap - cold (mm) | 21 | 21 | 25 | 25 |
| Avg Rated Life (hrs) | 500 | 500 | 500 | 500 |
| Operating Position | p 15 | p 15 | p 15 | p 15 |
| Base | S25.5 | S25.5 | S30 | S30 |
| Hot Restart | Yes | Yes | Yes | Yes |
| Fig No | 2 | 2 | 2 | 2 |
| Symbols & Footnotes | 60,90 | 55,60,90,161 | 55,60,90,161 | 60,90,161 |

## HMI® DOUBLE-ENDED

| Ordering Abbreviation | HMI 18000 W/DXS |
|---|---|
| Product Number | 54317 |
| Watts (W) | 18000 |
| Volts (V) | 225 |
| Current (A) | 88.0 |
| CRI | >90 |
| Lumens (lm) | 1700000 |
| Color Temp (K) | 6000 |
| Length l1 max (mm) | 500 |
| Length l2 max (mm) | |
| Diameter d (mm) | 70 |
| Electrode Gap - cold (mm) | 44 |
| Avg Rated Life (hrs) | 300 |
| Operating Position | p 15 |
| Base | S30 |
| Hot Restart | Yes |
| Fig No | 2 |
| Symbols & Footnotes | 55,60,90,161,219 |

# HTI® METAL HALIDE




1 2 3 4 5 6 7

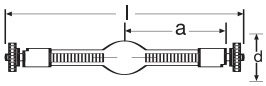
## HTI® SINGLE-ENDED

| Ordering Abbreviation | HTI S 35/12 | HTI 150 W | HTI 152 W | HTI 405 W/SE XS | HTI 600 W/SE |
|---|---|---|---|---|---|
| Product Number | 69000 | 54078 | 54079 | 54139 | 54087 |
| Watts (W) | 35 | 150 | 150 | 400 | 600 |
| Volts (V) | 85 | 90 | 95 | 55 | 95 |
| Current (A) | 2.5 | 1.8 | 1.8 | 7.3 | 7.7 |
| CRI | >90 | >70 | >90 | >90 | >90 |
| Lumens (lm) | 3200 | 9500 | 9500 | 28000 | 48000 |
| Average Luminance (cd/cm2) | 6500 | 5000 | 4200 | 40000 | 25000 |
| Color Temp (K) | 4250 | 6500 | 5000 | 5800 | 5300 |
| Length l max (mm) | 79.5 | 46 | 48 | 80 | 84 |
| Distance a (mm) | 27.1 | 30 | 30 | 36.5 | 35 |
| Electrode Gap - cold (mm) | 4.2 | 5.0 | 6.75 | 3.0 | 5.5 |
| Avg Rated Life (hrs) | 3000 | 750 | 2000 | 500 | 300 |
| Operating Position | p 10 | Any | Any | p 45 | p 45 |
| Base | P32d-2 | GY9.5 Bipin Prefocus | GY9.5 Bipin Prefocus | GY9.5 Bipin Prefocus | FaX1.5 |
| Hot Restart | Yes | No | No | No | Yes |
| Fig No | 1 | 2 | 3 | 4 | 5 |
| Symbols & Footnotes | 60 | 2,90 | 90 | 1,10,48,53,60,161 | 10,37,60,90,112 |

## HTI® SINGLE-ENDED

| Ordering Abbreviation | HTI 700 W/SE/75 | HTI 705 W/SE XS | HTI 1200 W/SE XS | HTI 1800W/SE XS | HTI 2500 W/SE XS |
|---|---|---|---|---|---|
| Product Number | 54329☼ | 54130 | 54141 | 54770☼ | 54142 |
| Watts (W) | 700 | 700 | 1200 | 1800 | 2500 |
| Volts (V) | 70 | 70 | 100 | 100 | 115 |
| Current (A) | 10 | 10 | 13.8 | 20 | 25.6 |
| CRI | >80 | >80 | >90 | >90 | >90 |
| Lumens (lm) | 59000 | 59000 | 99000 | 155000 | 240000 |
| Average Luminance (cd/cm2) | | | 26000 | 35000 | 30000 |
| Color Temp (K) | 7500 | 5500 | 5400 | 5600 | 6000 |
| Length l max (mm) | 85 | 85 | 135 | 135 | 180 |
| Distance a (mm) | 39 | 39 | 59 | 59 | 85 |
| Electrode Gap - cold (mm) | 4 | 4 | 7 | 7 | 14 |
| Avg Rated Life (hrs) | 500 | 500 | 600 | 750 | 600 |
| Operating Position | p 45 | p 45 | s 135 | s 135 | s 135 |
| Base | FaX1.5 | GY9.5 Bipin Prefocus | GY22 | GY22 | G22+Cable |
| Hot Restart | Yes | No | Yes | Yes | Yes |
| Fig No | 5 | 4 | 6 | 6 | 7 |
| Symbols & Footnotes | 10,60,161 | 10,60,161 | 10,19,58,90,161 | 10,19,58,90,161 | 28,58,90,161 |

# HTI® METAL HALIDE

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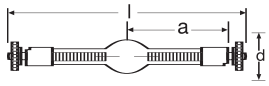
## HTI® SHARXS® DOUBLE-ENDED

| Ordering Abbreviation | HTI 400W/D3/75 SHARXS | HTI 400W/D3/75 SHARXS BULK | HTI 575W/D4/60 SHARXS |
|---|---|---|---|
| Product Number | 54241 | 54280☼ | 54296☼ |
| Watts (W) | 400 | 400 | 575 |
| Volts (V) | 49 | 49 | 69 |
| Current (A) | 8.5 | 8.5 | 8.3 |
| CRI | >80 | >80 | >85 |
| Lumens (lm) | 26000 | 26000 | 49000 |
| Average Luminance (cd/cm2) | 55000 | 55000 | 49000 |
| Color Temp (K) | 7500 | 7500 | 6000 |
| Length l max (mm) | 136 | 136 | 136 |
| Distance a (mm) | 57.5 | 57.5 | 57.5 |
| Diameter d (mm) | 18 | 18 | 20 |
| Electrode Gap - cold (mm) | 3 | 3 | 4 |
| Avg Rated Life (hrs) | 1000 | 1000 | 750 |
| Operating Position | Any | Any | Any |
| Base | SFc10-4 | SFc10-4 | SFc10-4 |
| Hot Restart | Yes | Yes | yes |
| Fig No | 1 | 1 | 1 |
| Symbols & Footnotes | 90,161,166,167 | 90,161,166,167,290 | 90,161,166,167 |

## HTI® SHARXS® DOUBLE-ENDED

| Ordering Abbreviation | HTI 575W/D4/75 SHARXS | HTI 700W/D4/60 SHARXS | HTI 700W/D4/60 SHARXS BULK |
|---|---|---|---|
| Product Number | 54270☼ | 54282☼ | 54283☼ |
| Watts (W) | 575 | 700 | 700 |
| Volts (V) | 64 | 70 | 70 |
| Current (A) | 9 | 10.0/11.0 | 10.0/11.0 |
| CRI | >80 | >80 | >80 |
| Lumens (lm) | 44000 | 59000 | 59000 |
| Average Luminance (cd/cm2) | 49000 | 60000 | 60000 |
| Color Temp (K) | 7500 | 6000 | 6000 |
| Length l max (mm) | 136 | 136 | 136 |
| Distance a (mm) | 57.5 | 57.5 | 57.5 |
| Diameter d (mm) | 20.5 | 20 | 20 |
| Electrode Gap - cold (mm) | 4 | 4 | 4 |
| Avg Rated Life (hrs) | 750 | 750 | 750 |
| Operating Position | Any | Any | Any |
| Base | SFc10-4 | SFc10-4 | SFc10-4 |
| Hot Restart | yes | Yes | Yes |
| Fig No | 1 | 1 | 1 |
| Symbols & Footnotes | 90,161,166,167 | 90,161,166,167 | 90,161,166,167,290 |

# HTI® METAL HALIDE

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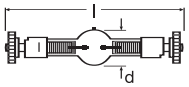
## HTI® SHARXS® DOUBLE-ENDED

| Ordering Abbreviation | HTI 700W/D4/75 SHARXS | HTI 700W/D4/75 SHARXS BULK | HTI 1200W/D7/60 SHARXS |
|---|---|---|---|
| Product Number | 54242 | 54281☼ | 54268☼ |
| Watts (W) | 700 | 700 | 1200 |
| Volts (V) | 70 | 70 | 100 |
| Current (A) | 10.0/11.0 | 10.0/11.0 | 12.7/13.8 |
| CRI | >80 | >80 | >90 |
| Lumens (lm) | 59000 | 59000 | 110000 |
| Average Luminance (cd/cm2) | 60000 | 60000 | 41000 |
| Color Temp (K) | 7500 | 7500 | 6000 |
| Length l max (mm) | 136 | 136 | 136 |
| Distance a (mm) | 57.5 | 57.5 | 57.5 |
| Diameter d (mm) | 20.5 | 20.5 | 21 |
| Electrode Gap - cold (mm) | 4 | 4 | 7 |
| Avg Rated Life (hrs) | 750 | 750 | 750 |
| Operating Position | Any | Any | Any |
| Base | SFc10-4 | SFc10-4 | SFc10-4 |
| Hot Restart | Yes | Yes | Yes |
| Fig No | 1 | 1 | 1 |
| Symbols & Footnotes | 90,161,166,167 | 90,161,166,167,290 | 90,161,166,167,196 |

## HTI® SHARXS® DOUBLE-ENDED

| Ordering Abbreviation | HTI 1200W/D7/60 SHARXS BULK | HTI 1200W/D7/75 SHARXS | HTI 1500W/D7/60 SHARXS |
|---|---|---|---|
| Product Number | 54202☼ | 54269☼ | 54319☼ |
| Watts (W) | 1200 | 1200 | 1500 |
| Volts (V) | 100 | 100 | 110 |
| Current (A) | 12.7/13.8 | 12.7/13.8 | 13.6 |
| CRI | >90 | >80 | >90 |
| Lumens (lm) | 110000 | 110000 | 155000 |
| Average Luminance (cd/cm2) | 41000 | 41000 | |
| Color Temp (K) | 6000 | 7500 | 6000 |
| Length l max (mm) | 136 | 136 | 136 |
| Distance a (mm) | 57.5 | 57.5 | 57.5 |
| Diameter d (mm) | 21 | 21 | 25 |
| Electrode Gap - cold (mm) | 7 | 7 | 7 |
| Avg Rated Life (hrs) | 750 | 750 | 750 |
| Operating Position | Any | Any | Any |
| Base | SFc10-4 | SFc10-4 | SFc10-4 |
| Hot Restart | Yes | Yes | Yes |
| Fig No | 1 | 1 | 1 |
| Symbols & Footnotes | 90,161,166,167,196,290 | 90,161,166,167 | 90,161,166,167 |

# HTI® METAL HALIDE

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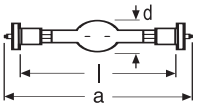
## HTI® BABY SHARXS® DOUBLE-ENDED

| Ordering Abbreviation | HTI 250W/D5/80 BABY SHARXS | HTI 300W/D5/57 BABY SHARXS | HTI 300W/D5/65 BABY SHARXS |
|---|---|---|---|
| Product Number | 54297☼ | 54298☼ | 54299☼ |
| Watts (W) | 250 | 300 | 300 |
| Volts (V) | 90 | 80 | 80 |
| Current (A) | 3.2 | 4.3 | 4.3 |
| CRI | >80 | >85 | >85 |
| Lumens (lm) | 18000 | 20000 | 22000 |
| Color Temp (K) | 8000 | 5700 | 6500 |
| Length l max (mm) | 93 | 93 | 93 |
| Distance a (mm) | 35 | 35 | 35 |
| Diameter d (mm) | 16 | 16 | 16 |
| Electrode Gap - cold (mm) | 5 | 5.5 | 5.5 |
| Avg Rated Life (hrs) | 3000 | 3000 | 750 |
| Operating Position | Any | Any | Any |
| Base | SFc10-4 | SFc10-4 | SFc10-4 |
| Hot Restart | Yes | Yes | Yes |
| Fig No | 1 | 1 | 1 |
| Symbols & Footnotes | 1,161,167,206 | 1,161,167,206 | 1,161,167,206 |

## HTI® BABY SHARXS® DOUBLE-ENDED

| Ordering Abbreviation | HTI 400W/D5/60 BABY SHARXS | HTI 575W/D5/56 BABY SHARXS |
|---|---|---|
| Product Number | 54300☼ | 54359☼ |
| Watts (W) | 400 | 575 |
| Volts (V) | 95 | 95 |
| Current (A) | 7.0 | 7.0 |
| CRI | >85 | >85 |
| Lumens (lm) | 33000 | 43000 |
| Color Temp (K) | 6000 | 5600 |
| Length l max (mm) | 93 | 93 |
| Distance a (mm) | 35 | 35 |
| Diameter d (mm) | 18 | 18 |
| Electrode Gap - cold (mm) | 5.5 | 5 |
| Avg Rated Life (hrs) | 750 | 500 |
| Operating Position | Any | Any |
| Base | SFc10-4 | SFc10-4 |
| Hot Restart | Yes | Yes |
| Fig No | 1 | 1 |
| Symbols & Footnotes | 1,161,167,206 | 1,161,167,206 |

# HTI® METAL HALIDE

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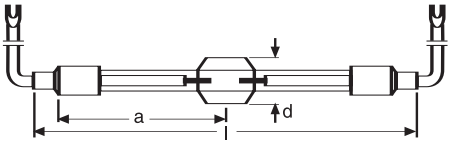


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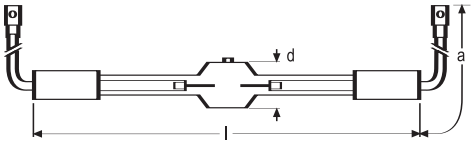
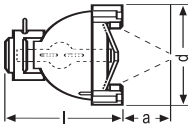



3

## HTI® DOUBLE-ENDED - OTHER

| Ordering Abbreviation | HTI 300 W/DX | HTI 2500 W/DEL | HTI 4000 W/DE |
|---|---|---|---|
| Product Number | 54143 | 54399 | 54133 |
| Watts (W) | 300 | 2500 | 4000 |
| Volts (V) | 100 | 115 | 115 |
| Current (A) | 3.6 | 26.0 | 39.0 |
| CRI | 90 | 90 | 90 |
| Lumens (lm) | 22000 | 270000 | 360000 |
| Average Luminance (cd/cm2) | 20000 | | 35000 |
| Color Temp (K) | 6500 | 6000 | 6300 |
| Length l max (mm) | 92 | 295 | 270 |
| Distance a (mm) | 70 | 108 | 140 |
| Diameter d (mm) | 16 | 31.5 | 40 |
| Electrode Gap - cold (mm) | 5.5 | 25 | 15 |
| Avg Rated Life (hrs) | 750 | 2000 | 500 |
| Operating Position | p 45 | p 45 | p 30 |
| Base | SFc10-4 | Special | S25.5 |
| Hot Restart | Yes | Yes | Yes |
| Fig No | 1 | 2 | 3 |
| Symbols & Footnotes | 60,90 | 60,90 | 60,90 |

# HTI® METAL HALIDE

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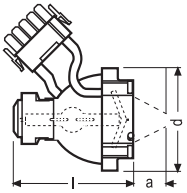
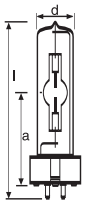



2

## HTI® WITH DICHROIC REFLECTOR

| Ordering Abbreviation | HTI 250 W/22 | HTI 250 W/32 | HTI 250 W/32C | HTI 400 W/24 | HTI 403 W/24 |
|---|---|---|---|---|---|
| Product Number | 54080 | 54081 | 54089 | 54083 | 54104 |
| Watts (W) | 270 | 270 | 270 | 400 | 400 |
| Volts (V) | 45 | 45 | 45 | 55 | 55 |
| Current (A) | 6.0 | 6.0 | 6.0 | 7.3 | 7.3 |
| CRI | 70 | 70 | 70 | 70 | 70 |
| Color Temp (K) | 5600 | 5600 | 5600 | 5600 | 5600 |
| Length l max (mm) | 73 | 73 | 73 | 73 | 73 |
| Working Distance a (mm) | 22 | 32 | 32 | 24 | 24 |
| Diameter d (mm) | 67 | 67 | 67 | 67 | 67 |
| Electrode Gap - cold (mm) | 2.5 | 2.5 | 2.5 | 4.0 | 4.0 |
| Avg Rated Life (hrs) | 250 | 250 | 250 | 250 | 750 |
| Operating Position | P 20 | P 20 | P 20 | P 20 | P 20 |
| Hot Restart | Yes | Yes | Yes | Yes | Yes |
| Fig No | 1 | 1 | 2 | 2 | 2 |
| Symbols & Footnotes | 1,60 | 1,60,63 | 60,90 | 1,60 | 1,60 |

# HSR® METAL HALIDE

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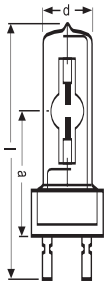
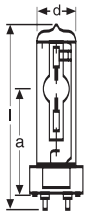



2

## HSR® WITH OUTER JACKET

| Ordering Abbreviation | HSR 400/60 | HSR 575/60 | HSR 575/72 | HSR 700/60 | HSR 1200/60 |
|---|---|---|---|---|---|
| Product Number | 54102 | 54115 | 54116 | 54107 | 54168 |
| Watts (W) | 400 | 575 | 575 | 700 | 1200 |
| Volts (V) | 67 | 95 | 95 | 72 | 100 |
| Current (A) | 6.9 | 7.0 | 7.0 | 11.0 | 13.8 |
| CRI | >85 | >85 | >85 | >85 | >85 |
| Lumens (lm) | 33000 | 49000 | 49000 | 58000 | 110000 |
| Average Luminance (cd/cm2) | 20000 | 10000 | 10000 | 10000 | 20000 |
| Color Temp (K) | 6000 | 6000 | 7200 | 6000 | 6000 |
| Length l max (mm) | 110 | 125 | 125 | 155 | 175 |
| Distance a (mm) | 62 | 65 | 65 | 75 | 85 |
| Diameter d (mm) | 23 | 30 | 30 | 30 | 40 |
| Electrode Gap - cold (mm) | 5 | 7 | 7 | 8 | 10 |
| Avg Rated Life (hrs) | 650 | 1000 | 1000 | 1000 | 1000 |
| Operating Position | Any | Any | Any | Any | Any |
| Base | GX9.5 | GX9.5 | GX9.5 | G22 | G22 |
| Hot Restart | No | No | No | NO | No |
| Fig No | 1 | 1 | 1 | 2 | 2 |
| Symbols & Footnotes | 90 | 90 | 90 | 90 | 90 |

# HSD® METAL HALIDE



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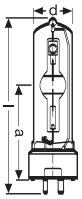

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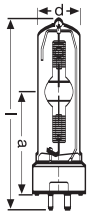

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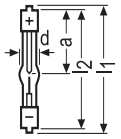
## HSD® 4ARXS METAL HALIDE

| Ordering Abbreviation | HSD 150W/70 4ARXS | HSD 150W/UL/75 4ARXS | HSD 200W/60 4ARXS | HSD 250W/60 4ARXS | |
|---|---|---|---|---|---|
| Product Number | 54311☼ | 54312☼ | 54167 | 54170 | |
| Watts (W) | 150 | 150 | 200 | 250 | |
| Volts (V) | 97 | 97 | 70 | 90 | |
| Current (A) | 1.8 | 1.8 | 3.3 | 3.1 | |
| CRI | >85 | >85 | >80 | >85 | |
| Lumens (lm) | 12000 | 11000 | 13000 | 17000 | |
| Color Temp (K) | 7000 | 7500 | 6000 | 6000 | |
| Length l (mm) | 105 | 105 | 108 | 108 | |
| Distance a (mm) | 56 | 56 | 55 | 55 | |
| Diameter d (mm) | 20 | 20 | 23 | 23 | |
| Electrode Gap - cold (mm) | 5.5 | 5.5 | 5 | 5 | |
| Avg Rated Life (hrs) | 3000 | 6000 | 2000 | 2000 | |
| Operating Position | Any | Any | Any | Any | |
| Base | G12 | G12 | GY9.5 | GY9.5 | |
| Hot Restart | No | No | No | No | |
| Fig No | 1 | 1 | 2 | 2 | |
| Symbols & Footnotes | 90,161 | 90,161 | 90,161,191 | 90,161 | |

## HSD® 4ARXS METAL HALIDE

| Ordering Abbreviation | HSD 250W/80 4ARXS | HSD 575W/72 4ARXS | HSD 250W/UL/75 4ARXS | HSD 575W/60 4ARXS | HSD 575W/UL/75 4ARXS |
|---|---|---|---|---|---|
| Product Number | 54243 | 54129 | 54288☼ | 54271☼ | 54287☼ |
| Watts (W) | 250 | 575 | 250 | 575 | 575 |
| Volts (V) | 95 | 88 | 90 | 88 | 88 |
| Current (A) | 3.2 | 7.4 | 3.1 | 7.4 | 7.4 |
| CRI | >85 | >85 | >85 | >85 | >80 |
| Lumens (lm) | 17000 | 45000 | 15000 | 45000 | 43000 |
| Color Temp (K) | 8000 | 7200 | 7500 | 6000 | 7500 |
| Length l (mm) | 108 | 135 | 108 | 135 | 135 |
| Distance a (mm) | 55 | 65 | 55 | 65 | 65 |
| Diameter d (mm) | 23 | 30 | 23 | 30 | 30 |
| Electrode Gap - cold (mm) | 5 | 7 | 5 | 7 | 7 |
| Avg Rated Life (hrs) | 3000 | 3000 | 6000 | 3000 | 6000 |
| Operating Position | Any | Any | Any | Any | Any |
| Base | GY9.5 | GX9.5 | GY9.5 | GX9.5 | GX9.5 |
| Hot Restart | No | No | No | No | No |
| Fig No | 2 | 3 | 2 | 3 | 3 |
| Symbols & Footnotes | 90,161 | 90,161 | 90,161 | 90,161 | 90,161 |

# XBO®<=450W XENON SHORT ARC

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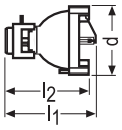


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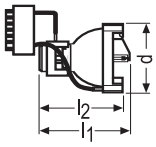


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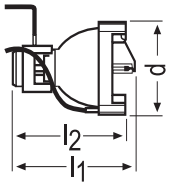
| Ordering Abbreviation | XBO 75 W/2 | XBO 75 W/2 OFR | XBO 100 W OFR | XBO R 100 W/45 OFR | XBO R 100 W/45C OFR |
|---|---|---|---|---|---|
| Product Number | 69231 | 69232 | 69233 | 69197 | 69191 |
| Watts (W) | 75 | 75 | 100 | 100 | 100 |
| Volts (V) | 14 | 14 | 14 | 13 | 13 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 5.4 | 5.4 | 7.0 | 7.0 | 7.0 |
| Current Control Range (A) | | | | | |
| Lumens (lm) | 1000 | 1000 | 1900 | | |
| Luminous Intensity (cd) | 100 | 100 | 270 | | |
| Average Luminance (cd/cm2) | 40000 | 40000 | 31000 | | |
| Luminous Area -- w x h (mm) | 0.25 x 0.5 | 0.25 x 0.5 | 0.4 x 0.8 | 0.4 x 0.9 | 0.4 x .09 |
| Length l1 max (mm) | 90 | 90 | 90 | 83 | 83 |
| Length l2 max (mm) | 82 | 82 | 82 | 75 | 75 |
| Distance a (mm) | 43 | 43 | 44.5 | 0 | 0 |
| Diameter d (mm) | 10 | 10 | 11 | 67 | 67 |
| Avg Rated Life Vertical (hrs) | 400 | 400 | 500 | | |
| Avg Rated Life Horizontal (hrs) | 400 | 400 | | 500 | 500 |
| Operating Position | s 105 | s 105 | s 105 | p 15 | p 15 |
| Cooling | 0 | 0 | Required | Required | Required |
| Base Anode | SFa9-2 | SFa7.5-2 | SFa9-2 | | |
| Base Cathode | SFa7.5-2 | SFa7.5-2 | SFa7.5-2 | | |
| Fig No | 1 | 1 | 1 | 2 | 3 |
| Symbols & Footnotes | 38,58,129,157,179 | 56,58,129,157,179 | 56,58,129,157,179 | 56,60,129,146,157, 168,190 | 44,56,60,129,157,190 |

# XBO®<=450W XENON SHORT ARC

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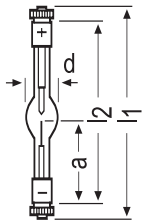



2

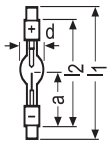
| Ordering Abbreviation | XBO R 101 W/45C OFR | XBO 150 W/1 | XBO 150 W/1 OFR | XBO 150 W/4 | XBO 150 W/CR OFR |
|---|---|---|---|---|---|
| Product Number | 69190 | 69234 | 69235 | 69238 | 69237 |
| Watts (W) | 100 | 150 | 150 | 150 | 150 |
| Volts (V) | 13 | 20 | 20 | 20 | 18 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 7.0 | 7.5 | 7.5 | 7.5 | 8.5 |
| Current Control Range (A) | | | | | |
| Lumens (lm) | | 3000 | 3000 | 3000 | 2900 |
| Luminous Intensity (cd) | | 300 | 300 | 300 | 290 |
| Average Luminance (cd/cm2) | | 15000 | 15000 | 15000 | 20000 |
| Luminous Area -- w x h (mm) | 0 | 0.5 x 2.2 | 0.5 x 2.2 | 0.5 x 2.2 | 0.5 x 1.6 |
| Length l1 max (mm) | 83 | 150 | 150 | 150 | 150 |
| Length l2 max (mm) | 75 | 127 | 127 | 127 | 127 |
| Distance a (mm) | 0 | 57 | 57 | 57 | 57 |
| Diameter d (mm) | 67 | 20 | 20 | 20 | 20 |
| Avg Rated Life Vertical (hrs) | | 1200 | 1200 | 1200 | 3000 |
| Avg Rated Life Horizontal (hrs) | 500 | | | | 1200 |
| Operating Position | p 15 | s 15 | s 15 | s 15 | s15 p15 |
| Cooling | Required | Required | Required | Required | Required |
| Base Anode | | SFc12-4 | SFc12-4 | SFc12-4 | SFc12-4 |
| Base Cathode | | SFcX12-4 | SFcX12-4 | SFcX12.4 | SFcX12-4 |
| Fig No | 1 | 2 | 2 | 2 | 2 |
| Symbols & Footnotes | 44,56,60,129,157, 190,202 | 39,58,129,157,179,212 | 56,58,129,157,179,212 | 40,58,129,157,179 | 56,58,60,68,129,157, 179,213 |





Symbols/Footnotes on page 275-281

# XBO®<=450W XENON SHORT ARC

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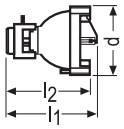


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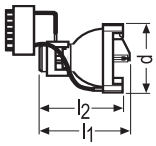
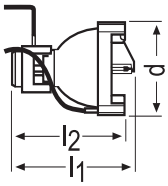
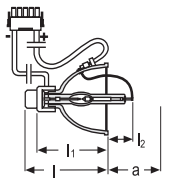



3



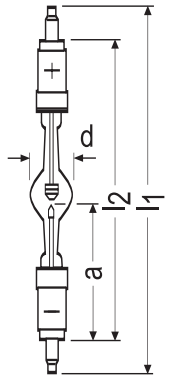

4



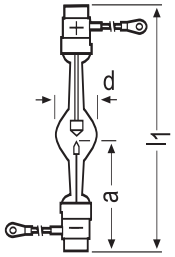

5

| Ordering Abbreviation | XBO 150 W/S | XBO R 180 W/45/OFR | XBO R 180 W/45C OFR | XBO R 181 W/45C OFR | XBO R 300 W/60C OFR |
|---|---|---|---|---|---|
| Product Number | 69236 | 69186 | 69183 | 69184 | 69167 |
| Watts (W) | 150 | 180 | 180 | 180 | 300 |
| Volts (V) | 20 | 14 | 14 | 14 | 17 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 7.5 | 12.0 | 12.0 | 12.0 | 16.0 |
| Current Control Range (A) | | | | | 14 - 19 |
| Lumens (lm) | 2200 | | | | |
| Luminous Intensity (cd) | 220 | | | | |
| Average Luminance (cd/cm2) | 18000 | | | | |
| Luminous Area -- w x h (mm) | 0.5 x 1.9 | 0 | 0 | 0 | 0 |
| Length l1 max (mm) | 117 | 90 | 90 | 90 | 62 |
| Length l2 max (mm) | 96 | 75 | 75 | 75 | 30 |
| Distance a (mm) | 47.5 | 0 | 0 | 0 | 60 |
| Diameter d (mm) | 20 | 67 | 67 | 67 | 82.5 |
| Avg Rated Life Vertical (hrs) | 1000 | 500 | 500 | 500 | |
| Avg Rated Life Horizontal (hrs) | 800 | | | | 1000 |
| Operating Position | s15 p15 | p 15 | p 15 | p 15 | p20 |
| Cooling | Required | Required | Required | Required | Required |
| Base Anode | SFa12-11 | | | | |
| Base Cathode | SFa12-11 | | | | |
| Fig No | 1 | 2 | 3 | 4 | 5 |
| Symbols & Footnotes | 43,58,60,68,129,157,179 | 36,56,60,129,157,190 | 44,56,60,129,157,190 | 44,56,60,129,157,190,202 | 44,56,60,129,157,165 |

# XBO®<=450W XENON SHORT ARC




1




2

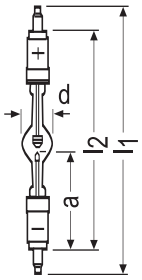
| Ordering Abbreviation | XBO 450 W | XBO 450 W OFR | XBO 450 W/1 | XBO 450 W/2 OFR | XBO 450 W/4 |
|---|---|---|---|---|---|
| Product Number | 69241 | 69245 | 69242 | 69243 | 69244 |
| Watts (W) | 450 | 450 | 450 | 450 | 450 |
| Volts (V) | 17 | 17 | 17 | 17 | 17 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| Current Control Range (A) | 17-30 | 17-30 | 17-30 | 17-30 | 17-30 |
| Lumens (lm) | 13000 | 13000 | 13000 | 13000 | 13000 |
| Luminous Intensity (cd) | 1300 | 1300 | 1300 | 1300 | 1300 |
| Average Luminance (cd/cm2) | 35000 | 35000 | 45000 | 35000 | 35000 |
| Luminous Area -- w x h (mm) | 0.9 x 2.7 | 0.9 x 2.7 | 0.7 x 2.2 | 0.9 X 2.7 | 0.9 x 2.7 |
| Length l1 max (mm) | 260 | 260 | 260 | 177 | 260 |
| Length l2 max (mm) | | 212 | 212 | 0 | 212 |
| Distance a (mm) | 95.5 | 95.5 | 95.5 | 79 | 95.5 |
| Diameter d (mm) | 29 | 29 | 29 | 29 | 29 |
| Avg Rated Life Vertical (hrs) | 2000 | 2000 | 800 | 2000 | 2000 |
| Avg Rated Life Horizontal (hrs) | | | 800 | | |
| Operating Position | s 30 | s 30 | s 100 | s 30 | s 30 |
| Cooling | Required | Required | Required | Required | Required |
| Base Anode | SFa20-8 | SFa20-8 | SFa20-8 | SK19/36 | SFa20-8 |
| Base Cathode | SFa20-10 | SFa20-10 | SFa20-10 | SK19/36 | SFa20-10 |
| Fig No | 1 | 1 | 1 | 2 | 1 |
| Symbols & Footnotes | 41,42,58,129,157,179 | 56,58,129,157,179 | 58,129,157,179 | 56,58,129,157,179 | 40,58,129,157,179 |



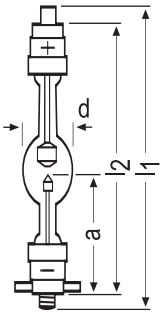


Symbols/Footnotes on page 275-281

# XBO®>450W XENON SHORT ARC CINEMA FILM PROJECTION




1

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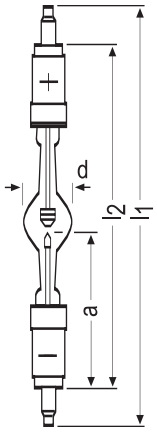


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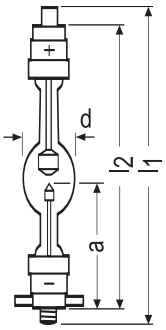
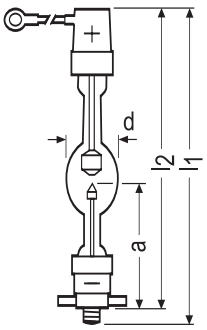


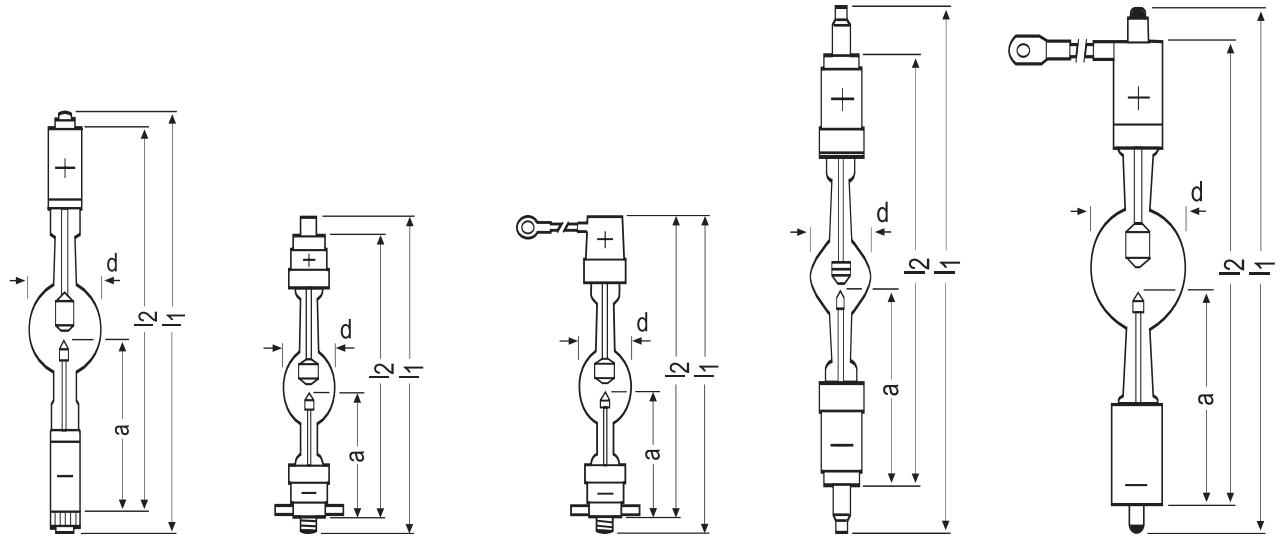

4




5

| Ordering Abbreviation | XBO 500 W/H OFR | XBO 700 W/HS OFR | XBO 900 W OFR | XBO 1000 W/HS OFR | XBO 1000 W/HSC OFR |
|---|---|---|---|---|---|
| Product Number | 69257 | 69260 | 69261 | 69263 | 69264 |
| Watts (W) | 500 | 700 | 900 | 1000 | 1000 |
| Volts (V) | 17 | 18 | 19 | 19 | 19 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 28 | 37 | 45 | 50 | 50 |
| Current Control Range (A) | 17-30 | 30-45 | 30-53 | 30-55 | 30-55 |
| Lumens (lm) | 14500 | 20000 | 30000 | 32000 | 32000 |
| Luminous Intensity (cd) | 1450 | 2000 | 3000 | 3000 | 3000 |
| Average Luminance (cd/cm2) | 40000 | 40000 | 50000 | 60000 | 60000 |
| Luminous Area -- w x h (mm) | 0.9 x 2.5 | 1.1 x 2.9 | 1.1 x 3.3 | 1.1 x 2.8 | 1.1 x 2.8 |
| Length l1 max (mm) | 190 | 235 | 325 | 235 | 236 |
| Length l2 max (mm) | 165 | 205 | 277 | 205 | 222 |
| Distance a (mm) | 75 | 95 | 123 | 95 | 95 |
| Diameter d (mm) | 35 | 40 | 40 | 40 | 40 |
| Warranty | 2000 | 1500 | 2400 | 2000 | 2000 |
| Operating Position | s30 p30 | s20 p20 | s 30 | s20 p20 | s20 p20 |
| Cooling | Required | Required | Required | Required | Required |
| Magnetic Arc Stabilization | Required | | | | |
| Base Anode | SFa16-8 | SFa27-11 | SFa25-10 | SFa27-11 | SK27/50 |
| Base Cathode | SFa15-10 | SFcX27-8 | SFa25-12 | SFcX27-8 | SFcX27-8 |
| Fig No | 1 | 2 | 3 | 4 | 5 |
| Symbols & Footnotes | 45,56,58,60,109,129, 157,179 | 43,45,56,58,60,129, 157,179 | 56,58,129,157,179 | 43,45,56,58,60,129, 157,179 | 43,44,45,56,58,60,129, 157,179 |

