

Lamp Specification & Application Guide 2004



PHILIPS

HOW TO USE THIS CATALOG

The full-color sections in the front of this guide are designed to help you evaluate the many lighting options available for incandescent, halogen, compact fluorescent, fluorescent and high intensity discharge (HID) applications.

It includes a comprehensive listing of the specifications for thousands of Philips Lighting products. The following key will help you when reviewing specifications:

Green highlighting indicates products which feature ALTO® Lamp Technology. See page 3 for more on ALTO Lamp Technology.

The **\$** symbol indicates lamps with high energy efficiency, which reduces electricity costs.

The **Philips Shield** [] denotes proprietary products exclusive to Philips Lighting Company.

The **dagger symbol** [†] denotes new products from Philips.

The illustration below shows the meanings of the specifications used to describe each lamp.

Bulb: Bulb designations indicate approximate shape and size.

Base: Full base names and configuration drawings are shown in the back of each lamp section.

Ordering code: Must be used when placing orders.

Volts: For lamps listed with voltage ranges, see page 116 for corresponding voltage designs.

Package Qty.: Number of lamps packaged in a shipping container. Quantity shown is minimum shipping container.

HALOGEN LAMPS												
PAR-30S Lamps												
Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.*	Description	Class. Filament	MOL (In.)	Rated Avg. Life (93)	Approx. MBCP* Lumens
Halogen PAR-30 Short (Formerly MasterLine) WISO Reflector (82, 86)												
50	PAR-30S Med.		26349-1	\$ (82, 86) (E)	50PAR30S/HAL/SP10	120	15	Spot 10°	C, CC-8	3 3/4	3000	5800 610
	DiOptic Reflector		26358-2	\$ (82, 86) (E)	50PAR30S/HAL/FL25	120	15	Flood 25°	C, CC-8	3 3/4	3000	1800 610
			26364-0	\$ (82, 86) (E)	50PAR30S/HAL/WFL40	120	15	Wide Flood 40°	C, CC-8	3 3/4	3000	900 610
60	PAR-30S Med.		35751-7	\$ (82, 86) (E)	60PAR30S/HAL/SP10	120	15	Spot 10°	C, CC-8	3 3/4	3000	8500 800
	DiOptic Reflector		35753-3	\$ (82, 86) (E)	60PAR30S/HAL/FL25	120	15	Flood 25°	C, CC-8	3 3/4	3000	2550 800
			35758-2	\$ (82, 86) (E)	60PAR30S/HAL/WFL40	120	15	Wide Flood 40°	C, CC-8	3 3/4	3000	1300 800
75	PAR-30S Med.		28479-4	\$ (82, 86) (E)	75PAR30S/HAL/SP10	120	15	Spot 10°	C, CC-8	3 3/4	3000	9600 1050
	DiOptic Reflector		28488-5	\$ (82, 86) (E)	75PAR30S/HAL/FL25	120	15	Flood 25°	C, CC-8	3 3/4	3000	3100 1050
			28491-9	\$ (82, 86) (E)	75PAR30S/HAL/WFL40	120	15	Wide Flood 40°	C, CC-8	3 3/4	3000	1600 1050
Halogen PAR-30 Short 130V (Formerly MasterLine) WISO Reflector (82, 86)												
50	PAR-30S Med.		26357-4	\$ (82, 86) (E)	50PAR30S/HAL/SP10	130	15	Spot 10°	C, CC-8	3 3/4	2000	6000 630
	Reflector							Ratings @ 120V = 44W			4000	480

Product Number: Both product number and complete ordering code should be used when placing orders.

Symbol, Footnotes: Explanations are listed at the back of each lamp section.

MOL: Maximum Overall Length in inches.*

Rated Average Life/Lumens: Rated average life in hours and lumens rating represent average performance.

*For more complete definitions, see pages 117.

Please note: Base types, bulb shapes and filament design for all lamp types are detailed in the back of each corresponding section. See Table of Contents.

Cover photo by Jeff MacWright of MacWright Studios.

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PHILIPS LIGHTING COMPANY'S COMMITMENT TO INNOVATION

Commitment to Innovation

Recently at Philips, we have explored our products in the context of 5 distinct areas: Concept Lamps, Environmental Solutions, Energy Solutions, Experience of Light and Maintenance Solutions. These areas represent the main themes of our focused end-user solutions. We are proud of our solutions-based knowledge, which responds to the needs of our customers. Within each area, we showcase innovative new products along with our current product portfolio.

For over one hundred years, Philips has been leading the way, setting new standards and pushing technology to new heights.

Concept Lamps

Innovation: "To start to introduce something new; something new or unusual; creativity." At Philips Lighting Company, we also define innovation as creativity. This year, our creativity is exhibited with an exciting addition to our compact fluorescent family, the PL-H™. The PL-H features high lumens, long life and high lumen maintenance—an optimal alternative to some older fluorescent and HID sources.

Environmental Solutions

We are committed to being a leading eco-efficient company in the lighting industry. Seeing environmental improvement as an opportunity for innovation, we work continuously to minimize the impacts of products, processes and services. To meet this challenge, we establish solid action programs to drive progress in this important area.

ALTO® T8 lamps can contribute to LEED-EB certification. Go to www.usgbc.org for more information about the U.S. Green Building Council.



At Philips, we believe sustainable development is imperative. It is our way of doing business—an investment that will create and secure the future. And in the end, it's the right thing to do.

Energy Solutions

Electricity is about 86% of your total lighting bill. Energy-efficient lighting retrofits and installation of energy-efficient lighting systems in new buildings not only delivers immediate cost savings but also better quality light—offering sustained productivity increases for even greater value. See our energy calculator on page 119.

By choosing an ENERGY STAR® Qualified Philips bulb, you will be doing your part in helping to promote energy efficiency. The ENERGY STAR label is a widely-recognized industry qualification presented to products for energy efficiency. Go to www.energystar.gov for more information about ENERGY STAR.



Experience of Light

Philips makes things better through a deeper understanding of the moments people experience through technology. People interact with technology practically every second often without realizing it. Only by appreciating how those interactions take place can we enhance our customers' experience of them.

The Lighting Application Center, located at the North American Headquarters in Somerset, NJ, offers the ultimate experience in lighting education in the largest, most technologically advanced lighting education and display facility in North America. So whether you are starting a lighting career or seeking an advanced lighting workshop, this state-of-the-art facility is unmatched in its ability to demonstrate first hand in full scale, the art and science of lighting.

Maintenance Solutions

Good maintenance practices lead to better lighting that can enhance the work environment, improve performance, productivity and safety, as well as the look and feel of your facility, office or store.

While the advantages are clear, the costs can be significant. In fact, after energy, maintenance ranks as the second largest contributor, representing around 9% of your total lighting costs. Since lamp life drives maintenance costs, Philips longer life lamps are a great way to help manage your maintenance dollars!



SUSTAINABILITY and ALTO® LAMP TECHNOLOGY

Sustainability Policy

The Philips Sustainability Policy is a core element for the operations of the entire Philips organization. Sustainable development¹ is a priority for the Board of Management, which has formulated guidelines of sustainable performance. This policy and resulting action programs are regularly reviewed and updated to meet stakeholder needs.

Philips Wins Sustainability Award

In September 2003 Royal Philips Electronics announced that the company was ranked number one by the Dow Jones Sustainability Index World in corporate sustainability among companies from the consumer electronics, leisure goods, home construction, apparel and airline sectors. The news comes just six months after the release of Philips' first annual corporate Sustainability Report in which the company measures its progress against a triple bottom line of economic, environmental and social criteria.

Philosophy

Since Philips was founded in 1891, it has worked to improve social equity and environmental quality—proving that responsible business is good business. Operating this way, the company has been able to improve economic prosperity for itself, its stakeholders and society at large. With its tradition of integrating economic, environmental and social issues, Philips understands that sustainable development is one of the most challenging issues facing the world.

Products That Utilize ALTO® Lamp Technology Introduce Less Mercury into the Environment

Reduce

Philips ALTO fluorescent lamps combine the lowest mercury with long life and energy efficiency—which together help achieve sustainability:

Low Mercury: Philips ALTO lamps average 70 percent less mercury than the 2001 industry average for fluorescent lamps up to sixty inches which are not TCLP-compliant². Source reduction during the manufacturing phase is essential to mercury management throughout the product lifecycle.

Long Life: Philips ALTO PLUS T8 lamps achieve 50 percent longer life than standard T8 lamps, reducing the impact of lamps on the environment.

Energy Efficiency: Since lighting, on average, consumes half of the energy used in a typical building, energy-efficient lighting not only reduces operating costs; it also supports a clean and sustainable environment.

Reuse

ALTO lamps use 100 percent recycled mercury during the ALTO manufacturing process.

Recycle

Philips encourages recycling of all spent mercury-containing lamps at end of life, where permitted by law. For information on recycling regulations in your state go to www.lamprecycle.org.

Did You Know?

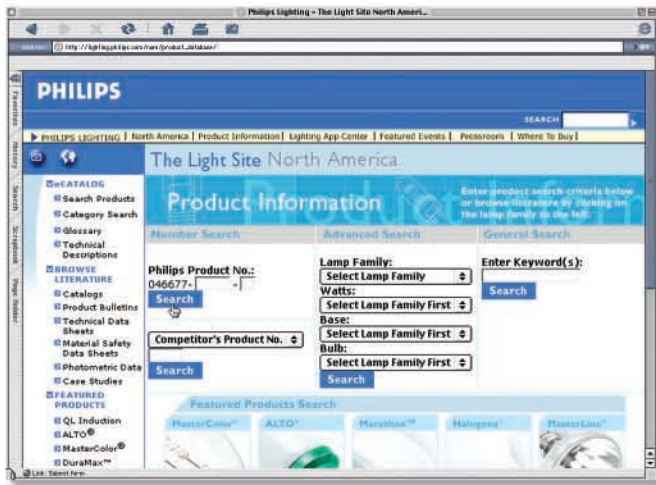
- ▶ ALTO T8 lamps have warranties ranging from 2–3 years³.
 - ▶ ALTO T8 require no burn in before dimming.
 - ▶ ALTO T8 lamps can contribute to LEED-EB certification.
- For more information go to www.usgbc.org.
- ▶ Since 1995 over **900 million** ALTO lamps have been installed and proven nationwide.

1. Sustainability is defined as "meeting the needs of the present generation without compromising the ability of future generations to meet their own needs." Sustainable development—which is considered the path to sustainability—is the simultaneous pursuit of economic prosperity, environmental quality and social equity. Companies that pursue this path are known as sustainable entrepreneurs.

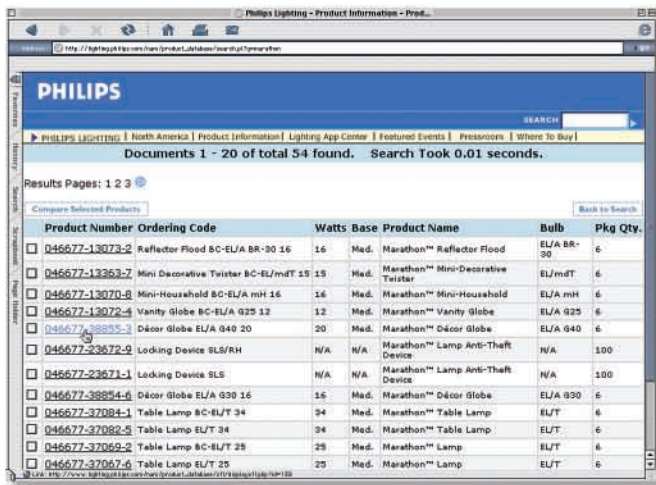
2. The TCLP is the US EPA's Toxicity Characteristic Leaching Procedure.

3. Warranties: ALTO Universal T8, 24 months; ALTO Energy Advantage T8, 24 months; ALTO PLUS T8, 30 months; ALTO Advantage T8, 36 months.

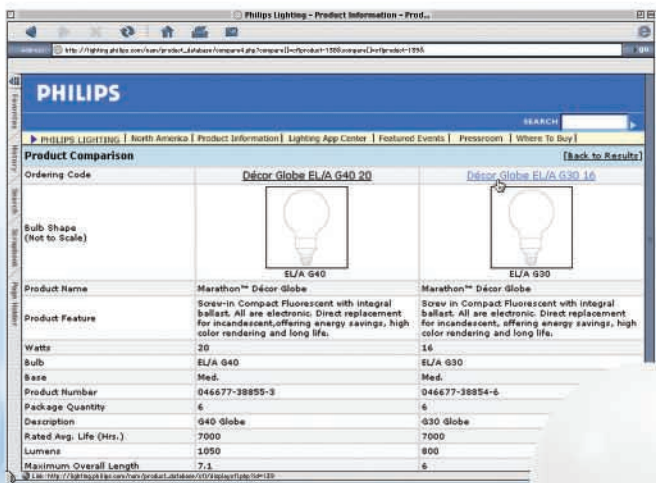
PRODUCT INFORMATION: eCatalog



Multiple search measures ensure the information you need is only a click away. Search by Philips product number or by a general keyword. An advanced search option is also available, as is a cross-reference guide of competitors' products; just enter the competitor's product number.



When a search renders various results, products are clearly listed with their identifying characteristics: product number, ordering code, watts, base type, product name, bulb shape and package quantity. The left-hand-most column offers a product-comparison tool.

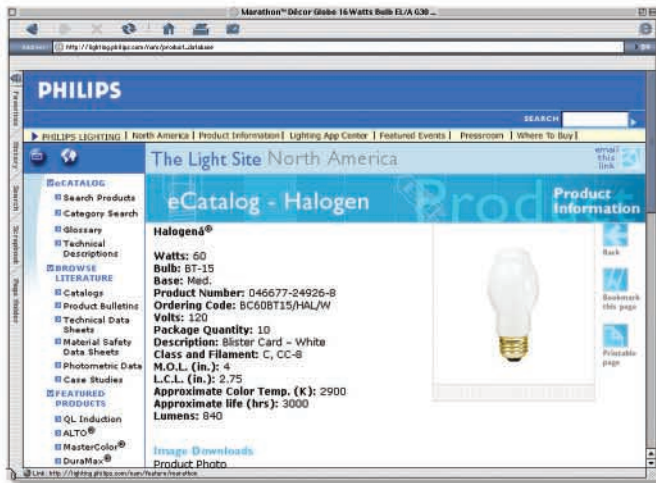


Checking off multiple products on the previous screen provides a side-by-side product comparison including bulb clip art and a complete list of specifications which enable users to make informed decisions.

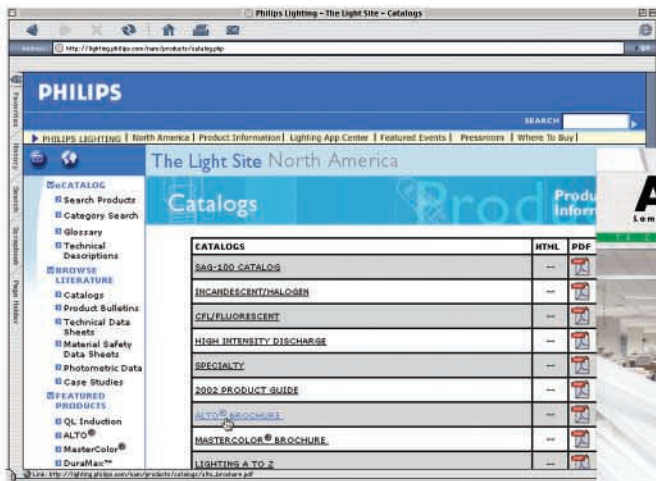


Marathon Décor Globe
EL/A G30

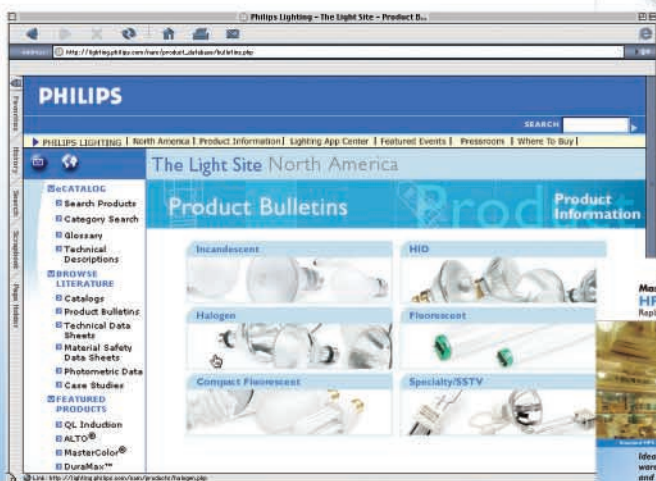
Marathon Décor Globe
EL/A G40



A successful search displays detailed product information, photography or clip art and product literature—available in HTML or PDF format for viewing or download. Each product has its own display page with downloadable PDFs, image JPGs and HTML pages.



Links to catalog PDFs, including product family brochures as well as the SAG-100, are also available for viewing and ready to download.