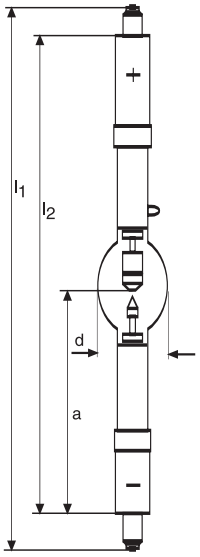
# XBO®>450W XENON SHORT ARC CINEMA FILM PROJECTION



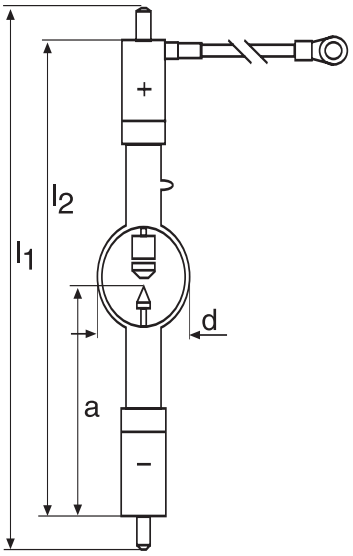

1 2 3 4 5

| Ordering Abbreviation | XBO 1000 W/HTP OFR | XBO 1600 W/HS OFR | XBO 1600 W/HSC OFR | XBO 1600 W OFR | XBO 1600 W/CA OFR |
|---|---|---|---|---|---|
| Product Number | 69265 | 69268 | 69269 | 69266 | 69267 |
| Watts (W) | 1000 | 1550 | 1550 | 1600 | 1600 |
| Volts (V) | 21 | 23 | 23 | 24 | 24 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 45 | 65 | 65 | 65 | 65 |
| Current Control Range (A) | 30-55 | 50-75 | 50-70 | 45-75 | 45-75 |
| Lumens (lm) | 35000 | 70000 | 70000 | 60000 | 60000 |
| Luminous Intensity (cd) | 3200 | 5500 | 5500 | 6000 | 6000 |
| Average Luminance (cd/cm2) | 45000 | 70000 | 70000 | 65000 | 65000 |
| Luminous Area -- w x h (mm) | 1.0 x 4.0 | 1.0 x 3.2 | 1.0 x 3.2 | 1.4 x 4.0 | 1.4 x 4.0 |
| Length l1 max (mm) | 330 | 235 | 236 | 370 | 370 |
| Length l2 max (mm) | 277 | 205 | 222 | 322 | 322 |
| Distance a (mm) | 123 | 95 | 95 | 142.5 | 143 |
| Diameter d (mm) | 46 | 46 | 46 | 52 | 52 |
| Warranty | 2400 | 2000 | 2000 | 2400 | 2400 |
| Operating Position | s30 p30 | s20 p20 | s20 p20 | s 30 | s 30 |
| Cooling | Required | Required | Required | Required | Required |
| Magnetic Arc Stabilization | Required | | | | |
| Base Anode | SFa25-14 | SFa27-11 | SK27/50 | SFa27-10 | SFaX27-10 |
| Base Cathode | SFc25-14 | SFcX27-8 | SFcX27-8 | SFa27-12 | SFa27-12 |
| Fig No | 1 | 2 | 3 | 4 | 5 |
| Symbols & Footnotes | 45,51,56,58,60,109,129, 157,179 | 43,45,56,58,60,129, 157,179 | 43,44,45,56,58,60,129, 157,179 | 56,58,129,157,179 | 47,56,58,129,157,179 |

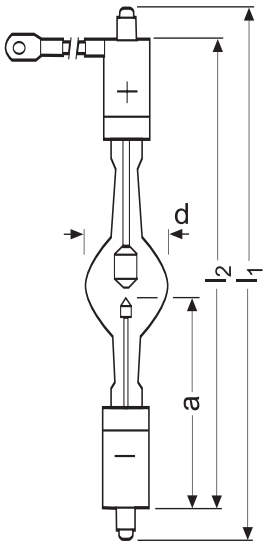
# XBO®>450W XENON SHORT ARC CINEMA FILM PROJECTION



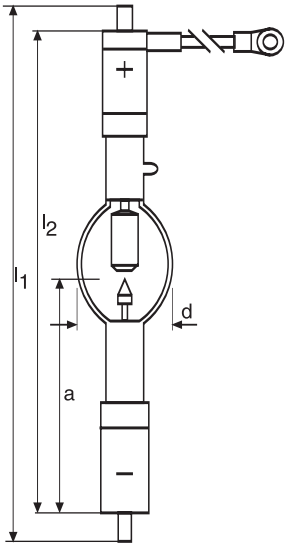

1




2



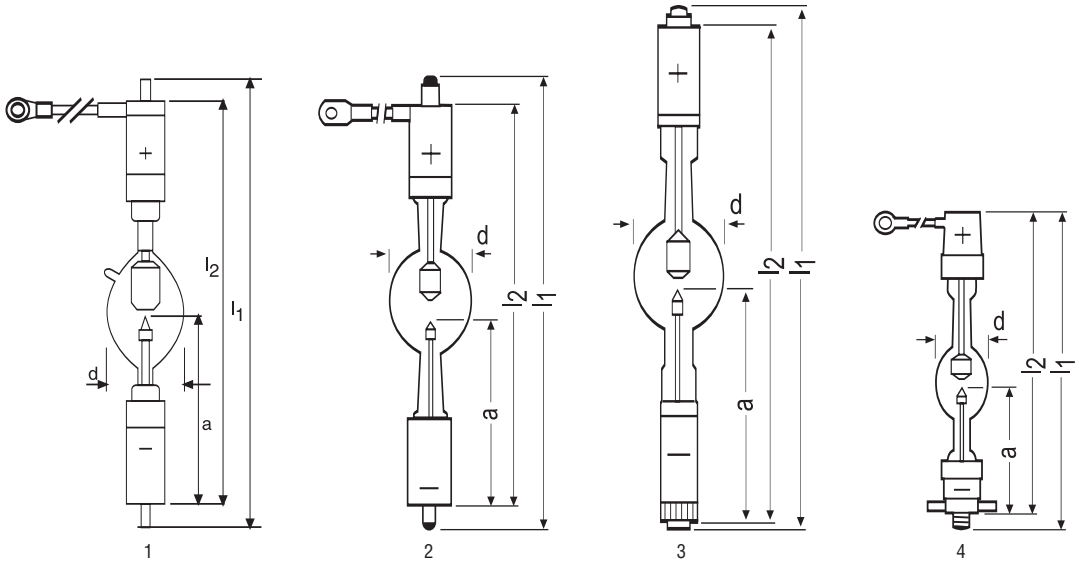

3




4

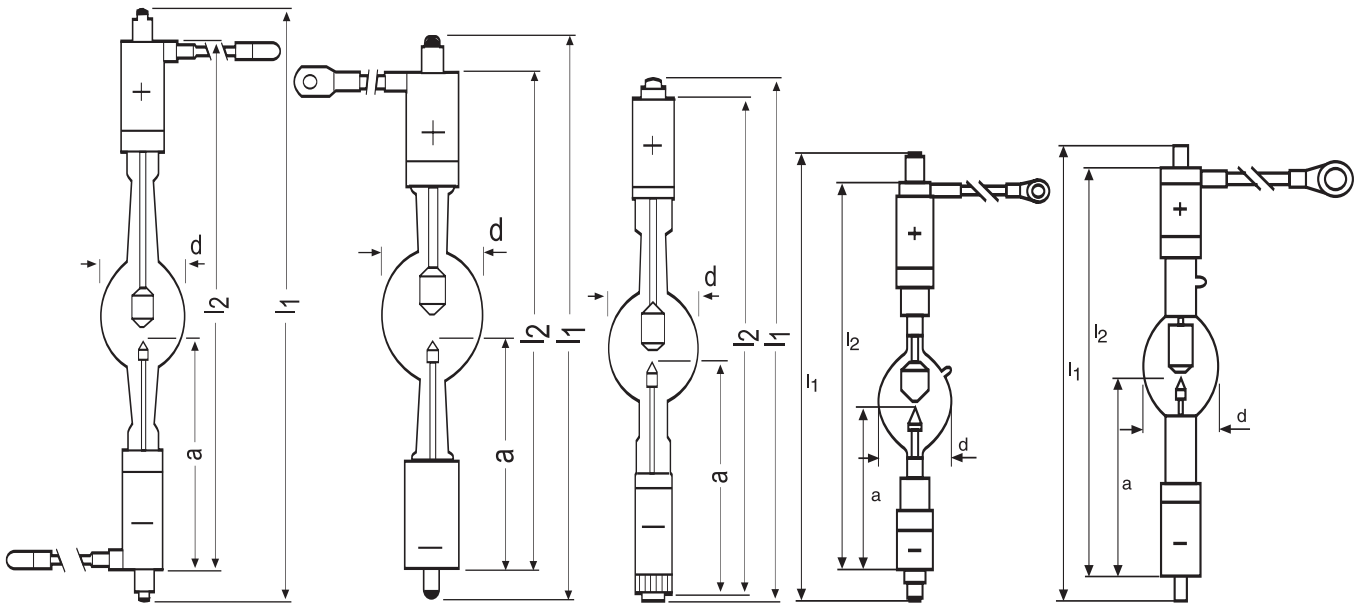
| Ordering Abbreviation | XBO 2000 W/DTP OFR | XBO 2000 W/H CL OFR | XBO 2000 W/H OFR | XBO 2000 W/H XL OFR | XBO 2000 W/HCC OFR |
|---|---|---|---|---|---|
| Product Number | 69155☼ | 69470☼ | 69385☼ | 69477☼ | 69384☼ |
| Watts (W) | 2000 | 2000 | 2000 | 2000 | 2000 |
| Volts (V) | 25 | 28 | 28 | 27 | 28 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 80 | 70 | 70 | 70 | 70 |
| Current Control Range (A) | 50-85 | 50-85 | 50-85 | 50-85 | 50-85 |
| Lumens (lm) | 80000 | 80000 | 80000 | 80000 | 80000 |
| Luminous Intensity (cd) | 7500 | 7500 | 7500 | 7500 | 7500 |
| Average Luminance (cd/cm2) | 75000 | 80000 | 80000 | 75000 | 80000 |
| Luminous Area -- w x h (mm) | 1.3 x 4.0 | 1.3 x 4.8 | 1.3 x 4.8 | 1.3 x 4.8 | 1.3 x 4.8 |
| Length l1 max (mm) | 403 | 370 | 370 | 365 | 370 |
| Length l2 max (mm) | 354 | 322 | 322 | 320 | 322 |
| Distance a (mm) | 160 | 142.5 | 142.5 | 142.5 | 142.5 |
| Diameter d (mm) | 52 | 46 | 52 | 52 | 52 |
| Warranty | 2400 | 2400 | 2400 | 3500 | 2400 |
| Operating Position | s30 p30 | s30 p30 | s30 p30 | s30 p30 | s30 p30 |
| Cooling | Required | Required | Required | Required | Required |
| Magnetic Arc Stabilization | Required | | | Required | |
| Base Anode | SFa 25-14 | SFaX27-10 | SFaX27-10 | SFaX27-10 | SFaX27-10 |
| Base Cathode | SFc25-14 | SFaX27-12 | SFaX27-12 | SFaX27-12 | SFaX27-12 |
| Fig No | 1 | 2 | 3 | 4 | 3 |
| Symbols & Footnotes | 51,56,58,60,109,129, 157,179,279 | 45,56,58,60,129,157, 179,281 | 45,56,58,60,129,157, 179,193 | 45,56,58,60,129,157, 179,280 | 44,45,56,58,60,129,157, 179,195 |

# XBO®>450W XENON SHORT ARC CINEMA FILM PROJECTION



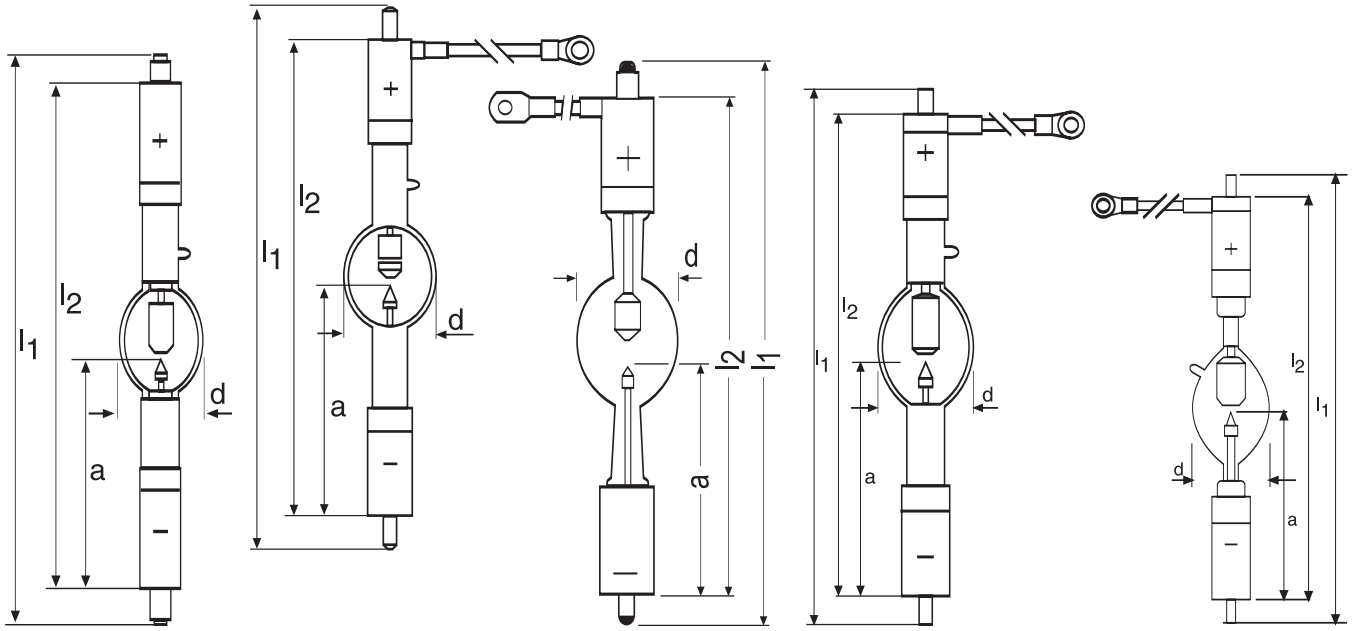

| Ordering Abbreviation | XBO 2000 W/HPS OFR | XBO 2000 W/HS OFR | XBO 2000 W/HTP OFR | XBO 2000 W/SHSC OFR | XBO 2001 W/HTP OFR |
|---|---|---|---|---|---|
| Product Number | 69486☼ | 69270 | 69247 | 69256 | 69310 |
| Watts (W) | 2000 | 2000 | 2000 | 2000 | 2000 |
| Volts (V) | 25 | 24 | 27 | 27 | 25 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 80 | 80 | 70 | 70 | 80 |
| Current Control Range (A) | 60-90 | 50-85 | 50-85 | 50-85 | 50-85 |
| Lumens (lm) | 75000 | 80000 | 80000 | 80000 | 80000 |
| Luminous Intensity (cd) | 8000 | 7500 | 7500 | 7500 | 7500 |
| Average Luminance (cd/cm2) | 160000 | 80000 | 75000 | 80000 | 75000 |
| Luminous Area -- w x h (mm) | 1.3 x 3.2 | 1.3 x 4.0 | 1.3 x 4.8 | 1.3 x 4.0 | 1.3 x 4.0 |
| Length l1 max (mm) | 332 | 342 | 375 | 236 | 375 |
| Length l2 max (mm) | 295 | 302 | 322 | 222 | 322 |
| Distance a (mm) | 128 | 145 | 142.5 | 95 | 142.5 |
| Diameter d (mm) | 46 | 60 | 52 | 46 | 60 |
| Warranty | 2400 | 2400 | 2400 | 2000 | 2400 |
| Operating Position | s15 p15 | s30 p30 | s30 p30 | s20 p20 | s30 p30 |
| Cooling | Required | Required | Required | Required | Required |
| Magnetic Arc Stabilization | | | Required | | Required |
| Base Anode | SFaX30-14/68 | SFaX27-9.5 | SFa25-14 | SK27/50 | SFa25-14 |
| Base Cathode | SFc30-20/50 | SFa27-7.9 | SFc25-14 | SFcX27-8 | SFc25-14 |
| Fig No | 1 | 2 | 3 | 4 | 3 |
| Symbols & Footnotes | 56,58,60,129,157,179, 282,283 | 43,45,56,58,60,129, 157,179 | 45,51,56,58,60,109, 129,157,179 | 49,56,58,60,129,157,179 | 45,51,56,58,60,109,129, 157,179 |

# XBO®>450W XENON SHORT ARC CINEMA FILM PROJECTION




| Ordering Abbreviation | XBO 2500 W OFR | XBO 2500 W/HS OFR | XBO 2500 W/HTP OFR | XBO 3000 W/DHP OFR | XBO 3000 W/DHS OFR |
|---|---|---|---|---|---|
| Product Number | 69248 | 69249 | 69160☼ | 69480☼ | 69462☼ |
| Watts (W) | 2500 | 2500 | 2500 | 2600 | 3000 |
| Volts (V) | 29 | 28 | 28 | 29 | 29 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 85 | 90 | 90 | 90 | 110 |
| Current Control Range (A) | 60-95 | 70-100 | 70-100 | 80-110 | 60-120 |
| Lumens (lm) | 100000 | 100000 | 100000 | 140000 | 130000 |
| Luminous Intensity (cd) | 9500 | 10000 | 9500 | 13500 | 12000 |
| Average Luminance (cd/cm2) | 61000 | 80000 | 60000 | 180000 | 105000 |
| Luminous Area -- w x h (mm) | 1.5 x 6.0 | 1.5 x 4.5 | 1.5 x 6.0 | 1,3 x 3,5 | 1.7 x 4.0 |
| Length l1 max (mm) | 428 | 342 | 398 | 340 | 340 |
| Length l2 max (mm) | 382 | 302 | 357 | 294 | 300 |
| Distance a (mm) | 167.5 | 145 | 165 | 123 | 145 |
| Diameter d (mm) | 60 | 60 | 60 | 55 | 55 |
| Warranty | 2000 | 1500 | 1500 | 1500 | 1500 |
| Operating Position | s 30 | s30 p20 | s30 p30 | s15 p15 | s30 p30 |
| Cooling | | Required | Required | Required | Required |
| Magnetic Arc Stabilization | | | Required | | Required |
| Base Anode | SFaX27-13 | SFaX27-9.5 | SFa27-14 | SFaX27-14/80 | SFaX 27-9.5 |
| Base Cathode | SFaX27-14 | SFa27-7.9 | SFc27-14 | SFc27-16/45 | SFa 27-7.9 |
| Fig No | 1 | 2 | 3 | 4 | 5 |
| Symbols & Footnotes | 56,58,129,157,179 | 43,45,56,58,60,129, 157,179 | 45,51,56,58,60,109, 129,157,179 | 56,58,60,129,157,179, 279,282 | 43,45,56,58,60,129,157, 179,279 |

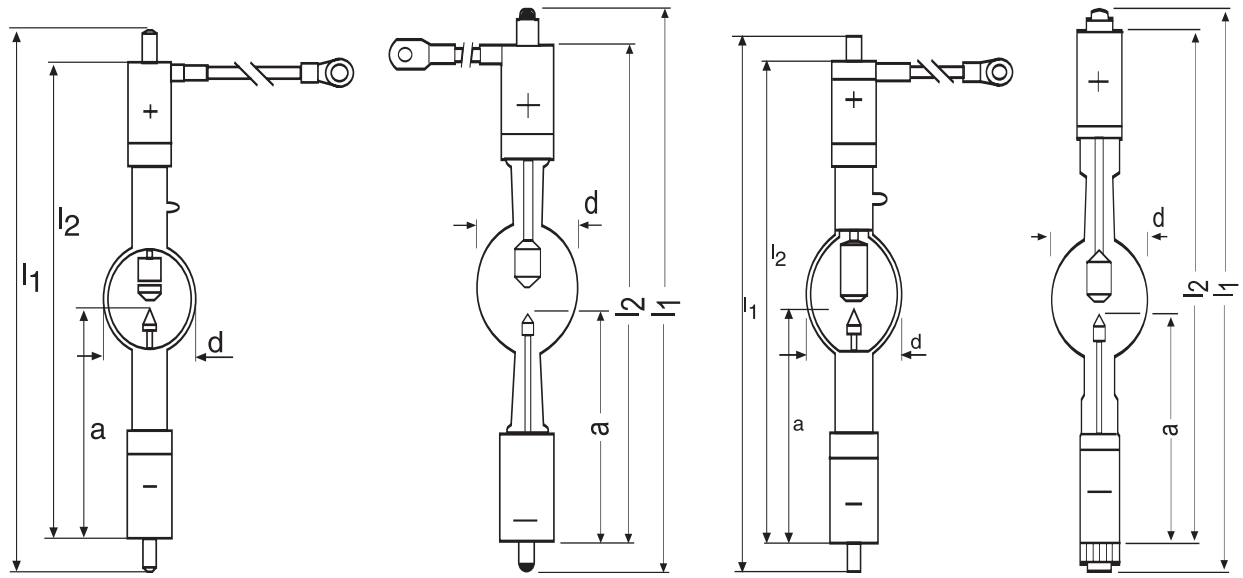
# XBO®>450W XENON SHORT ARC CINEMA FILM PROJECTION




1 2 3 4 5

| Ordering Abbreviation | XBO 3000 W/DTP OFR | XBO 3000 W/H CL OFR | XBO 3000 W/H OFR | XBO 3000 W/H XL OFR | XBO 3000 W/HPS OFR |
|---|---|---|---|---|---|
| Product Number | 69154☼ | 69475☼ | 69251 | 69478☼ | 69487☼ |
| Watts (W) | 3000 | 3000 | 3000 | 3000 | 3000 |
| Volts (V) | 27 | 30 | 30 | 30 | 29 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 110 | 100 | 100 | 100 | 105 |
| Current Control Range (A) | 60-120 | 60-110 | 60-110 | 70-110 | 70-110 |
| Lumens (lm) | 130000 | 130000 | 130000 | 130000 | 140000 |
| Luminous Intensity (cd) | 15000 | 12000 | 12000 | 12000 | 13500 |
| Average Luminance (cd/cm2) | 120000 | 85000 | 85000 | 90000 | 180000 |
| Luminous Area -- w x h (mm) | 1.5 x 4.0 | 1.7 x 5.0 | 1.7 x 5.0 | 1.7 x 5.0 | 1.3 x 3.5 |
| Length l1 max (mm) | 403 | 428 | 428 | 423 | 332 |
| Length l2 max (mm) | 352 | 382 | 382 | 380 | 295 |
| Distance a (mm) | 160 | 167.5 | 167.5 | 167.5 | 128 |
| Diameter d (mm) | 60 | 55 | 66 | 60 | 55 |
| Warranty | 1500 | 1500 | 1500 | 2200 | 1000 |
| Operating Position | s30 p30 | s30 p30 | s30 p30 | s30 p30 | s15 p15 |
| Cooling | Required | Required | Required | Required | Required |
| Magnetic Arc Stabilization | Required | Required | Required | Required | |
| Base Anode | SFc27-14 | SFaX27-13 | SFaX27-13 | SFaX27-13 | SFaX30-14/68 |
| Base Cathode | SFa27-14 | SFa27-14 | SFa27-14 | SFa27-14 | SFc30-20/50 |
| Fig No | 1 | 2 | 3 | 4 | 5 |
| Symbols & Footnotes | 51,56,129,157,179,279 | 45,56,58,60,129,157, 179,281 | 45,56,58,60,109,129, 157,179 | 45,56,58,60,129,157, 179,280 | 56,58,60,129,157,179, 282,283 |

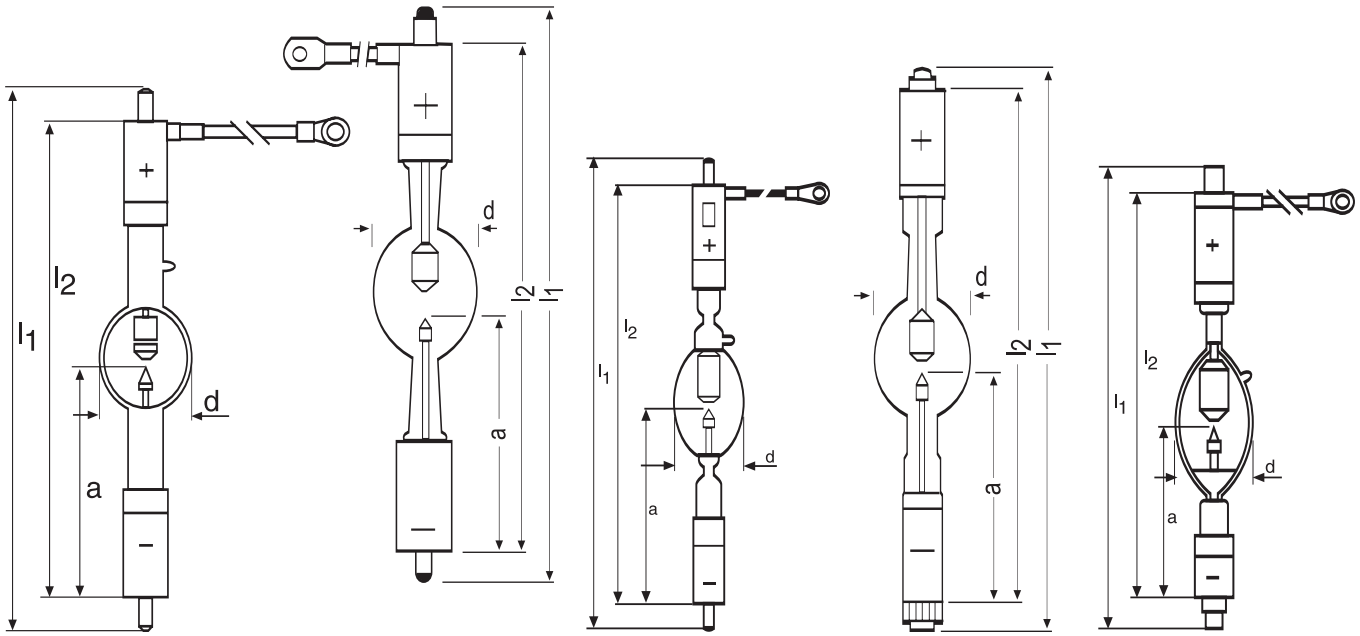
# XBO®>450W XENON SHORT ARC CINEMA FILM PROJECTION




1 2 3 4

| Ordering Abbreviation | XBO 3000 W/HS CL OFR | XBO 3000 W/HS OFR | XBO 3000 W/HS XL OFR | XBO 3000 W/HSLA OFR | XBO 3000 W/HTP OFR |
|---|---|---|---|---|---|
| Product Number | 69153☼ | 69250 | 69479☼ | 69390☼ | 69252 |
| Watts (W) | 3000 | 3000 | 3000 | 3000 | 3000 |
| Volts (V) | 29 | 29 | 30 | 29 | 29 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 100 | 100 | 100 | 110 | 100 |
| Current Control Range (A) | 60-110 | 60-110 | 70-110 | 60-120 | 60-110 |
| Lumens (lm) | 130000 | 130000 | 130000 | 130000 | 130000 |
| Luminous Intensity (cd) | 12000 | 12000 | 12000 | 12000 | 12000 |
| Average Luminance (cd/cm2) | 90000 | 90000 | 90000 | 105000 | 85000 |
| Luminous Area -- w x h (mm) | 1.7 x 5.0 | 1.7 x 5.0 | 1.7 x 5.0 | 1.7 x 4.0 | 1.7 x 5.0 |
| Length l1 max (mm) | 342 | 342 | 340 | 342 | 405 |
| Length l2 max (mm) | 302 | 302 | 300 | 302 | 357 |
| Distance a (mm) | 145 | 145 | 145 | 145 | 162.5 |
| Diameter d (mm) | 55 | 60 | 60 | 54 | 66 |
| Warranty | 1500 | 1500 | 2200 | 1500 | 1500 |
| Operating Position | s30 p30 | s30 p30 | s30 p30 | s30 p30 | s30 p30 |
| Cooling | Required | Required | Required | Required | Required |
| Magnetic Arc Stabilization | Required | Required | Required | Required | |
| Base Anode | SFaX27-9.5 | SFaX27-9.5 | SFaX27-9.5 | SFaX 27-9.5 | SFa27-14 |
| Base Cathode | SFa27-7.9 | SFa27-7.9 | SFa27-7.9 | SFa 27-7.9 | SFc27-14 |
| Fig No | 1 | 2 | 3 | 2 | 4 |
| Symbols & Footnotes | 56,58,60,129,157, 179,281 | 43,45,56,58,60,109, 129,157,179 | 43,45,56,58,60,129, 157,179,280 | 43,45,56,58,60,109, 129,157,179,210 | 45,51,56,58,60,129, 157,179 |

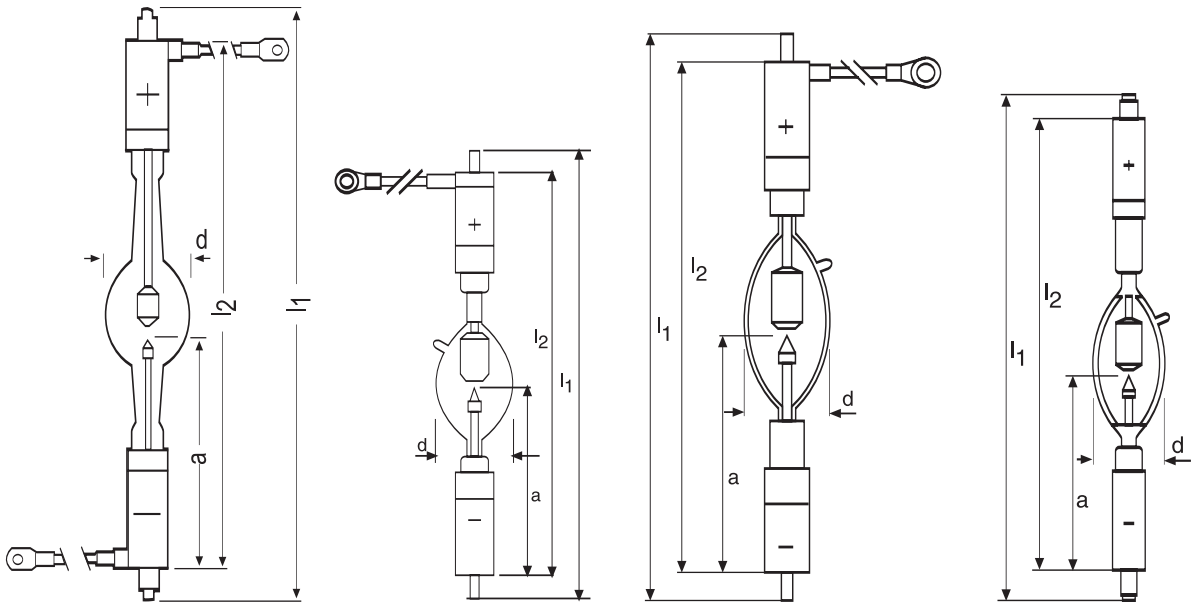
# XBO®>450W XENON SHORT ARC CINEMA FILM PROJECTION




1 2 3 4 5

| Ordering Abbreviation | XBO 4000 W/HS CL OFR | XBO 4000 W/HS OFR | XBO 4000 W/HS XL OFR | XBO 4000 W/HTP OFR | XBO 4000 W/DHP OFR |
|---|---|---|---|---|---|
| Product Number | 69394☼ | 69254 | 69474☼ | 69296 | 69481☼ |
| Watts (W) | 4000 | 4000 | 4000 | 4000 | 4200 |
| Volts (V) | 28 | 28 | 27 | 30 | 34 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 135 | 135 | 135 | 130 | 125 |
| Current Control Range (A) | 80-150 | 80-150 | 80-150 | 100-140 | 100-130 |
| Lumens (lm) | 155000 | 155000 | 155000 | 155000 | 170000 |
| Luminous Intensity (cd) | 17000 | 17000 | 17000 | 16000 | 17000 |
| Average Luminance (cd/cm2) | 90000 | 90000 | 90000 | 90000 | 140000 |
| Luminous Area -- w x h (mm) | 1.9 x 6.0 | 1.9 x 6.0 | 1.9 x 6.0 | 1.9 x 6.0 | 1.6 x 5.0 |
| Length l1 max (mm) | 410 | 410 | 408 | 433 | 340 |
| Length l2 max (mm) | 370 | 370 | 368 | 382 | 294 |
| Distance a (mm) | 171 | 171 | 171 | 167.5 | 123 |
| Diameter d (mm) | 60 | 70 | 70 | 70 | 55 |
| Warranty | 1000 | 1000 | 1500 | 1000 | 700 |
| Operating Position | s20 p20 | s20 p20 | s20p20 | s20 p20 | s15 p15 |
| Cooling | Required | Required | Required | Required | Required |
| Magnetic Arc Stabilization | Required | Required | Required | | |
| Base Anode | SFaX30-9.5 | SFaX30-9.5 | SFaX30-9.5 | SFa27-14 | SFaX27-14/80 |
| Base Cathode | SFa30-7.9 | SFa30-7.9 | SFa30-7.9 | SFc27-14 | SFc27-16/45 |
| Fig No | 1 | 2 | 3 | 4 | 5 |
| Symbols & Footnotes | 56,58,60,129,157,179, 281 | 43,45,56,58,60,109,129, 157,179 | 43,45,56,58,60,129, 157,179,280 | 45,51,56,58,60,129, 157,179 | 56,58,60,129,157,179, 279,282 |

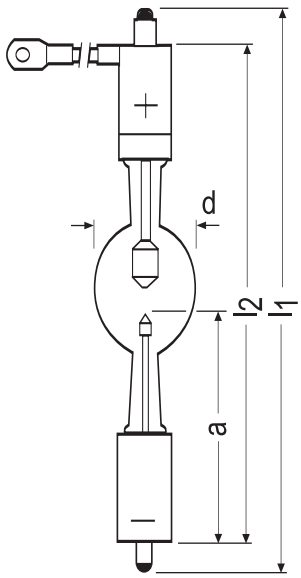
# XBO®>450W XENON SHORT ARC CINEMA FILM PROJECTION




1 2 3 4

| Ordering Abbreviation | XBO 4200 W/CA OFR | XBO 4200 W/GS OFR | XBO 4200 W/HPS OFR | XBO 4500 W/DHP OFR | XBO 4500 W/DTP OFR |
|---|---|---|---|---|---|
| Product Number | 69294 | 69350 | 69488☼ | 69463☼ | 69459☼ |
| Watts (W) | 4200 | 4200 | 4200 | 4500 | 4500 |
| Volts (V) | 29 | 29 | 35 | 30 | 32 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 140 | 140 | 120 | 145 | 145 |
| Current Control Range (A) | 80-160 | 80-160 | 80-130 | 80-150 | 80-150 |
| Lumens (lm) | 190000 | 190000 | 170000 | 190000 | 190000 |
| Luminous Intensity (cd) | 20000 | 20000 | 17000 | 22000 | 25000 |
| Average Luminance (cd/cm2) | 100000 | 100000 | 160000 | 115000 | 115000 |
| Luminous Area -- w x h (mm) | 2.1 x 5.7 | 2.1 x 5.7 | 1.5 x 4.5 | 1.9 x 5.0 | 1.9 x 5.0 |
| Length l1 max (mm) | 428 | 428 | 332 | 408 | 433 |
| Length l2 max (mm) | 382 | 382 | 295 | 368 | 384 |
| Distance a (mm) | 167.5 | 167.5 | 128 | 171 | 165 |
| Diameter d (mm) | 70 | 60 | 55 | 60 | 60 |
| Warranty | 1000 | 1000 | 500 | 1000 | 1000 |
| Operating Position | s 15 | s 15 | s15 p15 | s15 p15 | s15 p15 |
| Cooling | Required | Required | Required | Required | Required |
| Magnetic Arc Stabilization | | Required | | Required | Required |
| Base Anode | SFaX27-13 | SFaX27-13 | SFaX30-14/68 | SFaX30-9.5 | SFcX27-14 |
| Base Cathode | SFaX27-14 | SFaX27-14 | SFc30-20/50 | SFa30-7.9 | SFa27-14 |
| Fig No | 1 | 1 | 2 | 3 | 4 |
| Symbols & Footnotes | 47,56,58,129,157, 179,220 | 52,56,58,109,129, 157,179 | 56,58,60,129,157,179, 282,283 | 56,58,60,129,157, 179,279,282 | 51,56,58,60,129,157, 179,279 |

# XBO®>450W XENON SHORT ARC CINEMA FILM PROJECTION



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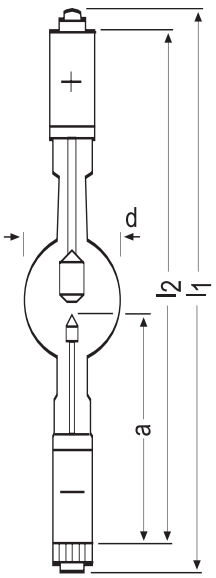
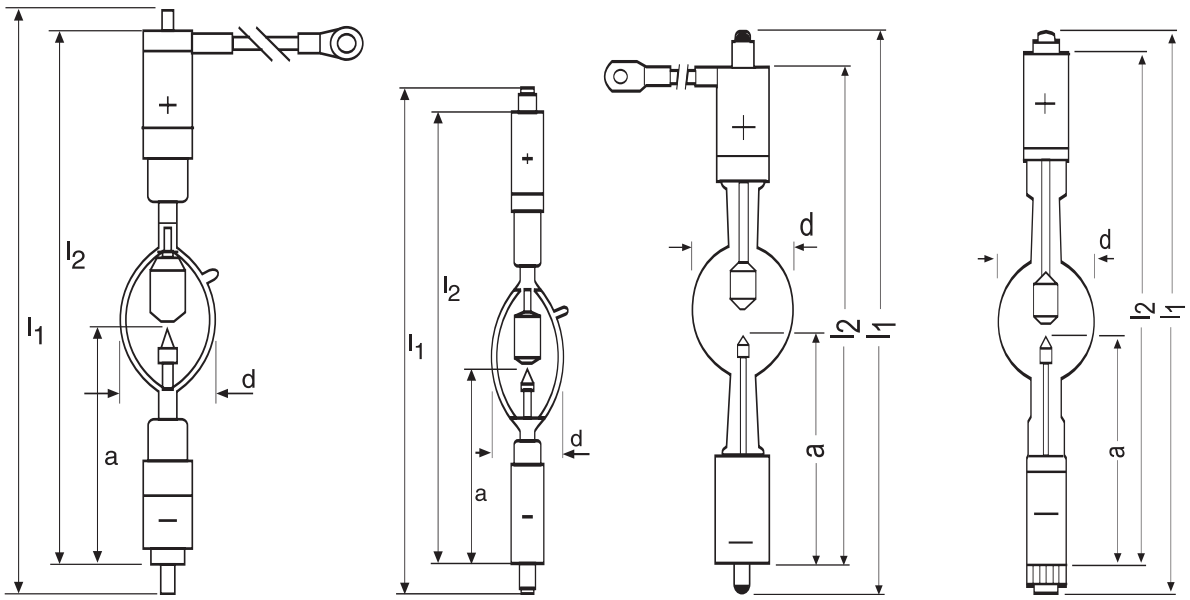


2

| Ordering Abbreviation | XBO 4500 W/HS OFR | XBO 4500 W/HSLA OFR | XBO 4500 W/HTP OFR | XBO 5000 W/H OFR | XBO 5000 W/HTP OFR |
|---|---|---|---|---|---|
| Product Number | 69359 | 69389☼ | 69360 | 69315 | 69336 |
| Watts (W) | 4500 | 4500 | 4500 | 5000 | 5000 |
| Volts (V) | 32 | 30 | 32 | 35 | 34 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 135 | 145 | 135 | 140 | 140 |
| Current Control Range (A) | 80-150 | 80-150 | 80-150 | 100-150 | 100-150 |
| Lumens (lm) | 190000 | 160000 | 190000 | 225000 | 225000 |
| Luminous Intensity (cd) | 22000 | 22000 | 22000 | 27000 | 27000 |
| Average Luminance (cd/cm2) | 120000 | 115001 | 105000 | 95000 | 95000 |
| Luminous Area -- w x h (mm) | 1.9 x 6.0 | 1.9 x 5.0 | 1.9 x 6.0 | 2.2 x 6.5 | 2.2 x 6.5 |
| Length l1 max (mm) | 410 | 410 | 433 | 433 | 433 |
| Length l2 max (mm) | 370 | 370 | 382 | 382 | 382 |
| Distance a (mm) | 171 | 171 | 171 | 168 | 165 |
| Diameter d (mm) | 70 | 60 | 70 | 70 | 70 |
| Warranty | 1000 | 1000 | 1000 | 1000 | 1000 |
| Operating Position | s15 p15 | s15 p15 | s15 p15 | s15 p15 | s15 p15 |
| Cooling | Required | Required | Required | Required | Required |
| Magnetic Arc Stabilization | Required | Required | Required | Required | Required |
| Base Anode | SFa30-7.9 | SFaX30-9.5 | SFa27-14 | SFaX27-13 | SFa27-14 |
| Base Cathode | SFaX30-9.5 | SFa30-7.9 | SFc27-14 | SFaX27-14 | SFc27-14 |
| Fig No | 1 | 1 | 2 | 1 | 2 |
| Symbols & Footnotes | 43,45,56,58,60,109,129, 157,179 | 43,45,56,58,60,109,129, 157,179,210 | 45,51,56,58,109,129, 157,179 | 45,56,58,60,109,129, 157,179 | 45,51,56,58,60,109,129, 157,179 |

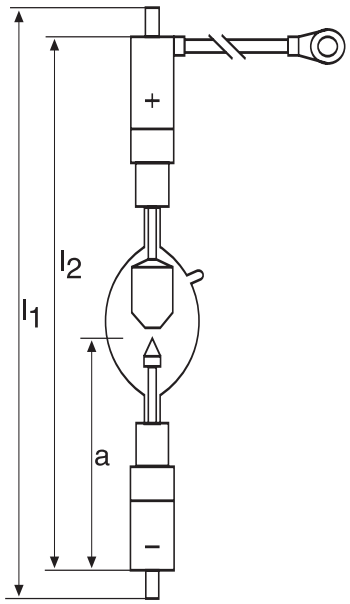
# XBO®>450W XENON SHORT ARC CINEMA FILM PROJECTION




1 2 3 4

| Ordering Abbreviation | XBO 6000 W/DHP OFR | XBO 6000 W/DTP OFR | XBO 6000 W/HS OFR | XBO 6000 W/HSLA OFR | XBO 6000 W/HTP OFR |
|---|---|---|---|---|---|
| Product Number | 69476☼ | 69460☼ | 69339 | 69386☼ | 69340 |
| Watts (W) | 6000 | 6000 | 6000 | 6000 | 6000 |
| Volts (V) | 35 | 39 | 37 | 35 | 37 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 170 | 155 | 160 | 170 | 160 |
| Current Control Range (A) | 140-175 | 140-175 | 110 - 165 | 140-175 | 110 - 165 |
| Lumens (lm) | 280000 | 270000 | 280000 | 280000 | 280000 |
| Luminous Intensity (cd) | 30000 | 33000 | 40000 | 30000 | 40000 |
| Average Luminance (cd/cm2) | 160000 | 130000 | 105000 | 160000 | 105000 |
| Luminous Area -- w x h (mm) | 1.9 x 6.0 | 1.9 x 7.0 | 2.0 x 7.5 | 1.9 x 6.0 | 2.0 x 7.5 |
| Length l1 max (mm) | 431 | 433 | 433 | 433 | 433 |
| Length l2 max (mm) | 391 | 386 | 393 | 393 | 382 |
| Distance a (mm) | 170.5 | 165 | 170.5 | 170.5 | 165 |
| Diameter d (mm) | 70 | 70 | 78 | 70 | 78 |
| Warranty | 600 | 600 | 750 | 600 | 750 |
| Operating Position | s15 p15 | s15 p15 | s15 p15 | s15 p15 | s15 p15 |
| Cooling | Required | Required | Required | Required | Required |
| Magnetic Arc Stabilization | Required | Required | Required | Required | Required |
| Base Anode | SFaX30-9.5 | SFc27-14 | SFaX30-9.5 | SFaX30-9.5 | SFaX27-14 |
| Base Cathode | SFa30-7.9 | SFa27-14 | SFa30-7.9 | SFa30-7.9 | SFc27-14 |
| Fig No | 1 | 2 | 3 | 3 | 4 |
| Symbols & Footnotes | 56,58,60,129,157,179, 279,282 | 51,56,58,60,109,129,157, 179,279 | 43,45,56,58,60,109,129, 157,179 | 43,45,56,58,60,109,129, 157,179,210 | 43,45,51,56,58,60,109, 129,157,179 |

# XBO®>450W XENON SHORT ARC CINEMA FILM PROJECTION



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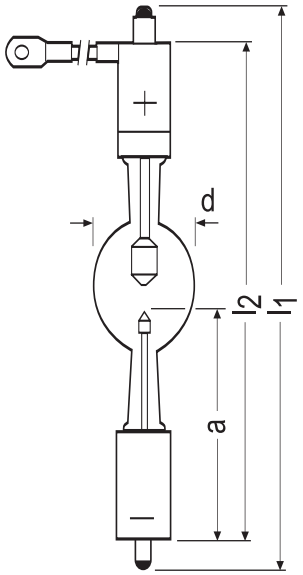
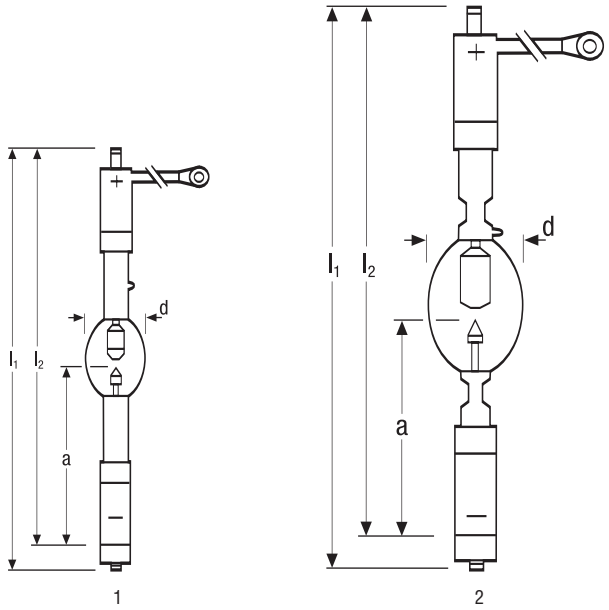


2

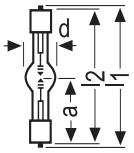
| Ordering Abbreviation | XBO 6500 W/DHP OFR | XBO 6500 W/HSLA OFR | XBO 7000 W/HS OFR | XBO 8000 W/HS OFR |
|---|---|---|---|---|
| Product Number | 69461☼ | 69489☼ | 69295 | 69351 |
| Watts (W) | 6500 | 6500 | 7000 | 8000 |
| Volts (V) | 38 | 38 | 42 | 45 |
| Type of Current | DC | DC | DC | DC |
| Current (A) | 170 | 170 | 160 | 175 |
| Current Control Range (A) | 140-175 | 140-175 | 110-165 | 150-180 |
| Lumens (lm) | 300000 | 300000 | 350000 | 400000 |
| Luminous Intensity (cd) | 32000 | 32000 | 35000 | 40000 |
| Average Luminance (cd/cm2) | 160000 | 160000 | 100000 | 110000 |
| Luminous Area -- w x h (mm) | 2.0 x 6.3 | 2.0 x 6.3 | 2.0 x 7.5 | 2.5 x 10.5 |
| Length l1 max (mm) | 431 | 433 | 433 | 433 |
| Length l2 max (mm) | 391 | 393 | 393 | 393 |
| Distance a (mm) | 170.5 | 170.5 | 170.5 | 170.5 |
| Diameter d (mm) | 70 | 70 | 78 | 90 |
| Warranty | 500 | 500 | 650 | 500 |
| Operating Position | s15 p15 | s15 p15 | s15 p15 | s 15, p15 |
| Cooling | Required | Required | Required | Required |
| Magnetic Arc Stabilization | Required | Required | Required | Required |
| Base Anode | SFaX30-9.5 | SFaX30-9.5 | SFaX30-9.5 | SFaX 30-9.5 |
| Base Cathode | SFa30-7.9 | SFa30-7.9 | SFa30-8.0 | SFa 30-7.9 |
| Fig No | 1 | 2 | 2 | 2 |
| Symbols & Footnotes | 56,58,60,129,157,179,279,282 | 43,45,56,58,60,109,129,157, 179,210 | 43,45,56,58,60,109,129,157,179 | 43,45,56,58,60,109,129,157,179 |

# XSTAGE™ XENON SHORT ARC ENTERTAINMENT




| Ordering Abbreviation | Xstage 2000W OFR | Xstage 3000W OFR | Xstage 4000W OFR | Xstage 7000W OFR |
|---|---|---|---|---|
| Product Number | 69482☼ | 69483☼ | 69484☼ | 69485☼ |
| Watts (W) | 2000 | 3000 | 4000 | 7000 |
| Volts (V) | 23 | 30 | 30 | 40 |
| Type of Current | DC | DC | DC | DC |
| Current (A) | 90 | 100 | 130 | 160 |
| Current Control Range (A) | 70-110 | 70-110 | 80-135 | 110-165 |
| Lumens (lm) | 80000 | 140000 | 150000 | 330000 |
| Luminous Intensity (cd) | 9000 | 13500 | 17000 | 33000 |
| Average Luminance (cd/cm2) | 170000 | 200000 | 120000 | 120000 |
| Luminous Area -- w x h (mm) | 1.2x2.7 | 1.3x3.5 | 1.9x5.0 | 2.0x7.0 |
| Length l1 max (mm) | 300 | 300 | 315 | 405 |
| Length l2 max (mm) | 262 | 262 | 277 | 354 |
| Distance a (mm) | 120 | 120 | 120 | 162.5 |
| Diameter d (mm) | 46.5 | 55 | 60 | 70 |
| Warranty | 1000 | 1000 | 1000 | 1000 |
| Operating Position | any | any | any | any |
| Cooling | Required | Required | Required | Required |
| Magnetic Arc Stabilization | | | | |
| Base Anode | SFaX27-9.5 | SFaX27-9.6 | SFaX27-9.7 | SFaX27-9.8 |
| Base Cathode | SFc28-27 | SFc28-28 | SFc28-29 | SFc28-30 |
| Fig No | 1 | 1 | 1 | 2 |
| Symbols & Footnotes | 56,129,157,179 | 56,129,157,179 | 56,129,157,179 | 56,129,157,179 |

# HBO® MERCURY SHORT ARC

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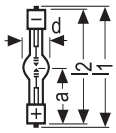
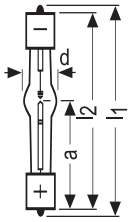


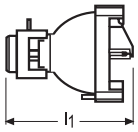

2




3

| Ordering Abbreviation | HBO 50 W AC L1 | HBO 50 W AC L2 | HBO 50 W/3 | HBO 100 W/2 | HBO 103 W/2 |
|---|---|---|---|---|---|
| Product Number | 69213 | 69214 | 69215 | 69217 | 69182 |
| Watts (W) | 50 | 50 | 50 | 100 | 100 |
| Volts (V) | 42 | 37 | 23 | 20 | 23 |
| Type of Current | AC | AC | DC | DC | DC |
| Current (A) | 1.3 | 1.45 | 2.3 | 5.0 | 4.44 |
| Lumens (lm) | 2000 | 2000 | 1300 | 2200 | 2550 |
| Luminous Intensity (cd) | 230 | 230 | 150 | 260 | 270.0 |
| Average Luminance (cd/cm2) | 30000 | 30000 | 90000 | 170000 | 150000 |
| Luminous Area – w x h (mm) | 0.3 x 1.0 | 0.3 x 1.0 | 0.2 x 0.35 | 0.25 x 0.25 | 0.25 x 0.25 |
| Luminous Efficacy (lm/W) | 40 | 40 | 26 | 22 | 30 |
| Length l1 max (mm) | 53 | 53 | 53 | 90 | 90 |
| Length l2 max (mm) | 47 | 47 | 47 | 82 | 82 |
| Distance a (mm) | 22 | 22 | 22 | 43 | 43 |
| Diameter d (mm) | 8.5 | 8.5 | 9 | 10 | 10 |
| Avg Rated Life (hrs) | 100 | 100 | 200 | 200 | 300 |
| Operating Position | s 45 | s 45 | s 45 | s 90 | s 90 |
| Cooling | Convection | Convection | Convection | Convection | Convection |
| Base Anode | SFa6-2 | SFa6-2 | SFa6-2 | SFa7.5-2 | SFa7.5-2 |
| Base Cathode | SFa6-2 | SFa6-2 | SFa8-2 | SFa9-2 | SFa9-2 |
| Fig No | 1 | 1 | 2 | 3 | 3 |
| Symbols & Footnotes | 58 | 58 | 58 | 58 | 58,222 |

# HBO® MERCURY SHORT ARC

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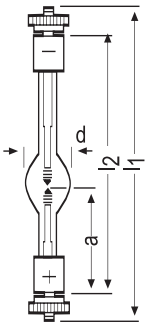
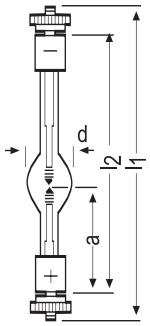



2

| Ordering Abbreviation | HBO R 103 W/45 | HBO 200 W/2 L1 | HBO 200 W/2 L2 | HBO 200 W/2 TM L2 | HBO 200 W/4 |
|---|---|---|---|---|---|
| Product Number | 69311 | 69198 | 69222 | 69223 | 69224 |
| Watts (W) | 100 | 200 | 200 | 200 | 200 |
| Volts (V) | 23 | 61 | 53 | 47 | 61 |
| Type of Current | DC | DC or AC | DC or AC | DC or AC | AC |
| Current (A) | 4.3 | | | | 3.6 |
| Lumens (lm) | | 9500 | 9500 | 9500 | 9500 |
| Luminous Intensity (cd) | | 1000 | 1000 | 1000 | 1000 |
| Average Luminance (cd/cm2) | | 40000 | 40000 | 40000 | 40000 |
| Luminous Area – w x h (mm) | | 0.6 x 2.2 | 0.6 x 2.2 | 0.6 x 2.2 | 0.6 x 2.2 |
| Luminous Efficacy (lm/W) | | 47.5 | 47.5 | 47.5 | 47.5 |
| Length l1 max (mm) | 81.50 | 128 | 128 | 128 | 128 |
| Length l2 max (mm) | | 102 | 102 | 102 | 102 |
| Distance a (mm) | | 40 | 40 | 40 | 40 |
| Diameter d (mm) | 67 | 17 | 17 | 17 | 17 |
| Avg Rated Life (hrs) | 300 | 400 | 400 | 200 | 200 |
| Operating Position | p 20 | s 45 | s 45 | s 45 | s 45 |
| Cooling | Convection | Convection | Convection | Convection | Convection |
| Base Anode | Pin | SFc10-4 | SFc10-4 | 8-32 UNC-3A | SFc10-4 |
| Base Cathode | Pin | SFc10-4 | SFc10-4 | 8-32 UNC-3A | SFc10-4 |
| Fig No | 1 | 2 | 2 | 2 | 2 |
| Symbols & Footnotes | 60,190,223 | 58,86,226,227 | 58,86,226,227 | 58,87 | 58,225 |

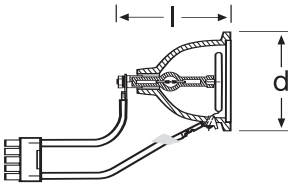
# HBO® MERCURY SHORT ARC




1

| Ordering Abbreviation | HBO 200 W/DC | HBO 200 W/DC TM | HBO 202 W/4 |
|---|---|---|---|
| Product Number | 69225 | 69163☼ | 69316 |
| Watts (W) | 200 | 200 | 200 |
| Volts (V) | 57 | 56 | 61 |
| Type of Current | DC | DC | AC |
| Current (A) | 3.5 | | 3.6 |
| Lumens (lm) | 10000 | 9500 | 0 |
| Luminous Intensity (cd) | 1100 | 1000 | 1000 |
| Average Luminance (cd/cm2) | 40000 | 40000 | 40000 |
| Luminous Area – w x h (mm) | 0.75 x 2.3 | 0.6 x 2.2 | 0.6 x 2.2 |
| Luminous Efficacy (lm/W) | 50 | 50 | 47.5 |
| Length l1 max (mm) | 128 | 128 | 128 |
| Length l2 max (mm) | 102 | 102 | 102 |
| Distance a (mm) | 40 | 40 | 40 |
| Diameter d (mm) | 17 | 17 | 17 |
| Avg Rated Life (hrs) | 1000 | 400 | 200 |
| Operating Position | s 15 | s20 | s 45 |
| Cooling | Convection | Convection | Convection |
| Base Anode | SFc10-4 | 8-32 UNC-3A | SFc10-4 |
| Base Cathode | SFc10-4 | 8-32 UNC-3A | SFc10-4 |
| Fig No | 1 | 1 | 1 |
| Symbols & Footnotes | 58 | 58,200 | 58,69 |

# HXP® MERCURY SHORT ARC

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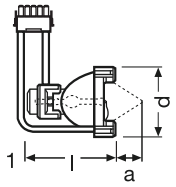
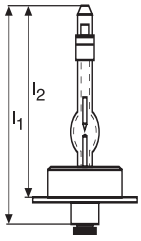



2

| Ordering Abbreviation | HXP R 120 W/17C | HXP R 120 W/45 C UV | HXP R 120 W/45 C VIS |
|---|---|---|---|
| Product Number | 69125 | 69120 | 69119 |
| Watts (W) | 120 | 120 | 120 |
| Volts (V) | 75 | 75 | 75 |
| Type of Current | AC | AC | AC |
| Current (A) | 1.4 | 1.4 | 1.4 |
| Lumens (lm) | 4400 | | 2800 |
| Color Temp (K) | | | 9500 |
| Length l max (mm) | 77 | 77 | 77 |
| Diameter d (mm) | 56 | 64 | 64 |
| Working Distance A (mm) | 17.3 | 45 | 45 |
| Avg Rated Life (hrs) | 2000 | 2000 | 2000 |
| Hot Restart | p 20 | p 20 | p 20 |
| Operating Position | Special | Special | Special |
| Base | Yes | Yes | Yes |
| Fig No | 1 | 2 | 2 |
| Symbols & Footnotes | 60,170,172,173,174 | 60,100,169,170,171,172, | 60,100,169,170,171,172 |

# HBO® MERCURY SHORT ARC FOR MICROLITHOGRAPHY

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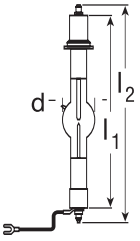


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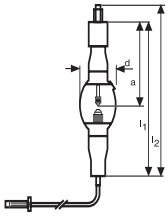

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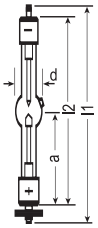


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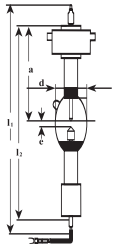
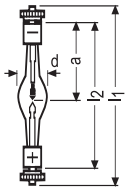


5

| Ordering Abbreviation | HBO 200 W/DN-I | HBO 201 W/HS-D2 | HBO 510 W/FU | HBO 250 W/BY | HBO 250 W/HS |
|---|---|---|---|---|---|
| Product Number | 69136 | 69168 | 69134 | 69246 | 69364 |
| Watts (W) | 200 | 200 | 200 | 250 | 250 |
| Volts (V) | 25 | 25 | 59 | 40 | 40 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 8.0 | 8.0 | 3.0 | 6.5 | 6.25 |
| Radiant Intensity 350..450 nm (mW/sr) | | | | | |
| Length l1 max (mm) | 145.8 | 150 | 111 | 152 | 143 |
| Length l2 max (mm) | 131 | 127 | 120 | 125 | 125 |
| Distance a (mm) | | | 55 | 62 | 62 |
| Diameter d (mm) | 20 | 20 | 16 | 20 | 20 |
| Electrode Gap -- cold (mm) | 1.9 | 2 | 2.4 | 2 | 2 |
| Avg Rated Life (hrs) | 1000 | 1000 | 400 | 1000 | 1000 |
| Operating Position | Horizontal | Vertical, anode up | Vertical, anode down | Vertical, anode down | Vertical, anode down |
| Cooling | Convection | Convection | Convection | Forced Base | Convection |
| Base Anode | | SFcX32-22 | Cable connection | SFc13-5/20 | SFa 13-5/20 |
| Base Cathode | | SFcX12-4/15 | SfcY 10-4/14 | SFc13-5/20 | Special |
| Fig No | 1 | 2 | 3 | 4 | 5 |
| Symbols & Footnotes | 129,160,186 | 129,160,186 | 182 | 186 | 160,186 |

# HBO® MERCURY SHORT ARC FOR MICROLITHOGRAPHY

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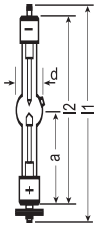


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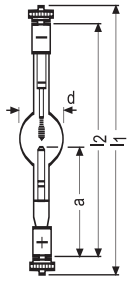


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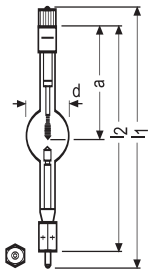
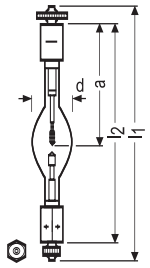



4

| Ordering Abbreviation | HBO 350 W | HBO 350 W/S | HBO 450 W/GS | HBO 500 W/A | HBO 500 W/B |
|---|---|---|---|---|---|
| Product Number | 69226 | 69228 | 69343 | 69205 | 69206 |
| Watts (W) | 350 | 350 | 450 | 500 | 500 |
| Volts (V) | 68 | 68 | 50 | 60 | 48 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 5.3 | 5.15 | 9.0 | 8.3 | 10.3 |
| Radiant Intensity 350..450 nm (mW/sr) | 4600 | 4700 | | 6230 | 5800 |
| Length l1 max (mm) | 128 | 127 | 150 | 190 | 180 |
| Length l2 max (mm) | 102 | 103 | 105 | 161.5 | 151.5 |
| Distance a (mm) | 45 | 52.5 | 53 | 73 | 78.5 |
| Diameter d (mm) | 20 | 20 | 22 | 29 | 29 |
| Electrode Gap -- cold (mm) | 2.9 | 3 | 2.2 | 4.5 | 3 |
| Avg Rated Life (hrs) | 600 | 600 | 600 | 800 | 800 |
| Operating Position | Vertical, anode down | Vertical, anode down | Vertical, anode down | Vertical, anode down | Vertical, anode down |
| Cooling | Convection | Convection | Convection | Convection | Convection |
| Base Anode | SFcY 10-4 | SFcY10-4 | SFc 13-8 | SFcY13-5 | SFcX13-5/20 |
| Base Cathode | SFcY 10-4 | SFcY10-4 | SFc 13-4 | SFcY13-5 | SFcY 13-15/20 |
| Fig No | 1 | 1 | 2 | 3 | 4 |
| Symbols & Footnotes | 89,229,230,231 | 89,231 | 291 | 231,235 | 96,231,236 |

# HBO® MERCURY SHORT ARC FOR MICROLITHOGRAPHY

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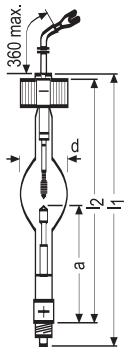


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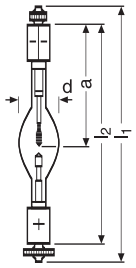


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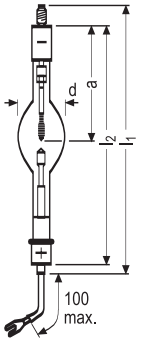


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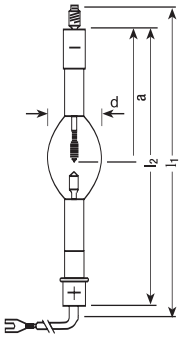
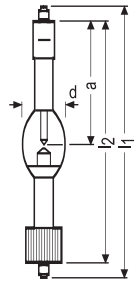



5

| Ordering Abbreviation | HBO 1000 W/CEL | HBO 1000 W/NEL | HBO 1002 W/CEL | HBO 1002 W/NEL | HBO 1002 W/NIL |
|---|---|---|---|---|---|
| Product Number | 69175 | 69176 | 69177 | 69273 | 69347 |
| Watts (W) | 750 | 750 | 750 | 750 | 750 |
| Volts (V) | 47 | 47 | 47 | 47 | 25 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 16.0 | 16.0 | 16.0 | 16.0 | 27.1 |
| Radiant Intensity 350..450 nm (mW/sr) | 8300 | 8300 | 8300 | 8300 | |
| Length l1 max (mm) | 175 | 190 | 175 | 190 | 187 |
| Length l2 max (mm) | 157 | 168 | 157 | 168 | 168 |
| Distance a (mm) | 78.5 | 84.5 | 78.5 | 78.5 | 78.5 |
| Diameter d (mm) | 28 | 28 | 28 | 28 | 29 |
| Electrode Gap -- cold (mm) | 3 | 3 | 3 | 3 | 3 |
| Avg Rated Life (hrs) | 2500 | 2500 | 2500 | 2500 | 1500 |
| Operating Position | Vertical, anode down | Vertical, anode down | Vertical, anode down | Vertical, anode down | Vertical, anode down |
| Cooling | Convection | Convection | Convection | Convection | Forced Base |
| Base Anode | SxFc15-6/20 | SFa15-5/16 | SFc15-6/20 | SFaX14-5/21 | SFaX14-5/21 |
| Base Cathode | SFc15-6/20 | SFaX14-5/21 | SXFc15-6/20 | SFc15-6/25 | SFc15-6/25 |
| Fig No | 1 | 2 | 3 | 4 | 5 |
| Symbols & Footnotes | 75,237,243 | 97,237,253,254 | 78,237,244 | 98,237,243 | 98,237,243 |

# HBO® MERCURY SHORT ARC FOR MICROLITHOGRAPHY

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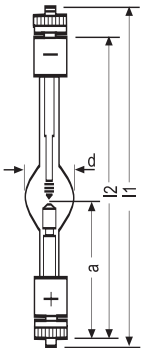


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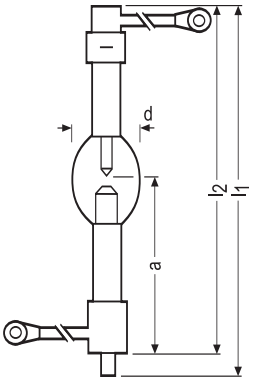
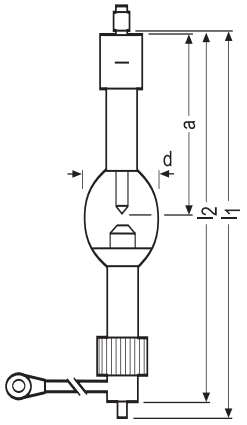



3

| Ordering Abbreviation | HBO 1003 W/PI | HBO 1003 W/PIL | HBO 1000 W/D | HBO 1500 W/CIEL | HBO 1500 W/CIL |
|---|---|---|---|---|---|
| Product Number | 69195 | 69180 | 69200 | 69171 | 69179 |
| Watts (W) | 750 | 750 | 1000 | 1500 | 1500 |
| Volts (V) | 26 | 26 | 38 | 23 | 23 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 27.1 | 25.8 | 26.5 | 65.2 | 65.2 |
| Radiant Intensity 350..450 nm (mW/sr) | | | 10800 | | |
| Length l1 max (mm) | 197 | 195 | 240 | 262 | 262 |
| Length l2 max (mm) | 169.5 | 169.5 | 208 | 242 | 242 |
| Distance a (mm) | 85 | 85 | 89.5 | 122 | 122 |
| Diameter d (mm) | 29 | 29 | 40 | 52 | 52 |
| Electrode Gap -- cold (mm) | 3 | 3 | 3 | 4 | 4 |
| Avg Rated Life (hrs) | 850 | 1500 | 1000 | 2250 | 1500 |
| Operating Position | Vertical, anode down | Vertical, anode down | Vertical, anode down | Vertical, anode down | Vertical, anode down |
| Cooling | Forced Base | Forced Base | Forced Base | Forced Base | Forced Base |
| Base Anode | SFcX14-6/25 | SFcX14-6/25 | SFc15-6/25 | SFa27-20/22 | SFa27-10/35 |
| Base Cathode | SFc15-6/25 | SFc15-6/25 | SFc15-6/25 | SFa27-20/23 | SFa27-20/23 |
| Fig No | 1 | 1 | 2 | 3 | 3 |
| Symbols & Footnotes | 237,242,249 | 64,237,242 | 74,243 | 258,260,266 | 260,266 |

# HBO® MERCURY SHORT ARC FOR MICROLITHOGRAPHY

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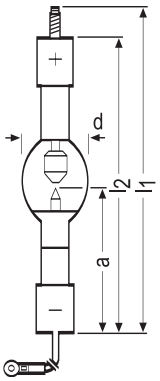


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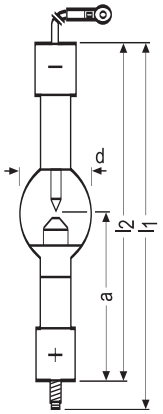
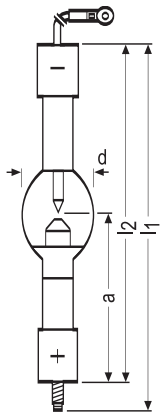



3

| Ordering Abbreviation | HBO 1500 W/PI | HBO 1500 W/PIL | HBO 1500 W/PIL HP | HBO 2000 W/NIL | HBO 2001 W/NIEL |
|---|---|---|---|---|---|
| Product Number | 69319 | 69181 | 69122 | 69303 | 69306 |
| Watts (W) | 1500 | 1500 | 1500 | 1750 | 1750 |
| Volts (V) | 23 | 23 | 23 | 26 | 26 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 65.2 | 65.2 | 65.0 | 67.0 | 67.0 |
| Radiant Intensity 350..450 nm (mW/sr) | | | | 5200 | |
| Length l1 max (mm) | 267 | 273 | 273 | 241 | 251 |
| Length l2 max (mm) | 240 | 242 | 242 | 221 | 231 |
| Distance a (mm) | 118 | 118 | 118 | 112.25 | 112.5 |
| Diameter d (mm) | 47 | 46 | 52 | 52 | 52 |
| Electrode Gap -- cold (mm) | 4 | 4 | 4 | 4.5 | 4.5 |
| Avg Rated Life (hrs) | 850 | 1500 | 1500 | 1500 | 2250 |
| Operating Position | Vertical, anode down | Vertical, anode down | Vertical, anode down | Vertical, anode up | Vertical, anode down |
| Cooling | Forced Base | Forced Base | Forced Base | Forced Base | Forced Base |
| Base Anode | SFc30-6/25 | SFc30-6/25 | SFc30-6/25 | SFc27-12/35 | SFc27-10/35 |
| Base Cathode | SFc27-10/35 | SFc27-10/35 | SFc27-10/35 | SFc27-7/35 | SFc27-7/35 |
| Fig No | 1 | 1 | 1 | 2 | 3 |
| Symbols & Footnotes | 257,262 | 61,262 | 241,242 | 241,260 | 241,260 |

# HBO® MERCURY SHORT ARC FOR MICROLITHOGRAPHY

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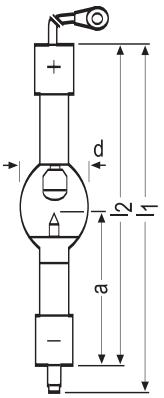


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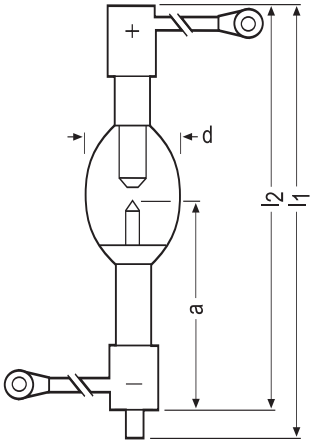


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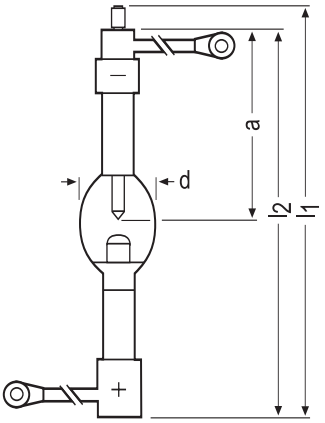
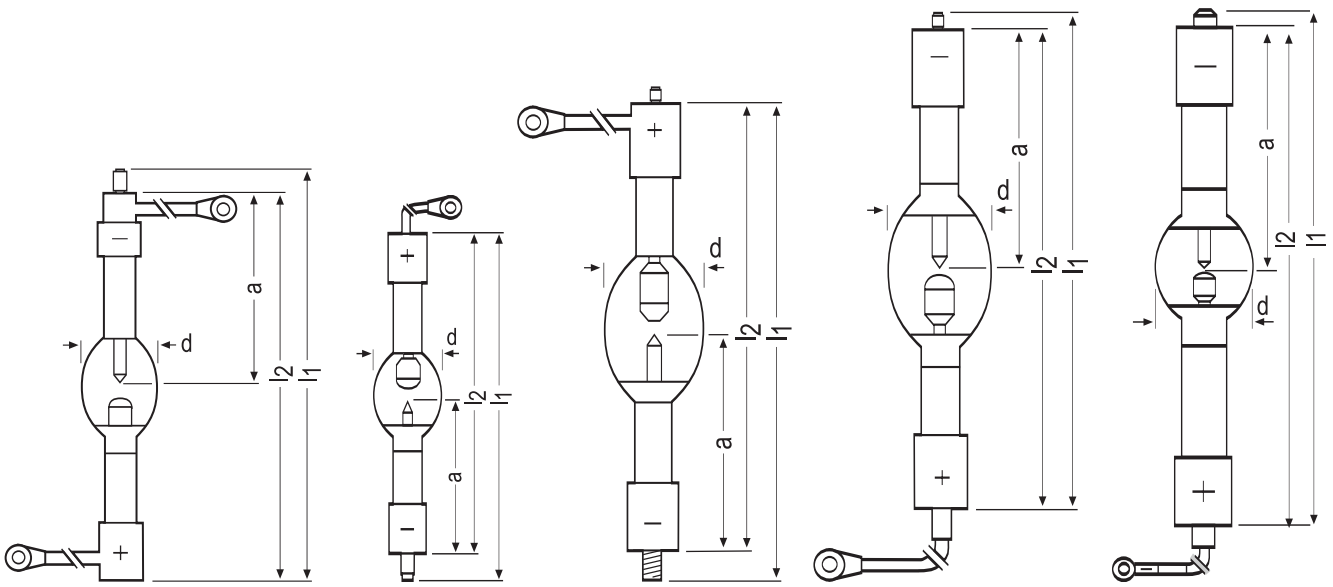



4

| Ordering Abbreviation | HBO 2001 W/NIL | HBO 2002 W/NIL | HBO 2001 W/CIEL | HBO 2001 W/CIL | HBO 2002 W/MA |
|---|---|---|---|---|---|
| Product Number | 69292 | 69287 | 69166 | 69189 | 69199 |
| Watts (W) | 1750 | 1750 | 2000 | 2000 | 2000 |
| Volts (V) | 26 | 24 | 26 | 26 | 37 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 67.0 | 67.0 | 77.0 | 77.0 | 54.0 |
| Radiant Intensity 350..450 nm (mW/sr) | | | | | |
| Length l1 max (mm) | 251 | 254 | 329 | 329 | 292 |
| Length l2 max (mm) | 231 | 234 | 309 | 307 | 272 |
| Distance a (mm) | 112 | 107.5 | 148.75 | 149 | 138.5 |
| Diameter d (mm) | 50 | 52 | 62 | 62 | 62 |
| Electrode Gap -- cold (mm) | 4.5 | 4.5 | 4 | 4.5 | 3 |
| Avg Rated Life (hrs) | 1500 | 1500 | 2250 | 1500 | 1000 |
| Operating Position | Vertical, anode down | Vertical, anode up | Vertical, anode up | Vertical, anode up | Vertical, anode down |
| Cooling | Forced Base | Forced Base | Forced Base | Forced Base | Forced Base |
| Base Anode | SFc27-10/35 | SFc27-7/35 | SF33.5/50 | SF33.5/50 | SF27/35 |
| Base Cathode | SFaX27-7/35 | SFc27-10x1.25/35 | SFa33.5-10/50 | SFa33.5-10//50 | SFa27-10/35 |
| Fig No | 1 | 2 | 3 | 3 | 4 |
| Symbols & Footnotes | 241,260 | 79,241 | 79,114,264 | 79,241,264 | 79,241,260 |