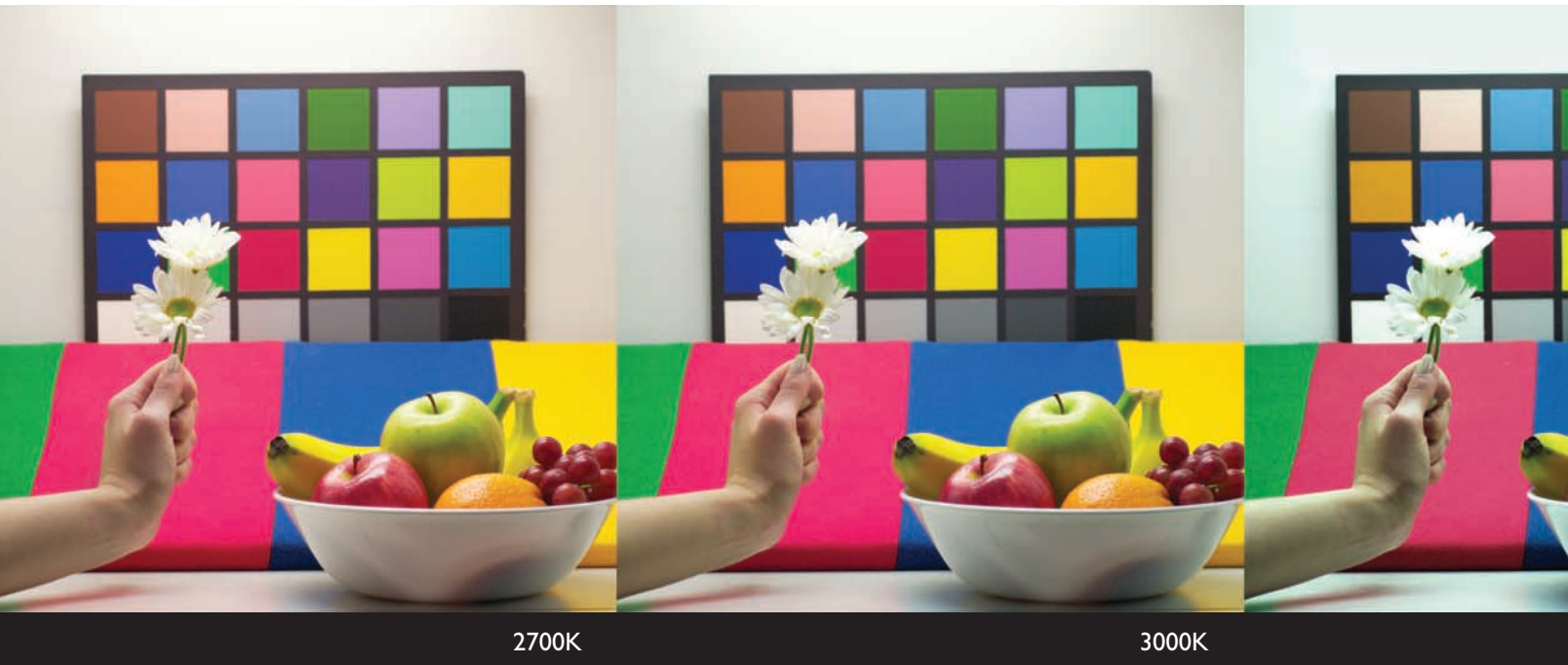


Specific product bulletins are also available for viewing or download. First, click on the "product bulletins" link in the menu on the left.

A page of the six main product categories will appear. Then choose a specific product category. Once this is selected, a list of product bulletins is shown. Each product bulletin has its own display page with downloadable PDFs and HTML pages.



PERFORMANCE CHARACTERISTICS



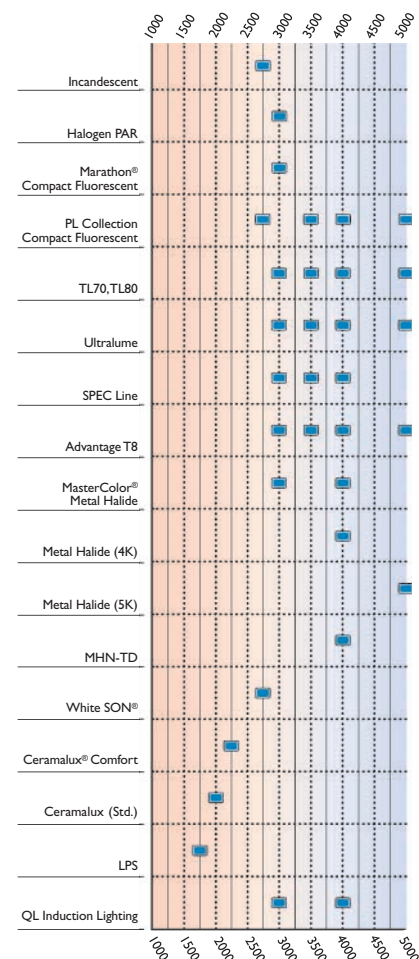
Color Temperature

The overall color appearance of the light that comes from a light source is called color temperature or chromaticity. Also referred to as Correlated Color Temperature (CCT) and measured in degrees Kelvin or "K," color temperature creates the mood or ambiance of the space you are lighting and can influence shopping behavior or work performance. Imagining a piece of iron in a fire can help you visualize color temperature. At first the iron becomes "red-hot." Reddish-yellow is the color of the light being generated by the metal at this temperature. In describing color temperatures, this color corresponds to "warm" appearance such as in incandescent lamps at 2700 Kelvin. Continuing to heat the metal makes it "white hot," such as in cool white fluorescent lamps operating at 4100 Kelvin. Heating it further would cause it to become "blue-hot" (like flash bulbs or stars), corresponding to Daylight such as in 5K metal halide sources at 5000 Kelvin.

The Influence of Color Temperature on Mood and Lighting Applications

Color Temperature	Warm	White	Neutral	Cool	Daylight
Kelvin Range	2700K	3000K	3500K	4100K	5000K
Associated Effects and Moods	Warm Cozy Open	Friendly Intimate Personal Exclusive	Friendly Inviting Non-threatening	Neat Clean Efficient	Bright Alert Exact coloration
Appropriate Applications	Restaurants Hotel lobbies Boutiques Homes	Libraries Office areas Retail stores	Public reception areas Showrooms Bookstores Office areas	Office areas Conference rooms Classrooms Mass merchandisers Hospitals	Galleries Museums Jewelry stores Medical examination areas Printing companies

Color Temperature of Selected Philips Lighting Lamps





4100K

5000K

6500K

Philips Lighting Company offers lamps in the full range of color temperatures suitable for every application. The charts on these pages will help you determine the most appropriate color temperature for your lighting needs by comparing several key Philips products.

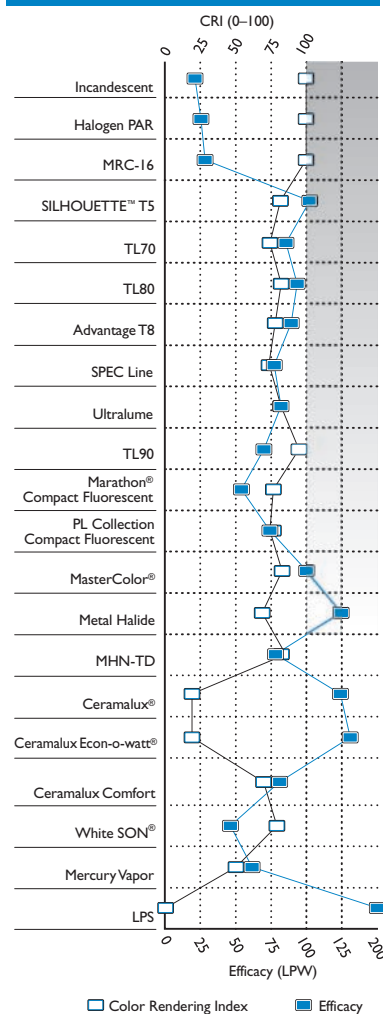
Color Rendering

The ability of a light source to represent colors in objects is called its Color Rendering Index or CRI. Based on a relative measurement which rates light sources on a scale of 0 to 100, the higher the CRI, the more vibrant colors appear. Light from lamps with good (70–80 CRI) and excellent (80+ CRI) color rendering properties is said to be “high quality light” because objects and people look more appealing and the light level itself is perceived to be higher. Excellent CRI is critical in settings where it is important that people appear natural, in retail applications where merchandise must look appealing and in restaurant applications where food must look appetizing. In office and factory applications, high color rendering can increase visual clarity and create a more pleasing and productive work environment.

Efficacy

Efficacy is the rate at which a lamp is able to convert electrical power (watts) into light (lumens), expressed in terms of lumens per watt (LPW). Put simply, a watt of electricity is the amount of power in and a lumen or light is the amount of power out. Efficacy is key when evaluating a lamp because lighting represents 30–50% of the total operating cost of a typical installation and can affect related costs such as air conditioning. Electricity represents, on average, 86% of your total lifecycle lighting costs. Lamps and ballasts represent less than 10% of your total cost. By investing in energy efficient lighting upgrades, you can leverage the energy cost savings to achieve significant, even dramatic, reductions in your operating costs. In addition, an energy-efficient lighting system benefits the environment.

The Relationship between Color Rendering Index and Efficacy



INCANDESCENT LAMPS

As the most popular lighting category accounting for the largest percent of lighting industry sales, incandescent sources offer warmth, dimmability, sparkle and familiarity in a myriad of intimate settings. Philips offers a complete line of superior long life sources within this category, from soft white to decorative and 3-Way types in a wide variety of sizes and shapes.

DuraMax® Long Life Light Bulbs reduce the hassle of replacing light bulbs every few months, since all DuraMax products last longer than standard incandescent light bulbs. A wide assortment of shapes, sizes and wattages ensures that there is a DuraMax product to meet most household lighting needs.

Philips Family of Specialty Incandescents provide the perfect light for dramatic accents and display lighting as well as general lighting in a variety of applications. From tubular shapes and appliance bulbs, to colored lamps made specifically for holiday, party or special effects lighting, this family of lamps has everything needed for professional and consumer applications.

The yellow light emitted by **Philips Bug-A-Way® Lamps** does not attract insects. Bug-A-Way lamps provide long life and are excellent for use in enclosed outdoor fixtures or on enclosed porches.

Philips Infrared PAR Heat Lamps are much more efficient than ordinary R40 reflectors. With the R40 reflector lamp, much of the heat escapes through the back and sides of the glass. Philips Infrared PAR has a mirrored reflector that allows no infrared heat to escape in directions where it isn't needed. Therefore, a 100W PAR can replace a 125W BR40 and a 175W PAR can replace a 250W R40. That's up to 30% energy reduction with the same heat production.

Philips Director® Lamps produce 35% more light on a given surface area, so there's more light where it's needed most; a special coating redirects light so less is lost on a surface. Director Lamps are ideal for specific task work, reading or hobbies and are available in a variety of wattages as well as 3-Way versions.

Philips Swimming Pool Lamps are gas-filled reflector lamps, available in spot, flood and wide flood versions specifically designed for swimming pools and underwater applications such as swimming pools, waterfalls, fountain lighting and reflection pools. These hard, shatter-resistant glass bulbs withstand thermal shock and vibration and their specially designed filament mounts are rugged and shock resistant.





DuraMax® Family
of Long Life Incandescent Lamps

DuraMax Soft White

- ▶ Lasts at least one year¹
- ▶ Provide soft white light
- ▶ Ideal for use in table and floor lamps
- ▶ See page 21

DuraMax Reflectors

- ▶ Lasts one and a half years²
- ▶ Ideal for use in recessed cans and track lighting fixtures
- ▶ See page 22

DuraMax Globes

- ▶ Lasts two years³
- ▶ Ideal for use in pendant or hanging fixtures, as well as bathroom vanity strips
- ▶ See page 21

DuraMax Decoratives

- ▶ Lasts at least one year⁴
- ▶ Ideal for use in chandeliers, wall sconces and other decorative light fixtures
- ▶ See pages 22–23

DuraMax Sparkling Clear

- ▶ Lasts at least one year⁵
- ▶ Ideal for use in table lamps or decorative fixtures
- ▶ See page 22

DuraMax Fan Lights

- ▶ Lasts one and a half years⁶
- ▶ Ideal for use in ceiling fans or other decorative light fixtures
- ▶ See page 22

¹ Based on 4 hours average daily usage, 7 days per week.

² Based on 4 hours average daily usage, 7 days per week; the 50W BR-19 Spot lasts 1 1/2 years based on 4 1/2 hours average daily usage, 7 days per week.

³ G-25s last 2 years based on 2 1/2 hours average daily usage, 7 days per week; G-30s and G-40s last 2 years based on 4 hours average daily usage, 7 days per week.

⁴ F-20 bulbs last one year based on 10 hours average daily usage, 7 days per week. BA-9, BA-9.5, B-10.5, B-13, F-10 and F-15 bulbs last 1 1/2 years based on 3 hours average daily usage, 7 days per week. G-16.5 bulbs last 2 years based on 2 1/2 hours average daily usage, 7 days per week.

⁵ Based on 4 hours average daily usage, 7 days per week; the 150W A-21 lasts 2 years based on 4 hours average daily usage, 7 days per week.

⁶ Based on 3 hours average daily usage, 7 days per week.

HALOGEN LAMPS

Halogen is the lighting of choice for professional accent, display, task and general lighting applications calling for bright white light, high efficiency, maximum lumen maintenance and superior beam control. Halogen is whiter light with a color temperature approaching 3000K, offers long life and has a CRI of 100 for optimum color rendering. These attributes make halogen an outstanding choice for accent, display and task lighting, as well as for uses around the home. Consumer lighting trends are bringing more halogen sources into the home, offering brighter, longer-life alternatives to standard incandescents.

Philips Halogen Lamp Family A new presentation of halogen lamps designed to appeal both visually and financially. Three simple categories; Halogen, Halogen Long Life and Halogen Energy Advantage IR for decorative, accent, ambient, and task lighting.

Because visually, Philips halogen lamps provide brighter, crisper light that is perfect for retail lighting. And, since they deliver more lumens per watt than other conventional incandescent reflector lamps, they reduce energy and maintenance costs and feature long rated average life.

Philips Halogená® are ideal for hard-to-reach fixtures. Its long life means less hassle and lower maintenance and the brighter light of Halogená decoratives can produce significant energy savings versus incandescent decoratives. Best of all, Halogená lamps last longer than standard incandescent lamps and can be used in any standard incandescent socket, whatever the fixture. Available in a variety of bulb shapes and wattages, from decoratives to BRs to the "classic" shape, Halogená lamps provide spectacular bright, white light indoors or out. The Halogená Brilliant Crystal is the official bulb of the Times Square New Year's Eve Ball.

Cool Beam PAR-38 Flood Lamps featuring Halogen technology are ideal for displays of perishable goods since they are designed to transmit radiated lamp heat backwards while maintaining beam lumens. Its dichroic coating transmits approximately 75% of the heat out of the back of the lamp, which also aids in minimum discoloration and drying out of displayed articles, as well as greater environmental comfort.

Philips Low-Voltage Halogen Reflectors and Capsules provide bright white light you expect from a Halogen source while using less energy. These energy-efficient lamps are available in a wide variety of shapes and beam spreads for professional and consumer applications.





ALUline Pro 111mm



Energy Advantage IR Halogen PAR



Energy Advantage IR MRC-16

Halogen Energy Advantage IR Lamps

- ▶ Maximum energy savings; lower wattage lamps with maintained light levels
- ▶ Brighter white light
- ▶ Excellent beam qualities for accent lighting
- ▶ See pages 43, 45, 46

Halogená® Family of Lamps

- ▶ Long life alternative to standard incandescent that offers superior light quality, less maintenance and energy savings
- ▶ Ideal for hard-to-reach fixtures and a variety of applications
- ▶ See pages 40-41

Halogen Long Life Lamps

- ▶ 6000 hours of life, a double life compared to standard lamps. Which means lamp replacement is delayed. Ideal for places where maintenance is expensive or disruptive
- ▶ Bright white light
- ▶ Excellent beam qualities for ambient or accent lighting
- ▶ See pages 43, 44, 46

ALUline PRO 111mm

- ▶ Excellent beam properties
- ▶ Comfortable glare-free light with UV block
- ▶ Long rated average life of 3000 hours
- ▶ See page 47

COMPACT FLUORESCENT LAMPS

Philips line of compact fluorescent lamps are designed to meet your lighting needs while significantly lowering operating costs. When compared to incandescents, CFLs last up to 10 times longer; are up to four times more efficient and offer greater design flexibility.

Lamps in the **Philips Marathon® Collection** combine the economies of fluorescent lighting with the quality light output and versatility of standard incandescent lamps. Featuring a warm color temperature of 2700K and an excellent color rendering of 82, they provide outstanding light quality. Revolutionary Amalgam Technology ensures consistent light output over a wide range of temperatures. When operating in cold weather temperatures as low as -10° F in outdoor applications, the Universal, Outdoor and Flood lamp types maintain relatively stable light output.

Also, by choosing an ENERGY STAR® Qualified Philips Marathon light bulb, you will be doing your part in helping to promote energy efficiency. The ENERGY STAR label is a widely-recognized industry qualification presented to products for energy efficiency. Since over 90% of the Marathon Collection is ENERGY STAR Qualified, being environmentally responsible is now easier than ever.

New ENERGY STAR Qualified lamps in the Marathon Collection, introduced in 2003:

- ▶ 16W Mini-Household: Lasts 5 years*—up to 6 times longer than standard incandescents; direct replacement to the current 16W Household; smaller size and attractive shape provide increased flexibility
- ▶ 15W Mini-Decorative Twister: Lasts 5 years*—up to 6 times longer than standard incandescents; perfect for general applications where a smaller bulb size and long life are desired; unique ornamental shape

- ▶ 12W Vanity Globe (G25): Lasts 5 years*—up to 4 ½ times longer than standard incandescents; similar in appearance to an incandescent globe; ideal for bathroom vanity strips or where a decorative globe shape is desired
- ▶ 16W Reflector Flood (BR30): Lasts 5 years*—up to 3 ½ times longer than standard incandescents; ideal for recessed and track lighting fixtures; UL approved for wet locations, making it ideal for use both indoors and outdoors

Philips expanded line of **PL Compact Fluorescent Lamps** offer designers, specifiers and end-users new levels of efficiencies and versatility in sizes, configurations and application possibilities. With so many elegant fixtures available to complement their small size, high light output and advanced technology, they are fast becoming the preferred choice when maximum efficiency and sleek design solutions are required. Whether you're lighting a new space or updating your present system, the PL line's variety of sizes, wattages and color temperatures bring you a whole new generation of high performance lighting solutions.

The PL-H™ System was introduced at Lightfair 2003 and was the winner of the Energy Award and Best of Category Award for Systems. It is comprised of an Advance Transformer ballast, a BJB Electric lampholder and a Philips lamp that boasts a maximum lumen output that almost doubles that of other PL compact fluorescent systems. The PL-H lamp family are members of the low-mercury ALTO® family and offer stable color rendering, long life and high lumen maintenance.





Alto® PL-H™
Compact Fluorescent Lamp



PL Compact
Fluorescent Lamps



Marathon® Collection
of Compact Fluorescent Lamps

ALTO® PL-H™ Compact Fluorescent Lamp

- ▶ 20,000 hours rated average life
- ▶ Lumen output of up to 9000 (almost double that of other PL CFL systems) and high lumen maintenance
- ▶ Optimal alternative to older fluorescent and HID technologies
- ▶ Low cost of ownership and easy installation and maintenance
- ▶ See page 56

PL Compact Fluorescent Lamps

- ▶ Available in a wide variety of wattages and color temperatures in PL-S, PL-C, PL-H, PL-L and PL-T shapes
- ▶ High lumen output, excellent lumen maintenance, compact size
- ▶ Ideal for interior applications
- ▶ See page 56–57

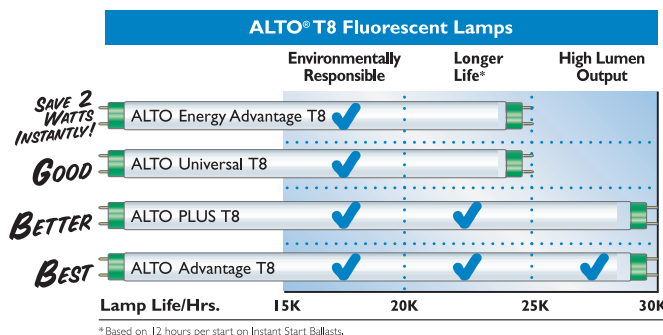
Marathon® Collection of Compact Fluorescent Lamps

- ▶ Energy-saving, super long life
- ▶ Most Marathon products are ENERGY STAR® Qualified
- ▶ Direct retrofit into existing incandescent sockets while using less energy than standard incandescent lamps
- ▶ Combines the economies of fluorescent lighting with the quality light output and versatility of standard incandescent lamps
- ▶ High-quality, economical lighting solutions in residential, office, and commercial applications
- ▶ See pages 53–55

FLUORESCENT LAMPS

Philips leverages technology to create products that are appealing to the individual, valuable to society and better for the environment. Philips Lighting Company strongly supports the EPA's commitment to reduce, reuse and recycle. ALTO® Lamp Technology from Philips Lighting Company is leading the industry by reducing the amount of mercury in our products (reducing hazardous material) without compromising performance. Since 1995 we have sold over one billion ALTO linear fluorescent lamps and we continue to make improvements to the ALTO fluorescent lamp family.

One hundred percent of the mercury used in ALTO lamps is purchased from a mercury recycling facility. ALTO lamps provide consistent quality of light and long life without compromising performance. Our trademark Green End-Caps® on every Philips ALTO fluorescent lamp means you are using environmentally-responsible lamps. Philips Lighting Company recommends that all lamps containing mercury should be recycled. We encourage you to check your state and local laws regarding lamp recycling. For information on recycling regulations in your state, go to www.lamprecycle.org.



ALTO® T8 Fluorescent Lamps provide long life, environmental responsibility and high performance, which translates into reduced maintenance and disposal costs. ALTO lamps are low mercury and TCLP*-compliant. This makes them a sustainable lighting solution, since less mercury and fewer lamps in landfills, combined with energy efficiency, reduces the impact on the environment. HI-VISION® Phosphor combined with Philips' exclusive cathode guard delivers 95% lumen maintenance and reduced lamp-end blackening. ALTO T8 lamps also provide an enhanced CRI of 86 for TL80 lamps.

ALTO® SILHOUETTE™ Series T5 High Output Fluorescent Lamps are powerful, ultra-slim lamps with an increased light output of up to 70% more lumens than standard SILHOUETTE T5 lamps. ALTO T5 lamps provide design flexibility, improved optical control and high system efficacy, as well as long life and high lumen maintenance.





Alto® Universal T8



Alto® PLUS T8



Alto® Advantage T8

ALTO® Universal T8 Lamps

- Philips Exclusive Universal T8 Design: The only T8 lamp to deliver full rated average life on all T8 ballast types (Instant Start, Rapid Start, Programmed Start and Hybrid ballasts)
- 24-month warranty
- See page 61

ALTO Advantage T8 Lamps

- High Performance: 3100 lumens is 10% more than standard T8 lamps
- 36-month warranty
- See page 63

ALTO SILHOUETTE™ Series T5 High Output Lamps

- Powerful, Environmentally-Responsible Ultra-Slim Lamps with a Slim Profile Lamp and Ballast
- 24-month warranty
- See page 59

ALTO PLUS T8 Lamps

- Long Life: Up to 36,000 hours rated average life; 50% more life than standard T8 lamps means reduced maintenance and disposal costs
- 30-month warranty
- See page 62

ALTO Energy Advantage 25W T8 Lamps

- Replace standard 32 watt T8 lamps with Philips ALTO Energy Advantage 25 watt T8 and save 7 watts per lamp instantly!
- 24-month warranty
- See page 64

ALTO PLUS Slimline T8 8-Ft. and ALTO PLUS High Output T8 Lamps

- Environmentally-Responsible Long Life Lamps
- Both have 24-month warranty
- See pages 66 and 67

HID LAMPS

Philips Lighting Company continues to produce breakthrough products in the HID category. Recently introduced to the MasterColor® line were the CDM 150W ED-17 3K and the CDM-TC 70W. Also improved in the last year were the life hours for most ED-17, 3K and 4K: for the 70–100W 3K, rated average life expanded from 12,000 to 16,000 and for the 50–150W 4K lamps, rated average life expanded from 12,000 to an incredible 20,000 hours!

Philips MasterColor® Collection provides noticeable consistency in lamp-to-lamp color—both initial and throughout life—as well as higher efficacy than any other low-wattage metal halide source available. The secret to MasterColor's superior performance is its ceramic discharge tube, which combines the white light and high efficacy of metal halide lamps with the color stability and reliable, long life of polycrystalline alumina (PCA) technology.

Receiving the Best of Category for HID Lamps Category at Lightfair 2003, the new MasterColor Pulse Start lamp delivers superior color performance and improved lumen maintenance when compared to a standard switch-start metal halide lamp. Improved products include MasterColor HPS-Retro White™, which offers technology optimized to operate in existing HPS fixtures while producing bright white light on existing HPS ballasts.

Philips High Pressure Sodium Lamps are ideal for outdoor and industrial applications where high efficiency is most important and color appearance is not a priority. Philips offers many different types of high pressure sodium lamps, including Ceramalux® and Ceramalux Comfort, the foundation of our HPS family, as well as Instant Restrike and White SON®.

Philips Metal Halide “O” Rated Lamps are designed for safe operation in open fixtures. “O” Rated lamps are ideal for manufacturing facilities, retail establishments and warehouses and have an extended eyelet mogul base that will operate in both standard and exclusionary sockets.





Tubular Single-Ended T-4/T6



HPS-Retro White™



Metal Halide 360 Watt
Econ-o-watt

MasterColor Tubular Single-Ended T-4/T-6 Lamps

- ▶ 81–96 CRI and high lamp efficacy of up to 92 LPW
- ▶ Energy-efficient alternative to incandescent/halogen
- ▶ Versatile: universal operating position and compact dimensions for high beam intensities
- ▶ See page 81

Metal Halide 360 Watt Econ-o-watt

- ▶ Replace 400 watt standard metal halide lamps and reduce energy usage by 40 watts
- ▶ Operates on standard metal halide ballasts
- ▶ Same 20,000 hours rated average life
- ▶ See page 87

Protected Metal Halide “O” Rated Lamps

- ▶ “O” rated for safe operation in open fixtures (relamp fixtures at or before end of rated average life)
- ▶ Protective quartz shroud provides extra level of safety protected metal halide “O” rated lamps
- ▶ See page 87

MasterColor HPS-Retro White featuring ALTO® Lamp Technology

- ▶ MasterColor technology optimized to operate in existing HPS fixtures, which means a simple, twist-of-the-wrist conversion
- ▶ Improved work environment (crisp white light vs. yellow light)
- ▶ Better for the environment: TCLP*-compliant
- ▶ See pages 85 and 91

Protected Pulse Start Metal Halide “O” Rated Lamps

- ▶ “O” rated for safe operation in open fixtures (relamp fixtures at or before end of rated average life)
- ▶ Quicker restart/restrike time and improved lumen maintenance over standard switch start metal halide
- ▶ See page 86

*The TCLP is the US EPA's Toxicity Characteristic Leaching Procedure.

QL INDUCTION LIGHTING SYSTEMS



QL Induction Lighting Systems have broadened their appeal with an amazing 100,000 hours rated average life and new products in development. Philips 55, 85 and 165 watt QL systems offer electrodeless technology that provides crisp white light with a CRI of 80+, a choice of color temperature and no color shift. QL has a high lumen output of up to 12,000 lumens and it operates in hot and cold environments. As the system utilizes amalgam control, there is also high reliability with instant hot and cold (re)start. Its low EMI complies with FCC non-consumer limits. This remarkable system, with a traditional lamp design, is ideal for decorative street lighting, bridges and tunnels, hazardous areas, freezers and hard-to-reach applications.

QL Induction Lighting Systems

- ▶ Ultra-long life: 100,000 hours rated average life
- ▶ Electrodeless technology
- ▶ Crisp white light and CRI of 80+
- ▶ High lumen output
- ▶ Operates in hot and cold environments
- ▶ See page 93



INCANDESCENT AND HALOGEN LAMPS



INCANDESCENT LAMPS

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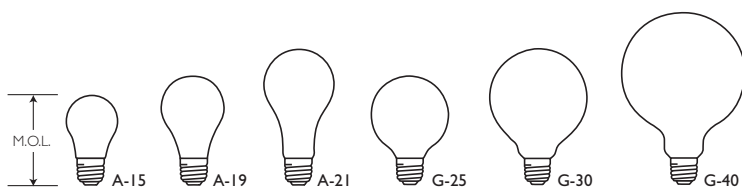
Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.	Description	Class, Filament	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (93)	Approx. MBCP *	Lumens
DuraMax® Long Life Soft White														
15	A-15	Med.	16860-9	▲	15A/WL 12/2	120	24	Soft White Long Life	B, C-9		3 1/2	3000		115
25	A-19	Med.	16868-2	▲	25A/WL 12/2	120	24	Soft White Long Life	C, CC-6		4 1/8	3000		235
30	A-21	3 Ct.	16947-4	▲ (8)	30/100A/WL 12/1	120	12	Soft White Long Life	C, 2CC-8		5 1/8	1750		285
70		Med.						Three-Way						920
100														1205
40	A-19	Med.	16869-0	▲	40A/WL 12/4	120	48	Soft White Long Life	C, CC-6		4 1/8	1500		475
			16737-9	▲	40A/WL 24/4	120	96	Soft White Long Life	C, CC-6		4 1/8	1500		475
50	A-21	3 Ct.	16948-2	▲ (8)	50/150A/WL 12/1	120	12	Soft White Long Life	C, 2CC-8		5 1/8	1750		575
100		Med.						Three-Way						1440
150														2015
50	A-21	3 Ct.	16949-0	▲ (8)	50/250A/WL 12/1	120	12	Soft White Long Life	C, 2CC-8		5 1/8	1750		575
200		Med.						Three-Way						3120
250														3695
60	A-19	Med.	16874-0	▲	60A/WL 12/4	120	48	Soft White Long Life	C, CC-6		4 1/8	1500		830
			16738-7	▲	60A/WL 24/4	120	96	Soft White Long Life	C, CC-6		4 1/8	1500		830
75	A-19	Med.	16879-9	▲	75A/WL 12/4	120	48	Soft White Long Life	C, CC-6		4 1/8	1500		1040
			16739-5	▲	75A/WL 24/4	120	96	Soft White Long Life	C, CC-6		4 1/8	1500		1040
100	A-19	Med.	16862-5	▲	100A/WL 12/4	120	48	Soft White Long Life	C, CC-8		4 1/8	1500		1550
			16740-3	▲	100A/WL 24/4	120	96	Soft White Long Life	C, CC-8		4 1/8	1500		1550
150	A-21	Med.	16866-6	▲	150A/WL 12/1	120	12	Soft White Long Life	C, CC-8		5 1/8	2000		2310
200	A-21	Med.	16867-4	▲	200A/WL 6/1	120	6	Soft White Long Life	C, CC-8		5 1/8	1500		3300

DuraMax® Long Life Globes

25	G-25	Med.	16748-6	▲	25G25/W/LL 12/1	120	12	White Long Life Globe	C, CC-6		4 1/8	2000		210
			16887-2	▲	25G25/CL/LL 12/1	120	12	Clear Long Life Globe	C, CC-6		4 1/8	2000		235
			16901-1	▲	25G25/CL/LL 4/3	120	12	Clear Long Life Globe	C, CC-6		4 1/8	2000		235
			16902-9	▲	25G25/W/LL 4/3	120	12	White Long Life Globe	C, CC-6		4 1/8	2000		210
40	G-25	Med.	16903-7	▲	40G25/CL/LL 4/3	120	12	Clear Long Life Globe	C, CC-6		4 1/8	2000		460
			16904-5	▲	40G25/W/LL 4/3	120	12	White Long Life Globe	C, CC-6		4 1/8	2000		415
			16746-0	▲	40G25/W/LL 12/1	120	12	White Long Life Globe	C, CC-6		4 1/8	2000		415
			16747-8	▲	40G25/CL/LL 12/1	120	12	Clear Long Life Globe	C, CC-6		4 1/8	2000		460
			16702-3	▲	40G25/CT 6/1	120	6	Clear Long Life Chrome Top	C, C-9		4 1/8	2000		200
	G-40	Med.	16857-5	▲	40G40/CL/LL 6/1	120	6	Clear Long Life Globe	C, C-9		6 1/8	3000		372
			16858-3	▲	40G40/W/LL 6/1	120	6	White Long Life Globe	C, C-9		6 1/8	3000		335
60	G-25	Med.	16749-4	▲	60G25/W/LL 12/1	120	12	White Long Life Globe	C, CC-6		4 1/8	2000		700
			16896-2	▲	60G25/CL/LL 12/1	120	12	Clear Long Life Globe	C, CC-6		4 1/8	2000		775
			16899-6	▲	60G25/CL/LL 4/3	120	12	Clear Long Life Globe	C, CC-6		4 1/8	2000		775
			16900-3	▲	60G25/W/LL 4/3	120	12	White Long Life Globe	C, CC-6		4 1/8	2000		700
	G-30	Med.	16849-2	▲	60G30/W/LL 6/1	120	6	White Long Life Globe	C, C-9		5 1/2	3000		580
	G-40	Med.	16851-8	▲	60G40/W/LL 6/1	120	6	White Long Life Globe	C, C-9		6 1/8	3000		595
			16852-6	▲	60G40/CL/LL 6/1	120	6	Clear Long Life Globe	C, C-9		6 1/8	3000		665
100	G-25	Med.	13423-9	▲	100G25/W/LL 12/1	120	12	White Long Life Globe	C, CC-6		4 1/8	2000		1180
	G-30	Med.	16850-0	▲	100G30/W/LL 6/1	120	6	White Long Life Globe	C, C-9		5 1/2	3000		945
	G-40	Med.	16853-4	▲	100G40/W/LL 6/1	120	6	White Long Life Globe	C, C-9		6 1/8	3000		985
			16859-1	▲	100G40/CL/LL 6/1	120	6	Clear Long Life Globe	C, C-9		6 1/8	3000		1100
150	G-40	Med.	16854-2	▲	150G40/W/LL 6/1	120	6	White Long Life Globe	C, C-9		6 1/8	3000		1770