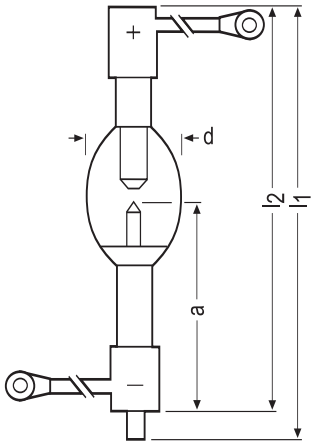
# HBO® MERCURY SHORT ARC FOR MICROLITHOGRAPHY



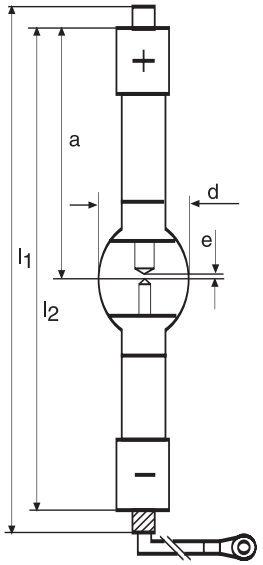

1 2 3 4 5

| Ordering Abbreviation | HBO 2002 W/MAL | HBO 2011 W/NIL | HBO 2500 W/PIL | HBO 2501 W/NIL | HBO 2510 W/NIL |
|---|---|---|---|---|---|
| Product Number | 69121 | 69288 | 69172 | 69289 | 69299 |
| Watts (W) | 2000 | 2000 | 2500 | 2500 | 2500 |
| Volts (V) | 40 | 24 | 28 | 23 | 23 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 50.0 | 80.0 | 90.0 | 110.0 | 109.0 |
| Radiant Intensity 350..450 nm (mW/sr) | | | | | |
| Length l1 max (mm) | 292 | 256 | 350 | 367 | 367 |
| Length l2 max (mm) | 272 | 236 | 315 | 327 | 327 |
| Distance a (mm) | 138.5 | 107.75 | 149 | 157.75 | 157.5 |
| Diameter d (mm) | 62 | 52 | 62 | 70 | 70 |
| Electrode Gap -- cold (mm) | 3 | 4.5 | 6.7 | 4.5 | 4.5 |
| Avg Rated Life (hrs) | 1500 | 1500 | 1500 | 1500 | 1500 |
| Operating Position | Vertical, anode down | Vertical, anode up | Vertical, anode up | Vertical, anode down | Vertical, anode up |
| Cooling | Forced Base | Forced Base | Forced Base | Forced Base | Forced Base |
| Base Anode | SF27/35 | SFc27-7/35 | SFc30-6/50 | SFc33.5-8/50 | SFc33.5-8/50 |
| Base Cathode | SFa27-10/35 | SFc27-12x1.5/35 | SFc30-6.3/50 | SFc33.5-14/5 | SFc33.5-14/50 |
| Fig No | 1 | 2 | 3 | 4 | 5 |
| Symbols & Footnotes | 79,260 | 79,241 | 241,242,266 | 79 | 72,241 |

# HBO® MERCURY SHORT ARC FOR MICROLITHOGRAPHY




1

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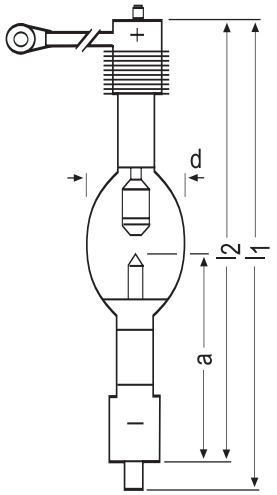
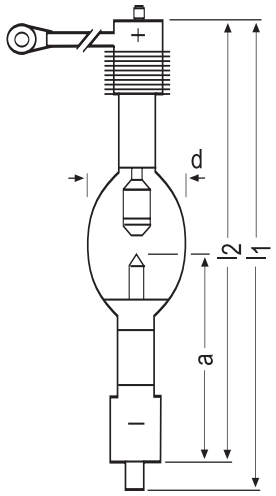


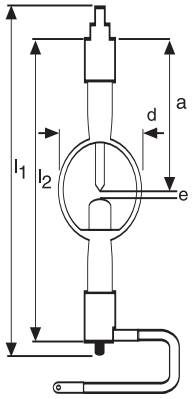

3

| Ordering Abbreviation | HBO 2700 W/CIL | HBO 3500 W/NIL | HBO 3500 W/PI | HBO 3500 W/PIL | HBO 3501 W/PI |
|---|---|---|---|---|---|
| Product Number | 69344 | 69456☼ | 69174 | 69169 | 69127 |
| Watts (W) | 2700 | 3500 | 3400 | 3400 | 3400 |
| Volts (V) | 24 | 27 | 23 | 23 | 23 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 110.0 | 130 | 148.0 | 148.0 | 148.0 |
| Radiant Intensity 350..450 nm (mW/sr) | | | | | |
| Length l1 max (mm) | 334 | 382 | 340 | 360 | 360 |
| Length l2 max (mm) | 309 | 337 | 315 | 315 | 315 |
| Distance a (mm) | 148.75 | 180 | 154 | 154 | 154 |
| Diameter d (mm) | 62 | 82 | 77 | 77 | 77 |
| Electrode Gap -- cold (mm) | 4.8 | 5.5 | 4.5 | 4.5 | 4.5 |
| Avg Rated Life (hrs) | 1500 | 1500 | 850 | 1500 | 850 |
| Operating Position | Vertical, anode up | Vertical, anode up | Vertical, anode up | Vertical, anode up | Vertical, anode up |
| Cooling | Forced Base | Forced Base | Forced Base | Forced Base | Forced Base |
| Base Anode | SFa33.5/50 | SFc33.5-16-50 | SFaX40-6/50 | SFaX40-6/50 | SFaX40-6/50 |
| Base Cathode | SFa33.5-14.59 | SFa33.5-12/50 | SFc32.5-6.7/50 | SFc32.5-6.7/50 | SFc32.5-6.7/50 |
| Fig No | 1 | 2 | 3 | 3 | 3 |
| Symbols & Footnotes | 79,129,264 | 129,260,284 | 99,241,266 | 241,266 | 241,266 |

# HBO® MERCURY SHORT ARC FOR MICROLITHOGRAPHY




1

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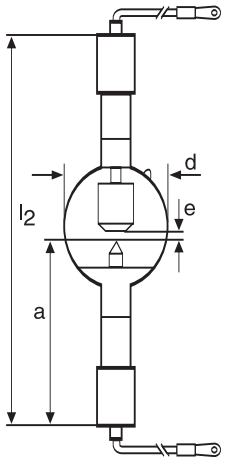


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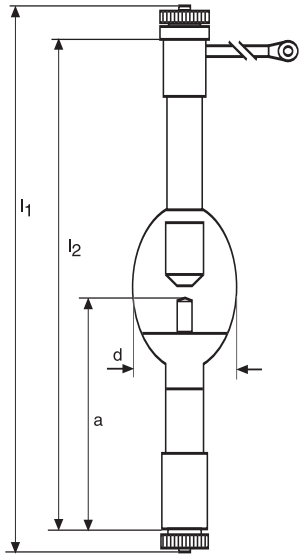
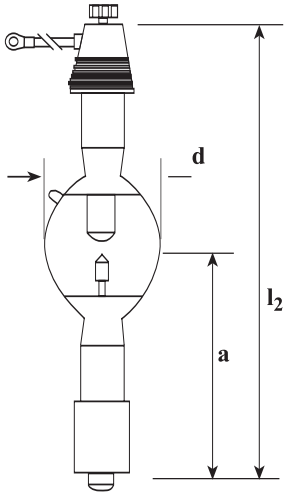


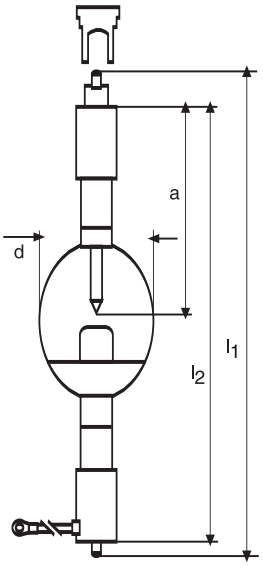

4

| Ordering Abbreviation | HBO 3501 W/PIL | HBO 3500 W/HK | HBO 4500 W/CIL | HBO 5000 W/TA | HBO 5001 W/UF |
|---|---|---|---|---|---|
| Product Number | 69165 | 69137☼ | 69162 | 69135 | 69161☼ |
| Watts (W) | 3400 | 3500 | 4500 | 5000 | 5000 |
| Volts (V) | 23 | 55 | 30 | 50 | 62 |
| Type of Current | DC | DC | DC | DC | DC |
| Current (A) | 148.0 | 63.5 | 148.0 | 100.0 | 80.0 |
| Radiant Intensity 350..450 nm (mW/sr) | | | | | |
| Length l1 max (mm) | 360 | 315 | 360 | | 486 |
| Length l2 max (mm) | 315 | | 315 | 327.5 | 355 |
| Distance a (mm) | 154 | 142.7 | 154 | 148.5 | 206 |
| Diameter d (mm) | 77 | 70 | 77 | 80 | 85 |
| Electrode Gap -- cold (mm) | 4.5 | 6.4 | 4.5 | 7.5 | 7.5 |
| Avg Rated Life (hrs) | 1500 | 1000 | 1500 | 850 | 850 |
| Operating Position | Vertical, anode up | Vertical, anode up | Vertical, anode up | Vertical, anode up | Vertical, anode up |
| Cooling | Forced Base | Forced Base | Forced Base | Forced Base | Forced Base |
| Base Anode | SFc32.5-6.7/50 | SFa 27-10/42 | SFAX40-6/50 | SFa 33.5-12/50 | SFa 38-14/65 |
| Base Cathode | SFaX40-6/50 | SFc 27-14-8/35 | SFC32.5-6.7/50 | SFa 33.5-12/50 | SFXa 38-14/65 |
| Fig No | 1 | 2 | 1 | 3 | 4 |
| Symbols & Footnotes | 163,266 | 100,189 | 186 | 183,266 | 135,266 |

# HBO® MERCURY SHORT ARC FOR MICROLITHOGRAPHY



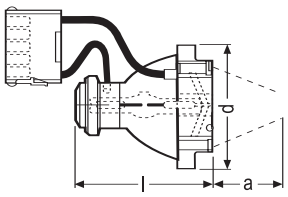

1




2

| Ordering Abbreviation | HBO 5500 W/PI | HBO 5000 W/HK |
|---|---|---|
| Product Number | 69164 | 69138☼ |
| Watts (W) | 5000 | 5100 |
| Volts (V) | 25 | 70 |
| Type of Current | DC | DC |
| Current (A) | 200.0 | 72.0 |
| Radiant Intensity 350..450 nm (mW/sr) | | 65.8 |
| Length l1 max (mm) | | 355 |
| Length l2 max (mm) | 355 | 302 |
| Distance a (mm) | 154 | 152.5 |
| Diameter d (mm) | 85 | 82 |
| Electrode Gap -- cold (mm) | 5.5 | 7.5 |
| Avg Rated Life (hrs) | 850 | 1000 |
| Operating Position | Vertical, anode up | Vertical, anode down |
| Cooling | Forced Base | Forced Base |
| Base Anode | SFcX 42.5-6/50 | SFYa29-10/42 |
| Base Cathode | SFa 37.5-9/50 | SFc29-20-12/42 |
| Fig No | 1 | 2 |
| Symbols & Footnotes | 135,201,266 | 80 |

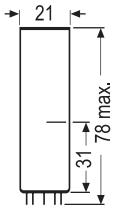
# VIP® VIDEO AND DATA PROJECTION




1

| Ordering Abbreviation | VIP R 273/45 |
|---|---|
| Product Number | 69327 |
| Watts (W) | 270 |
| Volts (V) | 38 |
| Current (A) | 7.1 |
| Lumens (lm) | 17000 |
| Average Luminance (cd/cm2) | 100000 |
| Color Temp (K) | 5800 |
| Length l (mm) | 73 |
| Distance a (mm) | 45 |
| Diameter d (mm) | 67 |
| Arc Length (mm) | 1.9 |
| Avg Rated Life (hrs) | 1000 |
| Operating Position | Horizontal, tip-off up |
| Base | |
| Hot Restart | Yes |
| Fig No | 1 |
| Symbols & Footnotes | 1,113,124 |

# SPECTRAL

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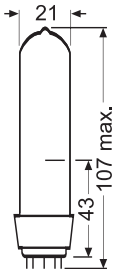
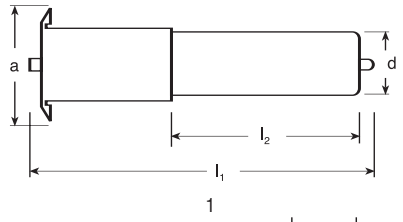



2

| Ordering Abbreviation | Na 10 FL | Na/10 |
|---|---|---|
| Product Number | 69284 | 69282 |
| Elements | Sodium | Sodium |
| Watts (W) | 9 | 15 |
| Volts (V) | 16 | 15 |
| Current (A) | 0.57 | 1.0 |
| Type of Current | AC | AC |
| Operating Position | Vertical, base down | Vertical, base down |
| Base | Pico 9 | Pico 9 |
| Fig No | 1 | 2 |
| Symbols & Footnotes | 119,128 | 128 |

# EXCIMER LAMPS

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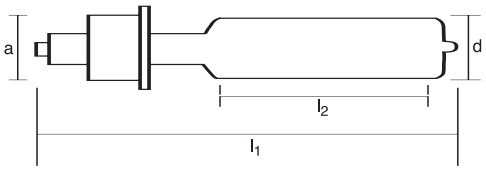


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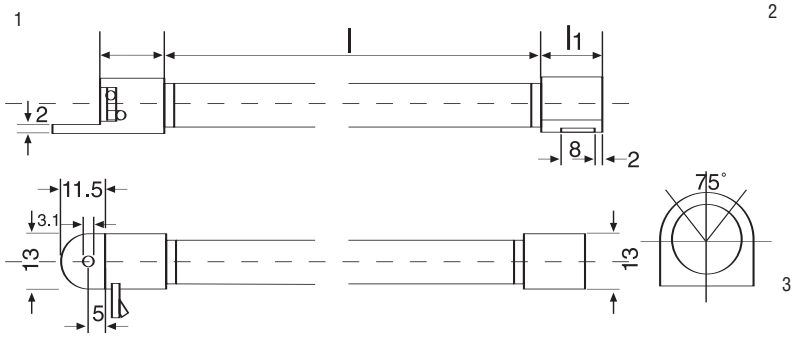



3

## XERADEX®

| Ordering Abbreviation | XERADEX 20 | XERADEX 20/HV | XERADEX 20/SY45/45 |
|---|---|---|---|
| Product Number | 69338 | 69352 | 69349 |
| Watts (W) | 20 | 20 | 20 |
| Length l1 max (mm) | 245 | 245 | 300 |
| Length l2 max (mm) | 120 | 120 | 125 |
| Distance a (mm) | 75 | 75 | 45 |
| Diameter d (mm) | 40 | 40 | 40 |
| Avg Rated Life (hrs) | 1500 | 1500 | 1500 |
| Operating Position | Any | Any | Any |
| Fig No | 1 | 1 | 2 |
| Symbols & Footnotes | 115,118,145,147 | 115,118,145,158 | 115,118,145,148 |

## LINEX®

| Ordering Abbreviation | LX40T3/956/A3 | LX24T3/956/A4 |
|---|---|---|
| Product Number | 52079 | 52155 |
| Watts (W) | 40 | 24 |
| Avg Rated Life (hrs) | 2000 | 2000 |
| Base | Special | Special |
| Illuminance @ 8mm (Lx) | 80000 | 48000 |
| Bulb | T3 | T3 |
| Lamp Finish | Coated | Coated |
| Hot Restart | Yes | Yes |
| Length L (mm) | 350 | 235 |
| Length L1 (mm) | 15 | 15 |
| MOL (mm) | 391.5 | 267.5 |
| Fig No | 3 | 3 |
| Symbols & Footnotes | 176,204 | 176,204 |

# LAMP BASES

BA15d
IEC 7004-11
DIN 49721
DL
Bayonet

BA15s
IEC 7004-11A
DIN 49720
SC
Bayonet

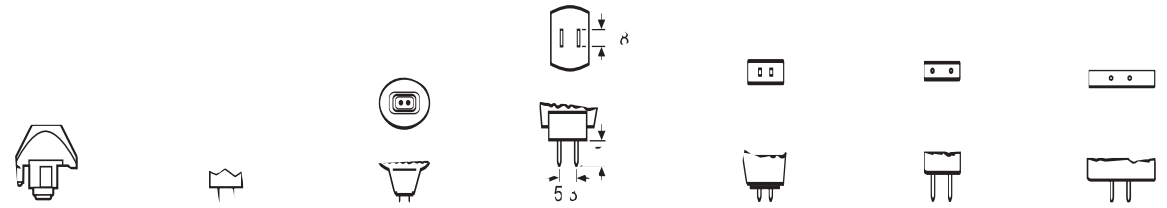
BA20d
IEC 7004-12
DIN 49730

E10
IEC 7004-22
DIN 49610
miniature
Edison

E14
IEC 7004-23
DIN 49615
small
Edison

E27/E26
IEC 7004-21
DIN 49620
E26-NA
E27-EURO

E40/E39
IEC 7004-21
DIN 49625
E39-NA
E40-EURO



FaX1.5-3x1

G4
IEC 7004-72
DIN 49757
2-pin

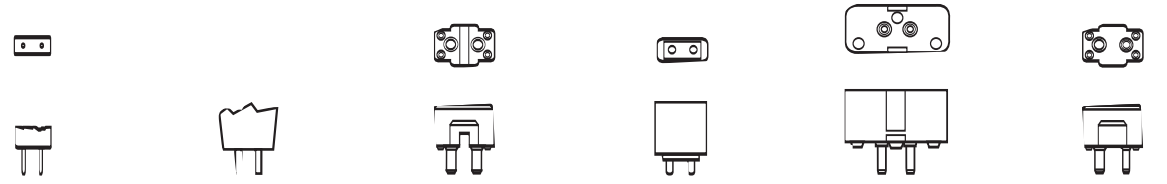
GX5.3
IEC 7004-61
DIN 49640
2-pin

G5.3-4.8
2-pin

GY5.3
2-pin

G6.35-15
G6.35-20
G6.35-25
IEC 7004-59
2-pin

GX6.35-25
IEC 7004-59
2-pin



GY6.35-15
IEC 7004-59
2-pin

GZ6.35
IEC 7004-59 A
DIN 49754
2-pin

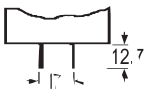
GZX9.5
GZZ9.5
IEC 7004-70 B
DIN 49756
2-pin
pre-focus

G9.5
IEC 7004-70
medium
2-pin

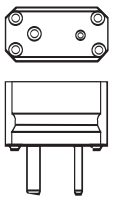
GX9.5
DIN 49638
IEC 7004-70 A
2-pin
pre-focus

GY9.5
GZ9.5
DIN 49756
IEC 7004-70 B
2-pin
pre-focus

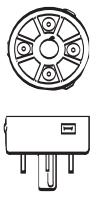
## LAMP BASES




GX16d
2-pin



GY16
DIN 49758
IEC 7004-45
2-pin



GY17q
DIN 49758
IEC 7004-74
4-pin

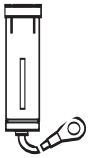
GY17t
DIN 49665
IEC 7004-45
4-pin

G22
IEC 7004-75
medium
Bipost

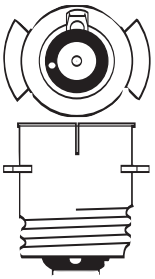
GY22
2-pin

G38
IEC 7004-76
MOGUL
Bipost

GX38q



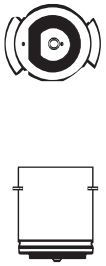
K24s
Length of cable
250 mm
Hole of cable lug
ø 8.4 mm
DIN 49748



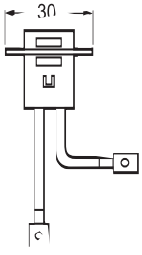
P40s
DIN 49728
IEC 7004-43
medium
pre-focus

Pico9
DIN 41539

PG22-6.35
DIN 49751
IEC 7004-48

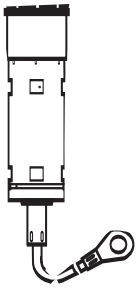


P28s
DIN 49728
IEC 7004-42
MOGUL
pre-focus

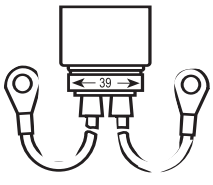



PK30d

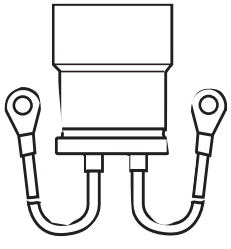
R7s
RX7s
DIN 49750
IEC 7004-92



K30 s
Length of cable
275 mm
Hole of cable lug
dia 8.4 mm
DIN 49748

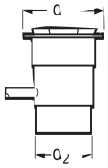



K39 d
with flexible Siaf cable
Length of cable 300 mm.
Hole of cable lug dia. 8.4 mm

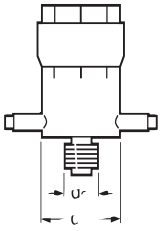


K59 d
with flexible Siaf cable
Length of cable 350 mm.
Hole of cable lug dia. 8.4 mm
DIN 49732

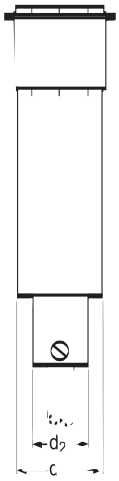
# LAMP BASES



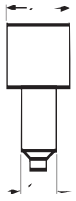
SK27-50



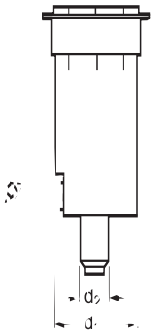
SFcX27-8
(5/16-18UNC-2 A)



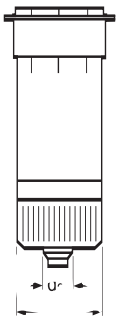
SFa15-10
SFa16-8
SFa16-10
SFa20-8
SFa20-10
SFa25-10
SFa27-8
SFa27-10
SFa27-11
SFa27-12
SFa27-14
SFa28-18



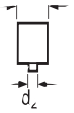
SFa21-12
DIN 49759



SFaX27-10
SFaX27-9.5
SFaX27-12
SFaX27-13
SFaX27-14
SFaX30-9.5
SFaX30-16



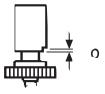
SFc25-14 (M 14x1.5)
SFc27-14 (M 14x1.5)



SFa5-2
SFa6-2
SFa7.5-2
SFa8-2
SFa9-2
SFa12-11
SFa21-5

SFcX12-4
(with M4 thread and centering collar)

SFcX 13-4
SFcX 15-4 (with US inch thread 8-32 UNC-3A and centering collar)



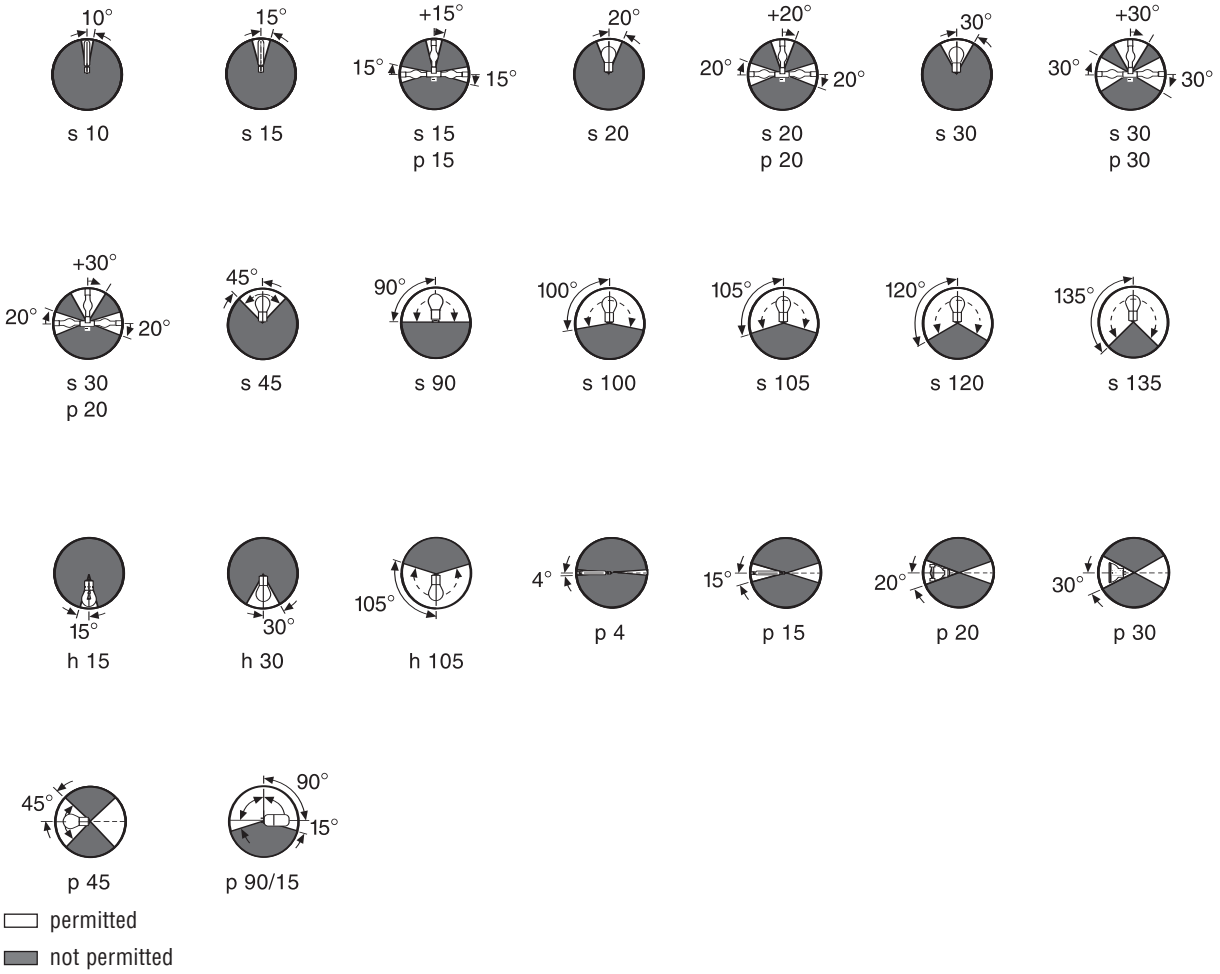
SFc10-4 M4-thread
SFc6-3 M3-thread
SFc12-4 M4-thread
SFc13-4 M4-thread

SX15s

X515
DIN 49613

## OPERATING POSITIONS

### Schematic diagrams




## GENERAL INFORMATION

In North America, OSRAM brand Display/Optic lighting products are sold by OSRAM SYLVANIA AND OSRAM SYLVANIA LTD. Sales are subject to standard terms and conditions of sale prevailing as of the date of purchase.

Operational data and dimensions are nominal values. OSRAM reserves the right to make technical modifications without notice. All supplies are subject to availability.
® = Registered trademarks of OSRAM GmbH

Lamps are designated in accordance with ANSI standard C78.370-1982 (As amended).

When disposing of spent lamps, always consult federal, state, local and/or provincial hazardous waste disposal rules and regulations to ensure proper disposal.

Use of improper, unapproved or unsuitable ballasts will negatively impact the performance of Display/Optic lamps and could void the lamp warranty. A list of power supply manufacturers is available upon request.

Discharge lamps in the HCD®, HMD®, HMI®, HMP®, HTI®, HSR®, HSD®, HBO®, HXP®OSRAM STUDIOLINE®and VIP® types and the spectral lamps contain small quantities of harmful substances (such as mercury).

# SYMBOLS & FOOTNOTES FOR DISPLAY/OPTIC LAMPS

| Symbol | Description |
|---|---|
| ☼ | New item introduced within the past year. |
| ⏏ | Item will be discontinued when inventory is depleted. |

| Footnote | Description |
|---|---|
| 1 | Type of current: square-wave AC. |
| 2 | Lamp arc needs to be in horizontal operating position. |
| 3 | Any operating position allowed with appropriate cooling. |
| 4 | In certain countries there are third party property rights relating to equipment which must be observed if these lamps are used in dentistry. |
| 5 | Lamp suited for video camera heads; 500hr life @ 1.8V/ 45 min. ON / 15 min. OFF. |
| 6 | WARNING: This lamp is designed for heating purposes. It emits a strong Infrared radiation with a temperature at focal point approx. 1300 degrees C. Read Safety and Warning instructions before using this lamp. |
| 7 | Lamp also available in BELLAPHOTŌ (Product Number 54163). |
| 8 | Lamp also available in BELLAPHOTŌ (Product Number 54840). |
| 9 | Lamp service life 75hr life is defined at 76V with a duty cycle of 45 min. ON / 15 min. OFF. |
| 10 | Current bar needs to be positioned underneath the discharge arc during operation. |
| 11 | Lamp also available in 240 V model. |
| 12 | Preferred operating position is horizontal; vertical possible for short periods. |
| 13 | Lamp has internal proximity reflector. |
| 14 | Base - filament connections: Pins 1 and 4. |
| 15 | Lamp has monoplane filament 10 X 10 mm. |
| 16 | Lamp has monoplane filament. |
| 17 | Lamp also available as a 240V model (Product Number 54977). |
| 18 | Lamp has a biplane filament. |
| 19 | WARNING: Lamp has a special GY22 base. Ignition voltage must be applied only to the thin pin. |
| 20 | Lamp interchangeable with HX 602 |
| 21 | Lamp interchangeable with HX 600 |
| 22 | Lamp also available as 115V model (Product Number 54636). |
| 23 | Lamp has two separately switchable filaments. |
| 24 | Length l = Contact to contact. |
| 25 | Lamp also available in 240 V version : Product Number 54619. |
| 26 | High-performance HPL halogen lamps are manufactured under license from ETC,Inc. |
| 27 | Do not tilt perpendicular to the filament. |
| 28 | WARNING: The contact pins on the base are connected internally. The electrode farthest from the base must be connected via cable. |
| 29 | MFL=Medium Flood |
| 30 | NSP=Narrow Spot |
| 31 | WFL=Wide Flood |
| 32 | VNSP=Very Narrow Spot. |
| 33 | With biplane filament , higher luminous intensity can be achieved. |
| 34 | Lamp has a flat core filament with filament area perpendicular to the lamp axis. |
| 35 | Hg 100 also suitable for DC operation (no igniter needed when connected to 230V) |
| 36 | Lamp also available with connecting cable and plug-in contact.XBO R 180W/45 C OFR (Product Number 69183). |
| 37 | Lampholder for FaX 1.5 base = HMI Socket 46721 (Product Number 69302). |
| 38 | Lamp also available in ozone-free version XBO 75 W/2 OFR (Product Number 69232) |
| 39 | Lamp also available in ozone-free version XBO 150 W/1 OFR (Product Number 69235) |
| 40 | Lamp uses Suprasil quartz glass. |
| 41 | Lamp also available in ozone-free version XBO 450 W OFR (Product Number 69245) |
| 42 | Lamp also available in Suprasil quartz glass version XBO 450 W/4 (Product Number 69244) |
| 43 | S=Short |
| 44 | C=Base with Cable |

## SYMBOLS & FOOTNOTES FOR DISPLAY/OPTIC LAMPS

| Footnote | Description |
|---|---|
| 45 | H=Suitable for horizontal operation |
| 46 | TC=Thread and Cable |
| 47 | CA=Cable on anode base |
| 48 | All HTI« lamps are hot restrikeable with the exception of HTI 150, HTI 152, HTI 405 W/SE, and 705 W/SE. |
| 49 | SHSC=Extra short version for horizontal burning position, anode connection via cable (super short) |
| 50 | TM=Threaded Modified |
| 51 | TP=Threaded Pin |
| 52 | GS=Gap Shortened |
| 53 | SE=Single Ended |
| 54 | DE=Double Ended |
| 55 | DX= Double Ended eXtreme Seal technology |
| 56 | OFR=Ozone Free |
| 57 | Molybdenum pins have 1mm diameter. |
| 58 | s (Operating Position) = Vertical, base down |
| 59 | h (Operating Position) = Vertical, base up |
| 60 | p (Operating Position) = Horizontal |
| 61 | Lamp also available with 850 hr HBO 1500 W/PI (Product Number 69319) |
| 62 | Lamp also available as version HBO 2001 W/CI with 850hr life (Product number 69219) |
| 63 | Lamp is also available with connecting cable and plug-in contact. HTI 250W/32 C (Product Number 54089). |
| 64 | Lamp also available as version HBO 1003 W/PI with 850hr life (Product Number 69195) |
| 65 | Lamp also available as version HBO 2500 W/PI with 850hr life (Product Number 69178) |
| 66 | Technical data if operated on AC: Current = 7.1 A, Volts = 67 V. |
| 67 | Average service life of lamp if operated with 400W is 100 hrs. |
| 68 | Magnetic arc stabilization required. |
| 69 | Lamp same as HBO 200 W/4 (Product Number 69224 but with increased radiation in the wavelength range below 450nm for UV-curing. |
| 70 | Technical lamp data if operated on AC: Current=4.2 A, Volts=65 V, Lumens=10,000 lm, Luminous Efficacy=50 lm/W. |
| 71 | Electrical data if lamp is operated on AC: Current=7.8 A, Volts=67 V. |
| 72 | Lamp has been specially adjustment for uniform illumination in the far field(200-250) mm focal length. |
| 73 | Cathode Base with 8-32 UNC-3A thread. |
| 74 | Anode Base=Sleeve base with M 6 thread. |
| 75 | Anode Base=Hexagon base with M 6 thread. |
| 76 | Anode Base with 8-32 UNC-3A thread. |
| 77 | Anode Base=Sleeve base with cooling fins and cable connection (M 6). |
| 78 | Anode Base with M 6 thread. |
| 79 | Anode Base with cable connection (M 8). |
| 80 | Anode Base with cable connection (M 6). |
| 81 | Anode Base with 8-32 UNC-3 thread. |
| 82 | Pin dimensions at front ceramic ring 2mm diameter, 10 mm length. Pin dimensions at rear ceramic base cap 2.5mm diameter, 11mm length. |
| 83 | Anode base with M 5x 0.9 thread |
| 84 | Cathode Hexagon base with M 5x 0.9 thread |
| 85 | Anode base with cable: length 340mm; connector 8/25. |
| 86 | For DC operation both Product Numbers 69198 & 69222 can be used (47...65Volts / 3.1...4.2Amps). For AC operation Product Number 69198 (L1 version 57 65 Volt / 3.6 Amps) or Product Number 69222 (L2 version 49 57 Volt / 4.2 Amps) can be used. |
| 87 | Product Number 69223 can be used for DC operation (47...65 Volts / 3.1...4.2Amps) and for AC operation (L2 version 49 57 Volt / 4.2 Amps). |
| 88 | For DC operation Product Number 69204 can be used (67-85 Volts / 5.9 - 7.4 Amps). For AC operation Product Number 69204 can be used (L2 version 69-77 Volt / 7.8 Amps). |
| 89 | Anode and Cathode Base with UNC-3B thread. |
| 90 | Type of current: sine-wave (sinusoidal) AC. |

## SYMBOLS & FOOTNOTES FOR DISPLAY/OPTIC LAMPS

| Footnote | Description |
|---|---|
| 91 | Photometric data refer to discharge tube (lamp burner). |
| 92 | Lamp also available with 850 hrs (HBO 3500 W/PI, Product Number 69174) |
| 93 | Lamp also available with 850 hrs (HBO 3501 W/PI, Product Number 69127) |
| 94 | Lamp also available as Longlife version HBO 2500 W/PIL with 1500hr life (Product Number 69172). |
| 95 | Lamp also available as Longlife version HBO 3500 W/PIL with 1500hr life (Product Number 69169). |
| 96 | Cathode base with M 5x 0.9 thread |
| 97 | Cathode base with cable connection (M5) |
| 98 | Anode Base=Sleeve base with cable connection (M5) |
| 99 | Lamp also available as Longlife version HBO 3500 W/PIL with 1500hr life (Product Number 69169). |
| 100 | Anode base with cable connection |
| 101 | Length l1 = Contact to contact. |
| 102 | Lamp has a parabolic reflector. |
| 103 | Lamp wattage - After seasoning for 1/2 hour 1000 watts based on 2 filaments together, 400 watts based on 1 filament. |
| 104 | Average service life = 25 hrs. based on 2 filaments together, 100 hrs. with 1 filament. |
| 105 | Average service life = 50 hrs. based on 2 filaments together, 100 hrs. with 1 filament. |
| 106 | Ignition voltage = 36 kVs |
| 107 | Ignition: Min. open circuit voltage for cold / hot ignition = 85 / 110 V |
| 108 | Cooling: Min. air flow velocity around discharge vessel = 6 m/s |
| 109 | Magnetic arc stabilization: necessary for horizontal operation |
| 110 | Product number 54100 is the replacement for product number 54048. |
| 111 | HMI PAR lens set for OSRAM HMI 1200 PAR 64 comprising of NSP, VNSP, MFL, and VWFL lenses. |
| 112 | OSRAM socket #46721, cable length 22" for use with the following OSRAM lamps: HTI 400W/SE (product number 54084), HTI 600W/SE (product number 54087), and HMI 250W/SE (product number 54062). |
| 113 | Lamp has a elliptical reflector. |
| 114 | Lamp also available as version HBO 2001 W/CIL with 1500hr life (product number 69189) |
| 115 | The XERADEX 20 lamp must be operated with DBD 20/110-240/ECG-XERADEX power supply (Product Number 69128 or 69129). |
| 116 | This power supply is designed to operate the XERADEX 20 lamp (Product Number 69338). |
| 117 | Lumens refers to screen lumens. |
| 118 | XERADEX lamps are only to be operated in appropriate equipment. Read and understand the Product Safety Warnings before using this product. XERADEX lamps generate a strong 172 nm (VUV) radiation. This short-wave radiation will convert atmospheric oxygen (O2) surrounding the lamp into ozone (O3). Ozone gas is toxic when inhaled in high concentrations over long periods of time. Ozone levels can be measured and monitored with commercial measuring equipment. Always keep ozone levels below the applicable TLV (threshold limit value). |
| 119 | For Na 10 FL (product number 69284) use adapter no. 454/s using Pico 9 bases with P28 sockets. |
| 120 | Lamp also available with male connectors (Product Number 58722) |
| 121 | Lamp also available with female connectors (Product Number 58697) |
| 122 | Lamp also available with male connectors (Product Number 58726) |
| 123 | Lamp also available with female connectors (Product Number 58721) |
| 124 | All VIP« lamps are for AC operation on electronic power supplies and are hot restrikeable. All VIP« lamps need forced cooling. |
| 125 | Lamp also available with female connectors (Product Number 58709) |
| 126 | Lamp also available with female connectors (Product Number 58717) |
| 127 | Clean room ready packaging. |
| 128 | Safety: Because the danger from glare, UV radiation and overpressure during operation, spectral lamps may only be operated in sealed housings specially designed for the purpose. Suitable filters must be fitted to ensure that UV radiation is reduced to permissible levels. |
| 129 | This lamp has positive pressure even when cold. Please read safety/warning instructions before using this lamp. |
| 130 | Line drawing represented does not show cable connection. |
| 131 | Lamp HSD 250/78 also available with 7800K color temperature and average rated life at 3000 hr. Product Number 54118. |
| 132 | Lamp XBO 10000 W/HS OFR also available with current control range 160-299 amps. Product Number 69342. |
| 133 | Lamp HSD 250 also available with 6000K color temperature and average rated life at 2000 hr. Product Number 54170. |
| 134 | Connector = Female, round, with 4mm pin. |