 For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

Incandescent symbols and footnotes located on page 50





Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.*	Description	Class, Filament	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (93)	Approx. MBCP*	Lumens
DuraMax® Long Life Reflectors														
30	R-20	Med.	16753-6	▲ (87)	30R20/LL 12/I	120	12	Frost Long Life Reflector	C, CC-6		3 1/8	2500	350	205
45	BR-30	Med.	16751-0	▲ (87)	45BR30/FL55/LL 12/I	120	12	Long Life Reflector Flood	C, CC-6		5 3/8	2500		340
50	BR-19	Med.	16750-2	▲\$ □ (87)	50BR19/25/SP/LL 12/I	120	12	Long Life Spotline Reflector	C, CC-11		4 1/8	2500	700	385
	R-20	Med.	16755-1	▲ (87)	50R20/LL 12/I	120	12	Frost Long Life Reflector	C, CC-6		3 1/8	2500	600	385
65	BR-30	Med.	16768-4	▲ (87)	65BR30/FL55/LL 12/I	120	12	Long Life Reflector Flood	C, CC-6		5 3/8	2500	510	595
			16769-2	▲ (87)	65BR30/SP20/LL 12/I	120	12	Long Life Reflector Spot	C, CC-6		5 3/8	2500	530	610
	BR-40	Med.	16741-1	▲ (87)	65BR/FL60/LL 8/I	120	8	Long Life Reflector Flood	C, CC-6		6 1/8	2500	500	630
75	R-20	Med.	16763-5	▲ (87)	75R20/LL 12/I	120	12	Frost Long Life Reflector	C, CC-6		3 1/8	2500	1250	570
85	BR-30	Med.	16766-8	▲ (87)	85BR30/FL55/LL 6/I	120	6	Long Life Reflector Flood	C, CC-6		5 3/8	2500	700	855
			16767-6	▲ (87)	85BR30/SP20/LL 6/I	120	6	Long Life Reflector Spot	C, CC-6		5 3/8	2500	3100	865
	BR-40	Med.	16785-8	▲ (87)	85BR/FL60/LL 8/I	120	8	Long Life Reflector Flood	C, CC-6		6 1/8	2500	700	900
			16788-2	▲ (87)	85BR/SP20/LL 8/I	120	8	Long Life Reflector Spot	C, CC-6		6 1/8	2500	3100	900
100	R-20	Med.	16701-5	▲ (87)	100R20/LL 12/I	120	12	Frost Long Life Reflector	C, CC-6		3 1/8	2500		935
120	BR-40	Med.	16779-1	▲ (87)	120BR/FL60/LL 8/I	120	8	Long Life Reflector Flood	C, CC-6		6 1/8	2500	1000	1285
			16781-7	▲ (87)	120BR/SP20/LL 8/I	120	8	Long Life Reflector Spot	C, CC-6		6 1/8	2500	4600	1225

DuraMax® Long Life Sparkling Clear

40	A-19	Med.	16797-2	▲	40A/CL/LL 12/2	120	24	Clear Long Life	C, CC-6		4 3/8	1500		505
60	A-19	Med.	16794-0	▲	60A/CL/LL 12/2	120	24	Clear Long Life	C, CC-6		4 3/8	1500		900
75	A-19	Med.	16801-3	▲	75A/CL/LL 12/2	120	24	Clear Long Life	C, CC-6		4 3/8	1500		1080
100	A-19	Med.	16795-6	▲	100A/CL/LL 12/2	120	24	Clear Long Life	C, CC-6		4 3/8	1500		1470
150	A-21	Med.	16799-8	▲	150A/CL/LL 12/I	120	12	Clear Long Life	C, CC-8		5 3/8	2000		2570
200	A-23	Med.	16798-0	▲	200A/CL/LL 6/I	120	6	Clear Long Life	C, CC-8		6 3/8	1500		3665

DuraMax® Long Life Fan Lights

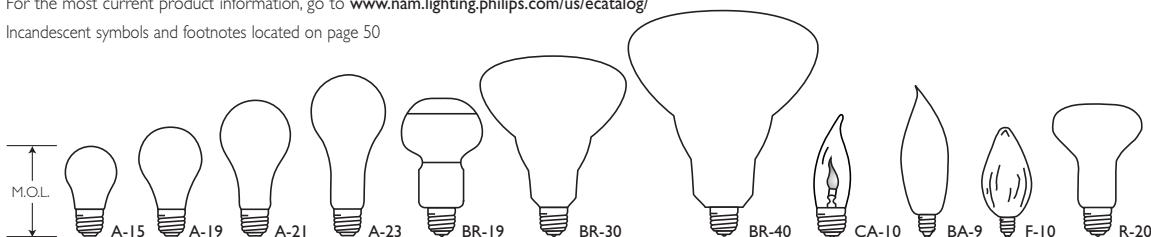
40	A-15	Med.	16934-2	▲	BC40A15/FAN/CL/LL 6/2	120	12	Clear Long Life Fan	C, C-9		3 1/8	2000		395
			16935-9	▲	BC40A15/FAN/W/LL 6/2	120	12	White Long Life Fan	C, C-9		3 1/8	2000		365
60	A-15	Med.	16945-8	▲	BC60A15/FAN/W/LL 6/2	120	12	White Long Life Fan	C, C-9		3 1/8	2000		570
			16946-6	▲	BC60A15/FAN/CL/LL 6/2	120	12	Clear Long Life Fan	C, C-9		3 1/8	2000		630

DuraMax® Long Life Decoratives

3	CA-10	Med.	16697-4	▲ (12)	BC3CA10/CL/LL 6/I	120	6	Clear Long Life Flicker Flame	B, CC-2V		3 3/8	2000		
	Cand.		16698-2	▲ (12)	BC3CA10C/CL/LL 6/I	120	6	Clear Long Life Flicker Flame	B, CC-2V		4 3/8	2000		
15	BA-9	Cand.	16811-2	▲ (12)	BC15BA9C/CL/LL 6/2	120	12	Clear Long Life Bent Tip	B, CC-2V C-7A		4 3/8	2000		110
			16696-6	▲ (12)	BC15BA9C/CL/LL 6/4	120	24	Clear Long Life Bent Tip	B, CC-2V C-7A		3 3/8	2000		110
	F-10	Cand.	16830-2	▲ (12)	BC15F10C/CL/LL 6/2	120	12	Clear Long Life Flame	B, C-7A		3 3/8	2000		95
			16831-0	▲ (12)	BC15F10C/A/LL 6/2	120	12	Amber Long Life Flame	B, C-7A		3 3/8	2000		85
25	BA-9	Cand.	16719-7	▲ (12)	BC25BA9C/CL/LL 6/4	120	24	Clear Long Life Bent Tip	C, CC-2V C-7A		4 3/8	2000		150
			16806-2	▲ (12)	BC25BA9C/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V C-7A		4 3/8	2000		150
			16810-4	▲ (12)	BC25BA9C/F/LL 6/2	120	12	Frost Long Life Bent Tip	C, CC-2V C-7A		4 3/8	2000		145

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

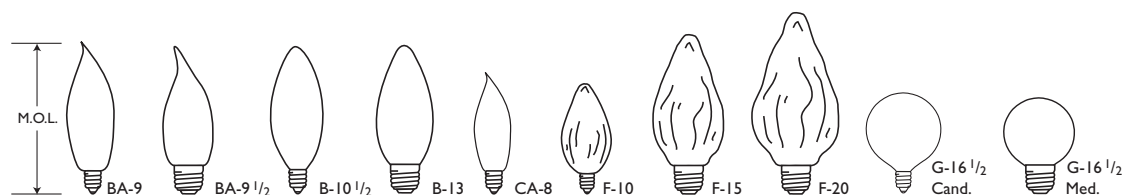
Incandescent symbols and footnotes located on page 50



Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.	Description	Class, Filament	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (93)	Approx. MBCP *	Lumens
25	BA-9 ½	Med.	16819-5	▲ (12)	BC25BA9-½/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		150
	B-10 ½	Cand.	16824-5	▲ (12)	BC25B10-½ C/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, C-7A		4 ⅞	2000		150
	B-13	Med.	16827-8	▲ (12)	BC25B13/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, C-7A		4 ⅞	2000		150
	CA-8	Cand.	13568-1	▲ (12)	BC25CA8C/CL/LL 6/2	120	12	Clear Petite Long Life Bent Tip	C, CC-2V		3 ⅞	2000		220
	F-10	Cand.	16832-8	▲ (12)	BC25F10C/CL/LL 6/2	120	12	Clear Long Life Flame	B, C-7A		3 ⅞	2000		105
	F-15	Med.	16833-6	▲ (12)	BC25F15/CL/LL 6/2	120	12	Clear Long Life Flame	B, C-9		4 ⅞	2000		150
			16839-3	▲ (12)	BC25F15/IR/LL 6/2	120	12	Iridescant Long Life Flame	C, C-9		4 ⅞	2000		150
			16840-1	▲ (12)	BC25F15/W/LL 6/2	120	12	White Long Life Flame	C, C-9		4 ⅞	2000		120
			16841-9	▲ (12)	BC25F15/A/LL 6/2	120	12	Amber Long Life Flame	B, C-9		4 ⅞	2000		130
	G-16 ½	Cand.	16845-0	▲ (12)	BC25G16-½ C/CL/LL 6/2	120	12	Clear Long Life Globe	B, C-7A		3	2000		200
			16847-6	▲ (12)	BC25G16-½ C/W/LL 6/2	120	12	White Long Life Globe	B, C-7A		3	2000		165
		Med.	13535-0	▲ (12)	BC25G16-½/CL/LL 6/2	120	12	Clear Long Life Globe	C, CC-2V		2 ¾	2000		180
			13534-3	▲ (12)	BC25G16-½/W/LL 6/2	120	12	White Long Life Globe	C, CC-2V		2 ¾	2000		120
40	BA-9	Cand.	16720-5	▲ (12)	BC40BA9C/CL/LL 6/4	120	24	Clear Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		300
			16807-0	▲ (12)	BC40BA9C/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		300
			16809-6	▲ (12)	BC40BA9C/F/LL 6/2	120	12	Frost Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		295
	BA-9 ½	Med.	16760-1	▲ (12)	BC40BA9-½/CL/LL 6/4	120	24	Clear Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		300
			16820-3	▲ (12)	BC40BA9-½/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		300
			16821-1	▲ (12)	BC40BA9-½/F/LL 6/2	120	12	Frost Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		295
	B-10 ½	Cand.	16825-2	▲ (12)	BC40B10-½ C/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, C-7A		4 ⅞	2000		300
	B-13	Med.	16828-6	▲ (12)	BC40B13/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, C-7A		4 ⅞	2000		300
	F-15	Med.	16835-1	▲ (12)	BC40F15/CL/LL 6/2	120	12	Clear Long Life Flame	C, C-9		4 ⅞	2000		385
			16837-7	▲ (12)	BC40F15/IR/LL 6/2	120	12	Iridescant Long Life Flame	C, C-9		4 ⅞	2000		370
			16838-5	▲ (12)	BC40F15/W/LL 6/2	120	12	White Long Life Flame	C, C-9		4 ⅞	2000		300
	G-16 ½	Cand.	16846-8	▲ (12)	BC40G16-½ C/CL/LL 6/2	120	12	Clear Long Life Globe	C, C-7A		3	2000		300
			16848-4	▲ (12)	BC40G16-½ C/W/LL 6/2	120	12	White Long Life Globe	C, C-7A		3	2000		245
		Med.	13537-6	▲ (12)	BC40G16-½/CL/LL 6/2	120	12	Clear Long Life Globe	C, CC-2V		2 ¾	2000		390
			13536-8	▲ (12)	BC40G16-½/W/LL 6/2	120	12	White Long Life Globe	C, CC-2V		2 ¾	2000		270
60	BA-9	Cand.	16808-8	▲ (12)	BC60BA9C/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		550
			16721-3	▲ (12)	BC60BA9C/CL/LL 6/4	120	24	Clear Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		550
			16805-4	▲ (12)	BC60BA9C/F/LL 6/2	120	12	Frost Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		545
	BA-9 ½	Med.	16822-9	▲ (12)	BC60BA9-½/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		550
			16823-7	▲ (12)	BC60BA9-½/F/LL 6/2	120	12	Frost Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		545
	B-10 ½	Cand.	16826-0	▲ (12)	BC60B10-½ C/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, C-7A		4 ⅞	2000		550
	B-13	Med.	16829-4	▲ (12)	BC60B13/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, C-7A		4 ⅞	2000		550
	F-15	Med.	16842-7	▲ (12)	BC60F15/CL/LL 6/2	120	12	Clear Long Life Flame	C, C-9		4 ⅞	2000		630
	G-16 ½	Cand.	16699-0	▲ (12)	BC60G16-½ C/CL/LL 6/2	120	12	Clear Long Life Globe	C, C-7A		3	2000		540
			16700-7	▲ (12)	BC60G16-½ C/W/LL 6/2	120	12	White Long Life Globe	C, C-7A		3	2000		450
		Med.	13538-4	▲ (12)	BC60G16-½/CL/LL 6/2	120	12	Clear Long Life Globe	C, CC-2V		2 ¾	2000		610
			13530-1	▲ (12)	BC60G16-½/W/LL 6/2	120	12	White Long Life Globe	C, CC-2V		2 ¾	2000		420
100	F-20	Med.	16844-3	(12)	100F20/POSTLT/CL/LL 6/1	120	6	Clear Long Life PostLight	C, C-9		5 ⅞	4000		1250