## SYMBOLS & FOOTNOTES FOR DISPLAY/OPTIC LAMPS

| Footnote | Description |
|---|---|
| 135 | Lamp life may vary depending on duty cycle and application. |
| 136 | Connector = Female. |
| 137 | Connector = Male. |
| 138 | Snap-on connector, female / male contact. |
| 139 | In horizontal operation position it is recommended that the "lead connection" wire be in the top position with filler tip facing down. |
| 140 | This lamp type is twice the life of the ANSI standard version. |
| 141 | This lamp type is twice the life of the standard version. |
| 142 | Please see Product Number 58795 for double life version. |
| 143 | Please see Product Number 58789 for double life version. |
| 144 | Please see Product Number 58794 for double life version. |
| 145 | XERADEX lamp life is rated in terms of 70% of initial UVC output on a continuous burn cycle. |
| 146 | Lamp also available with connecting cable and plug-in contact. XBO R 100W/45 C OFR (Product Number 69191). |
| 147 | Base is KF50 flange fitting; lamp is designed for use in vacuum environments at pressures above 300 mbar. |
| 148 | Base is KF40 flange fitting; lamp is designed for use in high vacuum environments at pressures above 30 mbar and below 10^-3 mbar. |
| 149 | Please see Product Number 58779 for double life version. |
| 150 | Please see Product Number 58819 for double life version. |
| 151 | Please see Product Number 58821 for double life version. |
| 152 | Maximum permitted base temperature is 350 degrees C at molybdenum foil / pinch seal region. |
| 153 | Distance b = Ignition Electrode. Base for ignition electrode is SFc 6-3. |
| 154 | HBO 200W L1 and HBO 200W L2 can be operated on AC or DC. |
| 155 | HBO 200W L1 (Product Number 69218) technical data if operated on AC current: Volts = 61 +/- 4, Current (A) = 3.6. |
| 156 | HBO 200W L2 (Product Number 69220) technical data if operated on AC current: Volts = 53 +/- 4, Current (A) = 4.2. |
| 157 | Distance a is from end of base to the respective electrode tip (cold) - see lamp drawing. |
| 158 | Base is KF50 flange fitting; lamp is designed for use in high vacuum environments at pressures above 200 mbar and below 10^-3 mbar. |
| 159 | For use indoors or outdoors. When used outdoors, protect the lens of the bulb from direct contact with moisture (rain, snow, etc.) to avoid cracking or breaking. |
| 160 | 2000hr warranty against non-passive lamp failure. |
| 161 | Optimized lamp eXtreme Seal (XS) technology to withstand interior base temperatures of up to 450 degrees celsius. |
| 162 | When operated on electronic control gear (ECG) service life extended to 3000h. |
| 163 | Also available with 850h, HBO 3501 W/PI: NAED 69127. |
| 164 | SHP - series (Super High Performance Technology). |
| 165 | Lamp focus is 60mm in front of reflector rim. |
| 166 | Lamp is part of the SharXS HTI lamp series. All SharXS HTI lamps are identical in terms of their shape, size, and bases. |
| 167 | Base has notch for pre-alignment. |
| 168 | Lamp current not to exceed 7.2A. |
| 169 | 125 mm (front ring to plug) and 95 mm (rear cap to plug) silicon cables terminated with MATE-N-LOK plug no. 350809-1 with pins no. 926868-3 by AMP Inc. |
| 170 | It takes time for the mercury in the lamp to evaporate. Typically 95% of luminous output are generated after approximately 120 seconds. For quality inspection purposes allow for five minutes burning time. |
| 171 | Excessive airflow may lead to mercury condensation in the discharge lamp bulb and consequently to a performance drop. |
| 172 | Operation time after which either aperture lumens decrease to 50% of initial value or the lamp voltage reaches 115 V and the lamp cannot be ignited. Switching cycle: 210 minutes on / 30 minutes off. |
| 173 | Operational bulb wall temperatures lower than 850˚C may lead to mercury condensation and prevent the lamp from reaching stable operation conditions; temperatures higher than 950˚C may lead to premature failures of the lamp. |
| 174 | For rectangular aperture of 5.0 x 3.8 mm (hor. x vert.) at working distance 17.3 mm. |
| 175 | Output is understood as total energy in the range 320 … 500 nm focused on an aperture with diameter d at working distance a in front of the reflector. |

## SYMBOLS & FOOTNOTES FOR DISPLAY/OPTIC LAMPS

| Footnote | Description |
|---|---|
| 176 | Beam Angle data refers to aperture. |
| 177 | Lamp is suited for use in ASML equipment (PAS 5500/22, /100, /100B, /TFH100). |
| 178 | The QXL lamp allows easy one-hand replacement without opening the light fixture. 1/4 turn twist in/out, no tool required. |
| 179 | With vertical operating position: anode(+) on top. |
| 180 | QXL is a trademark of Electronics Theatre Controls Inc., and used under license |
| 181 | The QXL 750/77 lamp has been designed and approved by ETC in the Source Four® Revolution™ |
| 182 | Anode: Cable connection length 110mm |
| 183 | Cathode Base with cable connection (M 12). |
| 184 | Lamp uses eXtreme Seal (XS) Technology, which effectively protects the seal up to 500˚C. |
| 185 | Cable Connector TP120. |
| 186 | This lamp is used for OEB/WEE applications. |
| 187 | Lamp is interchangeable with FLK naed 54589 |
| 188 | Lamp is interchangeable with FLK PLUS HPR 575/115 naed 54549 |
| 189 | Lamp designed for the manufacture of printed Board Circuits in Hakuto exposure equipment HAP 3500 and 3510 series |
| 190 | The focus lies 45mm in front of the mounting rim (working distance). |
| 191 | Lamp description changed from HSD 200 to HSD 200W/60 4ARXS |
| 192 | Lamp description changed from HTI 575 W/DE to HTI 575/D5/56 Baby-Sharxs |
| 193 | Includes screw hole in anode lamp base with installed cable. No screw hole in cathode lamp base. |
| 194 | Includes screw hole in anode & cathode lamp base. Includes 1 installed cable for anode lamp base. Cathode cable provided on request when ordering. |
| 195 | Includes screw hole in anode & cathode lamp base. Includes 1 anode cable & 1 cathode cable in box, not installed. |
| 196 | HTI 1200W/D7/60 SharXS lamp (Product No. 54268-10 case & 54202-30 case) is a direct and equal replacement for the HMI 1200W/S lamp (Product No.54088) |
| 197 | Cathode Base with Cable connection (M 10) |
| 198 | Easy disassembly into components allow for environmentally preferred waste disposal |
| 199 | Aluminum reflector reduces weight by up to 50% compared to standard glass PAR lamps |
| 200 | The HBO 200 W/DC TM is a direct and equal replacement for the HBO 200 W/2 TM (product No. 69221) |
| 201 | Lamp bases need to be forced cooled. |
| 202 | The connecting cables do not have a plug-in connector. |
| 203 | XIR=Xenon Infrared |
| 204 | Average service life can vary by application. Call National Customer Sales and Support (888) 677-2627 for more information. |
| 205 | Connector = female, flat |
| 206 | Lamp is part of the Baby SharXS HTI lamp series. All Baby SharXS HTI lamps are identical in terms of their shape, size, and bases. |
| 207 | Reinforced pinch-seal neck design for moving head applications |
| 208 | Connector = female, round |
| 209 | Connector = male, flat |
| 210 | LA= Lumen Advanced (High Efficiency Lamp) |
| 211 | Photometric values are measured at rated current. |
| 212 | Lamp also available in Suprasil quartz glass version: XBO 150 W/4 (Product Number 69238). |
| 213 | Lamp is suitable for Crosfield color scanner (CR = Crosfield). |
| 214 | Photometric data is measured in vertical operating position at rated wattage. |
| 215 | Lamp also available in Suprasil quartz version: XBO 450 W/4 (Product Number 69244). |
| 216 | For vertical operating position; anode(+) on top. |
| 217 | Lamp has same dimensions as XBO 1600 W/HSC OFR (Product Number 69268). |
| 218 | Lamp also available as XBO 2001 W/HTP OFR (Product Number 69310). |
| 219 | Necessary input voltage: 380 volt. |
| 220 | Lamp also available as XBO 4200 W/GS with 60mm bulb diameter and 500 hrs life. |
| 221 | Lamp also available as XBO 5000W/HBM OFR with anode base SFaX30-9,5 and cathode base SFa30-8. |
| 222 | Lamp optimized for fluorescence microscopy. |
| 223 | Lamp also available with AMP plug contact. HBO R 103/45 C (Product Number 69311). |

## SYMBOLS & FOOTNOTES FOR DISPLAY/OPTIC LAMPS

| Footnote | Description |
|---|---|
| 224 | HBO 200W/2 and HBO 500W/2 can be operated on AC or DC. |
| 225 | Lamp also available with increased radiation in the wavelength range below 450nm for UV-curing. HBO 202W/4 (Product Number 69316). |
| 226 | Lamp also available with threaded pin 8-32 UNC-3A: HBO 200 W/2TM (Product Number 69223). |
| 227 | Technical data if operated on AC current: Volts=65, Lumens=10,000 lm, Luminous Efficacy=50 lm/W. |
| 228 | Lens set available (NSP,MFL,WFL,SWFL) Ref. No. 46771. |
| 229 | Lamps suitable for pulse operation between 250W and 500W. Maximum permissible average power is 350W (also for constant power operation). |
| 230 | HBO 350W (Product Number 69226) replaces HBO 350 W/G (Product Number 69227). |
| 231 | Lamp service life is defined with a switch-on/switch off duty cycle of 12hours ON / 30 minutes OFF. |
| 232 | Distance a = Distance (cold) of either anode base to anode tip or cathode base to cathode tip depending on lamp type. |
| 233 | NOTE: Maximum permitted base temperature: 230 degrees C (446 degrees F). |
| 234 | lamp base is with 8-32 UNC-3A thread. |
| 235 | Lamp base(s) with M 5x0.9 thread. |
| 236 | Lamp anode base (hexagon) with thread M5x0.9 |
| 237 | Lamps suitable for pulse operation between 700W and 1000W. Maximum permissible average power is 750W (also for constant power operation). |
| 238 | Available in 2500 hrs. life: HBO 1000 W/CEL (Product Number 69175). |
| 239 | Discharge tube needs to be in horizontal operating position. |
| 240 | Available in 2500 hrs. life: HBO 1002 W/CEL (Product Number 69177). |
| 241 | Lamp should not be ignited more than ten times over lifetime. |
| 242 | Lamp has cooling fins on anode base. |
| 243 | Cathode Base=Sleeve base with M 6 thread. |
| 244 | Cathode Base=Hexagon base with M 6 thread. |
| 245 | Lamp has anode base with cooling fins and cable connection (M 6). |
| 246 | Lamp is available in 2500 hrs life: HBO 1000 W/NEL (Product Number 69176). |
| 247 | Lamp is available in 2500 hrs. life: HBO 1002 W/NEL (Product Number 69273). |
| 248 | The radiant Power of the I-line is measured in the wavelength range: 365 + 2.5 nm. |
| 249 | Lamp also available as Longlife version HBO 1003 W/PIL (Product Number 69180) with 1500hr life. |
| 250 | Lamp filler tip needs to point upwards during operation. |
| 251 | Cathode Base=Sleeve base with cooling fins and cable connection (M 6). |
| 252 | Cathode Base with M 6 thread. |
| 253 | Cathode Base with cooling fins. |
| 254 | Anode sleeve base without thread. |
| 255 | Anode Base=Sleeve base with cable connection (M 6). |
| 256 | Maximum permitted base temperature: 200 degrees C (392 degrees F). |
| 257 | Lamp also available as Longlife version HBO 1500 W/PIL (Product Number 69181) with 1500hr life. |
| 258 | Lamp also available as Longlife version HBO 1500 W/CIL (Product Number 69179) with 1500hr life. |
| 259 | Lamp also available as Longlife version HBO 2001 W/NIL with 1500hr life (Product Number 69292). |
| 260 | Cathode Base with cable connection (M 8). |
| 261 | Permitted wattage range: 300W to 600W. |
| 262 | Anode Base=Cooling fins with cable connection (M 8). |
| 263 | The average rated life of this lamp depends on the operating mode (initial power setting). |
| 264 | Cathode Base with cable connection (M 6). |
| 265 | Lamp also available as Longlife version HBO 2501 W/NIL (Product Number 69289) with 1500hr. |
| 266 | Anode Base with cable connection (M 10). |
| 267 | Lamp has round-core double filament. |
| 268 | Male contacts according to DIN 46248. |
| 269 | Lamp is also available with male contact(Product Number 58724). |
| 270 | Permitted wattage range: 400W to 700W. |
| 271 | Female contact is according to DIN 46247. |

## SYMBOLS & FOOTNOTES FOR DISPLAY/OPTIC LAMPS

| Footnote | Description |
|---|---|
| 272 | Despite transverse filament, lamp can be inclined at any angle in s 90 position. |
| 273 | Lamp has snap-on male contact to DIN 46248. |
| 274 | Lamp also available with male contact according to DIN 46248. 64361/HLX Z (Product Number 58717) |
| 275 | Lamp has D.C. Bay Ring. |
| 276 | WARNING: Lamp only for use where seal temperature does not exceed 650 degrees F (343 degrees C). Minimum bulb wall temperature 480 degrees F (249 degrees C). |
| 277 | Lamp has 1.75 inch (44.45mm) stranded Nickel leads. |
| 278 | Max. Beam Candlepower (MBCP) : 175 kcd. |
| 279 | D=Digital |
| 280 | XL=Xtreme Life |
| 281 | CL=Classic Line |
| 282 | HP=High Performance |
| 283 | S=Sony (Sony projector) |
| 284 | Anode base with thread (M16) |
| 285 | High temperature base. Retards seal deterioration where seal temperature exceeds 650˚F. |
| 286 | For use where seal temperature does not exceed 650˚F. |
| 287 | Life at rated voltage and at 650˚F maximum seal temperature. |
| 288 | Usually limited to intermittent burning. |
| 289 | A suitable protective shield, screening technique, or both must be used to protect people and surroundings from the possibility of a lamp shattering and from possible ultraviolet radiation. |
| 290 | Bulk pack= 30/case |
| 291 | Anode: Hexagon base with thread 8-32 UNC |

## Index by Ordering Abreviation

## Index by Ordering Abreviation (cont.)



## Index by Product Number

## Index by Product Number (continued)

## Index by Product Number (continued)



## Index by ANSI Code

## WARNING

### TUNGSTEN HALOGEN & INCANDESCENT DISPLAY/OPTIC LAMPS

The following information pertains to all Display/Optic Tungsten-Halogen and Incandescent lamps including Infrared Heat Lamps, Current-Controlled Airfield Lamps, PAR and other Reflector Lamps.

**WARNING:**
In accordance with ANSI/IESNA Standard RP-27, Display/Optic incandescent & tungsten halogen lamps are Risk Group 2 products.

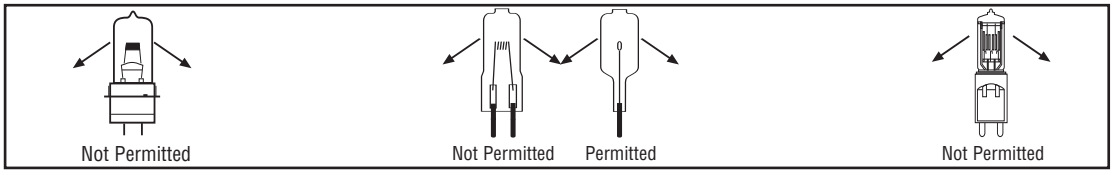
**Read and understand this warning before using this bulb!**

**THIS LAMP EMITS ULTRAVIOLET AND INFRARED RADIATION. ALWAYS WEAR SUITABLE EYE PROTECTION WHEN WORKING NEAR THIS LAMP. THIS LAMP OPERATES AT HIGH PRESSURE AND AT HIGH TEMPERATURE AND MAY SHATTER UNEXPECTEDLY. THIS LAMP MUST BE USED IN A FIXTURE THAT HAS A SUITABLE PROTECTIVE SHIELD AND/OR SCREEN TO PROTECT PEOPLE AND SURROUNDINGS AGAINST THE RISK OF PERSONAL INJURY AND/OR PROPERTY DAMAGE FROM LAMP SHATTERING AND EXPOSURE TO INFRARED OR ULTRAVIOLET RADIATION.**

**ALL OF THE FOLLOWING PROCEDURES MUST BE FOLLOWED FOR SAFETY AND TO OBTAIN SATISFACTORY LAMP PERFORMANCE.**

**GENERAL SAFETY AND INSTALLATION TIPS:**
1. This lamp generates UV (ultraviolet) and/or IR (infrared) radiation. Prolonged exposure to this lamp may cause skin and eye irritation from the radiation when operated at or above rated voltage.
   Please note that lamp with reference number 64614 has enhanced UV output as a result of its reflector coating.
2. To avoid risk of serious eye injury from the intense light, do not stare at operating lamp.
3. Because this lamp radiates considerable heat, do not use in close proximity to people, combustible materials, or substances adversely affected by heat or drying.
4. To avoid shattering of glass parts and/or lens/reflector, keep water, other liquids and metal objects from contacting hot glass surfaces. Protect the entire lamp from moisture (rain, snow, etc.) to avoid cracking or breaking.
5. Protect the lamp from contamination, abrasion and scratches. Do not use if lamp is scratched, cracked or damaged in any way.
6. For safe and proper lamp operation, operate at rated voltage and wattage. Operation above rated voltage increases UV output and internal pressure, thus increasing the risk of rupture.
7. This lamp (for reflectorized lamps, this applies to inner lamp capsule) operates at high internal pressure and at high surface temperature and may unexpectedly shatter resulting in hot, flying fragments of glass or metal. Although this lamp was carefully constructed, tested and inspected before packing and shipping, under certain conditions beyond the manufacturer's control, the glass parts could crack or break.
8. For PAR and other reflectorized lamps: Even though this lamp may continue to operate after the reflector and/or lens is broken or damaged, it should be replaced as soon as possible since the pressure-filled inner lamp capsule could unexpectedly shatter if scratched or otherwise damaged, creating a risk of personal injury or property damage.

**LAMP MOUNTING AND OPERATION:**
1. Use only in equipment/fixture specifying this lamp type, including voltage and wattage. Use in circuits, which do not exceed rated voltage and in sockets and equipment designed for its use.
2. Do not touch or handle the quartz glass with bare fingers. Contaminants can burn in at high operating temperatures and cause glass to recrystalize. This makes the glass opaque and milky; it increasingly loses its strength, and the risk of bursting increases. If lamp is touched, clean with denatured alcohol and wipe dry with a soft, clean lint-free cloth before operating.
3. Make sure lamp is properly installed into socket to obtain good electrical contact and to avoid damaging lamp and/or socket. A heat resistant connector should be used to make electrical contact to the lamp base for safety and to obtain rated lamp life. To avoid damage to lamps with bipin bases, do not twist. Pull old lamp straight out and push new lamp straight in. For safe and proper operation of lamps with lead wires, please ensure that the lamp is securely supported and the lead-wires are securely connected to the electrical supply.
   For PAR 36, 46, 56, 64 lamps: To avoid breaking, the lamp must be supported by its rim.
4. Operating temperatures deteriorate lamp sockets. Socket condition may affect lamp life. Replace socket if deterioration of socket or lamp base contacts is observed.
5. Do not move, bump or bounce equipment/fixture during operation because mechanical shock can cause shattering and failure of the lamp.
6. For PAR 36, 46, 56 and 64 lamps: Lamp should be operated with a protective shield (especially in public places -- churches, auditoriums, etc) to prevent the risk of personal injury or property damage from flying lamp fragments in the event of the lamp cracking or breaking.
7. To avoid risk of burns or electrical shock, do not remove or insert lamp when power is on, allow lamp to cool to room temperature before removing or storing.
8. Replace all equipment/fixture covers and shields after servicing to prevent personal injury or property damage.
9. All Display/Optic lamps have a range of permissible operating positions. Please see relevant operating position information in our literature or on-line catalog and only operate lamps at the operating positions specified. The basic rule for all single-ended Display/Optic halogen and incandescent lamps is that the lamp may only be tilted/inclined perpendicular to the plane through both filament lead-wires (see illustrations and list of affected filament designs below).




**Affected Filament Designs:**

**C-2V, C-6, C-6F, C-13, C-13D, CC-2V, CC-6, CC-13, CC-13D, 2C-8, 2CC-8**

10. Keep lamp seal temperature below 350°C (660°F) and the lamp wall temperature between 250°C (480°F) and 900°C (1650°F). When used in equipment designed to provide cooling to operating lamp, do not obstruct equipment cooling system.
11. Filaments for high luminance applications are designed in such a way that the incandescent elements do not block each other in the direction of projection. The positioning of single filament coils in one plane is called a monoplane filament. Biplane filaments have the incandescent elements staggered forward and backward in two parallel planes while maintaining adequate spacing to prevent arc-over.
12. Note: Photometric values of a frosted lamp will vary from the published values of the same non-frosted type.

## TUNGSTEN HALOGEN & INCANDESCENT DISPLAY/OPTIC LAMPS (continued)

**LAMP DIMMING:**
1. Incandescent lamps (non-halogen): Incandescent lamps perform according to fixed relationships between luminous flux, luminous efficacy, color temperature, electrical voltage, electrical current and electrical power consumption. In general, a 5% increase in applied lamp voltage results in half the lamp life, and conversely a 5% reduction of lamp voltage results in twice the lamp life.
2. Tungsten-Halogen Lamps: In standard incandescent lamp operation, there is an inverse relationship of lamp life vs. supply voltage; i.e., the lower the voltage, the longer the life. In some tungsten halogen lamps, however, this holds true only when operated within 5 to 10% of the rated voltage. Further dimming, beyond the 10%, may affect the halogen chemistry in the lamp and may cause filament corrosion. There are also tungsten halogen lamps that only achieve nominal lamp lives regardless of the level of dimming that is used. Unlike standard incandescent lamps, the relationships in halogen lamps are not clear-cut because of the halogen chemical cycle. For the vaporized tungsten to be removed from the inner bulb wall, a minimum bulb wall temperature is necessary. This temperature is directly related to the power input to the lamp such that a reduction in power effects a reduction in the bulb wall temperature. Special design techniques have been incorporated in modern halogen lamps to prevent blackening regardless of the level of dimming. Consideration must be given to lamp dimming in applications that require maximum constancy of color temperature (photographic and video recording, for example), since the color temperature changes with the filament temperature.

**CURRENT-CONTROLLED HALOGEN LAMPS:**
Some lamp types are designed for constant current operation, primarily for airfield applications. They are usually operated in series with an isolation transformer tap connected to each lamp to ensure that all lamps have the same brightness. Constant current-operated lamps differ in performance from the published values of constant applied voltage lamps. Direct series connection of non-constant current designed lamps is not recommended.

**INFRARED HEAT LAMPS:**
These lamps are designed for use in applications specifically requiring an infrared radiation source. Infrared radiation from these lamps causes surfaces to be heated. These lamps operate at high temperatures. Allow sufficient cooling time before handling. A listing of Kelvin temperatures, method for electrical connection, and operating positions with appropriate cooling recommendations for tungsten halogen special heat lamps can be found in the OSRAM literature or in the on-line catalog.

**CAUTION:** The infrared reflector lamp, HLX 64635 is specially designed to produce high temperatures at its focal point (approximately 1300°C / 2372°F) for soldering, welding and heating applications.

**LAMP DISPOSAL:**
1. Disposal of spent lamps must be in accordance with applicable federal, state/provincial, and local regulations.
2. Lamp users in North America may obtain specific state or province information concerning disposal regulations, toll free, by calling 1-866-666-6850.
3. OSRAM SYLVANIA Products Inc. cannot advise lamp users as to general or specific disposal regulations for federal, state/provincial, and/or local municipalities.

**WARNING**

## METAL HALIDE DISPLAY/OPTIC LAMPS [HCD®, HMI®, HMD®, HMP®, HSD®, HSR®, HTI®]

**WARNING:**
In accordance with ANSI/IESNA Standard RP-27, Display/Optic metal halide lamps are a Risk Group 3 product.

***Read and understand this warning before using this lamp!***

**THIS LAMP EMITS ULTRAVIOLET AND INFRARED RADIATION. ALWAYS WEAR SUITABLE EYE PROTECTION WHEN WORKING NEAR THIS LAMP. THIS LAMP OPERATES AT HIGH PRESSURE AND AT HIGH TEMPERATURE AND MAY SHATTER UNEXPECTEDLY. THIS LAMP MUST BE USED IN A FIXTURE THAT HAS A SUITABLE PROTECTIVE SHIELD AND/OR SCREEN TO PROTECT PEOPLE AND SURROUNDINGS AGAINST THE RISK OF PERSONAL INJURY AND/OR PROPERTY DAMAGE FROM LAMP SHATTERING AND EXPOSURE TO INFRARED OR ULTRAVIOLET RADIATION.**

**RUPTURE & RADIATION (UV-IR-VISIBLE) HAZARD:**
1. All Display/Optic metal halide lamps operate at high internal pressures (upwards of 500psi or 35bar possible) and may unexpectedly rupture resulting in the discharge of hot fragments (approximately 800°C / 1472°F) of quartz and/or metal particles, as well as the release of mercury/mercury vapor. In the event of such a rupture, there is a risk of personal injury, burns and fire.
2. All Display/Optic metal halide lamps generate ultraviolet (UV), infrared (IR) and visible radiation during operation. This radiation can cause permanent damage to the eyes (including blindness) and serious injury to the skin (including burns and blistering). To avoid eye damage, other personal injury and/or property damage, the lamp MUST be operated in a suitable fixture.
3. A suitable fixture is one that will prevent the arc from being viewed directly while operating, and in the event of a lamp rupture, will prevent hot (up to 800°C / 1472°F), flying fragments of quartz and/or metal from escaping into the area.
4. To minimize the risk of a lamp rupture, replace the lamp at or before the end of rated life (see OSRAM SYLVANIA product catalog for rated life) or when the lamp shows signs of blackening.
5. The discharge vessel of Display/Optic metal halide lamps is constructed of quartz glass that is filled with a quantity of mercury, elemental metals and/or rare earth elements. These lamps are **not** at positive pressure when cold (not operating, at room temperature).

**GENERAL SAFETY & INSTALLATION TIPS**

**BROKEN LAMPS (MERCURY VAPOR RELEASE AND DISPOSAL):**
1. In the event of a lamp rupturing during operation, all personnel should leave the area immediately to avoid the inhalation of mercury vapor. The area should then be thoroughly ventilated for a minimum of 30 minutes or until the mercury vapor in the area is below the ACGIH TLV (American Conference of Governmental Industrial Hygienists Threshold Limit Value). Inhaling vapor or small particles of mercury or its compounds can be harmful to lungs, kidneys and nervous system. Penetration of the skin or ingestion can also be harmful.
2. To avoid mercury vapor getting into air conditioning systems, mercury vapor-absorbing filters should be used. ***When the lamp housing has cooled, mercury residue may be picked up with special mercury adsorptive agents or a mercury vacuum cleaner (available from laboratory safety equipment suppliers) and disposed of in accordance with local, state and federal regulations.*** There should be no direct skin contact with and/or inhalation of mercury residues that may be residing in lamp housing, optics or lamp parts.
   If a cold (room temperature) lamp is broken, proceed with clean up and disposal as indicated above (in the ***bold, italic statement***).

## METAL HALIDE DISPLAY/OPTIC LAMPS [HCD®, HMI®, HMD®, HMP®, HSD®, HSR®, HTI®] (continued)

**INSTALLATION:**

1. Do not use if lamp is scratched, cracked or damaged in any way.
2. To prevent electric shock, shut off main power to the fixture before attempting to service or replace lamp.
3. To avoid damaging the quartz and causing premature lamp failure, do not handle lamp with bare hands. Use clean gloves.
4. If the quartz parts are inadvertently touched, clean fingerprints off with denatured alcohol and wipe dry with a clean, soft, lint-free cloth. Do not use cleaning rags or material that can leave a residue.
5. To prevent skin burns, allow lamp to cool before handling.
6. To avoid breakage, mounting of the lamp must be free of mechanical stress during installation and during operation by allowing for thermal expansion along its axis.
7. Display/Optic metal halide lamps should not be subjected to force/stress during installation. Single-ended lamp types use a metal bar, which runs parallel to the lamp body and provides an electrical path for the lamp current (from the socket end to the opposite end of the lamp). To avoid overheating the lamp current bar, Display/Optic metal halide lamp types without outer jackets should not have the lamp current bar positioned above the discharge arc during operation. Single-ended lamp types with outer jackets may be operated in any position and with any current bar position.
8. Replace all fixture covers and shields after replacing lamp to prevent eye damage, other personal injury or property damage.
9. Use only in instruments/equipment specifying this light source.
10. **CAUTION - Shorting Hazard:** The HTI 2500 W/SE has both base pins connected to the same point inside the lamp socket. A lead wire on the opposite side of the lamp provides the current connection necessary for operating the lamp.
11. Make sure lamp is properly installed into socket/connector to obtain good electrical and thermal contact and avoid damaging lamp and/or socket/connector. electrical connections should be free from dirt and corrosion. Socket/connector condition may affect lamp life. Replace socket/connector or lamp if deterioration (pitting, scorching, corrosion, etc.) is observed.

Please note that certain Display/Optic, AC metal halide lamps have dedicated pins or connectors for high voltage ignition.

**OPERATION:**

1. Magnetic current-limiting ballasts (chokes) provide sine-wave current operation for lamps. However, electronic control gear (ECG) allows for square wave cur-rent operation, often at higher frequencies. Some Display/Optic metal halide lamps have been designed for, and therefore require, ECG square-wave operation. Please see OSRAM literature for power requirements for your specific lamp type.
2. Operate with compatible power supply and fixture only.
3. OSRAM Display/Optic metal halide discharge lamps are designed for either hot re-start (high ignition voltages) or cold start (low ignition voltages only). Please see OSRAM literature for power requirements for your specific lamp type.
4. To ensure that lamps operate at the correct power during AC operation, connections on the ballast/choke in the power supply should be made to the correct voltage taps; i.e., tap voltage should match input line voltage. To avoid wall blackening, overheating or other premature failure modes, OSRAM strongly advises against operating Display/Optic metal halide lamps at higher than rated wattage ("boosted operation"). Only OSRAM HMP Display/Optic metal halide lamps are offered with a unique power feature allowing for operation at increased wattage of up to 1.5 times their rated wattage, but with reduced service life. For safe lamp operation and optimum performance, use only those ballasts/power supplies that have been approved by OSRAM. See your OSRAM dealer for a list of approved equipment.
5. Dimming of Display/Optic metal halide lamps, like incandescent lamps, causes a drop in luminous output. If a metal halide lamp is dimmed by electrical means, it will not reach its optimum operating state and, unlike incandescent lamps, will not last longer. When dimmed, the lamp wall temperature falls more rapidly on a lamp that has no outer jacket. In metal halide lamps without an outer jacket, reduced power operation causes an increase in the color temperature and a reduction in CRI. Lamps with outer jackets can have either a vacuum or filling gas (often Nitrogen) within. Metal halide lamps with outer jackets tend to maintain their color properties better under dimmed conditions because the outer jacket provides thermal insulation against internal lamp cooling.
6. Display/Optic metal halide lamps need 5 to 20 minutes (depending on lamp type and cooling conditions) before they reach their operating temperatures. To ensure proper ignition on subsequent start-up, lamps should not be switched off during the warm-up period.
7. Average service life of these lamps is determined by the ON/OFF duty cycle. Lamp performance is reduced with increased duty cycle.

**OPERATING POSITION:**

Display/Optic metal halide lamps may only be used in the operating positions described in the OSRAM SYLVANIA product catalog. Please note that lamp photometric values and arc stability can be effected by the operating position.

**OZONE GENERATION:**

- During operation, Display/Optic metal halide lamps produce a spectrum that ranges from about 150 nm in the ultraviolet region to the infrared region.
- If the quartz glass bulb is transparent in the ultraviolet region between 180 and 220 nm, this short-wave radiation will convert a small quantity of atmospheric oxygen ($O_2$) surrounding the lamp into ozone ($O_3$). Moreover, the oxygen molecules will link together with the nitrogen ($N_2$) in the air, creating nitrogen oxides ($NO_x$). (Some believe that the smell attributed to ozone is in actuality from the nitrogen oxides.)
- Ozone gas is toxic when inhaled in high concentrations over long periods of time. Ozone levels can be measured and monitored with commercial measuring equipment. Always keep ozone levels below the applicable TLV (threshold limit value)
- An "ozone smell" (or smell of nitrogen oxide) may be detected shortly after ignition. There are two probable causes for this condition. $O_3$ and $NO_x$ production is caused by the (short-duration) radiation of the spark gap used for lamp ignition. Or, the cold condition of the quartz glass bulb has slightly shifted its UV-absorption characteristics thus permitting a small amount of radiation in the very short-wave ultraviolet range to be emitted by the bulb. Typically, after the lamp has run up to its operating temperature range, virtually no ozone is produced by the lamp, as a rule, due to the quartz glass absorption and the self-absorption of the plasma.

**LAMP COOLING:**

1. All Display/Optic metal halide lamp bases must be kept below 230˚C (446˚F) during operation to prevent premature lamp failure. If convection cooling is inadequate, forced air-cooling may be used. Please see OSRAM literature for cooling requirements of specific lamp types.
2. If forced air-cooling is used, care must be taken to direct airflow at the bases only. Striking elsewhere on the lamp with the airflow will result in poor lamp performance or premature failure.
3. Discoloration, surface pitting, and/or corrosion of the lamp connections indicates a thermal overload. To obtain optimum lamp performance, components exhibiting these conditions must be cleaned or replaced.

**LAMP REMOVAL:**

- Turn off power to the lamp and allow lamp to cool (forced or convection) for a minimum of 30 minutes prior to shutting main fixture power and opening fixture. Do not remove lamp until it has cooled.
- Lamps should be placed in their original OSRAM SYLVANIA packaging for temporary storage until disposal and/or transportation to a disposal location. See "Lamp Transportation" and "Lamp Disposal" sections below for relevant information.

## METAL HALIDE DISPLAY/OPTIC LAMPS [HCD®, HMI®, HMD®, HMP®, HSD®, HSR®, HTI®] (continued)

**LAMP TRANSPORTATION:**
1. All Display/Optic metal halide lamps should be transported ONLY in their original packaging.
2. Transportation in non-original packaging can damage the lamp and void warranty.
3. U.S. Federal regulations require mercury-containing lamps to be shipped ONLY in DOT-compliant packaging. Original OSRAM packaging is DOT-compliant.

**MERCURY FILL OF Display/Optic METAL HALIDE LAMPS:**
- Mercury is referred to by its chemical symbol, Hg, which is derived from the Greek and Latin "hydrargyrum," a silvery shiny liquid metal at room temperature. In humid air it is covered with a gray oxide skin. Of all metals it has the highest vapor pressure which increases exponentially with rising temperatures. For this reason, mercury is volatile at room temperature. The colorless and odorless vapors produced are poisonous and heavier than air.
- The inhalation (respiration) of mercury or mercury compounds as vapor or dust will lead to the damage of lungs, kidneys, and the nervous system. Apart from inhalation, mercury can be transmitted through the skin (penetration) or through the gastro-intestinal tract (ingestion), which is also harmful.
- The ACGIH TLVs are merely guidelines to assist in the control of health hazards. The ACGIH states that the TLVs refer to airborne concentrations of substances and represent conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse health effects. Therefore, the TLV for mercury should never be exceeded.
- Analytical detection of mercury vapor is possible by means of gas/vapor detector tubes (rough measurement) or air-monitors that absorb mercury vapor.

OSRAM metal halide lamps have the following mercury contents:

| Lamp Family | Maximum Mercury Content (mg) |
|---|---|
| HMI | 1200 |
| HMP | 70 |
| HTI | 180 |
| HSR/HSD | 110 |
| HMD | 520 |
| HCD | 23 |

**PROPERTIES OF MERCURY:**
- Chemical symbol: Hg
- Atomic number: 80
- Molecular Weight: 200.59
- Density: 13.6 g/cm$^3$ @ 20°C / 68°F
- Melting Point: -39°C / -38.2°F
- Boiling Point: 357°C / 674°F
- Vapor pressure: 160 Pa @ 20°C / 68°F; 370 Pa @ 30°C / 86°F; 823 Pa @ 40°C / 104°F
- Concentration in air: 13.6 mg/m$^3$ @ 20°C / 68°F; 29.6 mg/m$^3$ @ 30°C / 86°F; 62.7 mg/m$^3$ @ 40°C / 104°F
- CAS Registry Number: 7439-97-6
- RCRA waste number: U151
- Other Names: Hydrargyrum, Colloidal mercury, Kwik, Mercure, Mercurio, Metallic mercury, Quecksilber, Quick silver, Liquid Silver

**LAMP DISPOSAL:**
1. Disposal of spent lamps must be in accordance with applicable federal, state/provincial, and local regulations. State laws may differ in their disposal requirements for lamps.
2. Lamp users in North America may obtain specific state or province information concerning disposal regulations, toll free, by calling 1-866-666-6850.
3. OSRAM SYLVANIA Products Inc. cannot advise lamp users as to general or specific disposal regulations for federal, state/provincial, and/or local municipalities. It is the responsibility of the waste generator to ensure proper classification and disposal of waste products.

**Hg Lamp Contains Mercury**

**Manage in accordance with disposal laws**
**See www.lamprecycle.org or 1-866-666-6850**

**WARNING**

### VIP SUPER HIGH PRESSURE MERCURY LAMPS (DISPLAY/OPTIC)

**WARNING:**
In accordance with ANSI/IESNA Standard RP-27, VIP Super High Pressure Mercury Lamps are Risk Group 3 products.

**Read and understand this entire statement before using this lamp!**

**RUPTURE & RADIATION (UV- VISIBLE) HAZARD:**
1. The discharge vessel of Super High Pressure Mercury VIP lamps is constructed of quartz glass that is filled with a quantity of mercury. These lamps are not pressurized when cold (i.e., at room temperature).
2. ***All Super High Pressure Mercury VIP lamps have high internal pressures (up to approximately 3,675 psi or 250 bar) during operation and may unexpectedly rupture resulting in the discharge of hot fragments (approximately 800°C / 1472°F) of quartz and/or metal particles, as well as the release of mercury/mercury vapor.*** In the event of such a rupture, there is a risk of personal injury, burns, and fire.
3. ***Super High Pressure Mercury VIP lamps generate intense ultraviolet (UV), visible and infrared radiation during operation. This radiation can cause permanent damage to the eyes (including blindness) and serious injury to the skin (including burns and blistering).*** To avoid eye damage, other personal injury, and/or property damage, the lamp MUST be operated in a suitable fixture.
4. A suitable fixture is one that will prevent the arc from being viewed directly while operating, and in the event of a lamp rupture, will prevent hot (up to 800°C / 1472°F), flying fragments of quartz and/or metal from escaping into the area.
5. To minimize the risk of a lamp rupture, replace the lamp at or before the end of rated life (see OSRAM SYLVANIA product catalog for rated life).