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INCANDESCENT LAMPS

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.*	Description	Class, Filament	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (93)	Approx. MBCP*	Lumens
3	S-6	Cand.	37374-6	▲	3S6/5	120-130	48	Clear Indicator	B, C-7A		1 7/8	3000		12
4	C-7	Cand.	25706-3	▲	BC4C7 12/2	120	24	Clear Night Light	B, C-7A		2 1/8	3000		16
			24741-1	▲	BC4C7/4 12/4	120	48	Clear Night Light	B, C-7A		2 1/8	3000		16
			25708-9	▲	BC4C7/W 12/2	120	24	White Night Light	B, C-7A		2 1/8	3000		14
6	S-6	Cand.	23443-5	▲	6S6	12	48	Clear Indicator	B, C-2V		1 7/8	1500		48
			23449-2	▲	6S6	24	48	Clear Indicator	B, C-2V		1 7/8	1500		53
			23451-8	▲	6S6	30	48	Clear Train	B, C-2V		1 7/8	1500		52
			23458-3		6S6/BR	32	48	Clear Train	B, C-2V		1 7/8	1500		51
			24835-1		6S6	120-130	48	Clear Indicator	B, C-7A		1 7/8	1500		39
			23461-7		6S6	135	48	Clear Indicator	B, C-7A		1 7/8	1500		38
			23462-5		6S6	145	48	Clear Indicator	B, C-7A		1 7/8	1500		37
			23476-5		6S6	155	48	Clear Indicator	B, C-7A		1 7/8	1500		37
			23477-3		6S6/3	130	48	Clear Vibration	B, C-7A		1 7/8	1500		18
	Inter:		23479-9		6S6/7	120	48	Clear Indicator	B, C-7A		1 13/16	1500		39
	D.C. Bay		37376-1		6S6DC	120-130	48	Clear Indicator	B, C-7A	1 1/8	1 13/16	1500		39
			23483-1		6S6DC	145	48	Clear Indicator	B, C-7A	1 1/8	1 13/16	1500		37
	T-4 1/2	Cand.	37377-9	▲	6T4 1/2 I	120-130	24	Clear Indicator	B, C-7A		1 7/8	1500		34
7	C-7	Cand.	37378-7	▲	7C7	120-130	24	Clear Indicator	B, C-7A		2 1/8	3000		45
			23643-0	▲	7C7/W	120	24	White Night Light	B, C-7A		2 1/8	3000		35
			25714-7	▲	BC7C7/W 12/2	120	24	White Night Light	B, C-7A		2 1/8	3000		35
			23635-6	▲	7C7/O 24 Pk.	120	24	Orange Indicator	B, C-7A		2 1/8	3000		16
			23636-4	▲	7C7/R 24 Pk.	120	24	Red Indicator	B, C-7A		2 1/8	3000		13
7 1/2	S-11	Med.	24811-2	▲	7 1/2 S	120-130	24	Clear	B, C-7A		2 1/4	1400		45
			37380-3	▲	7 1/2 S/W	120-130	24	White Night Light	B, C-7A		2 1/4	1400		35
			23611-7	▲	7 1/2 S/O 24 Pk.	120	24	Orange	B, C-7A		2 1/4	1400		18
10	C-7	Cand.	24812-0	(3)	10C7	120	24	Clear Indicator	B, C-7A		2 1/8			50
	D.C. Bay		23639-8	▲ (3)	10C7DC	120	24	Clear Indicator	B, C-7A		2 1/8			50
	S-6	Cand.	23485-6	▲	10S6/10	230	48	Clear Indicator	B, C-7A		1 7/8	1500		65
			23488-0	▲	10S6/10	250	48	Clear Indicator	B, C-7A		1 7/8	1500		65
	S-11	Cand.	23598-6	▲	10S11/79	120	24	Clear Indicator	B, C-7A	1 1/8	2 1/4	1500		70
	Inter:		23606-7	▲	10S11N/IF	120	24	Frost Appliance	B, C-7A		2 1/4	1500		70
			37381-1	▲	10S11N	120-130	24	Clear	B, C-7A	1 1/8	2 1/4	1500		70
	S-14	Med.	21308-2	X	10S14/IF	130	120	Frost Sign	B, C-9		3 1/2	1500		82
			37382-9		10S14	120-130	120	Clear Sign	B, C-9		3 1/2	1500		82
11	S-14	Med.	38025-3		11S14/Y	130	120	Yellow Sign	B, C-9		3 1/2	3000		77
			39007-0		11S14/TB	130	120	Transparent Blue Sign	B, C-9		3 1/2	3000		77
			39006-2		11S14/TR	130	120	Transparent Red Sign	B, C-9		3 1/2	3000		77
			39095-5		11S14/TY	130	120	Transparent Yellow Sign	B, C-9		3 1/2	3000		77
15	A-15	Med.	37384-5	▲	15A15	120-130	120	Frost	B, C-9		3 1/2	2500		126
			37385-2	▲	15A15/CL	120-130	120	Clear	B, C-9	2 3/8	3 1/2	2500		126
			21376-9	▲	15A/R	120	60	Red	B, C-9		3 1/2	2500		
			16860-9	▲	15A/WL 12/2	120	24	Soft White Long Life	B, C-9		3 1/2	3000		115
	Med.		25849-1	□	15A15/35	130	60	Frost Industrial Service	B, C-9		3 1/2	3500		123
	S-11	D.C. Bay	23599-4	(12)	15S11/3DC	75	24	Clear Train Marker Control	B, C-7A	1 1/4	2 3/8	1000		140
	Med.		23614-1	▲	15S11/102	120	24	Clear Refrigerator	B, C-7A	1 1/8	2 1/4	400		130
	T-6	Cand.	23582-0	▲	15T6	120	24	Clear Switchboard	B, C-7A		3 1/8	2000		110
			24815-3	▲ (63)	15T6	140-150	24	Clear Switchboard	B, C-7A		3 1/8	2000		100
	D.C. Bay		23590-3		15T6DC	120	24	Clear Switchboard	B, C-7A		3 1/8	2000		110
	T-7	D.C. Bay	22307-3	(4)	15T7DC	120	24	Clear Appliance	B, C-7A		2 1/4			104
	Cand.		22308-1	▲ (4)	15T7C	120	24	Clear Appliance	B, C-7A		2 1/4			104
	Inter:		24816-1	▲ (4)	15T7N	120	24	Clear Appliance	B, C-7A		2 1/4			104
			29904-0	▲ (4)	BC15T7N 12/1	120	12	Clear Appliance	B, C-7A		2 1/4			104
	T-8	Cand.	23591-1	▲	15T8C	120	24	Clear Appliance	B, C-7A		2 3/8	1000		110
	Inter:		23594-5	▲	15T8N	120	24	Clear Appliance	B, C-7A		2 3/8	1000		110

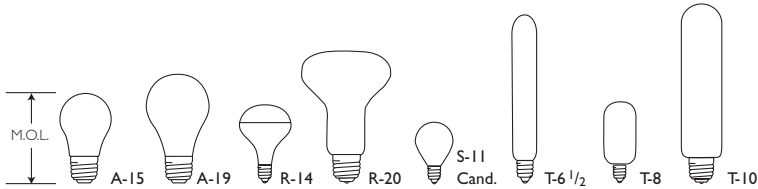
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Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.	Description	Class, Filament	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (93)	Approx. MBCP *	Lumens
17	R-20	Med.	23263-7		17R20	6.3	60	Frost Reflector Lt.	C, C-6		3 1/4	2000		
18	S-11	S.C. Bay	29137-7		18S11/ISC/6	10	120	Railroad Signal	C, CC-6	1 1/4	2 3/4	6000		
20	S-11	S.C. Bay	29139-3		20S11/ISC/6	10	120	Railroad Signal	C, CC-6	1 1/4	2 3/4	6000		
	T-6 1/2	Inter.	24853-4	(3)	20T6-1/2IF	120	24	Frost Exit Sign	B, C-8		5 1/2			150
		D.C. Bay	24839-3	(3)	20T6-1/2DC/IF	120	24	Frost Exit Sign	B, C-8		5 1/2			150
			24838-5	(3)	20T6-1/2DC	120	24	Clear Exit Sign	B, C-8		5 1/2			160
24	T-6 1/2	Inter.	24848-4	□	24T6-1/2IF	120	24	Frost Exit Sign 1 Yr. Life	B, C-8		5 1/2	8760		200
25	A-15	Med.	23165-4	▲	25A15/I	120	120	Frost Refrigerator	B, C-9		3 1/2	1000		210
			22638-1		25A15/RFL	130	120	Frost Sign Reflector	B, C-9		3 1/2	2500		
	A-19	Med.	16868-2	▲	25A/WL 12/2	120	24	Soft White Long Life	C, CC-6		4 3/4	3000		235
			38942-9		25A/TG 6/I	120	6	Transparent Green	B, C-9		3 1/4	3000		
			38943-7		25A/TR 6/I	120	6	Transparent Red	B, C-9		3 1/4	3000		
			38945-2		25A/TY 6/I	120	6	Transparent Yellow	B, C-9		3 1/4	3000		
			38946-0		25A/TB 6/I	120	6	Transparent Blue	B, C-9		3 1/4	3000		
			24227-1	▲	25A	24	120	Frost	C, C-6		4 1/4	1000		345
			24229-7	▲	25A	30	120	Frost Train	C, C-6		4 1/4	1000		325
			24235-4	▲	25A	34	120	Frost Train	C, C-6		4 1/4	1000		325
			25564-6	▲	25A	120	24/2	Frost	C, CC-6		4 3/4	2500		232
			30031-9	▲	25A/TF	120	120	Frost Silicone Coated	B, C-9		3 1/4	2500		
			36142-8	▲ X	25A/TY	120	12	Transparent Yellow	B, C-9		3 1/4	3000		
			37988-3	▲	25A/B	120	60	Blue	B, C-9		3 1/4	2500		
			37994-1	▲	25A/G	120	60	Green	B, C-9		3 1/4	2500		
			37993-3	▲	25A/O	120	60	Orange	B, C-9		3 1/4	2500		
			37989-1	▲	25A/R	120	60	Red	B, C-9		3 1/4	2500		
			37978-4	▲	25A/Y	120	60	Yellow	B, C-9		3 1/4	2500		
			33365-8	▲	25A19/RS	75	120	Frost Train Rough Ser.	R, C-9		3 1/4	1000		240
			37386-0	▲	25A/RS	120-130	120	Frost Rough Service	R, C-9		3 1/4	1000		235
			37387-8	□	25A19/35	120-130	60	Frost Industrial Service	B, C-9		3 1/4	3500		220
	R-14	Inter.	24828-6	■	25R12/R14N Replaces 25R12N & 25R14	120	24	Mini-Ref. Lt. Fr. Actual Bulb Dia. 1 1/2"	C, CC-2V		2 3/4	1500		200
	S-11	S.C. Bay	24250-3	X (72)	25S11/4SC	10	120	Rwy. Lt. Signal	C, CC-6	1 1/4	2 3/4	1000		
			29102-1		25S11/4SC/6	10	120	Railroad Signal	C, CC-6	1 1/4	2 3/4	6000		
		Cand.	23603-4	▲ (2)	25S11/2C	120	24	Clear Headlamp	B, C-7A	1 1/4	2 1/4	500		220
	T-6 1/2	Inter.	37388-6	▲	25T6-1/2IF	120-130	24	Frost Appliance	B, C-8		5 1/2	1000		210
			37389-4	▲	25T6-1/2	120-130	24	Clear Appliance	B, C-8		5 1/2	1000		220
		D.C. Bay	37391-0		25T6-1/2DC/IF	120-130	24	Frost Appliance	B, C-8		5 1/2	1000		210
			37392-8		25T6-1/2DC	120-130	24	Clear Appliance	B, C-8		5 1/2	1000		220
	T-8	D.C. Bay	29909-9	X (4)	BC25T8DC 12/I	120	12	Clear Appliance	B, C-7A		2 3/4			210
			24827-8	(4)	25T8DC	120	24	Clear Appliance	B, C-7A		2 3/4			210
		Cand.	23592-9	▲ (4)	25T8C	120	24	Clear Appliance	B, C-7A		2 3/4			220
		Inter.	23593-7	▲ (4)	25T8N	120	24	Clear Appliance	B, C-7A		2 3/4			220
	T-10	Med.	37674-9	▲	BC25T10/IF 12/I	120	12	Frost Showcase	B, C-8		5 3/4	1000		260
			37393-6	▲	25T10/IF	120-130	60	Frost Showcase	B, C-8		5 3/4	1000		255
			20363-8	▲	BC25T10	120	12	Clear Showcase	B, C-8		5 3/4	1000		250
			37394-4	▲	25T10	120-130	60	Clear Showcase	B, C-8		5 3/4	1000		260
30	A-15	Med.	30448-5		30A15	130	120	Frost Sign Service Ratings @ 120V = 27W	C, C-9		3 1/2	8000 22828		180 137
			30452-7		30A15/CL	130	120	Clear Sign Service Ratings @ 120V = 27W	C, C-9	2 3/4	3 1/2	8000 22828		160 122
	R-20	Med.	20165-7	▲ X (87)	30R20 12/I	120	12	Lt. Frost Reflector	C, CC-6		3 1/4	2000		205
			22078-0	▲ (87)	30R20 12/I	130	12	Lt. Frost Reflector	C, CC-6		3 1/4	2000		205
			20264-8		30R20/SFL	120	60	Lt. Frost Reflector Sign	C, C-9		3 1/4	6000		240

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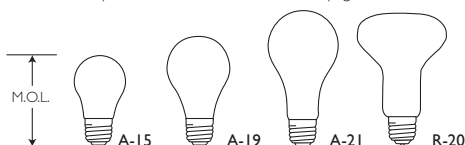


INCANDESCENT LAMPS

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.*	Description	Class, Filament	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (93)	Approx. MSCP*	Lumens
30	R-20	Med.	22601-9	□ (66)	30R20/SFL/TF	130	60	Frost Silicone Coated	C, CC-6		3 1/8	6000		
			27561-0	X □ (10)	30R20/SFL/5TR	120	60	Transp. Red Reflector Sign	C, C-9		3 1/8	6000		
			27553-7	X □ (10)	30R20/SFL/5TG	120	60	Transp. Green Reflector Sign	C, CC-6		3 1/8	6000		
			16753-6	▲ (87)	30R20/LL 12/I	120	12	Frost Long Life Reflector	C, CC-6		3 1/8	2500	335	205
30 70 100	A-21	3 Ct. Med.	16947-4	▲ (8)	30/100A/WL 12/I	120	12	Soft White Long Life Three-Way	C, 2CC-8		5 3/8	1750		285 920 1205
			36662-5	▲ (8)	30/100A/W 12/I	120	12	Soft White Three-Way	C, 2CC-8		5 3/8	1200		310 945 1255
33	A-19	Med.	22145-7		33A19/5	130	60	Clear Sign Ratings @ 120V = 29W	C, C-9		3 1/8	3000 8561		220 168
			30549-0		33A19/GR/CL	130	60	Clear Sign Ratings @ 120V = 29W	B, C-9		3 1/8	3000 8561		220 168
34	A-19	Med.	22234-9	▲ • \$	40A-34A/EW	120	48	Frost Econ-o-watt	C, CC-6		4 3/8	1500		410
			22235-6		40A-34A/EW	130	48	Frost Econ-o-watt Ratings @ 120V = 30W	C, CC-6		4 3/8	1500 4245		400 305
			37397-7	• \$	40A-34A/99/EW	120-130	48	Frost Econ-o-watt Extended Service Ratings @ 120V = 32W	C, CC-6		4 3/8	2500 4250		350 304
40	A-15	Med.	29999-0	▲	BC40A15/CL/LL 12/I	120	12	Clear Longer Life Home Appliance	C, C-9		3 1/2	1750		400
			37398-5	▲	40A15	120-130	120	Frost Home Appliance	C, C-9		3 1/2	1000		415
			25109-0	▲ □ (66)	40A15/TF	120-130	120	Frost Refrigerator Silicone Coated	C, C-9		3 1/2	1000		
			16934-2	▲	BC40A15/FAN/CL/LL 6/2	120	12	Clear Long Life Fan	C, C-9		3 1/2	2000		395
			16935-9	▲	BC40A15/FAN/W/LL 6/2	120	12	White Long Life Fan	C, C-9		3 1/2	2000		365
			20002-2	▲	40A15/22	120	120	Clear Home Oven	C, C-9		3 1/2	1000		420
	A-19	Med.	27081-9	▲	40A 12/4	120	48	Frost	C, CC-6		4 3/8	1500		495
			16797-2	▲	40A/CL/LL 12/2	120	24	Clear Long Life	C, CC-6		4 3/8	1500		505
			16737-9	▲	40A/WL 24/4	120	96	Soft White Long Life	C, CC-6		4 3/8	1500		475
			16869-0	▲	40A/WL 12/4	120	48	Soft White Long Life	C, CC-6		4 3/8	1500		475
			37465-2	▲	40A	120	48	Frost	C, CC-6		4 3/8	1500		495
			37466-0	▲	40A	130	48	Frost Ratings @ 120V = 35W	C, CC-6		4 3/8	1500 4245		490 375
			30033-5	▲ (66)	40A/TF	120	120	Frost Silicone Coated	C, CC-6		4 3/8	1500		
			37399-3	▲	40A/CL	120-130	48	Clear Ratings @ 120V = 37W	C, CC-6	3 3/8	4 3/8	1500 2550		500 435
			37400-9	▲	40A/99	120-130	48	Frost Extended Service Ratings @ 120V = 37W	C, CC-6		4 3/8	2500 5100		465 405
			24424-4	▲	BC40A/GD 12/2	120	24	Frost Garage Door	C, C-9		3 1/8	3500		370
			37481-9	▲ •	40A/W12/4	120	48	Soft White	C, CC-6		4 3/8	1000		500
			37482-7	▲	40A/W/TP 24/4	120	96	Soft White Tra-Pak	C, CC-6		4 3/8	1000		500
			35452-2	▲	40A/YL 12/2	120	24	Bug-A-Way® Yellow Longer Life	C, CC-6		4 3/8	1350		
			23096-1	□	40A19/35	130	48	Frost Industrial Service Ratings @ 120V = 35W	C, C-9		4 1/4	3500 9987		315 240
	A-21	Med.	37973-5		40A/B	120	120	Blue-Sign	B, C-9		4 3/8	1000		
			37974-3		40A/G	120	120	Green-Sign	B, C-9		4 3/8	1000		
			38022-0		40A/R	120	120	Red-Sign	B, C-9		4 3/8	1000		
			38024-6		40A/Y	120	120	Yellow-Sign	B, C-9		4 3/8	1000		

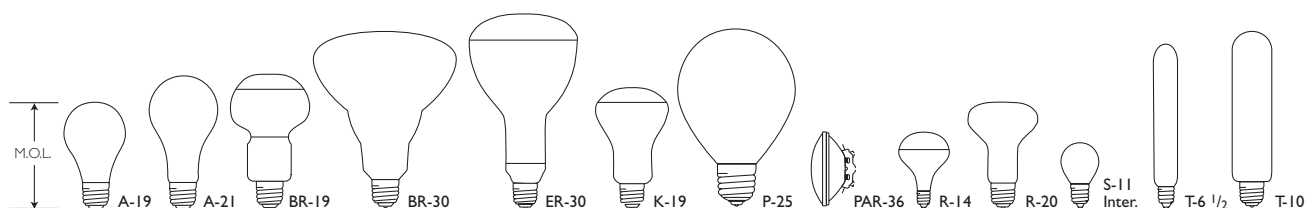
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Incandescent symbols and footnotes located on page 50



Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.	Description	Class, Filament	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (93)	Approx. MBCP *	Lumens
40	K-19	Med.	30728-0	▲ □	40K19/DL 6/2	120	12	Director®	C, C-9		4 1/4	1150		500
	R-14	Med.	35454-8		40R14/SP	120	24	Light Fr. Mini. Refl.	C, CC-2V		2 1/4	1500		250
	S-11	Inter.	21216-7	▲	BC40S11/NTP 16/I	120	16	Clear High Intensity	C, CC-2V		2 1/4	500		440
			24830-2	▲	40S11N/IF	120	24	Frost High Intensity	C, CC-2V		2 1/4	500		420
	T-6 1/2	Inter.	24850-0	▲	40T6-1/2	120	24	Clear Refrigerator	B, C-8		5 1/2	1000		350
			24852-6	▲	40T6-1/2IF	120	24	Frost Refrigerator	B, C-8		5 1/2	1000		340
			20491-7	▲	BC40T6-1/2 12/I	120	12	Clear Refrigerator	B, C-8		5 1/2	1000		350
	T-10	Med.	37679-8	▲	BC40T10/IF 12/I	120	12	Frost Showcase	B, C-8		5 1/2	1000		430
			37401-7	▲	40T10/IF	120-130	60	Frost Showcase	B, C-8		5 1/2	1000		435
			20368-7	▲	BC40T10 12/I	120	12	Clear Showcase	B, C-8		5 1/2	1000		435
			37402-5	▲	40T10	120-130	60	Clear Showcase	B, C-8		5 1/2	1000		440
		Med. Pf.	21941-0		40T10P	120	60	Aviation Airport Marker	C, CC-2V	1 1/2	3 1/4	1000		400
45	BR-30	Med.	16751-0	▲ (87)	45BR30/FL55/LL 12/I	120	12	Long Life Reflector Flood	C, CC-6		5 3/4	2500		340
50	A-19	Med.	36805-0	▲	50A 12/2	12	24	Frost	C, C-6		4 1/4	1000		790
			34765-8	▲	50A	24	120	Frost	C, C-6		4 1/4	1000		825
			34769-0	▲	50A	34	120	Frost	C, C-6		4 1/4	1000		790
			24569-6	▲	50A	250	120	Frost	C, RC-9		3 1/4	1000		
			24324-6	▲	50A/RS	34	120	Frost Rough Serv. Train	B, C-9		3 1/4	1000		500
			24326-1	▲	50A19/RS	75	120	Frost Rough Serv. Train	B, RC-9		3 1/4	1000		500
			21952-7	▲	50A19/3I	120	120	Clear Commercial Oven	B, C-9	2 1/2	3 1/4	1000		500
			37403-3	▲	50A/RS	120-130	120	Frost Rough Service Ratings @ 120V =47W	B, RC-9		3 1/4	1000		500
												1700		440
			20163-2	▲	50A/RS 12/2	120	24	Frost Rough Service	B, RC-9		3 1/4	1000		480
			24572-0	▲	50A/RS	250	120	Frost Rough Service	C, RC-9		3 1/4	1000		355
			30034-3	▲ (66)	50A/RS/TF	120-130	120	Frost Rough Service Silicone Coated	B, RC-9		3 1/4	1000		
	BR-19	Med.	16750-2	▲ \$ □ (87)	50BR19/25/SP/LL 12/I	120	12	Long Life Spotline Reflector	C, CC-11		4 1/4	2500	635	385
			28731-8	▲ \$ X □	50BR19/25/SP	120	12	Spotline Reflector	C-9		4 1/4	2000		530
	ER-30	Med.	37404-1	▲ \$ (87)	50ER30	120-130	24	Elliptical Reflector	C, CC-6		6 3/4	2000		360
	PAR-36	M.P.	29603-8		50PAR36/WFL	12	12	Compact Wide Flood	C, C-6		2 3/4	2000		
			22859-3		50PAR36/NSP/8	12	12	Compact Narrow Spot	C, C-6		2 3/4	2000		
	P-25	3 Ct. Mog.	22018-6	(15)	50/50P25/28	120	60	Clear Marine	C, C-5, C-9	3 3/4	5 1/4	750		375
	R-20	Med.	22082-2	▲ • (87)	50R20 12/I	130	12	Lt. Frost Reflector	C, CC-6		3 1/4	2000		380
			26635-3	▲ • (19, 87)	50R20/PK	120	60	Pink Reflector	C, CC-6		3 1/4	2000		
			16755-1	▲ (87)	50R20/LL 12/I	120	12	Frost Long Life Reflector	C, CC-6		3 1/4	2500		385
50 100 150	A-21	3 Ct. Med.	36671-6	▲ (8)	50/150A/W 12/I	120	12	Soft White Three-Way	C, 2CC-8		5 1/4	1200		610 1510 2120
			31736-2	▲ X □ (8)	50/150A/STP/BL 8/I	120	8	Blue Softone Pastel® Three-Way	C, 2CC-8		5 1/4	1200		530 1260 1790
			31716-4	▲ X □ (8)	50/150A/STP/PCH 8/I	120	8	Peach Softone Pastel® Three-Way	C, 2CC-8		5 1/4	1200		610 1510 2120
			31739-6	▲ □ (8)	50/150A/STP/PK 8/I	120	8	Pink Softone Pastel® Three-Way	C, 2CC-8		5 1/4	1200		550 1310 1860
			16948-2	▲ (8)	50/150A/WL 12/I	120	12	Soft White Long Life Three-Way	C, 2CC-8		5 1/4	1750		575 1440 2015

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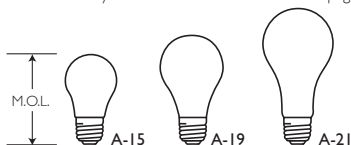
INCANDESCENT LAMPS

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.*	Description	Class, Filament	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (93)	Approx. MBCP*	Lumens
50 100 150	A-21	3 Ct. Med.	16717-1	▲ (8)	DIS 50/150A/WL 48/1	120	48	Soft White Long Life Three-Way	C,2CC-8		5 1/8	1750		575 1440 2015
			32359-2	▲ □ (8)	50/150A/DL 12/1	120	12	Director® Three-Way	C,2CC-8		5 1/8	1200		
50 200 250	A-21	3 Ct. Med.	16949-0	▲ (8)	50/250A/WL 12/1	120	12	Soft White Long Life Three-Way	C,2CC-8		5 1/8	1750		575 3120 3695
			31756-0	▲ \$ X □	51A19/RR/TS	125	20	Clear Ring Reflector Traffic Signal	C, C-7A	2 3/8	3 3/4	8000		385
51	A-19	Med. +	20555-9	▲ \$ X □	51A19/RR/TS	130	20	Clear Ring Reflector Traffic Signal	C, C-7A	2 3/8	3 3/4	8000		380
			22237-2	▲ •	60A-52A/EW	120	48	Frost Econ-o-watt	C, CC-6		4 3/8	1000		700
52	A-19	Med.	22239-8	▲ \$	60A-52A/EW	130	48	Frost Econ-o-watt Ratings @ 120V =46W	C, CC-6		4 3/8	1000		680 2830 550
			37459-5	▲ \$	60A-52A/99/EW	120-130	48	Frost Econ-o-watt Extended Service Ratings @ 120V =49W	C, CC-6		4 3/8	2500		605 4250 564
54	A-19	Med.	37166-6	\$ (12)	K54A19/TS/EW	120-125	120	Clear Krypton Econ-o-watt Traffic Signal	C, C-1 IV	2 3/8	4 3/8	8000		530
60	A-15	Med.	21281-1	▲ X	BC60A15FAN 12/2	120	24	Clear Fan	C, C-9		3 1/2	1000		630
			20431-3	▲ X	BC60A15FAN/ W 12/2	120	24	White Fan	C, C-9		3 1/2	1000		570
			16945-8	▲	BC60A15/FAN/W/ LL 6/2	120	12	White Long Life Fan	C, C-9		3 1/2	2000		570
			16946-6	▲	BC60A15/FAN/CL/ LL 6/2	120	12	Clear Long Life Fan	C, C-9		3 1/2	2000		630
	A-19	Med.	16794-0	▲	60A/CL/LL 12/2	120	24	Clear Long Life	C, CC-6		4 3/8	1500		900
			16738-7	▲	60A/WL 24/4	120	96	Soft White Long Life	C, CC-6		4 3/8	1500		830
			16874-0	▲	60A/WL 12/4	120	48	Soft White Long Life	C, CC-6		4 3/8	1500		830
			27082-7	▲ •	60A 12/4	120	48	Frost	C, CC-6		4 3/8	1000		890
			37469-4	▲ •	60A	120	48	Frost	C, CC-6		4 3/8	1000		890
			37471-0	▲ •	60A	130	48	Frost Ratings @ 120V =53W	C, CC-6		4 3/8	1000		850 2830 650
			30038-4	▲ (66)	60A/TF	120	120	Frost Silicone Coated	C, CC-6		4 3/8	1000		
			22245-5	▲ •	60A/99	120	48	Frost Extended Service	C, CC-6		4 3/8	2500		800
			22246-3	▲ •	60A/99	130	48	Frost Extended Service Ratings @ 120V =53W	C, CC-6		4 3/8	2500		790 7075 595
			37522-0	▲	60A/CL	130	48	Clear Ratings @ 120V =53W	C, CC-6	3 3/8	4 3/8	1000		880 2830 665
			37975-0	▲ X	60A/AGRO 24/1	120	24	Agro-Lite Plant Light	C, C-9		4 3/8	1000		
			13532-7	▲	60A/AGRO 12/1	120	12	Agro-Lite Plant Light	C, C-9		4 3/8	1000		
			38027-9	▲	60A/D	120	120	Frost Daylight	C, CC-6		4 3/8	1000		515
			37517-0	▲	60A/Y	120-130	48	Bug-A-Way® Yellow Longer Life	C, CC-6		4 3/8	1350		
			37987-5	▲	60A19/B	120	60	Blue	C, C-9		4 3/8	1000		
			37977-6	▲	60A19/G	120	60	Green	C, C-9		4 3/8	1000		
			37976-8	▲	60A19/R	120	60	Red	C, C-9		4 3/8	1000		
			23941-8	▲ (43)	60A/SB	120	120	Frost Silvered Bowl	C, CC-6		4 3/8	1000		810
			28111-3	▲	60A	230	120	Frost	C, RC-9		3 1/8	1000		545
			37483-5	▲ •	60A/W 12/4	120	48	Soft White	C, CC-6		4 3/8	1000		860
			37484-3	▲	60A/W/TP 24/4	120	96	Soft White Tra-Pak	C, CC-6		4 3/8	1000		860
			34819-3	▲ X □	60A/STP/BL 12/2	120	24	Blue Softone Pastel®	C, CC-6		4 3/8	1000		
			34820-1	▲ X □	60A/STP/PCH 12/2	120	24	Peach Softone Pastel®	C, CC-6		4 3/8	1000		
			34822-7	▲ □	60A/STP/PK 12/2	120	24	Pink Softone Pastel®	C, CC-6		4 3/8	1000		
			22573-0	▲ • □	60A/YL 12/2	120	24	Bug-A-Way® Yellow Longer Life	C, CC-6		4 3/8	1350		
			22247-1	□	60A19/35	120	48	Frost Industrial Service	C, C-9		4 3/8	3500		600

* Pursuant to California law, these incandescent lamps cannot be used or offered for sale for use in traffic signals in the State of California.

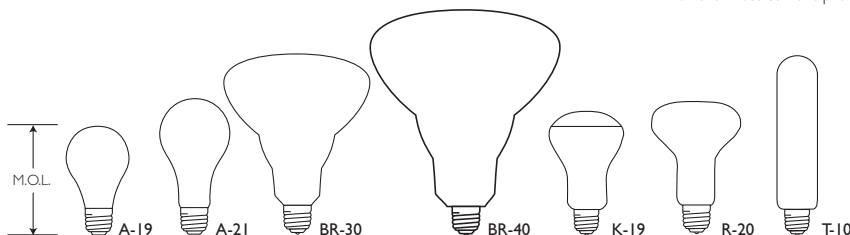
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Incandescent symbols and footnotes located on page 50



Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty. •	Description	Class, Filament	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (93)	Approx. MBCP *	Lumens
60	A-19	Med.	22248-9	□	60A19/35	130	48	Frost Industrial Service Ratings @ 120V =53W	C, C-9		4 7/8	3500		585
			25836-8	□ (66)	60A/35/TF	120	60	Frost Silicone Coated Industrial Service	C, C-9		4 7/8	3500		446
			+ 21056-7	\$ (12)	K60A19/TS/EW	120-125	120	Clear Krypton Econ-o-watt Traffic Signal	C, C-11V	2 7/8	4 7/8	8000		610
			+ 37167-4	\$ (12)	K60A19/TS/EW	130	120	Clear Krypton Econ-o-watt Traffic Signal	C, C-11V	2 7/8	4 7/8	8000		610
	K-19	Med.	22486-5	▲ □	60K19/DL 6/2	120	12	Director®	C, CC-6		4 7/8	1150		770
	R-20	Med.	30231-5	X (10)	60R20/SFL/5TB	120	60	Blue Transp. Refl. Sign	C, C-9		3 7/8	6000		
	T-10	Med.	22178-8	▲	60T10/64IF	120	60	Frost	B, C-8		5 7/8	1000		660
			22176-2	▲	60T10/64	120	60	Clear	B, C-8		5 7/8	1000		665
65	BR-30	Med.	24876-5	▲ • (87)	65BR30/FL55 12/I	120	12	Reflector Flood	C, CC-6		5 7/8	2000		635
			24884-9	▲ • (87)	65BR30/FL55	130	12	Reflector Flood	C, CC-6		5 7/8	2000		635
			24877-3	▲ (87)	65BR30/SP20 12/I	120	12	Reflector Spot	C, CC-6		5 7/8	2000		655
			24880-7	▲ (87)	65BR30/SP20	130	12	Reflector Spot	C, CC-6		5 7/8	2000		655
			24452-5	(87)	65BR30/SFL	120	24	Reflector Sign Frost	C, C-17A		5 7/8	5000		635
			16768-4	▲ (87)	65BR30/FL55/LL 12/I	120	12	Long Life Reflector Flood	C, CC-6		5 7/8	2500	510	595
			16769-2	▲ (87)	65BR30/SP20/LL 12/I	120	12	Long Life Reflector Spot	C, CC-6		5 7/8	2500	530	610
	BR-40	Med.	22537-5	▲ • (87)	65BR/FL60	130	24	Reflector Flood	C, CC-6		6 7/8	2000		685
			22546-6	▲ (87)	65BR/SP20	120-130	24	Reflector Spot	C, CC-6		6 7/8	2000		655
			16741-1	▲ (87)	65BR/FL60/LL 8/I	120	8	Long Life Reflector Flood	C, CC-6		6 7/8	2500	500	630
			38913-0	▲ (87)	65BR/FL60 24/I	120	24	Long Life Reflector Flood	C, CC-6		6 7/8	2000	500	630
67	A-19	Med.	22240-6	▲ • \$	75A-67A/EW	120	48	Frost Econ-o-watt	C, CC-6		4 7/8	750		1010
			22241-4	▲ • \$	75A-67A/EW	130	48	Frost Econ-o-watt Ratings @ 120V =59W	C, CC-6		4 7/8	750		990
												2120		805
			37405-8	▲ • \$	75A-67A/99/EW	120-130	48	Frost Econ-o-watt Extended Service Ratings @ 120V =63W	C, CC-6		4 7/8	2500		835
	A-21	Med.	+ 22192-9	• (12)	67A21/99TS	120	120	Clear Traffic Signal	C, C-11V		4 7/8	8000		610
			+ 22197-8	• (12)	67A21/99TS	130	120	Clear Traffic Signal	C, C-11V	2 7/8	4 7/8	8000		610
	A-21	Med.	+ 22199-4	• (12)	69A21/TS	120	120	Clear Traffic Signal	C, C-9	2 7/8	4 7/8	8000		685
69	A-21	Med.	+ 22204-2	• (12)	69A21/TS	130	120	Clear Traffic Signal	C, C-9	2 7/8	4 7/8	8000		685
75	A-19	Med.	37472-8	▲ •	75A	120	48	Frost	C, CC-6		4 7/8	750		1220
			16801-3	▲	75A/CL/LL 12/2	120	24	Clear Long Life	C, CC-6		4 7/8	1500		1080
			16879-9	▲	75A/WL 12/4	120	48	Soft White Long Life	C, CC-6		4 7/8	1500		1040
			16739-5	▲	75A/WL 24/4	120	96	Soft White Long Life	C, CC-6		4 7/8	1500		1040
			27083-5	▲ •	75A 12/4	120	48	Frost	C, CC-6		4 7/8	750		1220
			37473-6	▲	75A	130	48	Frost Ratings @ 120V =66W	C, CC-6		4 7/8	750		1150
												2120		860
			37406-6	▲ •	75A/99	120-130	48	Frost Extended Service Ratings @ 120V =70W	C, CC-6		4 7/8	2500		1070
												4250		930
			29360-5	▲	75A/RS/VS	120-130	12/I	Frost Rough & Vib. Serv. Ratings @ 120V =70W	R, C-9	2 7/8	3 7/8	1000		712
												1700		660
			37525-3	▲	75A/CL	130	48	Clear Ratings @ 120V =66W	C, CC-6	3 7/8	4 7/8	750		1195
												2140		885
			37485-0	▲ •	75A/W 12/4	120	48	Soft White	C, CC-6		4 7/8	750		1180
	A-21	Med.	37486-8	▲	75A/W/TP 24/4	120	96	Soft White Tra-Pak	C, CC-6		4 7/8	750		1180
			31305-6	▲	75A21	120-130	120	Frost Ratings @ 120V =66W	C, CC-8		5 7/8	1000		1200
												2854		858
			20922-1	▲ (66)	75A/RH/TF 12/I	120-130	12	Frost Silicone Coated Tough Bulb	C, RC-9		5 7/8	1000		