## VIP SUPER HIGH PRESSURE MERCURY LAMPS (DISPLAY/OPTIC) (continued)

**BROKEN LAMPS (MERCURY VAPOR RELEASE AND DISPOSAL):**

1. In the event of a lamp rupturing during operation, all personnel should leave the area immediately to avoid the inhalation of mercury vapor. The area should then be thoroughly ventilated for a minimum of 30 minutes or until the mercury vapor in the area is below the ACGIH TLV (American Conference of Governmental Industrial Hygienists Threshold Limit Value). Inhaling vapor or small particles of mercury or its compounds can be harmful to lungs, kidneys, and nervous system. Penetration of the skin or ingestion can also be harmful.
2. When the lamp housing has cooled, mercury residue may be picked up with special mercury adsorptive agents or a mercury vacuum cleaner (available from laboratory safety equipment suppliers) and disposed of in accordance with local, state, and federal regulations. There should be no direct skin contact with and/or inhalation of mercury residues that may be residing in lamp housing, optics or lamp parts.
3. If a cold (room temperature) lamp is broken, proceed with clean-up and disposal as indicated in item 2 above.

**GENERAL SAFETY & INSTALLATION TIPS**

**INSTALLATION:**

1. Do not use if lamp or any lamp parts such as reflector, front glass, etc. are scratched, cracked, or damaged in any way.
2. To prevent electric shock, shut off main power to the fixture before attempting to service or replace lamp.
3. If the quartz parts are inadvertently touched, clean fingerprints off with denatured alcohol and wipe dry with a soft, clean, lint-free cloth. Do not use cleaning rags or material that can leave a residue.
4. To prevent skin burns, allow lamp to cool before handling.
5. To avoid breakage, mounting of the lamp must be free of mechanical stress during installation and during operation by allowing for thermal expansion.
6. Super High Pressure Mercury VIP lamps should not be subjected to force/stress during installation.
7. Replace all fixture covers and shields after replacing lamp to prevent eye damage, other personal injury, or property damage.
8. Use only in instruments/equipment specifying this light source.
9. Make sure lamp is properly connected to avoid damaging lamp and/or socket/connector. Electrical connections should be free from dirt and corrosion. Socket/connector condition may affect lamp life.
10. Replace socket/connector or lamp if deterioration (pitting, scorching, corrosion, etc.) of either is observed.

**OPERATION:**

1. Super High Pressure Mercury VIP lamps are designed for operation on AC only.
2. Operate with compatible power supply and fixture only.
3. Super High Pressure Mercury VIP lamps need approximately 5 minutes (depending on lamp type and cooling conditions) before they reach their operating temperatures. To ensure proper ignition on the following start-up, lamps should not be switched off during the warm-up period.
4. The average service life of Super High Pressure Mercury VIP lamps is influenced by their ON/OFF-duty cycle. Lamp performance is reduced with increased duty cycle.

**OPERATING POSITION:**

Super High Pressure Mercury VIP lamps may only be operated in the positions described in the OSRAM SYLVANIA product catalog and/or technical literature.

**LAMP COOLING:**

1. To prevent premature failure, forced-air cooling is required. Maximum permitted lamp temperatures are described in the available technical literature.
2. Discoloration, surface pitting, and/or corrosion of the lamp connections indicate a thermal overload. Components exhibiting these conditions must be cleaned or replaced.

**LAMP REMOVAL:**

Turn off power to the lamp and allow lamp to cool (forced) for a minimum of 15 minutes prior to shutting main fixture power and opening fixture. Do not remove lamp until it has cooled.

**LAMP TRANSPORTATION:**

1. All Super High Pressure Mercury VIP lamps should be transported ONLY in their original packaging.
2. Transportation in non-original packaging can result in damage to the lamp thus voiding the warranty.
3. U.S. Federal regulations require mercury-containing lamps to be shipped ONLY in DOT-compliant packaging. Original OSRAM packaging is DOT-compliant.

**MERCURY FILL OF SUPER HIGH PRESSURE MERCURY VIP LAMPS:**

Mercury is referred to by its chemical symbol, Hg, which is derived from the Greek and Latin "hydrargyrum," a silvery, shiny liquid metal at room temperature. In humid air it is covered with a gray oxide skin. Of all metals it has the highest vapor pressure which increases exponentially with rising temperatures. For this reason, mercury is volatile at room temperature. The colorless and odorless vapors produced are poisonous and heavier than air.

The inhalation (respiration) of mercury or mercury compounds as vapor or dust may lead to the damage of lungs, kidneys, and the nervous system. Apart from inhalation, mercury can be transmitted through the skin (penetration) or through the gastro-intestinal tract (ingestion), which is also harmful.

Threshold Limit Values (TLVs) are not fine lines between safe and dangerous concentrations but are guidelines to assist in the control of health hazards. They represent the maximum exposure to substances, both short-term and long-term, that a person may experience without resulting in health-related problems. Therefore, the TLV for mercury should never be exceeded.

Analytical detection of mercury vapor is possible by means of gas/vapor detector tubes (rough measurement) or air-monitors that absorb mercury vapor.

OSRAM Super High Pressure Mercury VIP lamps have the following mercury contents:

| **Power level** | **Maximum Mercury content (mg)** |
|---|---|
| 100-200W | 12 |

**PROPERTIES OF MERCURY:**

- Chemical symbol: Hg
- Atomic number: 80
- Molecular Weight: 200.59
- Density: 13.6 g/cm$^3$ @ 20°C / 68°F
- Melting Point: -39°C / -38.2°F
- Boiling Point: 357°C / 674°F
- Vapor pressure: 160 Pa @ 20°C / 68°F
  370 Pa @ 30°C / 86°F
  823 Pa @ 40°C / 104°F

## VIP® SUPER HIGH PRESSURE MERCURY LAMPS (DISPLAY/OPTIC) (continued)

- Concentration in air: 13.6 mg/m³ @ 20°C / 68°F
  29.6 mg/m³ @ 30°C / 86°F
  62.7 mg/m³ @ 40°C / 104°F
- CAS Registry Number: 7439-97-6
- RCRA waste number: U151
- Other Names: Hydrargyrum, Colloidal mercury, Kwik, Mercure, Mercurio, Metallic mercury, Quecksilber, Quick silver, Liquid Silver

**LAMP DISPOSAL:**
1. Disposal of spent lamps must be in accordance with applicable federal, state/provincial, and local regulations. Some U.S. states differ in their disposal requirements for lamps containing mercury.
2. Lamp users in North America may obtain specific state or province information concerning disposal regulations, toll free, by calling 1-866-666-6850.
3. OSRAM SYLVANIA INC. cannot advise lamp users as to general or specific disposal regulations for federal, state/provincial, and/or local municipalities.

**Hg Lamp Contains Mercury**

**Manage in accordance with disposal laws**
**See www.lamprecycle.org or 1-866-666-6850**

**WARNING**

## XBO® HIGH PRESSURE XENON LAMPS

**WARNING:**
In accordance with ANSI/IESNA Standard RP-27, this XBO bulb is a Risk Group 3 product.

***Read and understand this warning before using this bulb!***

**XBO lamps are at high internal pressure when cold (up to 35 bar or approximately 525 psi) and at operating temperature (up to 80 bar or approximately 1200 psi at bulb wall temperatures of 600°C to 800°C). Therefore, XBO lamps may unexpectedly rupture resulting in the discharge of hot fragments of quartz and/or glass and metal. In the event of such a rupture, there is a risk of personal injury, burns and fire. Only handle lamps with their protective covers in place. Do not handle lamps without their protective covers unless government-approved (OSHA-approved in the U.S.A.) safety glasses, facemask (with neck protector), chest protector, and gauntlets are worn.**

**RUPTURE & RADIATION (UV-VISIBLE-IR) HAZARDS:**
1. Intense ultraviolet (UV), visible, and infrared (IR) radiation is also generated during operation. This radiation can cause permanent damage to the eyes (including blindness) and serious injury to the skin (including burns and blistering). Some operating lamps also generate ozone ($O_3$). Others, designated "OFR," are constructed of materials that prevent the generation of ozone. See the "Ozone Generation" section below.
2. To avoid eye damage, other personal injury and/or property damage, the lamp MUST be operated in a suitable fixture. A suitable fixture is one that will prevent the arc from being viewed directly while operating. It is ventilated to the outside for those lamps that produce ozone and, in the event of a rupture, will prevent hot (up to 800°C), flying fragments of quartz and/or glass or metal from escaping into the surrounding area.
3. To minimize the risk of a lamp rupture, the lamp must be replaced at or before the end of rated life (see catalog for rated life) or when the lamp shows signs of advanced blackening or quartz devitrification (recrystalization, a white, frosted appearance).
4. XBO lamps are constructed of quartz glass, tungsten electrodes and either tungsten support rods or molybdenum foils. High wattage XBO lamps used for cinema film projection have nickel-plated end caps (bases). Reflectorized XBO lamps have a dichroic-coated borosilicate glass reflector.

**GENERAL SAFETY & INSTALLATION TIPS**

**INSTALLATION:**
1. Do not use if lamp is scratched, cracked, or damaged in any way.
2. To prevent electric shock, shut off main power to the fixture before attempting to service or replace lamp.
3. To avoid damaging the quartz and causing premature lamp failure, do not handle lamp with bare hands.
4. Handle lamp ONLY with suitable, clean, safety gloves. See special handling instructions for using government-approved personal protective safety equipment with high-pressure lamps.
5. If the quartz parts (or the reflector for reflectorized lamps) are inadvertently touched, clean fingerprints off with denatured alcohol and wipe dry with a soft, clean, lint-free cloth. Do not use cleaning rags or material that can leave a residue.
6. To prevent skin burns, allow lamp to cool before handling.
7. To avoid breakage, mounting of the lamp must be free of mechanical stress during installation and during operation by allowing for thermal expansion along its axis. For this reason, XBO lamps should be fixed at one end only and the electrical connection on the other end must be flexible enough to avoid stressing the lamp.
8. XBO lamps should not be subjected to force/stress during installation.
9. Handle lamp only with protective safety cover in place. When installing lamp, remove safety cover only AFTER fully securing lamp in lamphouse/fixture and immediately preceding the replacement of equipment covers or closing of lamphouse door.
10. Replace all fixture covers and shields after replacing lamp to prevent eye damage, other personal injury, and/or property damage.
11. Use only in instruments/equipment specifying this lamp type.
12. Make sure lamp is properly installed into socket/connector to obtain good electrical and thermal contact and avoid damaging lamp and/or socket/connector. Electrical connections should be free from dirt and corrosion.
13. Socket/connector condition may affect lamp life. Replace socket/connector or lamp if deterioration (pitting, scorching, corrosion, etc.) of either is observed.
14. All XBO lamps are designed for DC operation. Make sure that the polarity is correct before turning power on. Incorrect polarity can destroy the lamp in a matter of seconds. Operate with compatible power supply and fixture only.
15. For best performance, operate this XBO lamp at rated current. Note: some low wattage XBO lamps may not be operated above their specified rated wattage. See catalog for details.
16. For those XBO lamps that have a current control range, the current may be increased to its maximum value to compensate for loss of light over the life of the lamp. Operating the lamp at minimum current does not prolong the life of the lamp. The DC current may only be varied within specified control limits for the selected type. (See catalog for these limits for your specific lamp type.)

## XBO® HIGH PRESSURE XENON LAMPS (continued)

17. When installing bare lamps that have an included flat washer, slip the washer over the threaded pin on the cathode (- negative) side. Removal of this flat washer (after half the average life) will allow a rotation of the lamp by 180° resulting in better output maintenance over life for horizontally operated lamps. This should be done only if darkening is evident in the upper part of the bulb. In instances where bare lamp cathode bases are provided with two metal pins, they may be engaged with the two slots on the protective cover to screw the cathode end of the lamp into its socket.

**LAMP REMOVAL:**

1. Turn off power to the lamp and allow it to cool (forced or convection) for a minimum of 15 minutes prior to shutting main fixture power and opening fixture. Do not remove lamp until it has cooled. After the lamp has cooled, place the protective cover around it and reverse the procedure described above. See special handling instructions for using government-approved safety equipment with high-pressure lamps.
2. Lamp should be placed in the original OSRAM SYLVANIA packaging for temporary storage until disposal and/or transportation to a disposal location. See "Lamp Disposal" section below for transportation and spent lamp disposal information.

**OPERATING POSITION:**

1. XBO bare lamps are designed to operate vertically. Of those, some (having an "H" in their designation) may also be operated in the horizontal position as well. For vertically operated lamps, the anode (+ positive) electrode must be on the top. See catalog for operating position and permissible deviation for your specific type.
2. Some horizontally operated lamps require magnetic arc stabilization. Check the catalog for your specific lamp type.
3. XBO reflector lamps are designed to operate with lamp/reflector axis within 15° of the horizontal position.

**LAMP COOLING:**

1. Discoloration, surface pitting, and/or corrosion of the lamp indicates a thermal overload. Components exhibiting these conditions must be cleaned or replaced.
2. If forced-air cooling is used, care must be taken to direct airflow at the lamp bases only. Striking the lamp elsewhere with the airflow will result in poor lamp performance or premature failure.
3. To prevent premature failure, the following cooling instructions must be followed:
   **Bare lamps** - Bases must be kept below 230˚C (445˚F) during operation. If convection cooling is insufficient and additional cooling is required, forced air-cooling may be used. If forced air is used, care must be taken to direct airflow at bases only, since striking elsewhere on the lamp with the airflow will result in poor lamp performance or premature failure. See catalog for your specific lamp type to learn whether forced air-cooling is required.
   **Reflector lamps** - To avoid damaging the reflector coating, do not allow the outer reflector surface to exceed the maximum temperature of 250°C (480˚F). [Optimum temperature: 175-200°C (345-390˚F)] To prevent premature failure, the lamp ends must not exceed the maximum temperature of 350°C (660˚F). [Optimum temperature: 200-250°C (385-480˚F)] Forced air-cooling is therefore required and the air flow must be directed perpendicular to the lamp/reflector axis, through the slots in the openings of both ceramics. See catalog for diagram.

**OZONE GENERATION:**

An electrical discharge in xenon gas generates radiant energy ranging from approximately 140 nm in the UV region to far into the infrared region. Xenon lamps are made of quartz glass. The quartz glass allows for the transmission of short UV wavelengths starting from approximately 140 nm, depending on the quartz type. Ozone gas ($O_3$) is generated by the conversion of oxygen ($O_2$) in the air by UV energy in the range of approximately 110-200 nm. Ozone is extremely toxic and will cause serious health problems if inhaled in excess of allowable limits over a prolonged period of time. For more information on allowable limits, please refer to the ACGIH (American Conference of Governmental Industrial Hygienists) publication, "TLVs and BEIs" (Threshold Limit Values and Biological Exposure Indices). Ozone production can be suppressed in xenon discharge lamps by adding materials to the quartz glass that block short-wave UV transmission.

**QUARTZ GLASS DESIGN OPTIONS:**

OSRAM XBO® xenon lamps are offered in three quartz glass designs. They are:

1. **OSRAM XBO W/4:** These lamps are fabricated from synthetic Suprasil quartz glass. Suprasil quartz is low in impurities and provides for maximum short-wave UV transmission and consequently allows for the production of ozone. These lamps should always be used with external ventilation with no possible direct exposure to humans. Under no circumstances may the applicable maximum allowable workplace concentration of ozone be exceeded for any OSRAM xenon XBO lamps.
2. **OSRAM XBO:** These lamps use standard quartz glass and will also emit UV radiation that produces ozone. These lamps, like the W/4 types, must always be externally ventilated. With these types of lamps, health risks must always be minimized by suitably extracting the air from the lamp housing and externally venting it.
3. **OSRAM XBO OFR:** These lamps are designated "Ozone-Free" and are characterized by the letters "OFR" in the order description. OSRAM XBO OFR type lamps have their quartz glass transparently coated to effectively suppress radiation below approximately 250 nm, resulting in the elimination of ozone production during operation.

**LAMP DISPOSAL:**

1. There is a risk that a lamp could rupture because of its high internal pressure (both hot and at room temperature). A lamp rupture could result in personal injury or property damage from flying fragments of glass and/or metal. Therefore, spent (end-of-life) lamps should ALWAYS be stored in the protective covers and packaging in which they originally came, and ultimately depressurized before release for disposal. The following is one example of a depressurizing method for XBO lamps prior to disposal, but it may not be the most suitable or appropriate method depending on the circumstance:
   - The operator must wear government-approved (OSHA-approved in the U.S.A.) safety glasses, facemask (with neck protector), chest protector, and gauntlets during this entire procedure.
   - With protective lamp covers in place, place lamps[1] into steel drum[2] and lock down cover with bolt ring and bolt.
   - Drop drum onto solid surface (concrete floor) from at least five feet. Increase height as needed to ensure all lamps are depressurized.
   - Wait for dust to settle (about 5 minutes) before opening drum. Loosen bolt and allow gas to escape before complete removal of cover.

   [1] The lamps should not exceed the half-full point in the drums. Adjust the maximum number of lamps accordingly.

   [2] 8, 20, or 30-gallon drums, depending on quantity of lamps to be de-pressurized, are available. Drums of 20-gauge steel are recommended and are available from many safety supply companies.
2. Disposal of spent lamps must be in accordance with applicable federal, state/provincial, and local regulations. State laws differ in their disposal requirements.
3. Lamp users in North America may obtain specific state or province information concerning disposal regulations, toll free, by calling 1-866-666-6850.
4. OSRAM SYLVANIA Products Inc. cannot advise lamp users as to general or specific disposal regulations for federal, state/provincial, and/or local municipalities.

**WARNING**

## HBO® HIGH PRESSURE MERCURY LAMPS

**WARNING:**
In accordance with ANSI/IESNA Standard RP-27, this HBO bulb is a Risk Group 3 product.

***Read and understand this warning before using this bulb!***

**RUPTURE & RADIATION (UV- VISIBLE) HAZARD:**
1. The discharge vessel of HBO lamps is constructed of quartz glass that is filled with a quantity of mercury and either Argon or Xenon gas. Most HBO lamps are not at positive pressure when cold (not operating, at room temperature). However, there are several HBO lamps that DO have a positive internal pressure of upto approximately 8 bar (or approximately 120 psi) in the cold (room temperature) state. The printing of the following bold warning statement on individual packages identifies them as positive-pressure lamps.

   **WARNING**
   **RISK OF LAMP RUPTURING. TO AVOID PERSONAL INJURY OR PROPERTY DAMAGE, ALWAYS WEAR PROTECTIVE CLOTHING WHEN HANDLING THESE LAMPS. Never handle these lamps unless government-approved (OSHA-approved in the U.S.A.) safety glasses, facemask (with neck protector), chest protector, and gauntlets are worn.**

   These positive-pressure lamps may unexpectedly rupture resulting in the discharge of quartz and/or metal fragments as well as exposing the surrounding area to mercury. In the event of such a rupture, there is a risk of personal injury or property damage. Therefore these positive-pressure lamps should be handled in accordance with these safety instructions.
2. All HBO lamps have high internal pressures (400 - 1100 psi or 30 to 75 bar) during operation and may unexpectedly rupture resulting in the discharge of hot fragments (approximately 800°C / 1472°F) of quartz and/or metal particles, as well as the release of mercury/mercury vapor. In the event of such a rupture, there is a risk of personal injury, burns, and fire.
3. All HBO lamps generate intense ultraviolet (UV) and visible radiation during operation. This radiation can cause permanent damage to the eyes (including blindness) and serious injury to the skin (including burns and blistering). To avoid eye damage, other personal injury, and/or property damage, the lamp MUST be operated in a suitable fixture.
4. A suitable fixture is one that will prevent the arc from being viewed directly while operating, and in the event of a lamp rupture, will prevent hot (up to 800°C / 1472°F), flying fragments of quartz and/or metal from escaping into the area.
5. Fixtures for lamps that produce ozone during operation should be ventilated and filtered to the outside for ozone removal.
6. To minimize the risk of a lamp rupture, replace the lamp at or before the end of rated life (see OSRAM SYLVANIA product catalog for rated life) or when the lamp shows signs of blackening.

**BROKEN LAMPS (MERCURY VAPOR RELEASE AND DISPOSAL):**
1. In the event of a lamp rupturing during operation, all personnel should leave the area immediately to avoid the inhalation of mercury vapor. The area should then be thoroughly ventilated for a minimum of 30 minutes or until the mercury vapor in the area is below the ACGIH TLV (American Conference of Governmental Industrial Hygienists Threshold Limit Value). Inhaling vapor or small particles of mercury or its compounds can be harmful to lungs, kidneys, and nervous system. Penetration of the skin or ingestion can also be harmful.
2. To avoid mercury vapor getting into air conditioning systems, instruments/equipment using lamps of 350 watts or greater should be connected to separate air exhaust systems through mercury vapor-absorbing filters. When the lamp housing has cooled, ***mercury residue may be picked up with special mercury adsorptive agents or a mercury vacuum cleaner (available from laboratory safety equipment suppliers) and disposed of in accordance with local, state, and federal regulations.*** There should be no direct skin contact with and/or inhalation of mercury residues that may be residing in lamp housing, optics or lamp parts. If a cold (room temperature) lamp is broken, proceed with clean-up and disposal as indicated above (in the ***bold, italicized statement***).

**GENERAL SAFETY & INSTALLATION TIPS**

**INSTALLATION:**
1. Do not use if lamp is scratched, cracked, or damaged in any way.
2. To prevent electric shock, shut off main power to the fixture before attempting to service or replace lamp.
3. To avoid damaging the quartz and causing premature lamp failure, do not handle lamp with bare hands.
4. Only handle lamp with suitable, clean safety gloves. See special, bolded warning for using government-approved safety equipment when handling positive-pressure lamps.
5. If the quartz parts are inadvertently touched, clean fingerprints off with denatured alcohol and wipe dry with a soft, clean, lint-free cloth. Do not use cleaning rags or material that can leave a residue.
6. To prevent skin burns, allow lamp to cool before handling.
7. To avoid breakage, mounting of the lamp must be free of mechanical stress during installation and during operation by allowing for thermal expansion along its axis. For this reason, HBO lamps should be fixed at one end only and the electrical connection on the other end must be flexible enough to avoid stressing the lamp.
8. HBO lamps should not be subjected to force/stress during installation.
9. Replace all fixture covers and shields after replacing lamp to prevent eye damage, other personal injury, or property damage.
10. Use only in instruments/equipment specifying this light source.
11. Make sure lamp is properly installed into socket/connector to obtain good electrical and thermal contact and avoid damaging lamp and/or socket/connector. Electrical connections should be free from dirt and corrosion.
12. Socket/connector condition may affect lamp life. Replace socket/connector or lamp if deterioration (pitting, scorching, corrosion, etc.) of either is observed.

**OPERATION:**
1. Some HBO lamps are designed for operation on only AC or only DC while some are designed for operation on either AC or DC.
2. Note: all HBO lamps with power consumption of 350 W and higher are only suited for DC operation. Make sure that the polarity is correct before turning power on. Incorrect polarity can destroy the lamp in a matter of seconds.
3. Operate with compatible power supply and fixture only.
4. To ensure that AC-suited lamps operate at correct power during AC operation, connections on the ballast/choke in the power supply should be made to the voltage taps that are marked the same as the marking on the lamp base (L1 or L2). Some power supplies are equipped with a switch (or taps) for selecting L1 or L2. For correct and safe lamp operation, use only those ballasts/power supplies that have been approved or meet minimum requirements as specified by OSRAM. See your OSRAM dealer for list of approved equipment.
5. HBO lamps need 5 to 20 minutes (depending on lamp type and cooling conditions) before they reach their operating temperatures. To ensure proper ignition on subsequent start-up, lamps should not be switched off during the warm-up period.
6. The average service life of high wattage HBO lamps (≥350 watts) is determined by their ON/OFF duty cycle. These lamps have been designed for a limited amount of ignitions only (less than 10). Lamp performance is reduced with increased duty cycle.

## HBO® HIGH PRESSURE MERCURY LAMPS (continued)

**OPERATING POSITION:**

HBO lamps may only be operated in the operating positions described in the OSRAM SYLVANIA product catalog.

Some HBO lamps are designed to operate horizontally (mainly low wattage types in the power range of 50 to 200 W) and others, vertically (all lamp types with-power consumption of 350 W and higher). Greater arc stability is obtained in vertically operating lamps when they are operated as close to vertical as possible. See catalog for permissible operating positions and electrode positions.

**OZONE GENERATION:**

During operation, HBO lamps produce a spectrum that ranges from about 150 nm in the ultraviolet region to the infrared region.

If the quartz glass bulb is transparent in the ultraviolet region between 180 and 220 nm, this short-wave radiation will convert a small quantity of atmospheric oxygen ($O_2$) surrounding the lamp into ozone ($O_3$). Moreover, the oxygen molecules will link together with the nitrogen ($N_2$) in the air, creating nitrogen oxides ($NO_x$). (Some believe that the smell attributed to ozone is in actuality from the nitrogen oxides.)

Ozone gas is toxic when inhaled in high concentrations over long periods of time. Ozone levels can be measured and monitored with commercial measuring equipment. Always keep ozone levels below the applicable TLV (threshold limit value).

The production of ozone and nitrogen oxide can be suppressed by using doped quartz glass, which absorbs the ozone-producing ultraviolet radiation. The quartz glass used in high wattage i-line (365nm) enhanced HBO lamps only transmits wavelengths above 250 nm, which provides effective, ozone-free lamps. Please be advised that the OSRAM HBO 4000 W/PL lamp is designed to generate UV wavelengths below 250nm. Consequently, this lamp will generate ozone in operation and should be externally ventilated.

An "ozone smell" (or smell of nitrogen oxide) may be detected shortly after ignition. There are two probable causes for this condition. $O_3$ and $NO_x$ production is caused by the (short-duration) radiation of the spark gap used for lamp ignition. Or, the cold condition of the quartz glass bulb has slightly shifted its UV-absorption characteristics thus permitting a small amount of radiation in the very short-wave ultraviolet range to be emitted by the bulb. Typically, after the lamp has run up to its operating temperature range, virtually no ozone is produced by the lamp, as a rule, due to the quartz glass absorption and the self-absorption of the plasma.

**LAMP COOLING:**

1. To prevent premature failure, lamp base temperatures must be kept below 230˚C (446˚F) for 50 to 350 watt lamps and below 200˚C (392˚F) for all lamps with power consumption of more than 350 watts.
2. Discoloration, surface pitting, and/or corrosion of the lamp connections indicates a thermal overload. Components exhibiting these conditions must be cleaned or replaced.
3. If convection cooling is insufficient and additional cooling is required, cooling fins may be applied to the bases and/or forced air may be used.
4. If forced air is used, care must be taken to direct airflow at the bases only. Striking elsewhere on the lamp with the airflow will result in poor lamp performance or premature failure.

**LAMP REMOVAL:**

Turn off power to the lamp and allow lamp to cool (forced or convection) for a minimum of 30 minutes prior to shutting main fixture power and opening fixture. Do not remove lamp until it has cooled. See special, bolded warning for using government-approved safety equipment when handling positive-pressure lamps.

Lamps should be placed in their original OSRAM SYLVANIA packaging for temporary storage until disposal and/or transportation to a disposal location. See "Lamp Transportation" and "Lamp Disposal" sections below for relevant information.

**LAMP TRANSPORTATION:**

1. All HBO lamps should be transported ONLY in their original packaging.
2. Transportation in non-original packaging can damage the lamp and void warranty.
3. U.S. Federal regulations require mercury-containing lamps to be shipped ONLY in DOT-compliant packaging. Original OSRAM packaging is DOT-compliant.
4. When transporting positive-pressure lamps, the bolded warning found in the "Rupture & Radiation Hazard" section MUST be placed on outside surface of the shipping carton and the warning instructions must also be placed inside the shipping packaging.

**MERCURY FILL OF HBO LAMPS:**

Mercury is referred to by its chemical symbol, Hg, which is derived from the Greek and Latin "hydrargyrum," a silvery shiny liquid metal at room temperature. In humid air it is covered with a gray oxide skin. Of all metals it has the highest vapor pressure which increases exponentially with rising temperatures. For this reason, mercury is volatile at room temperature. The colorless and odorless vapors produced are poisonous and heavier than air.

The inhalation (respiration) of mercury or mercury compounds as vapor or dust will lead to the damage of lungs, kidneys, and the nervous system. Apart from inhalation, mercury can be transmitted through the skin (penetration) or through the gastro-intestinal tract (ingestion), which is also harmful.

The ACGIH threshold limit values (TLVs) are merely guidelines to assist in the control of health hazards. The ACGIH says that the TLVs refer to airborne concentrations of substances and represent conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse health effects. Therefore, the TLV for mercury should never be exceeded.

Analytical detection of mercury vapor is possible by means of gas/vapor detector tubes (rough measurement) or air-monitors that absorb mercury vapor.

OSRAM HBO® lamps have the following mercury contents:

| Power level | Maximum Mercury content (mg) |
|---|---|
| 50 - 200 W | 110 |
| 350 W | 300 |
| 500 W | 500 |
| 1,000 W | 1,000 |
| 1,500 W | 800 |
| 2,000 - 2,500 W | 5,000 |
| 3,500 W and higher | 12,000 |

**PROPERTIES OF MERCURY:**

- Chemical symbol: Hg
- Atomic number: 80
- Molecular Weight: 200.59
- Density: 13.6 g/cm$^3$ @ 20°C / 68°F
- Melting Point: -39°C / -38.2°F
- Boiling Point: 357°C / 674°F
- Vapor pressure: 160 Pa @ 20°C / 68°F
  370 Pa @ 30°C / 86°F
  823 Pa @ 40°C / 104°F
- Concentration in air: 13.6 mg/m$^3$ @ 20°C / 68°F
  29.6 mg/m$^3$ @ 30°C / 86°F
  62.7 mg/m$^3$ @ 40°C / 104°F
- CAS Registry Number: 7439-97-6
- RCRA waste number: U151
- Other Names: Hydrargyrum, Colloidal mercury, Kwik, Mercure, Mercurio, Metallic mercury, Quecksilber, Quick silver, Liquid Silver

**LAMP DISPOSAL:**

1. Disposal of spent lamps must be in accordance with applicable federal, state/provincial, and local regulations. State laws differ in their disposal requirements for lamps containing mercury.
2. Lamp users in North America may obtain specific state or province information concerning disposal regulations, toll free, by calling 1-866-666-6850.

**Hg Lamp Contains Mercury**
**Manage in accordance with disposal laws**
**See www.lamprecycle.org or 1-866-666-6850**

3. OSRAM SYLVANIA Products Inc. cannot advise lamp users as to general or specific disposal regulations for federal, state/provincial, and/or local municipalities.

**Special disposal note for cold, positive-pressure lamps (see "RUPTURE & RADIATION HAZARD" section for applicable lamps)**
There is a risk that these lamps could rupture because of their high internal pressure when hot (during operation) and when cold (at room temperature when not operating). A lamp rupture could result in personal injury or property damage from flying fragments of quartz and/or metal. Therefore, spent (end-of-life) lamps should ALWAYS be stored in the packaging in which they originally came.

## Lamp Disposal Labeling

The following information appears on the packages and/or stuffer of mercury-containing Display/Optic lamps. For more information on lamp disposal labeling, see the inside back cover of this catalog.

**Hg Lamp Contains Mercury**
**Manage in accordance with disposal laws**
**See www.lamprecycle.org or 1-866-666-6850**

**NOTES:**

# LED SYSTEMS

The most important trend in lighting technology is the move towards systems… we started this trend with THE SYSTEM SOLUTION®, a family of optimally balanced energy saving lamps and ballast combinations. We are now extending that trend with LED systems for the lighting market.

LED systems are quickly becoming the light source of choice for signage applications due to their ruggedness, reliability, long life, energy efficiency and low maintenance requirements. They have also opened new avenues in lighting with their color mixing and color sequencing capabilities. They offer unique capabilities for architectural enhancements and decorative lighting due to their small sizes and system flexibility.

OSRAM SYLVANIA has the competitive advantage in the arena of LED systems with years of experience in designing and developing discrete LEDs, LED modules and OPTOTRONIC® electronic LED power supplies and controls. Our global network of design and manufacturing brings LED, electronics, and lighting systems knowledge together to produce innovative, efficient, environmentally friendly and energy saving systems. Our LED systems are also covered by our comprehensive LED system warranty.

**Consult Ballast section, page 185 for listings of OPTOTRONIC LED power supplies and controls.**

## LED ADVANTAGES

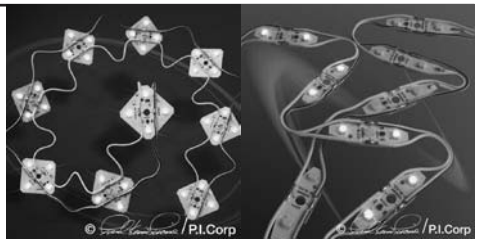
- Low energy consumption
- Long service life
- Directional distribution of light
- High color efficiency
- Small size
- Flexible lighting solutions
- No IR/UV radiation
- Innovative system solutions

### Hi-flux (HF) systems

Hi Flux LED modules are the latest generation of power LEDs. They offer exciting possibilities for LEDs in general illumination applications including signage, cove lighting, spot and flood lighting, display lighting, freezer and refrigeration lighting.

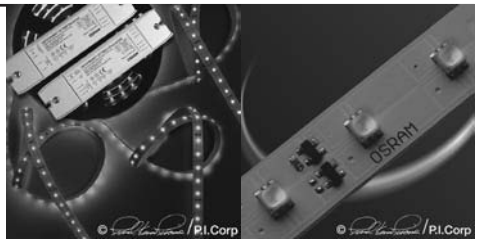

### BACKlight Systems

Designed especially for signage applications the BACKlight System offers a versatile alternative to neon for channel letter signs. It comes in various colors and due to its high flexibility is also suitable for any application requiring LEDs oriented in a 3-dimensional setting. This product is conformally coated and is listed in the UL Sign Accessories Manual (SAM).




### LINEARlight Colormix Systems

LINEARlight Colormix Flexible and Rigid modules along with OPTOTRONIC® RGB Control system offer simple dynamic control for creating colored lighting. The Colormix module features a 3-chip LED with high luminous efficacy to achieve an infinite number of colors. Connectors are available for both the flexible and rigid modules.

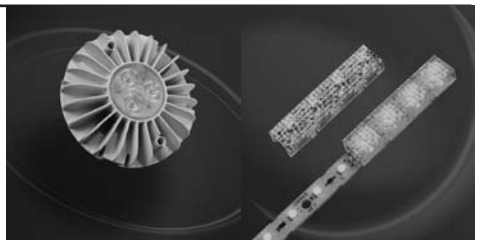



OSRAM SYLVANIA

For all module dimensions see sylvania.com/led

# LED SYSTEMS CONTINUED...

## LINEARlight Systems



Flexible LINEARlight reels are available with TOPLED or SIDELED options and in a variety of colors. The LINEARlight MULTIFLEX provides new dimensions for innovative lighting. POWERFLEX LINEARlight modules offer superior lumen output for white light. The LINEARlight modules are mounted on rigid boards which make them an ideal choice for small and sleek luminaires. Optics and connectors are available for the rigid modules.

## Accessories: connectors, optics, thermal solutions

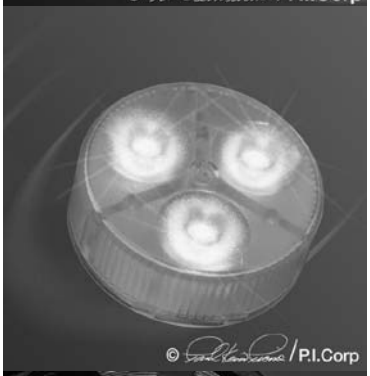
Accessories to LED modules aid in a complete system solution. Connector systems are designed to simplify the installation process by eliminating the need to solder wires. Optic accessories provide light intensification and mechanical protection. Thermal solutions supply proper thermal management allowing for an optimal service life.

## How to read Product Descriptions:

| BACKlight2G | 633 | BL02ST | S1 |
|---|---|---|---|
| BACKlight | Wave | ID# | Color Code |
| Second | length | | S=Super Red |
| Generation | 633nm | | |

| HF2Chain | 36 | W3 | -865 |
|---|---|---|---|
| HiFlux Second | # of | Color | Color Temp |
| Generation | LED 36 | Code | 865=6500K |
| Chain | | W3=White | |

| Color Definition | |
|---|---|
| S,S1 | Super Red |
| A,A1 | Amber Red |
| Y,Y1,Y2 | Yellow |
| O,O1 | Orange |
| T.T2 | True Green |
| B,B1 | Blue |
| W,W2,W3 | White |





For all module dimensions see sylvania.com/led

# Safety Information for all LED modules and accessories

**WARNING: ONLY QUALIFIED PERSONNEL SHOULD PERFORM INSTALLATION.**
**TO AVOID ELECTRICAL SHOCK OR COMPONENT DAMAGE, DISCONNECT POWER BEFORE ATTEMPTING INSTALLATION OF THE POWER SUPPLIES AND/OR MODULES.**

Failure to install the power supplies and/or LED modules in accordance with the National Electric Code (NEC), all applicable Federal, State and local electric codes as well as the specific Underwriter's Laboratories (UL) safety standards for the installation, location and application may cause serious personal injury, death, property damage and/or product malfunction. These instructions are guidelines for installation of OSRAM LED modules and power supplies. Installation requirements may vary depending on the application. Licensed electricians should provide all installation services for connection of both primary and secondary (input/output) of the power supplies.

1. The LED module itself and all its components must not be subjected to mechanical stress.
2. Assembly must not damage or destroy conducting paths on the circuit board.
3. Installation of LED modules (with power supplies) should adhere to all applicable electrical and safety standards. Only qualified personnel should perform installations.
4. Correct electrical polarity needs to be observed. Wrong polarity may destroy the module.
5. Unbalanced voltage drop can cause hazardous overload and damage the LED module.
6. Ensure that the power supply is of adequate power to operate the total load.
7. Pay attention to standard ESD precautions when installing the module.
8. Damage by corrosion will not be honored as a materials defect claim. It is the user's responsibility to provide suitable protection against corrosive agents such as moisture, condensation and other harmful elements.
9. Modules may be hot to the touch. Use caution when handling.
10. Only install according to the heat sinking parameters outlined.
11. For applications involving exposure to humidity and dust, the module must be protected by a fixture or housing with a suitable protection glass. The module can be protected against condensation water by treatment with an appropriate circuit board conformal coating. The conformal coating should have the following features:

    - Optical transparency
    - UV resistance
    - Thermal expansion properties matching those of the module (15-30 x 10-6cm/cm/K)
    - Low permeability of steam for all climate conditions
    - Resistance against corrosive environments

Note: The "AFL" grade conformal coating from Electrolube, Inc. (www.electrolube.com) has met the conditions for LINEARlight Colormix in our tests.