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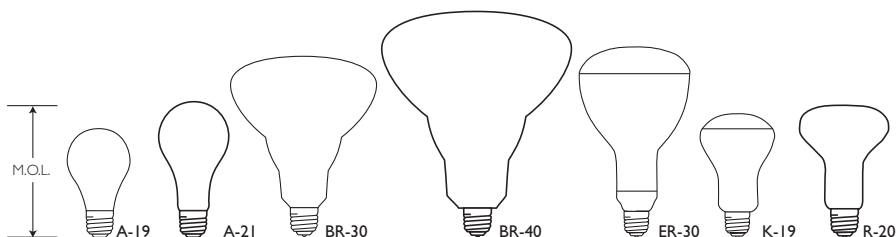
INCANDESCENT LAMPS

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.*	Description	Class, Filament	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (93)	Approx. MBCP*	Lumens
75	A-21	Med.	20470-1	▲	75A/RH 12/I	120-130	12	Frost Rough House Ratings @ 120V = 70W	C, RC-9		5 3/8	1000		750
			24353-5	▲	75A2I	12	120	Frost	C, C-6		5 3/8	1000		730
	BR-30	Med.	24903-7	▲ (66, 87)	75BR30/FL/TF	120	12	Frost Silicone Coated Reflector	C, CC-6		5 3/8	2000		1100
			24905-2	▲ (87)	75BR30/AGRO 6/I	120	6	Agro-Lite Plant Light	C, CC-6		5 3/8	2000		700
			24904-5	▲ (87)	75BR30/B 8/I	120	8	Blue	C, CC-6		5 3/8	2000		
			24902-9	▲ (87)	75BR30/PK 8/I	120	8	Pink	C, CC-6		5 3/8	2000		
			24899-7	▲ (87)	75BR30/R 8/I	120	8	Red	C, CC-6		5 3/8	2000		
	ER-30	Med.	20572-4	▲ \$ (19, 37, 87)	75ER30	120	24	Elliptical Reflector	C, CC-6		6 3/8	2000		570
			29636-8	▲ \$ (19, 37, 87)	75ER30	130	24	Elliptical Reflector	C, CC-6		6 3/8	2000		570
	K-19	Med.	22487-3	▲ □	75K19/DL 6/2	120	12	Director®	C, CC-6		4 3/8	1150		1000
	R-20	Med.	16763-5	▲ □ (87)	75R20/LL 12/I	120	12	Frost Long Life Reflector	C, CC-6		3 13/16	2500	800	570
85	BR-30	Med.	16766-8	▲ (87)	85BR30/FL55/LL 6/I	120	6	Long Life Reflector Flood	C, CC-6		5 3/8	2500	700	855
			16767-6	▲ (87)	85BR30/SP20/LL 6/I	120	6	Long Life Reflector Spot	C, CC-6		5 3/8	2500	3100	865
	BR-40	Med.	22527-6	▲ • (87)	85BR/FL60	120	24	Reflector Flood	C, CC-6		6 1/2	2000		900
			22528-4	▲ • (87)	85BR/FL60	130	24	Reflector Flood	C, CC-6		6 1/2	2000		925
			16785-8	▲ (87)	85BR/FL60/LL 8/I	120	8	Long Life Reflector Flood	C, CC-6		6 1/2	2500	700	900
			16788-2	▲ (87) X	85BR/SP20/LL 8/I	120	8	Long Life Reflector Spot	C, CC-6		6 1/2	2500	3100	900
90	A-19	Med.	22243-0	▲ • \$	100A-90A/EW	120	48	Frost Econ-o-watt	C, CC-6		4 3/8	750		1445
			37390-2	▲ \$	100A-90A/99EW	120-130	48	Frost Econ-o-watt Extended Service Ratings @ 120V = 84W	C, CC-6		4 3/8	2500		1185
			+ 37168-2	\$ (12)	K90A19/TS/EW	120-125	120	Clear Krypton Econ-o-watt Traffic Signal	C, C-11V	2 3/8	4 3/8	8000		1040
			+ 37615-2	\$ (12)	K90A19/11/TS/EW	120-125	120	Clear Krypton Econ-o-watt Traffic Signal	C, C-11V	3	4 3/8	8000		1040
	A-21	Med.	26829-2	\$ □	90A21/35	130	60	Frost Econ-o-watt Industrial Service Ratings @ 120V = 80W	C, C-9		5 3/8	3500		1050
												9987		801
100	A-19	Med.	27086-8	▲	100A 12/4	120	48	Frost	C, CC-6		4 3/8	750		1600
			37474-4	▲ • X	100A	120	48	Frost	C, CC-6		4 3/8	750		1600
			13684-6	▲ •	100A	120	48	Frost	C, CC-8		4 3/8	750		1710
			37476-9	▲ •	100A	130	48	Frost	C, CC-6		4 3/8	750		1560
								Ratings @ 120V = 88W				2120		1190
			22978-1	▲ •	100A/99	120	48	Frost Extended Service	C, CC-6		4 3/8	2500		1500
			22979-9	▲ •	100A/99	130	48	Frost Extended Service Ratings @ 120V = 88W	C, CC-6		4 3/8	2500		1470
												7075		1110
			37527-9	▲	100A/CL	130	48	Clear Ratings @ 120V = 88W	C, CC-6	3 1/2	4 3/8	750		1720
												2120		1300
			13254-8	▲ •	100A/W 12/4	120	48	Soft White	C, CC-6		4 3/8	750		1620
			16795-6	▲	100A/CL/LL 12/2	120	24	Clear Long Life	C, CC-6		4 3/8	1500		1470
			16740-3	▲	100A/WL 24/4	120	96	Soft White Long Life	C, CC-8		4 3/8	1500		1550
			13255-5	▲	100A/W/TP 24/4	120	96	Soft White Tra-Pak	C, CC-6		4 3/8	750		1620
			22581-3	▲ • □	100A/YL 12/2	120	24	Bug-A-Way® Yellow Longer Life	C, CC-6		4 3/8	1350		
			16862-5	▲	100A/WL 12/4	120	48	Soft White Long Life	C, CC-8		4 3/8	1500		1550

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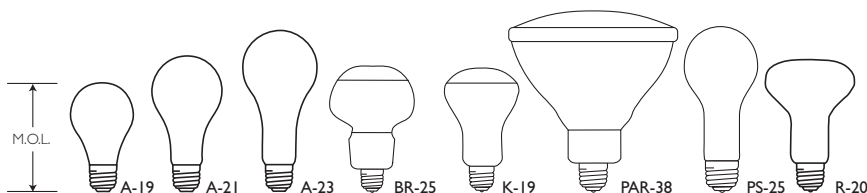


Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.	Description	Class, Filament	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (93)	Approx. MBCP *	Lumens
100	A-19	Med. LHT	37414-0	(18)	100A/LHT	120-130	48	Frost	C, CC-6		4 1/8	750		1560
	A-21	Med.	34803-7	▲	100A	12	120	Frost	C, C-6		5 3/8	1000		2050
			34781-5	▲	100A	34	120	Frost Train	C, C-6		5 3/8	1000		1940
			28171-7	▲	100A2I	120-130	120	Frost	C, CC-8		5 3/8	750		1680
								Ratings @ 120V = 94W				1280		1463
			30051-7	▲ (66)	100A2I/TF	120	120	Frost Silicone Coated	C, CC-8		5 3/8	750		
			29956-0	▲	100A	230	120	Frost	C, C-9		5 3/8	1000		1270
			29955-2	▲	100A	250	120	Frost	C, C-9		5 3/8	1000		1270
			24661-1	▲	100A	277	120	Frost Mine	C, C-9		5 3/8	1000		1070
			37460-3		100A2I/99	120-130	60	Frost Extended Service	C, CC-8		5 3/8	2500		1475
								Ratings @ 120V = 94W				4250		1280
			38026-1	▲	100A/D	120	60	Frost Daylight	C, C-9		5 3/8	750		900
			37969-3	▲ (43, 64)	100A/ISBIF	120	120	Frost Silvered Bowl	C, CC-6		5 3/8	1000		1240
			27985-1	▲ (66)	100A/RS/TF	120-130	60	Frost Silicone Coated Rough Service	C, RC-9		5 3/8	1000		
			27550-3	▲	100A/RS	250	60	Frost Rough Service	C, RC-9		5 3/8	1000		1030
			27560-2	▲ *	100A/CL/RS/VS	120-130	60	Clear Rough & Vibration Service	C, RC-9	3 3/8	5 3/8	1000		1100
								Ratings @ 120V = 94W				1700		945
			37411-6	□	100A2I/35	120-130	60	Frost Industrial Service	C, C-9		5 3/8	3500		1175
								Ratings @ 120V = 94W				5975		1015
			25838-4	□ (14, 66)	100A2I/35/TF	120	60	Frost Silicone Coated Industrial Service	C, C-9		5 3/8	3500		
			27569-3		100A/RS/VS/BR	120-130	60	Frost Rough & Vibration Service	C, RC-9		5 3/8	1000		1230
								Ratings @ 120V = 94W				1700		945
			+ 22390-9	(12)	100A2I/TS	130	120	Clear Traffic Signal	C, C-9	2 3/8	4 3/8	2000		1260
		Med. LHT	22300-8	X (18)	100A/3	120	120	Frost	C, CC-8		5 3/8	750		1750
		Med. Pf.	22310-7	(12)	100A2I/P	120	60	Aviation-Airport Marker	C, CC-2V	2 3/8	5 3/8	2000		
	A-23	Med.	22430-3	▲	100A23	120	120	Frost	C, CC-6		6 3/8	750		1730
			22422-0	X	100A23/R	120	60	Red	C, CC-6		6 3/8	750		
	BR-25	Med.	31572-1	▲ X □	100BR25/25	120	8	Spotlight Reflector	C, C-11		4 1/2	2000		
	PAR-38	Med. Skt.	36235-0	★ (29, 82)	100PAR/A 6/I	120	6	Amber PAR	C, CC-6		5 3/8	2000		
			20177-2	★ (29, 82)	100PAR/B 6/I	120	6	Blue PAR	C, CC-6		5 3/8	2000		
			20186-3	★ (29, 82)	100PAR/G 6/I	120	6	Green PAR	C, CC-6		5 3/8	2000		
			20228-3	★ (29, 82)	100PAR/R 6/I	120	6	Red PAR	C, CC-6		5 3/8	2000		
			20232-5	★ (29, 82)	100PAR/Y 6/I	120	6	Yellow PAR	C, CC-6		5 3/8	2000		
			22191-1	★ (27, 89)	100PAR38/HEAT/CL	120	15	Clear PAR Infrared	C, C-9		5 3/8			
K-19	Med.		22491-5	▲ □	100K19/DL 6/2	120	12	Director®	C, CC-6		4 3/8	1150		1450
R-20	Med.		33703-0	■ □ (12, 26)	100R20/FL/S	12	60	Reflector Flood Swimming Pool	C, C-6		3 1/8	2000		
			16701-5	▲ □ (87)	100R20/LL 12/I	120	12	Frost Long Life Reflector	C, CC-6		3 1/8	2500		935
100 200 300	PS-25	3 Ct. Mog.	36734-2	▲ (8)	100/300/W 12/I	120	12	Soft White Three-Way	C, 2CC-6		6 3/8	1200		1320 3300 4620
116	A-21	Med.	+ 22483-2	(12)	116A21/TS	120	120	Traffic Signal Clear	C, C-9	2 3/8	4 3/8	8000		1260
			+ 22485-7	(12)	116A21/TS	130	120	Traffic Signal Clear	C, C-9	2 3/8	4 3/8	8000		1260

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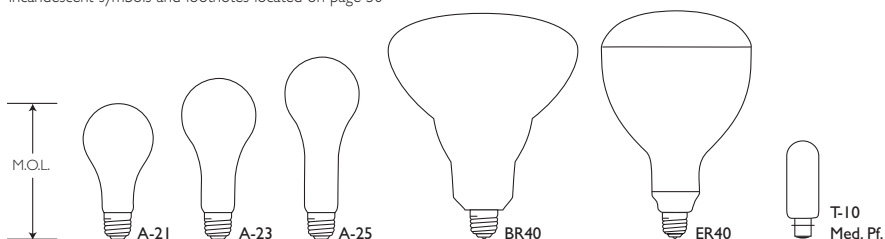
INCANDESCENT LAMPS

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.*	Description	Class, Filament	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (93)	Approx. MBCP*	Lumens
120	BR-40	Med.	22541-7	▲ • (87)	I20BR/FL60	120	24	Reflector Flood	C, CC-6		6 ½	2000		1300
			22532-6	▲ • (87)	I20BR/FL60	130	24	Reflector Flood	C, CC-6		6 ½	2000		1300
			22544-1	▲ (87)	I20BR/SP20	120-130	24	Reflector Spot	C, CC-6		6 ½	2000		1250
	ER-40	Med.	16779-1	▲ (87)	I20BR/FL60/LL 8/I	120	8	Long Life Reflector Flood	C, CC-6		6 ½	2500	1000	1285
			16781-7	▲ (87)	I20BR/SP20/LL 8/I	120	8	Long Life Reflector Spot	C, CC-6		6 ½	2500	4600	1225
			21562-4	▲ \$ (19, 37, 87)	I20ER40	120	24	Elliptical Reflector	C, CC-6		7 ¾	2000		1190
124	A-21	Med.	20556-7	□ \$	I24A21/RR/TS	120	20	Clear Ring Reflector Traffic Signal	C, C7A		4 ¾	8000		1150
			20557-5		I24A21/RR/TS	125	20	Clear Ring Reflector	C, C7A	3	4 ¾	8000		1125
			20558-3		I24A21/RR/TS	130	20	Clear Ring Reflector Traffic Signal	C, C7A	3	4 ¾	8000		1100
125	BR-40	Med.	38931-2	▲ (27, 87, 89)	I25BR40/I 4/I	120	4	Clear Reflector Infrared	C, C-9		6 ½			
	T-10	Med. Pf.	23640-6	X (8)	I25T10P	120	24	Spotlight	C, C-13	2 ¾	5 ¾	500		1740
135	A-21	Med.	28175-8	▲ \$	I50A-135A/EW	120-130	60	Frost Econ-o-watt Ratings @ 120V=127W	C, CC-8		5 ¾	750		2490
			37464-5	▲ \$	I50A-135A/99/EW	120-130	60	Frost Econ-o-watt Ratings @ 120V=126W	C, CC-8		5 ¾	2500		2030
			37616-0	\$ (12)	K135A21/TS/EW	120-125	120	Clear Krypton Econ-o-watt Traffic Signal	C, C-11V	3	4 1/8	8000		1750
	A-25	Med.	26836-7	X □ \$	I35A25/35	130	60	Frost Econ-o-watt Industrial Service Ratings @ 120V=119W	C, C-9		6 1/8	3500		1865
150	A-21	Med.	27003-3	▲ •	I50A	120	48	Frost	C, CC-8		5 ¾	750		2850
			27069-4	▲ •	I50A	130	48	Frost	C, CC-8		5 ¾	750		2800
								Ratings @ 120V=133W			2140		2174	
			37417-3	▲ • (82)	I50A/99	120-130	60	Frost Extended Service Ratings @ 120V=141W	C, CC-8		5 ¾	2500		2445
			37418-1	▲ (82)	I50A/CL	120-130	60	Clear Ratings @ 120V=141W	C, CC-8	3 ¾	5 ¾	750		2815
											1275		2440	
			27983-6	▲ (66)	I50A21/RS/TF	120-130	60	High-Temp. Coating	C, RC-9		5 ¾	1000		
			16799-8	▲	I50A/CL/LL 12/I	120	12	Clear Long Life	C, CC-8		5 ¾	2000		2570
			16866-6	▲	I50A/WL 12/I	120	12	Soft White Long Life	C, CC-8		5 ¾	2000		2310
			27578-4	▲	I50A21/RS/BR	120-130	60	Frost Rough & Vibration Service Ratings @ 120V=141W	C, RC-9		5 ¾	1000		2205
											1700		1915	
			27586-7	▲	I50A21/CL/RS/VS	120-130	60	Clear Rough & Vibration Service Ratings @ 120V=141W	C, RC-9	3 ¾	5 ¾	1000		2200
											1700		1915	
			32357-6	▲ □ (8)	I50A/DL 12/I	120	12	Director®	C, CC-8		5 ¾	1000		
			27588-3	▲ •	I50A/35/RS/BR	120-130	60	Frost Industrial Rough Service Ratings @ 120V=141W	C, RC-9	3 ¾	5 1/8	3500		1640
											1700		1915	
	A-23	Med. LHT	28170-9	(18)	I50A23/LHT	120-130	60	Frost	C, CC-8		6 ¾	750		2850
		Med.	37419-9	▲	I50A23/CL	120-130	60	Clear Ratings @ 120V=141W	C, CC-8	4 ¾	6 ¾	750		2855
	A-25	Med.	37421-5	□	I50A25/35	120-130	60	Frost Industrial Service Ratings @ 120V=141W	C, C-9		6 ¾	3500		1825
			22965-8	□ (14, 66)	I50A25/35/TF	120	60	Frost Silicone Coated Industrial Service	C, C-9		6 1/8	3500		1642