*For product specific safety information please see the appropriate Product Information Bulletin

The LED Module incorporates no protection against short circuits, overload or overheating. Therefore it is absolutely necessary to operate the modules with an electronically stabilized power supply offering protection against the above mentioned safety risks.

**OSRAM OPTOTRONIC power supplies are specifically designed with protection features for safe operation.**

When using power supplies other than OPTOTRONIC the following basic safety features are required in addition to any other application specific concerns and local safety codes:

- Short circuit protection
- Overload protection
- Overheat protection
- Correct output voltage, including consideration for ripple and spikes.



For all module dimensions see sylvania.com/led

# SPOT/FLOOD PRODUCTS

## HF²Eye

Task lighting, Accent lighting, Outdoor and landscape lighting, Shelf lighting, Display case lighting, Vehicle cabin lighting, Solar powered installations

| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Wavelength /(CCT °K) | OPTOTRONIC Power Supply | Current (Amps) | Load Wattage | Beam Angle (Degrees) | Luminous Intensity |
|---|---|---|---|---|---|---|---|---|---|---|
| 70199 | **HF2Eye/W3-833** | 6 | 264 | White | 3300K | Constant Current | .35 | 1.2 | 15 | 230 |
| 70200 | **HF2Eye/W3-854** | 6 | 264 | White | 5400K | Constant Current | .35 | 1.2 | 15 | 310 |

## DRAGONPuck

Task lighting, Accent lighting, Outdoor and landscape lighting, Shelf lighting, Refrigerator and freezer display case lighting, Light box, Backlit graphics, Edge lighting, Vehicle cabin lighting, Solar powered installations

| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Wavelength /(CCT °K) | LEDs/ Module | OPTOTRONIC Power Supply | Load Current (Amps) | Load Wattage | Beam Angle (Degrees) | Luminous Intensity (cd) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 70107 | **DRAGONPUCK/OS/DP3/W2-854** | 1 | 16 | White | 5400 | 3 | Constant Current | .35 | 3.6 | 20 | 285 |
| 70108 | **DRAGONPUCK/OS/DP3/W2-865** | 1 | 16 | White | 6500 | 3 | Constant Current | .35 | 3.6 | 20 | 285 |
| 70120 | **DRAGONPUCK/OS/DP3/W2-847** | 1 | 16 | White | 4700 | 3 | Constant Current | .35 | 3.6 | 20 | 285 |
| 70121 | **DRAGONPUCK/OS/DP3/A1** | 1 | 16 | Red | 617 | 3 | Constant Current | .35 | 2.4 | 16 | 215 |
| 70122 | **DRAGONPUCK/OS/DP3/B1** | 1 | 16 | Blue | 470 | 3 | Constant Current | .35 | 3.6 | 16 | 100 |
| 70123 | **DRAGONPUCK/OS/DP3/V1** | 1 | 16 | Verde | 505 | 3 | Constant Current | .35 | 3.6 | 16 | 285 |
| 70124 | **DRAGONPUCK/OS/DP3/Y1** | 1 | 16 | Yellow | 587 | 3 | Constant Current | .35 | 2.4 | 16 | 215 |
| 70142 | **DRAGONPUCK/OS/DP3/W2-733** | 1 | 16 | White | 3300 | 3 | Constant Current | .35 | 3.6 | 20 | 230 |
| 70167 | **DRAGONPUCK/OS/DP3/W3-733** | 1 | 16 | White | 3300 | 3 | Constant Current | .35 | 3.6 | 16 | 600 |
| 70168 | **DRAGONPUCK/OS/W3-847** | 1 | 16 | White | 4700 | 3 | Constant Current | .35 | 3.6 | 16 | 900 |
| 70169 | **DRAGONPUCK/OS/W3-854** | 1 | 16 | White | 5400 | 3 | Constant Current | .35 | 3.6 | 16 | 900 |
| 70170 | **DRAGONPUCK/OS/W3-865** | 1 | 16 | White | 6500 | 3 | Constant Current | .35 | 3.6 | 16 | 900 |

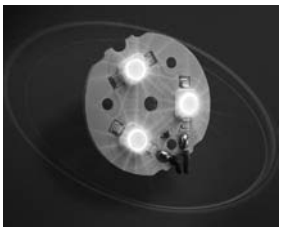


For all module dimensions see sylvania.com/led

## HFDisk

Task lighting, Accent lighting, Outdoor and landscape lighting, Shelf lighting, Display case lighting, Vehicle cabin lighting, Solar powered installations

| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Wavelength /(CCT °K) | LEDs/ Module | OPTOTRONIC Power Supply | Load Current (Amps) | Load Wattage | Viewing Angle (Degrees) | Lumens |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 70203 | **HFDisk/3/W2-733** | 10 | 100 | White | 3300K | 3 | Constant Current | .35 | 3.6 | 120 | 60 |
| 70204 | **HFDisk/3/W2-847** | 10 | 100 | White | 4700K | 3 | Constant Current | .35 | 3.6 | 120 | 75 |



## HF²X

Task lighting, Accent lighting, Outdoor and landscape lighting, Shelf lighting, Display case lighting, Vehicle cabin lighting, Solor powered installations

| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Wavelength /(CCT °K) | OPTOTRONIC Power Supply | Current (Amps) | Load Wattage | Radiance Angle (Degrees) | Luminous Intensity |
|---|---|---|---|---|---|---|---|---|---|---|
| 70184 | **HF2X/120/W3-854** | 6 | 120 | White | 5400K | Constant Current | .35 | 1.2 | 120 | 15 |
| 70191 | **HF2X/60/W3-854** | 6 | 120 | White | 5400K | Constant Current | .35 | 1.2 | 60 | 33 |
| 70201 | **HF2X/12/W3-854** | 6 | 120 | White | 5400K | Constant Current | .35 | 1.2 | 12 | 675 |
| 70202 | **HF2X/30/W3-854** | 6 | 120 | White | 5400K | Constant Current | .35 | 1.2 | 30 | 110 |
| 70164 | **HF2X/120/W3-733** | 6 | 120 | White | 3300K | Constant Current | .35 | 1.2 | 120 | 10 |
| 70192 | **HF2X/12/W3-733** | 6 | 120 | White | 3300K | Constant Current | .35 | 1.2 | 12 | 45 |
| 70193 | **HF2X/30/W3-733** | 6 | 120 | White | 3300K | Constant Current | .35 | 1.2 | 30 | 75 |
| 70190 | **HF2X/120/W3-847** | 6 | 120 | White | 4700K | Constant Current | .35 | 1.2 | 120 | * |
| 70189 | **HF2X/60/W3-847** | 6 | 120 | White | 4700K | Constant Current | .35 | 1.2 | 60 | * |
| 70174 | **HF2X/12/W3-847** | 6 | 120 | White | 4700K | Constant Current | .35 | 1.2 | 12 | * |
| 70176 | **HF2X/30/W3-847** | 6 | 120 | White | 4700K | Constant Current | .35 | 1.2 | 30 | * |
| 70194 | **HF2X/60/W3-733** | 6 | 120 | White | 3300K | Constant Current | .35 | 1.2 | 60 | 22 |

For all module dimensions see sylvania.com/led

## HF²Flood

Down lighting, Accent lighting, Cove lighting, Outdoor and landscape lighting, Vehicle cabin lighting, Solar powered installations

| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Wavelength /(CCT °K) | OPTOTRONIC Power Supply | Current (Amps) | Load Wattage | Radiance Angle (Degrees) | Luminous Intensity |
|---|---|---|---|---|---|---|---|---|---|---|
| 70244 | **HF2Flood/25/CO06A/W3-733** | 1 | 20 | White | 3300K | 24 Vdc | .50 | 12 | 25 | 700 |
| 70243 | **HF2Flood/25/CO06A/W3-847** | 1 | 20 | White | 4700K | 24 Vdc | .50 | 12 | 25 | 700 |
| 70242 | **HF2Flood/25/CO06A/W3-854** | 1 | 20 | White | 5400K | 24 Vdc | .50 | 12 | 25 | 700 |
| 70241 | **HF2Flood/25/CO06A/W3-865** | 1 | 20 | White | 6500K | 24 Vdc | .50 | 12 | 25 | 600 |
| 70255 | **HF2Flood/38/CO06A/W3-733** | 1 | 20 | White | 3300K | 24 Vdc | .50 | 12 | 38 | *** |
| 70256 | **HF2Flood/38/CO06A/W3-847** | 1 | 20 | White | 4700K | 24 Vdc | .50 | 12 | 38 | *** |
| 70257 | **HF2Flood/38/CO06A/W3-854** | 1 | 20 | White | 5400K | 24 Vdc | .50 | 12 | 38 | *** |
| 70258 | **HF2Flood/38/CO06A/W3-865** | 1 | 20 | White | 6500K | 24 Vdc | .50 | 12 | 38 | *** |

# LINEAR PRODUCTS

## HF²Stick

Shelf lighting, Under cabinet lighting, Refrigerator and freezer case lighting, Cove lighting, Display lighting, Street lighting

| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Wavelength /(CCT °K) | LEDs/ Module | OPTOTRONIC Power Supply | Load Current (Amps) | Load Wattage | Viewing Angle (Degrees) | Luminous Flux (Lumens) | Lumens /foot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70232 | **HF2Stick/6/W3-854-11.8 IN** | 1 | 6 | White | 5400K | 6 | 24 Vdc | .50 | 12 | 120 | 375 | 383 |
| 70215 | **HF2Stick/6/W3-865-11.8 IN** | 6 | 6 | White | 6500K | 6 | 24 Vdc | .50 | 12 | 120 | 375 | 383 |

## HF²Linear

Shelf lighting, Under cabinet lighting, Refrigerator and freezer case lighting, Cove lighting, Display lighting, Street lighting

| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Wavelength /(CCT °K) | LEDs/ Module | OPTOTRONIC Power Supply | Load Current (Amps) | Load Wattage | Viewing Angle (Degrees) | Luminous Flux (Lumens) | Lumens /foot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70250 | **HF2Linear/6/L30/W3-865-12.1 IN** | 6 | 6 | White | 6500K | 6 | 24 Vdc | .50 | 12 | 30 | 270 | 268 |
| 70214 | **HF2Linear/6/L30/W3-854-12.1 IN** | 6 | 6 | White | 5400K | 6 | 24 Vdc | .50 | 12 | 30 | 270 | 268 |
| 70178 | **HF2Linear/6/L30/W3-733-12.1 IN** | 1 | 6 | White | 3300K | 6 | 24 Vdc | .50 | 12 | 30 | 270 | 268 |
| 70109 | **HF2Linear/6/L30/W3-847-12.1 IN** | 1 | 6 | White | 4700K | 6 | 24 Vdc | .50 | 12 | 30 | 270 | 268 |



For all module dimensions see sylvania.com/led

## HF²Stick XB

Shelf lighting, Under cabinet lighting, Refrigerator and freezer case lighting, Cove lighting, Display lighting, Street lighting

| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Wavelength /(CCT °K) | LEDs/ Module | OPTOTRONIC Power Supply | Load Current (Amps) | Load Wattage | Viewing Angle (Degrees) | Luminous Flux (Lumens) | Lumens /foot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70212 | **HF2StickXB/4/W3-727-11.5 IN** | 10 | 50 | White | 2700K | 4 | 24 Vdc | 0.23 | 5.6 | 100 | 130 | 135 |
| 70225 | **HF2StickXB/4/W3-841-11.5 IN** | 10 | 50 | White | 4100K | 4 | 24 Vdc | 0.23 | 5.6 | 100 | 150 | 156 |
| 70226 | **HF2StickXB/4/W3-865-11.5 IN** | 10 | 50 | White | 6500K | 4 | 24 Vdc | 0.21 | 5.1 | 100 | 240 | 250 |

## DRAGONstick

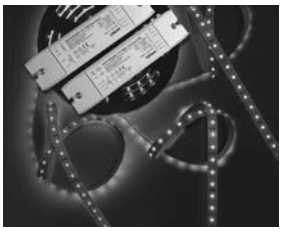
Shelf Lighting, Under cabinet lighting, Refrigerator and freezer lighting, Display case lighting

| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Wavelength /(CCT °K) | LEDs/ Module | OPTOTRONIC Power Supply | Load Current (Amps) | Load Wattage | Viewing Angle (Degrees) | Luminous Flux (Lumens) | Lumens /foot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70221 | **DRAGONstick/6/W3-847 11.5 IN** | 1 | 10 | White | 4700K | 6 | 24 Vdc | 0.35 | 8.5 | 120 | 200 | 208 |
| 70128 | **DRAGONstick/OS/DS12/W2-847** | 1 | 10 | White | 4700K | 12 | 24 Vdc | 0.7 | 17 | 120 | 300 | 313 |
| 70158 | **DRAGONstick/OS/DS6/W2-733** | 1 | 10 | White | 3300K | 6 | 24 Vdc | 0.35 | 8.5 | 120 | 120 | 125 |
| 70180 | **DRAGONstick/OS/DS12/W2-733** | 1 | 10 | White | 3300K | 12 | 24 Vdc | 0.7 | 17 | 120 | 240 | 250 |

## LINEARlight Flex Top Colormix

Edge lighting, Accent lighting, Cove lighting, Color mixing, Controlled color sequencing, Custom color applications

| Product Number | Ordering Description | Pkg Qty | Case Qty | Wavelength /(CCT °K) | LEDs/ Module | OPTOTRONIC Power Supply | Load Current (Amps) | Load Wattage | Viewing Angle (Degrees) | Luminous Flux (Lumens) | Lumens /foot |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 70127 | **LINEARFLEX TOP/OS/LM10L/B7RGB** | 1 | 8 | | | | | | | | |
| | Red Channel | | | 617nm | 200 | 24 Vdc | 0.5 | 12.1 | 120 | 213 | 16.3 |
| | Green Channel | | | 525nm | 200 | 24 Vdc | 1 | 24 | 120 | 336 | 25.6 |
| | Blue Channel | | | 467nm | 200 | 24 Vdc | 0.8 | 19.2 | 120 | 54 | 4.1 |



For all module dimensions see sylvania.com/led

## LINEARlight Flex Top Colormix

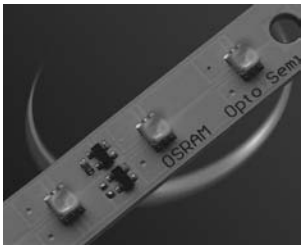
Edge lighting, Accent lighting, Cove lighting, Color mixing, Controlled color sequencing, Custom color applications

| Product Number | Ordering Description | Pkg Qty | Case Qty | Wavelength /(CCT °K) | LEDs/ Module | OPTOTRONIC Power Supply | Load Current (Amps) | Load Wattage | Viewing Angle (Degrees) | Luminous Flux (Lumens) | Lumens /foot |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 70229 | **LNRFLXTPLM10LB8RGB213.1FT** | 1 | 8 | | | | | | | | |
| | Red Channel | | | 625nm | 200 | 24 Vdc | 0.5 | 12.1 | 120 | 385 | 29.4 |
| | Green Channel | | | 525nm | 200 | 24 Vdc | 1 | 24 | 120 | 770 | 58.8 |
| | Blue Channel | | | 467nm | 200 | 24 Vdc | 0.6 | 14.4 | 120 | 130 | 9.9 |

## LINEARlight Colormix

Edge lighting, Accent lighting, Cove lighting, Color mixing, Controlled color sequencing, Custom color applications

| Product Number | Ordering Description | Pkg Qty | Case Qty | Wavelength /(CCT °K) | LEDs/ Module | OPTOTRONIC Power Supply | Load Current (Amps) | Load Wattage | Viewing Angle (Degrees) | Luminous Flux (Lumens) | Lumens /foot |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 70080 | **LNRCLRMX/LM01M/RGB 1.48 FT** | 1 | 10 | | | | | | | | |
| | All Colors | | | cool white | 30 | 24 Vdc | 0.33 | 8 | 120 | 87 | 58 |
| | Red Channel | | | 617nm | 30 | 24 Vdc | 0.075 | 1.8 | 120 | 32 | 21 |
| | Green Channel | | | 525nm | 30 | 24 Vdc | 0.15 | 3.6 | 120 | 51 | 34 |
| | Blue Channel | | | 470nm | 30 | 24 Vdc | 0.12 | 2.9 | 120 | 8 | 5 |




## LINEARlight MULTI FLEX

Cove lighting, Edge lighting, Border marking, Commercial signs, Emergency and rescue signs, Path and contour marking, Backlighting complex contours, Refrigeration cases, Display shelves, Recessed lighting

| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Wavelength /(CCT °K) | LEDs/ Module | OPTOTRONIC Power Supply | Load Current (Amps) | Load Wattage | Viewing Angle (Degrees) | Luminous Flux (Lumens) | Lumens /foot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70181 | **LLMULTIFLX/THN/W3-880-3.2 FT** | 1 | 10 | White | 8800K | 96 | 24 Vdc | 0.25 | 6 | 45 | 88 | 28 |
| 70205 | **LLMULTIFLX/THN/W3-827-3.2 FT** | 1 | 8 | White | 2700K | 96 | 24 Vdc | 0.25 | 6 | 45 | 83 | 26 |
| 70182 | **LLMULTIFLX/THN/W3-865-3.2 FT** | 1 | 8 | White | 6500K | 96 | 24 Vdc | 0.25 | 6 | 45 | 180 | 56 |



For all module dimensions see sylvania.com/led

## LINEARlight

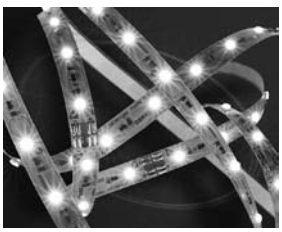
Escape route marker, Border marker, Walkways, Outlines

| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Wavelength /(CCT °K) | LEDs/ Module | OPTOTRONIC Power Supply | Load Current (Amps) | Load Wattage | Viewing Angle (Degrees) | Luminous Flux (Lumens) | Lumens /foot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70044 | **LINEAR/633/OS/LM01A/S1** | 1 | 10 | Super Red | 633nm | 32 | 10 Vdc | 0.4 | 4.2 | 120 | 54 | 37 |
| 70007 | **LINEAR/615/OS/LM01A/A1** | 1 | 10 | Amber Red | 617nm | 32 | 10 Vdc | 0.4 | 4.2 | 120 | 86 | 59 |
| 70083 | **LINEAR/610/OS/LM01A/O1** | 1 | 10 | Orange | 606nm | 32 | 10 Vdc | 0.4 | 4.2 | 120 | 98 | 67 |
| 70006 | **LINEAR/587/OS/LM01A/Y2** | 1 | 10 | Yellow | 587nm | 32 | 10 Vdc | 0.4 | 4.2 | 120 | 69 | 47 |
| 70008 | **LINEAR/525/OS/LM01A/T2** | 1 | 10 | True Green | 525nm | 32 | 10 Vdc | 0.4 | 4.2 | 120 | 57 | 39 |
| 70009 | **LINEAR/470/OS/LM01A/B1** | 1 | 10 | Blue | 469nm | 32 | 10 Vdc | 0.4 | 4.2 | 120 | 10 | 7 |
| 70111 | **LINEAR/LM01A/W2-847 1.47FT** | 1 | 10 | White | 4700K | 32 | 10 Vdc | 0.4 | 4.2 | 120 | 57 | 39 |
| 70112 | **LINEAR/LM01A/W2-854 1.47FT** | 1 | 10 | White | 5400K | 32 | 10 Vdc | 0.4 | 4.2 | 120 | 57 | 39 |
| 70113 | **LINEAR/LM01A/W2-865 1.47FT** | 1 | 10 | White | 6500K | 32 | 10 Vdc | 0.4 | 4.2 | 120 | 57 | 39 |
| 70265 | **LINEAR/LM01/W3-733 1.47FT** | 1 | 10 | White | 3300K | 32 | 10 Vdc | 0.4 | 4.2 | 120 | 68 | 46 |

## LINEARlight POWER FLEX

Cove lighting, Edge lighting, Border marking, Commercial signs, Emergency and rescue signs, Path and contour marking, Backlighting complex contours, Refrigeration cases, Display shelves, Recessed lighting

| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Wavelength /(CCT °K) | LEDs/ Module | OPTOTRONIC Power Supply | Load Current (Amps) | Load Wattage | Viewing Angle (Degrees) | Luminous Flux (Lumens) | Lumens /foot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70137 | **LNRPWRFLX/LM10P/W3-847 9FT** | 1 | 8 | White | 4700K | 120 | 24 Vdc | 3 | 72 | 120 | 1400 | 152 |
| 70098 | **LNRPWRFLX/LM10P/W3-854 9FT** | 1 | 8 | White | 5400K | 120 | 24 Vdc | 3 | 72 | 120 | 1400 | 152 |
| 70138 | **LNRPWRFLX/LM10P/W3-865 9FT** | 1 | 8 | White | 6500K | 120 | 24 Vdc | 3 | 72 | 120 | 1400 | 152 |
| 70267 | **LNRPWRFLX/LM10P/W3-733 9FT** | 1 | 1 | White | 3300K | 120 | 24 Vdc | 3 | 72 | 120 | 1300 | 144 |
| 70268 | **LNRPWRFLX/LM10P/W3-727 9FT** | 1 | 1 | White | 2700K | 120 | 24 Vdc | 3 | 72 | 120 | 1300 | 144 |





For all module dimensions see sylvania.com/led

## LINEARlight FLEX TOPLED

Cove lighting, Edge lighting, Border marking, Commercial signs, Emergency and rescue signs, Path and contour marking, Backlighting complex contours, Refrigeration cases, Display shelves, Recessed lighting

| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Wavelength /(CCT °K) | LEDs/ Module | OPTOTRONIC Power Supply | Load Current (Amps) | Load Wattage | Viewing Angle (Degrees) | Luminous Flux (Lumens) | Lumens /foot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70061 | **LNRFLXTP/587/LM10A/Y1 27.5FT** | 1 | 1 | Yellow | 587nm | 600 | 24 Vdc | 3 | 72 | 120 | 1290 | 47 |
| 70135 | **LNRFLXTP/617/LM10A/A1 27.5FT** | 1 | 1 | Amber Red | 617nm | 600 | 24 Vdc | 3 | 72 | 120 | 1620 | 59 |
| 70063 | **LNRFLXTP/525/LM10A/T1 27.5FT** | 1 | 1 | True Green | 525nm | 600 | 24 Vdc | 3 | 72 | 120 | 675 | 25 |
| 70064 | **LNRFLXTP/470/LM10A/B 27.5FT** | 1 | 1 | Blue | 469nm | 600 | 24 Vdc | 3 | 72 | 120 | 170 | 6 |
| 70105 | **LNRFLXTP/LM10A/W2-847 27.5FT** | 1 | 1 | White | 4700K | 600 | 24 Vdc | 3.6 | 86.4 | 120 | 1290 | 47 |
| 70089 | **LNRFLXTP/LM10A/W2-854 27.5FT** | 1 | 1 | White | 5400K | 600 | 24 Vdc | 3.6 | 86.4 | 120 | 1290 | 47 |
| 70104 | **LNRFLXTP/LM10A/W2-865 27.5FT** | 1 | 1 | White | 6500K | 600 | 24 Vdc | 3.6 | 86.4 | 120 | 1290 | 47 |
| 70266 | **LNRFLXTP/LM10A/W3-727 27.5FT** | 1 | 1 | White | 2700K | 600 | 24 Vdc | 3.6 | 86.4 | 120 | 1440 | 52 |

## LINEARlight FLEX SIDELED

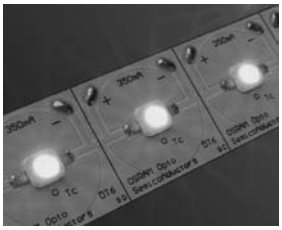
Cove lighting, Edge lighting, Border marking, Commercial signs, Emergency and rescue signs, Path and contour marking, Backlighting complex contours, Refrigeration cases, Display shelves, Recessed lighting

| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Wavelength /(CCT °K) | LEDs/ Module | OPTOTRONIC Power Supply | Load Current (Amps) | Load Wattage | Viewing Angle (Degrees) | Luminous Flux (Lumens) | Lumens /foot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70066 | **LNRFLXSD/615/LM11A/A 13.8FT** | 1 | 1 | Red | 615nm | 300 | 10 Vdc | 1.5 | 15.75 | 120 | 117 | 8.5 |
| 70067 | **LNRFLXSD/587/LM11A/Y 13.8FT** | 1 | 1 | Yellow | 587nm | 300 | 10 Vdc | 2.25 | 23.63 | 120 | 405 | 29 |
| 70068 | **LNRFLXSD/525/LM11A/T 13.8FT** | 1 | 1 | True Green | 528nm | 300 | 10 Vdc | 3 | 31.5 | 120 | 147 | 11 |
| 70069 | **LNRFLXSD/470/LM11A/B 13.8FT** | 1 | 1 | Blue | 470nm | 300 | 10 Vdc | 3 | 31.5 | 120 | 37 | 3 |
| 70070 | **LNRFLXSD/LM11A/W 13.8FT** | 1 | 1 | White | x=0.32, y=0.31 | 300 | 10 Vdc | 3 | 31.5 | 120 | 405 | 29 |

## DRAGONtape

Task lighting. Underer cabinet lighting, Accent lighting, Cove lighting, Outdoor and landscape lighting, Refrigerator and freezer lighting, Light box, Backlit graphics, Edge lighting, Vehicle cabin lighting, Solar powered installations

| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Wavelength /(CCT °K) | LEDs/ Module | OPTOTRONIC Power Supply | Load Current (Amps) | Load Wattage | Viewing Angle (Degrees) | Luminous Flux (Lumens) | Lumens /foot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70106 | **DRAGONtape/OS/DT6/W2-847** | 1 | 25 | White | 4700K | 6 | Constant Current | .35 | 7.2 | 120 | 150 | 300 |
| 70099 | **DRAGONtape/OS/DT6/W2-854** | 1 | 25 | White | 5400K | 6 | Constant Current | .35 | 7.2 | 120 | 150 | 300 |
| 70100 | **DRAGONtape/OS/DT6/W2-865** | 1 | 25 | White | 6500K | 6 | Constant Current | .35 | 7.2 | 120 | 150 | 300 |
| 70151 | **DRAGONtape/OS/DT6/W2-733** | 1 | 25 | White | 3300K | 6 | Constant Current | .35 | 7.2 | 120 | 120 | 240 |
| 70101 | **DRAGONtape/OS/DT6/A1** | 1 | 25 | Red | 617nm | 6 | Constant Current | .35 | 4.8 | 120 | 108 | 216 |
| 70117 | **DRAGONtape/OS/DT6/Y1** | 1 | 25 | Yellow | 587nm | 6 | Constant Current | .35 | 4.8 | 120 | 108 | 216 |
| 70118 | **DRAGONtape/OS/DT6/V1** | 1 | 25 | Verde | 505nm | 6 | Constant Current | .35 | 7.2 | 120 | 150 | 300 |
| 70119 | **DRAGONtape/OS/DT6/B1** | 1 | 25 | Blue | 465nm | 6 | Constant Current | .35 | 7.2 | 120 | 48 | 96 |



# CHAIN PRODUCTS

## HF²Chain

Backlighting advertising panels, Signs, Channel letters and displays, General lighting

| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Wavelength /(CCT °K) | LEDs/ Module | OPTOTRONIC Power Supply | Load Current (Amps) | Load Wattage | Viewing Angle (Degrees) | Luminous Flux (Lumens) | Lumens /foot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70165 | **HF2Chain/36/W3-865** | 1 | 10 | White | 6500K | 36 | 24 Vdc | 2.2 | 52 | 120 | 1320 | 110 |

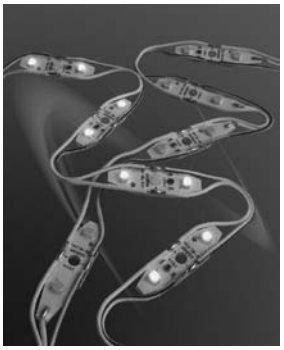


For all module dimensions see sylvania.com/led

## BACKlight 2G BL02

Backlighting advertising panels, Signs, Channel letters and displays, General lighting

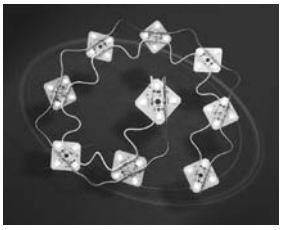
| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Wavelength /(CCT °K) | LEDs/ Module | OPTOTRONIC Power Supply | Load Current (Amps) | Load Wattage | Viewing Angle (Degrees) | Luminous Flux (Lumens) | Lumens /foot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70235 | **B2G/633/BL02ST/S1 31.5FT** | 1 | 5 | Super Red | 633nm | 240 | 10 Vdc | 3.6 | 38 | 120 | 490 | 16 |
| 70175 | **B2G/617/BL02ST/A2 31.5FT** | 1 | 5 | Amber Red | 617nm | 240 | 10 Vdc | 3.6 | 38 | 120 | 1180 | 37.5 |
| 70236 | **B2G/606/BL02ST/O1 31.5FT** | 1 | 5 | Orange | 606nm | 240 | 10 Vdc | 3.6 | 38 | 120 | 980 | 31 |
| 70237 | **B2G/587/BL02ST/Y2 31.5FT** | 1 | 5 | Yellow | 587nm | 240 | 10 Vdc | 3.6 | 38 | 120 | 980 | 31 |
| 70238 | **B2G/525/BL02ST/T2 31.5FT** | 1 | 5 | Green | 525nm | 240 | 10 Vdc | 3 | 32 | 120 | 430 | 14 |
| 70239 | **B2G/470/BL02ST/B1 31.5FT** | 1 | 5 | Blue | 470nm | 240 | 10 Vdc | 3 | 32 | 120 | 100 | 3 |
| 70144 | **B2G/BL02ST/W2-865 31.5FT** | 1 | 5 | White | 6500K | 240 | 10 Vdc | 3.6 | 38 | 120 | 520 | 17 |
| 70271 | **B2G/BL02S/W3-854 31.5FT** | 1 | 5 | White | 5400K | 240 | 10 Vdc | 4.2 | 44 | 120 | 880 | 28 |
| 70272 | **B2G/BL02S/W3-865 31.5FT** | 1 | 5 | White | 6500K | 240 | 10 Vdc | 4.2 | 44 | 120 | 880 | 28 |



## BACKlight 2G BL04

Backlighting advertising panels, Signs, Channel letters and displays, General lighting

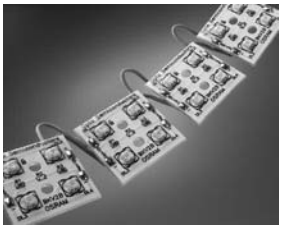
| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Wavelength /(CCT °K) | LEDs/ Module | OPTOTRONIC Power Supply | Load Current (Amps) | Load Wattage | Viewing Angle (Degrees) | Luminous Flux (Lumens) | Lumens /foot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70173** | **B2G/BL04ST/W2-865 15.75FT** | 1 | 5 reels | White | 6500K | 240 | 10 Vdc | 3.6 | 38 | 120 | 520 | 33 |
| 70172** | **B2G/525/BL04ST/T2 15.75FT** | 1 | 5 reels | Green | 525nm | 240 | 10 Vdc | 3 | 32 | 120 | 430 | 27 |
| 70171** | **B2G/470/BL04ST/B1** | 1 | 5 reels | Blue | 470nm | 240 | 10 Vdc | 3 | 32 | 120 | 100 | 6 |
| 70274 | **B2G/BL04S/W3-865** | 1 | 5 reels | White | 6500K | 240 | 10 Vdc | 4.2 | 44 | 120 | 880 | 55.9 |



## BACKlight

Backlighting advertising panels, Signs, Channel letters and displays, General lighting

| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Wavelength /(CCT °K) | LEDs/ Module | OPTOTRONIC Power Supply | Load Current (Amps) | Load Wattage | Viewing Angle (Degrees) | Luminous Flux (Lumens) | Lumens /foot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70081 | **BACKLITE/633/LM03A/S 1.8FT** | 1 | 20 | Super Red | 633nm | 32 | 10.5 Vdc | 0.4 | 4.2 | 120 | 54 | 30 |
| 70011 | **BACKLITE/615/LM03A/A 1.8FT** | 1 | 20 | Amber Red | 617nm | 32 | 10.5 Vdc | 0.4 | 4.2 | 120 | 54 | 30 |
| 70071 | **BACKLITE/610/LM03A/O 1.8FT** | 1 | 20 | Orange | 606nm | 32 | 10.5 Vdc | 0.4 | 4.2 | 120 | 86 | 48 |
| 70012 | **BACKLITE/587/LM03A/Y 1.8FT** | 1 | 20 | Yellow | 587nm | 32 | 10.5 Vdc | 0.4 | 4.2 | 120 | 69 | 38 |
| 70013 | **BACKLITE/525/LM03A/T 1.8FT** | 1 | 20 | True Green | 525nm | 32 | 10.5 Vdc | 0.4 | 4.2 | 120 | 57 | 31 |
| 70014 | **BACKLITE/470/LM03A/B 1.8FT** | 1 | 20 | Blue | 470nm | 32 | 10.5 Vdc | 0.4 | 4.2 | 120 | 9 | 5 |
| 70102 | **BACKLITE/LM03A/W2-854 1.8FT** | 1 | 20 | White | 5400K | 32 | 10.5 Vdc | 0.5 | 5.3 | 120 | 69 | 38 |
| 70103 | **BACKLITE/LM03A/W2-865 1.8FT** | 1 | 20 | White | 6500K | 32 | 10.5 Vdc | 0.5 | 5.3 | 120 | 69 | 38 |

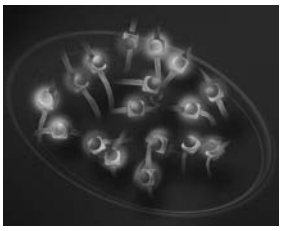


## LINEARlight Colorpod

Edge lighting, Accent lighting, Cove lighting, Color mixing, Controlled color sequencing, Custom color applications

| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Lens | LEDs/ Module | OPTOTRONIC Power Supply | Load Wattage |
|---|---|---|---|---|---|---|---|---|
| 70210 | **LINEARlight Colorpod/Clear-36 FT** | 1 | 12 | RGB | Clear | 50 | 7.5 Vdc | 25 |
| 70211 | **LINEARlight Colorpod/Frosted- 36 FT** | 1 | 12 | RGB | Frosted | 50 | 7.5 Vdc | 25 |

* To be used only with OTCP power supplies and controls.

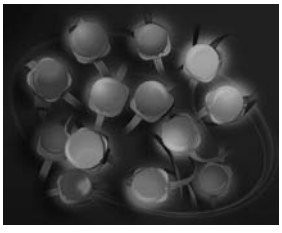


## LINEARlight Colorpod XB

Edge lighting, Accent lighting, Cove lighting, Color mixing, Controlled color sequencing, Custom color applications

| Product Number | Ordering Description | Pkg Qty | Case Qty | Color | Lens | LEDs/ Module | OPTOTRONIC Power Supply | Load Wattage |
|---|---|---|---|---|---|---|---|---|
| 70208 | **LINEARlight Colorpod XB/Frosted- 67 FT** | 1 | 6 | RGB | Frosted | 50 | 12 Vdc | 50 |
| 70209 | **LINEARlight Colorpod XB/Clear- 67 FT** | 1 | 6 | RGB | Clear | 50 | 12 Vdc | 50 |

*To be used only with OTCP power supplies and controls.



For all module dimensions see sylvania.com/led

# ACCESSORIES FOR SPOT/FLOOD PRODUCTS

## Spot/Flood Thermal Management Solutions

Thermal management solutions for DRAGONpuck® and HFDisk modules

| Product Number | Ordering Description | Pkg Qty | Case Qty | Diameter (in.) | Height (in.) |
|---|---|---|---|---|---|
| 70136 | **Heatsink/DRAGONpuck-50** | 1 | 50 | 3.5 | 0.79 |

# ACCESSORIES FOR LINEAR PRODUCTS

## HF²Stick - Linear Connector System

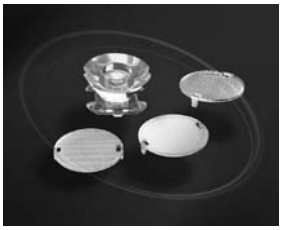
Compatible with HF2Stick and HF2Linear modules

| Product Number | Ordering Description | Pkg Qty | Case Qty | Length (in.) | Type |
|---|---|---|---|---|---|
| 70251 | **HF2Stick-Linear/Conn/2pin-input** | 10 | 500 | 20 | Power Feed |
| 70252 | **HF2Stick-Linear/Conn-4in** | 10 | 500 | 4 | Board to Board |
| 70253 | **HF2Stick-Linear/Conn-2in** | 10 | 500 | 2 | Board to Board |

## HF²Stick Optical Solutions

Compatible with HF2 Stick and DRAGONstick modules

| Product Number | Ordering Description | Pkg Qty | Case Qty | Beam Angle (Degrees) |
|---|---|---|---|---|
| 70159 | **LED/Optic/Spot/Lens-2** | 12 | 12 | 4 |
| 70160 | **LED/Optic/Wide/Sub Lens-15** | 12 | 144 | 30 |
| 70161 | **LED/Optic/Oval/Sub Lens- 4x27** | 12 | 144 | ±4 x ±27 |
| 70162 | **LED/Optic/Diffuser/Sub Lens-5** | 12 | 144 | 10 |



## Thermal Management Solutions

Compatible with HF2Stick, HF2Stick XB, HF2Chain and DRAGONstick modules

| Product Number | Ordering Description | Pkg Qty | Case Qty | Length in. (mm) | Width in. (mm) | Height in. (mm) |
|---|---|---|---|---|---|---|
| 70186 | **Heatsink/Linear/1 ft** | 1 | 25 | 12 (304.8) | 2.5 (63.5) | 0.72 (18.3) |



For all module dimensions see sylvania.com/led

## HF²Stick XB Connector

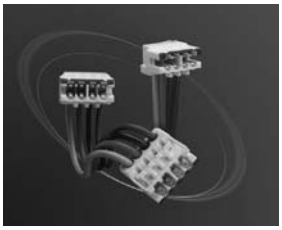
Accessory to HF2Stick XB modules

| Product Number | Ordering Description | Pkg Qty | Case Qty | Length in (mm) | Width in (mm) | Height in (mm) | Wire Length in (mm) |
|---|---|---|---|---|---|---|---|
| 70197 | **HF2StickXB Connector/input conn** | 10 | 500 | .57 (14.5) | .28 (7) | .34 (8.7 | 12 (305) |
| 70196 | **HF2StickXB Connector/conn** | 10 | 500 | .57 (14.5) | .28 (7) | .34 (8.7) | 1.77 (45) |
| 70195 | **HF2StickXB Connector/conn-12** | 10 | 500 | .57 (14.5) | .28 (7) | .34 (8.7) | 11.9 (303) |

## Colormix Connector System

Accesory to Colormix Rigid module

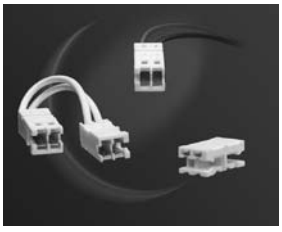
| Product Number | Ordering Description | Pkg Qty | Case Qty | Length in (mm) | Width in (mm) | Height in (mm) | Wire Length in (mm) |
|---|---|---|---|---|---|---|---|
| 70114 | **CLRMXCONN/LM4PIN/Feeder** | 10 | 500 | 0.29(7.3) | 0.49(12.5) | 0.43(11) | 19.7 (500) |
| 70110 | **CLRMXCONN/LMConn45** | 10 | 1000 | 2.35(59.6) | 0.49(12.5) | 0.43(11) | 1.77 (45) |



## LINEARlight Rigid Connector Systems

Accesory to LINEARlight module

| Product Number | Ordering Description | Pkg Qty | Case Qty | Length in (mm) | Width in (mm) | Height in (mm) | Wire Length in (mm) |
|---|---|---|---|---|---|---|---|
| 70115 | LINEARCONN/LM2-PIN/Feeder | 10 | 500 | 0.54(13.6) | 0.24(6.1) | 0.19(5) | 19.7 (550) |
| 70116 | LINEARBBCONN/LMCONN | 10 | 500 | 0.44(11.2) | 0.24(6.1) | 0.18(4.65) | |
| 70133 | LINEARLIGHTCONN/LMCONN-50 | 10 | 500 | 0.54(13.6) | 0.24(6.1) | 0.19(5) | 19.7 (500) |



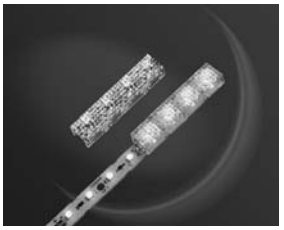


For all module dimensions see sylvania.com/led

## LINEARlight Optics

Accessory to LINEARlight modules

| Product Number | Ordering Description | Pkg Qty | Case Qty | Length in (mm) | Width in (mm) | Viewing Angle (Degrees) |
|---|---|---|---|---|---|---|
| 70072 | **LINEARLT Optics OS-OP4X1-20 + OS-LM01A** | 1 | 80 | 2.20(56) | 0.47(12) | 20/25 |



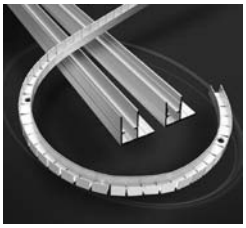
## LINEARlight MULTI FLEX Mounting Accessories

Accessory for LINEARlight MULTI FLEX modules

| Product Number | Ordering Description | Pkg Qty | Case Qty | Length (mm) | External Width (mm) | Height (mm) | Internal Width (mm) | Base Width (mm) |
|---|---|---|---|---|---|---|---|---|
| 70220 | **LLMULTIFLX/INSTALL-SCREWS** | 20 | 100 | | | | | |
| 70207 | **LLMULTIFLX/INSTALLL-TOOL** | 1 | 10 | | | | | |
| 70206 | **LLMULTIFLX/STR-CHANNEL - 3.2 FT**** | 5 | 5 | 1000 | 10.5 | 18.5 | 8 | 20 |
| 70187 | **LLMULTIFLX/THN/FLX-CHANNEL - 3.2 FT*** | 20 | 20 | 1000 | 9 | 9 | 7 | 7 |
| 70188 | **LLMULTIFLX/THN/STR-CHANNEL - 3.2 FT**** | 5 | 5 | 1000 | 10 | 16.5 | 8 | 20 |

* Flex channel only used with 70181

**70206 and 70188 can be used with 70205 and 70182



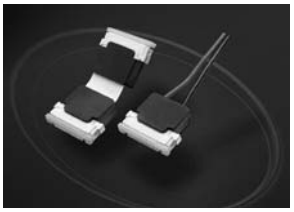
## LINEARlight FLEX Top Colormix Connector System

| Product Number | Ordering Description | Pkg Qty | Case Qty | Length in (mm) | Width in (mm) | Height in (mm) | Wire Length in (mm) |
|---|---|---|---|---|---|---|---|
| 70183 | **LM4PINFLEXCONNBPS** | 10 | 1000 | 0.48 (12.25) | 0.65 (16.5) | 0.2 (5) | 19.69 (500) |
| 70263 | **LM2CONN5FLEXCONNBB** | 10 | 2000 | 1.4 (34.5) | 0.65 (16.5) | 0.2 (5) | 0.39 (10) |

## LINEARlight FLEX Connectors

Compatible with LINEARlight POWERFLEX, LINEARlight Flex TOPLED, and LINEARlight FLEXSIDE LED

| Product Number | Ordering Description | Pkg Qty | Case Qty | Length in (mm) | Width in (mm) | Height in (mm) | Wire Length in (mm) |
|---|---|---|---|---|---|---|---|
| 70269 | **LM2PINFLEXCONN** | 10 | 1000 | 0.48 (12.25) | 0.65 (16.5) | 0.2 (5) | 19.69 (500) |
| 70263 | **LM2CONN5FLEXCONNBB** | 10 | 2000 | 1.4 (34.5) | 0.65 (16.5) | 0.2 (5) | 0.39 (10) |



# ACCESSORIES FOR CHAIN PRODUCTS

## BACKlight Connector

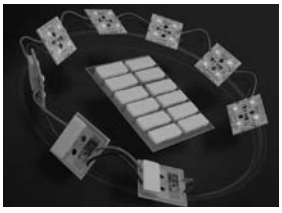
Compatible with BACKlight, BACKlight B2G BL02, and BACKlight B2G BL04

| Product Number | Ordering Description | Pkg Qty | Case Qty | Height in (mm) | Width in (mm) | Depth in (mm) | Strip Length in (mm) |
|---|---|---|---|---|---|---|---|
| 70126 | **BACKLITECONN/LM03A/CONN** | 100 | 1000 | 0.27 (6.86) | 0.39 (9.9) | 0.39 (9.9) | 0.22 (5.6) |

## BACKlight Tape

Accessory to BACKlight, BACKlight 2G and LINEARlight Rigid modules

| Product Number | Ordering Description | Pkg Qty | Case Qty | Length in (mm) | Width in (mm) | Depth in (mm) |
|---|---|---|---|---|---|---|
| 70125 | **BACKlite Tape/OS/LM03A** | 40 | 400 | 1(25.4) | 0.4 (10.16) | 0.1 (2.54) |



## LINEARlight Colorpod Mounting Accessories

Accessories to LINEARlight Colorpod modules

| Product Number | Ordering Description | Pkg Qty | Case Qty | Length in (mm) |
|---|---|---|---|---|
| 70216 | **LINEARLlight Colorpod/Track- 4ft (Mounting track - 4ft)** | 1 | 50 | 4 ft |
| 70217 | **LINEARlight Colorpod/Clip (Mounting Clip)** | 50 | 1000 | - |

## LINEARlight Colorpod XB Mounting Accessories

Accessories to LINEARlight Colorpod XB modules

| Product Number | Ordering Description | Pkg Qty | Case Qty | Length in (mm) |
|---|---|---|---|---|
| 70218 | **LINEARLlight Colorpod XB/Track- 4ft (Mounting track - 4ft)** | 1 | 50 | 4 ft |
| 70219 | **LINEARlight Colorpod XB/Clip (Mounting Clip)** | 50 | 1000 | - |

For all module dimensions see sylvania.com/led

# CONSUMER LUMINAIRES

**SYLVANIA Consumer Luminaires offer consumer and professional products to both new and existing markets that incorporate advanced, innovative LED technology.**

**The consumer luminaires product portfolio includes:**


**SYLVANIA DOT-it™ Bright White LED light™**
Meet the bright, long-lasting light that you can stick practically anywhere—over and over. DOT-it bright white LED lights outperform incandescent tap lights in brightness and life. This small, versatile light can be placed in a diverse range of locations to help provide bright, white light where needed. Use it in your car behind the seatback, in your home as an under cabinet light, in your workshop or garden shed, for your child's backpack or on your boat.

## MOBILE & FUNCTIONAL LIGHTING

**SYLVANIA Portable Lighting Products (Lanterns, Flashlights, Reading Lights, Safety Lights and more)**
are as durable as they are attractive, and go anywhere you do. Put them in your backpack or suitcase. On your bike. In your car. Take them to the beach, the mountains or use them around the house. Whatever activity you enjoy—hiking, camping, boating, cycling or working on the house, let SYLVANIA portable lights light the way for you. They're perfect as safety and emergency lights, too.

**SYLVANIA LED Strip Lights** LED TECHNOLOGY
bring colored light and lighting effects to alcoves, task areas, accent areas and other tight spaces without the expense or constraints of conventional colored lighting methods. The soft-edge fixture design is available in fixed lengths and three LED colors. Each LED strip light comes with a power cord, connection cord and mounting screws and brackets. The housing snaps into mounting brackets; no need to open the case to mount the strip. And, LED fixtures can be connected to one another to form longer lighting strips.

**SYLVANIA Night Lights**
are as functional as they are decorative. They provide just the right amount of light needed for visibility and peace-of-mind. No need to light up an area unnecessarily—wasting energy. SYLVANIA Night Lights can be used just about anywhere you need the perfect little light: bedroom, bathroom, kitchen, entryway/hallway, basement, garages, utility room, hotel rooms and nursing homes.

## MOOD & DECORATIVE LIGHTING

**SYLVANIA MOSAIC™ Color Changing Products** MOSAIC™ LED TECHNOLOGY
Color your world, indoors and out, with SYLVANIA MOSAIC Color Changing Products. They brighten up any application and make every occasion a special one. These innovative LEDs combine bright, colorful light with long lasting, durable LED technology. SYLVANIA MOSAIC products are currently available as SYLVANIA LED Light Chains, and SYLVANIA Night Lights.

**SYLVANIA lightingBrilliance™ – LED Recessed Lights** LED TECHNOLOGY
require no maintenance and are shock and vibration-resistant—providing long service life. Each recessed luminaire is equipped with four long-life LEDs in either white or blue with a lightly frosted lens. The mounting ring, available in stainless steel or granite, beautifully complements any décor or surrounding. Electronic power supplies to operate 10V LED fixtures are included in the LED Recessed Lighting Starter Kit. Installed in walls, floors or ceilings, they are ideal for living rooms, bathrooms and for marking out walkways, gardens or patios. Used indoors or outdoors, SYLVANIA LED recessed lighting can enhance the design of your retail, hospitality, residential or office application.

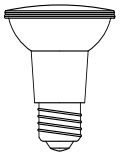
**SYLVANIA LED Light Chains** LED TECHNOLOGY
can make so many applications more festive and unique everyday. Party on, outdoors on the patio or deck, with Light Chains. Give one to your favorite student for their dorm room. Light up your landscape. Highlight treasured items in a cabinet or display case. Whenever and wherever you want your lighting to look spectacular, use a SYLVANIA LED Light Chain. Available with cool-white or color changing LEDs.

**Please visit www.sylvania.com or contact your local SYLVANIA Sales Representative for the most up-to-date listings of our Consumer Luminaires products**

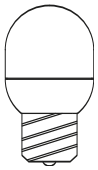
# LED RETROFIT LAMPS

LED Retrofit Lamps fill the niche for LED replacements for traditional incandescent or halogen S14, PAR20 and MR16 lamps. LED technology offers substantially better improved energy savings and exceptionally long life. They are ideal where temperature extremes and difficult or hard-to-reach locations are a factor with conventional light sources.

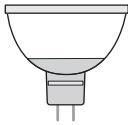
**Contact your local SYLVANIA Sales Representative of the most up-to-date lists of LED Retrofit products.**



**Par20**



**S14**



**MR16**

## LED RETROFIT LAMPS – PAR20

| Product Number | Symbols & Footnotes | Ordering Code | LED Finish | Wattage | Voltage | MOL (in.) | Beam Angle | Base | Units per Case |
|---|---|---|---|---|---|---|---|---|---|
| 72100 | 1,2,3 | **PAR20/36/36LED/Y/FL** | Red | 2.0 | 120V | 3.25 | Flood | Medium | 12 |
| 72101 | 1,2,3 | **PAR20/36/36LED/R/FL** | Yellow | 2.2 | 120V | 3.25 | Flood | Medium | 12 |
| 72102 | 1,2,3 | **PAR20/36/36LED/B/FL** | Blue | 1.5 | 120V | 3.25 | Flood | Medium | 12 |
| 72103 | 1,2,3 | **PAR20/36/36LED/G/FL** | Green | 1.5 | 120V | 3.25 | Flood | Medium | 12 |

## LED RETROFIT LAMPS – S14

| Product Number | Symbols & Footnotes | Ordering Code | LED Finish | Wattage | Voltage | MOL (in.) | Cover Finish | Base | Units per Case |
|---|---|---|---|---|---|---|---|---|---|
| 72090 | 1,2,3 | **S14/30LED/G** | Green | 1.6 | 120V | 3.15 | Acrylic Soft White | Medium | 15 |
| 72091 | 1,2,3 | **S14/30LED/B** | Blue | 1.6 | 120V | 3.15 | Acrylic Soft White | Medium | 15 |
| 72092 | 1,2,3 | **S14/30LED/R** | Red | 1.1 | 120V | 3.15 | Acrylic Soft White | Medium | 15 |
| 72093 | 1,2,3 | **S14/30LED/Y** | Yellow | 1.1 | 120V | 3.15 | Acrylic Soft White | Medium | 15 |
| 72094 | 1,2,3 | **S14/30LED/RGB** | Color Changing | 0.9 | 120V | 3.15 | Acrylic Soft White | Medium | 15 |

## LED RETROFIT LAMPS – MR16

| Product Number | Symbols & Footnotes | Ordering Code | Max. Luminous Intensity (cd) | Color Temp. (K) | Wattage | Voltage | MOL(in.) | Beam Angle | Units per Case |
|---|---|---|---|---|---|---|---|---|---|
| 72098 | 3 | LED/MR16/DRAGON/W/730/NSP6/CLAM | 869 | 3000 | 2.8 | 12V | 2 | 6 | 6 |
| 72099 | 3 | LED/MR16/DRAGON/W/735/NSP6/CLAM | 955 | 3500 | 2.8 | 12V | 2 | 6 | 6 |
| 72084 | 3 | LED/MR16/DRAGON/W/730/NSP6/COUNTER | 869 | 3000 | 2.8 | 12V | 2 | 6 | 6 |
| 72085 | 3 | LED/MR16/DRAGON/W/735/NSP6/COUNTER | 955 | 3500 | 2.8 | 12V | 2 | 6 | 6 |
| 72086 | 3 | LED/MR16/DRAGON/W/B/NSP6/COUNTER | 303 | 470 | 2.8 | 12V | 2 | 6 | 6 |

## FOOTNOTES FOR LED RETROFIT LAMPS

| Footnote | Description |
|---|---|
| 1. | CAUTIONS<br>• This lamp is not intended for use in emergency light fixtures or exit lights<br>• Not for use with dimmers<br>• No user serviceable parts inside. To avoid electrical shock, do not disassemble lamp<br>• Risk of electrical shock – do not use where directly exposed to water |
| 2. | Please contact your local SYLVANIA Sales Representative for a most updated product list on LED Retrofit Lamps |
| 3. | To avoid electrical shock and early lamp failure, this lamp must only be used indoors and in dry locations<br>• No user serviceable parts inside. To avoid electrical shock, do not disassemble lamp<br>• This lamp is not intended for use in emergency light fixtures or exit signs<br>• LED MR16 lamps will not dim. The lamps will extinguish at lower dimmer settings. Dimming circuits will not harm the lamps<br>• LED MR fits most standard, low voltage MR16 lighting fixtures including: track, strips for case lighting, adjustable downlighting, landscape lighting and recessed lighting<br>• LED MR16 lamps are not compatible with integral electronic transformers; LED MR16 lamps can run on magnetic transformers only<br>• Please contact your local SYLVANIA Sales Representative for most updated product lists on LED Retrofit Lamps |

# SYLVANIA HID SYSTEM
## LIMITED WARRANTY

### Combination Lamp and Ballast System Limited Warranty

OSRAM SYLVANIA Products Inc. ("OSPI") warrants SYLVANIA lamps installed on SYLVANIA magnetic ballasts to be free from defects in material and workmanship and to operate from the date of installation (or 3 months from date of manufacture if installation date is not known or available) for the lamp and ballast warranty periods and subject to the Terms and Conditions specified below. If lamps fail to operate for the warranty period, OSPI will provide a free replacement lamp (no labor allowance). If a SYLVANIA magnetic ballast fails to operate within the warranty period, OSPI will provide a free replacement ballast (no labor allowance).

| System | Avg. Rated Lamp Life* | Lamp Warranty Period | Ballast Warranty Period |
|---|---|---|---|
| METALARC® | 7,000-12,000 hrs | 6 months | 24 months |
| METALARC® | 15,000-20,000 hrs | 12 months | 24 months |
| LUMALUX® | 24,000 hrs | 12 months | 24 months |
| LUMALUX® | 30,000 hrs | 24 months | 24 months |

#### TERMS AND CONDITIONS

SYLVANIA lamps and SYLVANIA ballasts must be installed together as a system and be installed and operated under suitable environmental conditions and in accordance with the latest National Electrical Code, Underwriters Laboratory Bulletins, and ANSI Specifications. This warranty will not apply in the event of conditions demonstrating abnormal use or stress, such as operating temperatures in excess of maximum rated temperatures, under/over voltage conditions, excessive switching cycles or operating hours, dirty or cracked sockets, or improper lamp or ballast installation. Replacement of SYLVANIA lamps with lamps of other manufacturers will void the lamp portion of this warranty. Replacement of the SYLVANIA ballast with any other ballast will void the entire warranty.

#### FURTHER CONDITIONS

1. Warranty periods based on a minimum 4,000 hours/year to a maximum 6,000 hours/year operation (minimum 10hr/start for lamp).
2. The lighting system must operate the lamp within current ANSI Specifications.
3. OSRAM SYLVANIA reserves the right to examine all failed lamps to verify cause of failure and shall be the sole judge as to whether the lamps are in fact defective.
4. System warranty valid only for installations of 50 or more lamps and ballasts. Contact OSRAM SYLVANIA for further details.
5. Check with OSRAM SYLVANIA when using occupancy sensors or dimming, as some situations may void the warranty.

#### WARRANTY ACTIVATION / SERVICE CLAIMS

The HID System warranty is automatically activated after OSPI receives a completed HID System warranty registration form within 30 days after installation. An acknowledgment will be sent for each registration along with a reference number for future correspondence. Service claims can be made by contacting 1-800-LIGHTBULB to initiate the process for problem resolution.

#### LABOR OPTIONS

**No labor allowance is made for lamp or ballast replacement.**

#### RETURN OF DEFECTIVE PRODUCT

After contacting OSRAM SYLVANIA and receiving a RETURN MATERIAL AUTHORIZATION NUMBER, the user shall promptly return the product at the user's expense to OSRAM SYLVANIA after receiving instructions as to if, when and where to ship product. Failure to follow this procedure shall void this warranty.

#### REPLACEMENT OF PRODUCT, LIMITS OF LIABILITY

The foregoing shall constitute the sole and exclusive remedy of the purchaser and the sole and exclusive liability of OSPI. NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS MADE OR IS TO BE IMPLIED. OSPI will not, under any circumstance, whether as a result of breach of contract or warranty, tort, or otherwise, be liable for any incidental, special or consequential damages, including lost profits or revenues or any other costs or damages.

OSPI reserves the right to examine all failed lamps and/or ballasts and reserves the right to be the sole judge as to whether any lamps and/or ballasts are defective and covered under this warranty.

*Subject to and limited by the lamp warranty period limitations set forth above.

**QUESTIONS?** Please call customer service at 1-800-654-0089 or contact your local OSRAM SYLVANIA representative.

HID043

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# QUICK 60+®
## Limited Warranty

Subject to change without notice.

**The Heart of a Comprehensive System Service Program**

Compare lighting system warranties – you'll see that our QUICK 60+ warranty offers better coverage, more service options and, more important, peace of mind.

## Combination Lamp and Ballast System Limited Warranty

OSRAM SYLVANIA Products Inc. ("OSPI") warrants SYLVANIA lamps installed on QUICKTRONIC® ballasts to be free from defects in material and workmanship and to operate from the date of installation (or date of manufacture if installation date is not known or available) for the time periods and subject to the Terms and Conditions specified below. If lamps fail to operate for the warranty period, OSPI will provide a free replacement lamp (but no labor allowance). If a QUICKTRONIC ballast fails to operate within the warranty period, OSPI will provide a free replacement ballast and labor allowance in accordance with the "Labor Options" set forth below.

| System[3,4] | Lamp | Ballast Warranty Period*[8] | Lamp Warranty Period* |
|---|---|---|---|
| QUICKTRONIC® T8[1] | OCTRON XPS®, XP & XP/SS[2, 3] | 60 mos. | 36 mos. |
| QUICKTRONIC T8[1] | OCTRON family | 60 mos. | 30 mos. |
| QUICKTRONIC T8 High Ambient[1, 9] | OCTRON XP, XP/SS[2, 3] | 36/60mos.@<90°/70°C | 36 mos. |
| QUICKTRONIC 59 | OCTRON FO96/XP, FO96/XP/SS | 60 mos. | 30 mos. |
| QUICKTRONIC 59 | OCTRON FO96 | 60 mos. | 24 mos. |
| QUICKTRONIC 86/T8HO High Ambient[1] | OCTRON FO96HO | 36/60mos.@<90°/70°C | 30 mos. |
| QUICKTRONIC 96IS/96HO & 40T12 | N/A | 60 mos. | N/A |
| QUICKTRONIC T5[1], T5/HO[1] | PENTRON® Family | 60 mos. | 24 mos. |
| QUICKTRONIC 54T5HO[1] High Ambient | PENTRON® FP54/HO, FP54/C/HO | 36/60 mos.@<90°/70°C | 36 mos. |
| QUICKTRONIC 54T5/HO[1] | PENTRON® FP54/HO, FP54/C/HO | 60 mos. | 36 mos. |
| QUICKTRONIC 54PHO & DL40 | DULUX® FT55DL, FT40DL & FT40/28SS | 60 mos. | 12 mos. |
| QUICKTRONIC CF[1] | DULUX® D/E, T/E, T/E/IN, T/E/C | 60 mos. | 12 mos. |
| QUICKTRONIC FM | FM | 24 mos. | 6 mos. |
| QUICKTRONIC ICE[1, 5] | ICETRON® | 60 mos. | 60 mos. |
| QUICKTRONIC MH[7] | METALARC® Family[6] (7K-12K hrs. avg. rated life) | 36/60 mos. | 6 mos. |
| QUICKTRONIC MH[7] | METALARC® Family[6] (15K-20K hrs. avg. rated life) | 36/60 mos. | 12 mos. |

* NOTE: Fluorescent lamp warranty periods are based on a 3 hour minimum cycle, unless otherwise noted, with a maximum of 4000 hours per year. Other operating cycles may affect warranty period. Lamp warranty can renew when installation is group relamped, contact OSRAM SYLVANIA for details.

1 Occupancy sensor application, 15 minute/start minimum, allowed with QUICKTRONIC PROStart® and with QUICKTRONIC ICE ballasts.

2 OCTRON SUPERSAVER® bipin lamps operate on Instant Start & PROStart (non-dimming) models only.

3 QUICKTRONIC, Professional Series and High Efficiency Series including all IS, PS & DIM models where applicable.

4 Labor options must be pre-approved by OSPI. Any labor option or cost that is not pre-approved will not be eligible for reimbursement.

5 ICETRON Lamp Warranty Period allows up to 8760 hrs per year (continuous operation).

6 Contact OSRAM SYLVANIA for detailed specifications of METALARC® lamps.

7 QUICKTRONIC MH ballasts warranty is 36 or 60 months, depending on maximum case temperature. Refer to product specifications for details. Electronic HID system warranty period is based on a minimum cycle of 10hr/start up to a maximum operation of 6,000 hours/year.

8 Maximum Case Temperature <70°C, for normal environmental operating conditions (40°C max. ambient) unless noted. Refer to product specifications for details.

9 QUICKTRONIC T8 High Ambient (HT) Series

### TERMS AND CONDITIONS

SYLVANIA lamps and QUICKTRONIC ballasts must be installed together as a system and be installed and operated under suitable environmental conditions and in accordance with the latest National Electrical Code, Underwriters Laboratory Bulletins, and ANSI Specifications. **This warranty will not apply in the event of conditions demonstrating abnormal use or stress, such as operating temperatures in excess of maximum rated temperatures, under/over voltage conditions, excessive switching cycles (see above Note #1) or operating hours, dirty or cracked sockets, or improper lamp or ballast installation.** Replacement of SYLVANIA lamps with lamps of other manufacturers will void the lamp portion of this warranty. Replacement of the QUICKTRONIC ballast with any other ballast will void the entire warranty.

### WARRANTY ACTIVATION / SERVICE CLAIMS

The QUICK 60+ warranty is automatically activated after OSPI receives a completed QUICK 60+ warranty registration form within 30 days after installation. An acknowledgment will be sent for each registration along with a reference number for future correspondence. Service claims can be made by contacting 1-800-LIGHTBULB to initiate the process for problem resolution.

### LABOR OPTIONS (Ballast and ICETRON lamps only)

**No labor allowance is made for any lamp replacement except ICETRON, during the warranty period.** OSPI provides for several labor options for service under the QUICK 60+ warranty program.

1. OSPI will provide full service coverage through SYLVANIA LIGHTING SERVICES at no cost to the user of the ballast, or

2. OSPI will contact a service provider and coordinate replacement at no cost to the user of the ballast, or

3. OSPI will reimburse the purchaser reasonable, customary and necessary labor charges required to install the ballast replacement.

**4. Labor options must be pre-approved by OSPI. Any labor option or cost that is not pre-approved will not be eligible for reimbursement.**

### RETURN OF DEFECTIVE PRODUCT

After contacting OSRAM SYLVANIA and receiving a return AUTHORIZATION NUMBER, the user shall promptly return the product at the user's expense to OSRAM SYLVANIA after receiving instructions as to if, when and where to ship product. Failure to follow this procedure shall void this warranty.

### REPLACEMENT OF PRODUCT, LIMITS OF LIABILITY

The foregoing shall constitute the sole and exclusive remedy of the purchaser and the sole and exclusive liability of OSPI. NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS MADE OR IS TO BE IMPLIED. OSPI will not, under any circumstance, whether as a result of breach of contract or warranty, tort, or otherwise, be liable for any incidental, special or consequential damages, including lost profits or revenues or any other costs or damages.

OSPI reserves the right to examine all failed lamps and/or ballasts and reserves the right to be the sole judge as to whether any lamps and/or ballasts are defective and covered under this warranty.

**QUESTIONS?** Please call customer service at 1-800-654-0089 or contact your local OSRAM SYLVANIA representative.

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Photocopy the form below and use it to register any installation featuring QUICKTRONIC® ballast systems. Also available, is our on-line version which you may find by visiting our web site at www.sylvania.com. The warranty coverage begins from the date of installation, but you must register an installation in order to receive warranty service.

## Installation Information

Location Name:_____

Address:_____City:_____State:_____Zip:_____

Send Registration To: _____

Address:_____City:_____State:_____Zip:_____

Contact Name: _____Phone:_____Email: _____

Installation Date: _____

Operating Hours: _____hours/day _____days/year

Occupancy Sensors: ☐ Yes ☐ No

Comments _____

## Type & Quantities (Description and NAED Item # as Shown on label (or packaging)

| Ballast Description | NAED Item # | Quantity | Lamp Description | NAED Item # | Quantity | Comments |
|---|---|---|---|---|---|---|
| *e.g. QTP2X32T8/UNV ISN-TC* | *49943* | *800* | *FO32/830/XP/ECO* | *21759* | *1600* | |
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**Please Complete and Return To:**
**OSRAM SYLVANIA**
Attn: Warranty Dept.
18725 N. Union Street, Westfield, IN 46074
Tel #: 800/654-0089 Email: warranty.service@sylvania.com

**Or Complete and Fax To:**
**OSRAM SYLVANIA**
**Fax #: 866/632-9674**

**OSRAM SYLVANIA National Customer Service and Sales Center**
www.sylvania.com

the system solution®

# Magnetic Ballast Limited Warranty

OSRAM SYLVANIA Products Inc. ("OS") warrants SYLVANIA fluorescent magnetic ballasts and high intensity discharge (HID) magnetic ballasts to be free from defects in material and workmanship and to operate from the date of manufacture for the time periods specified below.

| Magnetic Ballast Type | Ballast Warranty Period* |
|---|---|
| Fluorescent Magnetic | 36 months |
| High Intensity Discharge (HID) Magnetic | 24 months |
| Magnetic Sign | 24 months |

*Note - Warranty periods are based on typical 4000 hr/12 months operation; longer operating cycles may limit warranty period. Contact OS for details.

TERMS AND CONDITIONS

SYLVANIA magnetic fluorescent and HID ballasts must be installed and operated under suitable environmental conditions and in accordance with the latest National Electrical Code, Underwriters Laboratory Bulletins, ANSI Specifications, CSA standards, and in accordance with OS installation instructions, where applicable. This warranty will not apply if conditions demonstrate abnormal use or stress, such as operating temperatures in excess of maximum rated temperatures, under/over voltage conditions, excessive switching cycles or operating hours, dirty or cracked sockets, or improper lamp or ballast installation.

WARRANTY ACTIVATION / SERVICE CLAIMS

Warranty is activated after installation. Service claims can be made by contacting 1-800-654-0089 (press "2") to initiate the process for problem resolution.

REPLACEMENT OF PRODUCT

OS shall correct any defects by replacing or repairing, at OS's option, any ballast determined to be defective under the terms of this warranty. Note: Labor costs are not reimbursed by OS.

RETURN OF DEFECTIVE BALLAST

After contacting OS and receiving a return AUTHORIZATION NUMBER, the purchaser may be requested to promptly return the ballast at the purchaser's expense to OS after receiving instructions as to if, when and where to ship the ballast. Failure to follow this procedure shall void this warranty.

LIMITS OF LIABILITY

The foregoing shall constitute the sole and exclusive remedy of the purchaser and the sole and exclusive liability of OS. NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS MADE OR IS TO BE IMPLIED. OS will not, under any circumstance, whether as a result of breach of contract or warranty, tort, or otherwise,be liable for any costs or damages, including lost profits or revenues, incidental, special or consequential damages.

OS reserves the right to examine all failed ballasts and reserves the right to be the sole judge as to whether any ballasts are defective and covered under this warranty. This warranty does not cover lamps operated by the ballast.

**QUESTIONS?** Please call customer service at 1-800-654-0089 contact your local OSRAM SYLVANIA representative.

# LED SYSTEM WARRANTY
## Limited Warranty

**OSRAM SYLVANIA Products, Inc. (OSI)** is pleased to provide the following warranty for the periods shown below. This warranty covers OSI's LED Modules and Optotronic® Power supplies or controls when installed as a system.

## OSI LED System Limited Warranty

OSI warrants each OSI LED Module or Optotronic, Power supply or control to be free from defects in materials and workmanship, and to operate from the date of installation (or date of manufacturer if installation date is not known or available, or verifiable) for the time periods and subject to the Terms and Conditions specified below. If an OSI LED module or an Optotronic, Power supply or control fails to operate for the specified warranty period, OSI will provide a free replacement component in accordance with the Terms and Conditions set forth below (labor not included).

### OSRAM LED SYSTEMS FOR LIGHTING WARRANTY

| System[4] | LED Module Family | Power Supply and Control Warranty Period | LED Module Warranty Period |
|---|---|---|---|
| Optotronic, OT and OSRAM LED Lamp Modules, Power Supply or Controls | BACKlight, LINEARlight, LINEARlight Flex, (Colormix), EFFECTlight, COINlight, MARKERlight | 60 months | 60 Months |

### TERMS AND CONDITIONS

This warranty only applies when OSI's OSRAM LED Lamp Module is properly wired and installed; is operated on a suitable power supply within the electrical values recommended by OSI; used in lighting equipment designed and approved for the application and in environmental conditions (temperature, humidity) within the normal specified operating range of the system. This warranty does not apply to any abnormal use or use in violation of any applicable standard, code or instructions for use in installations including those contained in the latest National Electrical Code (NEC), the Standards for Safety of Underwriters Laboratory, Inc. (UL), Standards for the American National Standards Institute (ANSI) or, in Canada, the Canadian Standards Association (CSA). This warranty will not apply in the event of conditions demonstrating abnormal use or stress, including under/over voltage/current conditions, excessive switching cycles or operating hours or outside the following recommended operating conditions:

- Warranty Period is based on typical 8,760 hr./yr. operation on a continuous burning cycle of 24 hours.
- Mean operating temperature for LED Module: 25˚C
- Maximum operating temperature for LED Module: 65˚C
- Operate at rated DC Voltage
- Mean ambient operating temperature for Optotronic, Power supplies and controls is 40˚C

Replacement of OSI LED Module components with LED components of other manufacturers will void the entire warranty. Inappropriate use and selection of power supply will void the entire warranty.

### WARRANTY SERVICE CLAIMS

Warranty claims can be serviced by calling OSI's National Customer Service & Sales Center:

**1-800-654-0089**
**Fax: 866-632-9674**
**Email: warranty.service@sylvania.com**

If you are unsure whether a situation exists that is covered by this warranty, please contact OSI's National Customer Service & Sales Center for assistance.

### RETURN OF DEFECTIVE PRODUCT

After contacting OSI, the purchaser/user shall promptly return the product after receiving instructions regarding if, when and where to ship product. Failure to follow this procedure shall void this warranty.

### REPLACEMENT OF PRODUCT, LIMITS OF LIABILITY

The foregoing shall constitute the exclusive remedy of the purchaser and the sole liability of OSI for the OSI LED Lamp Module component and Optotronic, power supply or controls. NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS MADE OR IS TO BE IMPLIED. In no event shall OSI be liable for any other costs or damages, including lost profits or revenues, incidental, special or consequential damages.

OSI reserves the right to examine all failed OSI Module LED and Optotronic, power supply, controls and components to determine the cause of failure and patterns of usage and reserves the right to be the sole judge as to whether any such controls or components are defective and covered under this warranty.

**QUESTIONS?** Please call customer service at 1-800-654-0089 or contact your local OSRAM SYLVANIA representative.

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# LIMITED PRODUCT WARRANTY HBO® SEMICONDUCTOR LAMPS

OSRAM SYLVANIA INC. (OSI) warrants that its HBO OSRAM mercury short arc lamp (HBO Lamp) for microlithography will be in conformity with OSI published specifications and free from defects in material and workmanship. In the event a non conformity or defect causes a catastrophic (non-passive) failure which results in damage to customer's Stepper machine during the average rated life of the HBO Lamp, customer's sole and exclusive remedy will be reimbursement for actual direct expenses incurred by the customer for parts, materials and outside labor for the repair of the damaged Stepper, up to a maximum of $1.5 million per occurrence. As a precondition of such reimbursement, customer must notify OSI within 10 days of the catastrophic failure; make available the HBO Lamp for testing; allow, if requested, the inspection of the damaged Stepper machine; and provide such other documentation or information as OSI may reasonably require to review and process customer's claim, including an itemized proof of loss with supporting documentation and invoices. This limited warranty shall be void if a catastrophic lamp failure results from accident, abuse, misuse, misapplication or occurs during operation of the HBO Lamp beyond its average rated life or during operation of a Stepper machine beyond its operating specifications.

EXCEPT AS EXPRESSLY SET FORTH HEREIN, THERE ARE NO OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILTY AND FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE HBO LAMP.

OSI'S SOLE LIABILITY TO CUSTOMER, AS A RESULT OF THE SALE OR USE OF THE HBO LAMP, IS LIMITED TO THE REIMBURSEMENT REMEDY DETAILED ABOVE. IN NO EVENT WILL OSI BE LIABLE TO THE CUSTOMER, OR ITS CUSTOMERS, AFFILIATES OR DISTRIBUTORS FOR ANY LOST PROFITS, LOST SAVINGS, DOWN TIME, INABILITY TO USE CUSTOMER'S STEPPER MACHINE, OR FOR ANY OTHER CONSEQUENTIAL, DIRECT, INDIRECT, SPECIAL, EXEMPLARY AND PUNITIVE DAMAGES OR FOR ANY OTHER DAMAGES OF ANY KIND OR NATURE.

For purposes of notification to OSI, send all requested information, including invoices and other supporting documentation to:

Quality Department
OSRAM SYLVANIA
c/o Danzas AEI
8470 Gravista Street
El Paso, TX 79907
Phone: 915-775-2939
Fax: 915-775-2924





# Index

## INCANDESCENT LAMPS



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## CONSUMER LUMINAIRES



## LED RETROFIT LAMPS



## SYSTEM WARRANTIES

## Notes:

**Note:**
At the time of printing, new wattages of SYLVANIA Incandescent A19, Medium Screw Base, 120 Volt and 130 Volt lamps with Soft White, Inside Frost and Clear finishes have been developed to meet new State of California standards effective January 1, 2008 but are not yet listed in this catalog. For more information on the legislation and these new lamps, please visit www.sylvania.com. Click on State Product Regulations.


**United States**
**OSRAM SYLVANIA**
**Headquarters**
100 Endicott Street
Danvers, MA 01923 USA
1-800-LIGHTBULB
www.sylvania.com

**Canada**
**OSRAM SYLVANIA LTD./LTÉE**
**Headquarters**
2001 Drew Road
Mississauga, Ontario L5S 1S4
1-800-LIGHTBULB
www.sylvania.com

**Mexico**
**OSRAM MEXICO**
**Headquarters**
Tultitlan/Edo DeMexico
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