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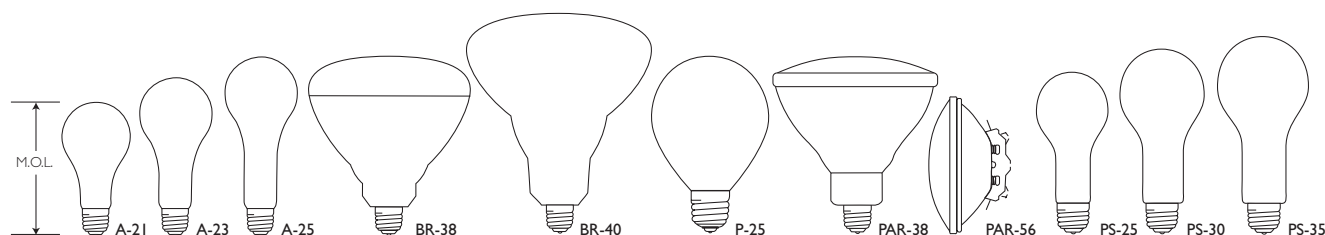
Incandescent symbols and footnotes located on page 50



INCANDESCENT LAMPS

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty. • Description	Class, Filament	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (93)	Approx. MBCP *	Lumens
150	BR-40	Med.	22736-3	X	150BR/B	120	24 Blue	C, CC-6		6 1/2	2000		
			22733-0	X	150BR/PK	120	24 Pink	C, CC-6		6 1/2	2000		
			22730-6	X	150BR/R	120	24 Red	C, CC-6		6 1/2	2000		
	P-25	Med.	22725-6		150BR/AGRO 6/I	120	6 Agro-Lite Plant Light	C, CC-6		6 1/2	2000		
			24938-3	(31)	150P25/2SB	120	60 Clear Spotlight Silvered Bowl	C, C-5		4 3/4	200		1700
			23654-7	(23)	150P25/I0	120	60 Light Frost Spotlight	C, C-5	3	4 3/4	200		2100
	BR-38	Med.	38568-2	★ (90)	150PAR/I/5FL	130	12 PAR Flood Anti-Vibration	C, C-11V		5 1/2	5000		
			28173-3	▲	150	120-130	60 Frost Ratings @120V=141W	C, C-9		6 1/8	750		2460
	PS-25	Med.	28174-1	▲	150PS25/99	120-130	60 Frost Extended Service Ratings @120V=141W	C, C-9		6 1/8	2500		2080
			30056-6	▲ (66)	150PS25/TF	120	60 Frost Silicone Coated	C, C-9		6 1/8	1000		
			24684-3	▲	150PS25/99CL	250	60 Clear Extended Service	C, CC-9		6 1/8	2500		1840
	PS-35	3 Ct. Mog.	23659-6	X	150/400	120	24 Frost Hospital	C, 2C-7A		9 3/4	200		
			13033-6	★ (27, 89)	175PAR38/HEAT/CL	120	15 Clear Infrared	C, C-9		5 3/4			
175	PAR-38	Med. Skt.	39423-9		189PS25/64	125	60 Clear	C, C-9	5 1/4	6 1/8	3000		2900
200	A-21	Med.	16867-4	▲	200A/WL 6/I	120	6 Soft White Long Life	C, CC-8		5 3/8	1500		3300
	A-23	Med.	16798-0	▲	200A/CL/LL 6/I	120	6 Clear Long Life	C, CC-8		6 3/8	1500		3665
			36289-7	▲	200A	120	60 Frost	C, CC-8		6 3/8	750		3800
			36291-3	▲	200A	130	60 Frost Ratings @120V=177W	C, CC-8		6 3/8	750		3800
			37427-2	▲	200A/CL	120-130	60 Clear Ratings @120V=187W	C, CC-8	4 3/4	6 3/8	750		3815
			28176-6	▲	200A/99	120-130	60 Frost Extended Service Ratings @120V=187W	C, CC-8		6 3/8	2500		3500
	A-25	Med.	39813-1	□	200A25/35	130	60 Frost Extended Service Ratings @120V=177W	C, C-9		6 1/8	3500		2690
			22654-8		200BR/FL	120	24 Reflector Flood	C, C-9		6 1/2	2000		2200
	PAR-56	M-P Mog. End Prong	23371-8	★ (10)	200PAR56	30	8 PAR Headlight R.R.	C, CC-6		4 1/2	350	230,000	
			28956-1	★ (9, 59, 90)	200PAR56/MFL	120	8 PAR Med. Flood	C, CC-13		5	2000		
	PS-25	Med.	34974-6	▲	200/IF	250	60 Frost	C, CC-9		6 1/8	1000		3000
			34976-1	▲	200	277	60 Clear Mine	C, CC-9	5 1/4	6 1/8	1000		2650
	PS-30	Med.	22729-8	▲	200	130	60 Clear Ratings @120V=177W	C, C-9	6	8 1/8	750		3710
			22735-5	▲ X	200/IF	130	60 Frost Ratings @120V=177W	C, C-9		8 1/8	750		3710
			22708-2	▲ X	200/IF	120	60 Frost	C, C-9		8 1/8	750		3710
			13392-6	▲	200/IF	120-130	12 Frost Ratings @120V=177W	C, C-9		8 1/8	750		3710
			24397-2	▲	200	32	60 Clear	C, C-6		8 1/8	1000		3800
			30059-0	▲ (66)	200/TF	120	60 Frost Silicone Coated	C, C-9		8 1/8	750		
			22737-1	▲	200/99IF	130	60 Frost Extended Service Ratings @120V=177W	C, C-9		8 1/8	2500		2975
			37431-4	▲ (31, 43)	200/SBIF	120-130	60 Frost Silvered Bowl	C, C-9		8 1/8	1000		3320
			22704-1	▲	200PS30/23	120	60 Frost Rough Service	C, C-9		8 1/8	1000		3500
			22732-2	▲	200PS30/23	130	60 Frost Rough Service Ratings @120V=177W	C, C-9		8 1/8	1000		3500
			22698-5	▲	200PS30/24	120	60 Clear Rough Service	C, C-9	6	8 1/8	1000		3500

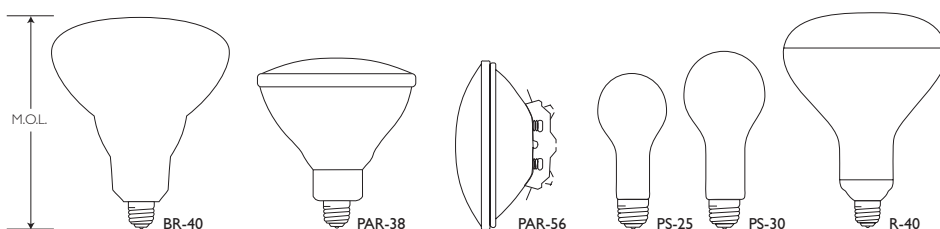
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Incandescent symbols and footnotes located on page 50



INCANDESCENT LAMPS

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.*	Description	Class, Filament	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (93)	Approx. MBCP*	Lumens
200	PS-30	Med.	22726-4	▲	200PS30/24	130	60	Clear Rough Service Ratings @120V=177W	C, C-9	6	8 1/8	1000		3500
			30022-8	▲ (66)	200PS30/RS/TF	120	60	Frost Rough Service Silicone Coated	C, C-9		8 1/8	1000		2670
			24717-1	▲	200PS30/RS	250	60	Clear Rough Service	C, C-9	6	8 1/8	1000		2850
			22995-5	□ (14, 66)	200/35/TF	120	60	Frost Silicone Coated Industrial Service	C, C-9		8 1/8			3500
		Mog.	22751-2		200PS30/12	130	60	Clear Ratings @120V=177W	C, C-9	6 3/4	8 1/8	750		3650
250	BR-40	Med.	38932-0	▲ (27, 87)	250BR40/I 4/I	120	4	Clear Reflector Infrared	C, C-9		6 1/2			
		Med. Skt.	24535-7	§ (87, 89)	250BR40/4	120	24	Clear Reflector Infrared Industrial	C, C-9		7 1/4	5000		
	PAR-38	Med. Skt.	37432-2	□ ★ (53, 82)	K250PAR38/FL	120-130	12	PAR Floodlight (Krypton)	C, CC-6		5 3/8	4000		3100
			37433-0	□ ★ (53, 82)	K250PAR38/SP	120-130	12	PAR Spotlight (Krypton)	C, CC-6		5 3/8	4000		3100
	R-40	Med.	38933-8	▲ ★ § (27, 87, 89)	250R40/HR 4/I	120	4	Red Bowl Heat Ray	C, C-9		6 3/8	5000		
300	BR-40	Med.	37441-3	▲ §	300BR/FL	120-130	24	Reflector Flood	C, CC-11		6 1/2	2000		2480
	PAR-56	M-P	26084-4	★ (84)	300PAR56/WFL	12	8	PAR Wide Flood Swimming Pool	C, C-6		4 1/2	1000		
			23405-4	★ (9, 55)	300PAR56/MFL	130	8	PAR Med. Flood	C, CC-13		5	2000		
			23388-2	★ (9, 55)	300PAR56/WFL	120	8	PAR Wide Flood	C, CC-13		5	2000		
			23410-4	★ (9, 55)	300PAR56/WFL	130	8	PAR Wide Flood	C, CC-13		5	2000		
			23378-3	★ (9, 46, 55)	300PAR56/NSP	120	8	PAR Narrow Spotlight	C, CC-13		5	2000		
	PS-25	Med.	28177-4	▲	300M/IF	120-130	60	Frost Ratings @120V=282W	C, CC-8		6 1/8	750		6230
												1280		5471
			38941-1	▲	300M/IF	120	6	Frost	C, CC-8		6 1/8	750		6300
			37151-8	▲ X	300M	120	60	Clear	C, CC-8	5 1/4	6 1/8	750		6280
			37153-4	▲ X	300M	130	60	Clear Ratings @120V=265W	C, CC-8	5 1/4	6 1/8	750		6280
												2120		4675
			13391-8	▲	300M	120-130	12	Clear Ratings @120V=265W	C, CC-8	5 1/4	6 1/8	750		6280
												2120		4625
			35008-2	▲	300M/99IF	120	60	Frost Extended Service	C, CC-8		6 1/8	2500		5060
			35009-0	▲	300M/99IF	130	60	Frost Extended Service Ratings @120V=265W	C, CC-8		6 1/8	2500		5060
												7130		4044
			35007-4	▲	300M/99	130	60	Clear Extended Service Ratings @120V=265W	C, CC-8	5 1/4	6 1/8	2500		5300
												7134		4044
	PS-30	Med.	22783-5	▲	300M/PS30IF	120	60	Frost	C, C-9		8 1/8	750		6100
			22808-0	▲	300M/PS30IF	130	60	Frost Ratings @120V=265W	C, C-9		8 1/8	750		6100
												2120		4650
			22779-3	▲	300M/PS30	120	60	Clear	C, C-9	6	8 1/8	750		6100
			22802-3	▲	300M/PS30	130	60	Clear Ratings @120V=265W	C, C-9	6	8 1/8	750		6100
												2120		4650
			39798-4	□	300M/PS30/35	130	60	Frost Industrial Service Ratings @120V=265W	C, C-9		8 1/8	3500		4420
												9987		3372

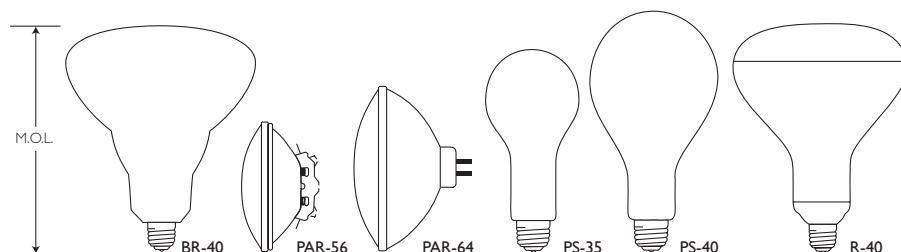
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Incandescent symbols and footnotes located on page 50



INCANDESCENT LAMPS

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty. •	Description	Class, Filament	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (93)	Approx. MBCP *	Lumens
300	PS-35	Mog.	39658-0		300/RSIF	120	24	Frost Rough Service	C, C-9		9 3/4	1000		5250
			22898-1		300/99IF	130	24	Frost Extended Service Ratings @120V=265W	C, C-9		9 3/4	2500 7134		5020 3830
			22890-8		300/99	130	24	Clear Extended Service Ratings @120V=265W	C, C-9	7	9 3/4	2500 7134		5070 3868
			39800-8		300PS35/35	130	24	Frost Industrial Service Ratings @120V=265W	C, C-9		9 3/4	3500 9987		4420 3372
			13390-0	▲	300/IF	120-130	12	Frost Ratings @120V=265W	C, C-9		9 3/4	1000 2854		5700 4025
			22869-2	▲ X	300/IF	120	24	Frost	C, C-9		9 3/4	1000		5700
			22897-3	▲ X	300/IF	130	24	Frost Ratings @120V=265W	C, C-9		9 3/4	1000 2854		5700 4025
			22862-7	▲	300	120	24	Clear	C, C-9	7	9 3/4	1000		5700
			22889-0	▲	300	130	24	Clear Ratings @120V=265W	C, C-9	7	9 3/4	1000 2854		5700 4063
			24759-3	▲	300	277	24	Clear	C, C-9	7	9 3/4	1000		4300
		Med. Skt.	23961-6	X (31, 43)	300MS/SBIF	130	24	Frost Silvered Bowl	C, C-9		9 3/4	1000		5400
		R-40	33710-5	■ ★ □ (19, 37, 53)	300R/FL/I	12	24	Reflector Flood Frost Swimming Pool	C, C-2V		6 3/4	2000		2960
			37442-1	■ ★ (31, 37, 51)	300R/FL/I	120-130	24	Reflector Flood Swimming Pool	C, CC-11		6 3/4	2000		2480
		Mog.	23551-5	★ (51)	300R/3FL	120	24	Reflector Flood	C, CC-11		7 1/4	2000		3600
			23557-2	★ (51)	300R/3FL	130	24	Reflector Flood	C, CC-11		7 1/4	2000		3600
350	PAR-56	M.P.	22904-7	★	350PAR56/SP	75	8	Train Light	C, CC-8		4 1/2	500	185,000	6200
375	BR-40	Med. Skt.	24550-6	(19, 31, 37, 87)	375BR40	120	24	Reflector Flood Frost Industrial	C, C-7A		7 1/4	5000		
	R-40	Med. Skt.	23840-2	★ (11, 31, 37, 89)	375R40/I	120	24	Clear Reflector Infrared Industrial	C, C-7A		7 1/4	5000		
400	G-30	Med.	37443-9	■ (12, 22)	400G/FL	120-130	60	Clear Floodlight	C, C-7A	3	5 1/4	800		6645
	R-40	Med.	31069-8	■ (12, 19, 31, 53)	400R40/FL	120	24	Swimming Pool	C, C-7A	3 3/4	6 3/4	2000		
500	PAR-64	Ext. Mog. End Prong	23417-9	★ (9, 55)	500PAR64/MFL	120	6	PAR Med. Flood	C, CC-13		6	2000		
			23416-1	★ (9, 46, 55)	500PAR64/NSP	120	8	PAR Narrow Spot	C, CC-13		6	2000		
	PS-35	Mog.	37446-2		500	120-130	24	Clear	C, C-9	7	9 3/4	1000		8170
			37447-0		500/IF	120-130	24	Frost	C, C-9	7	9 3/4	1000		8170
			37448-8		500/99	120-130	24	Clear Extended Service	C, C-9	7	9 3/4	2500		8750
			35016-5		500/99IF	130	24	Frost Extended Service Ratings @120V=442W	C, C-9		9 3/4	2500 7134		8000 7401
	PS-40	Mog.	24773-4	X	500	250	24	Clear	C, CC-9		9 3/4	1000		9100
			24780-9	X	500	277	24	Clear	C, CC-9		9 3/4	1000		7700
			22932-8	X	500PS40	120	24	Clear	C, C-9	7	9 3/4	1000		10,100
			23975-6	X (14, 31)	500/SBIF	120	24	Frost Silvered Bowl	C, C-9		9 3/4	1000		9500
			22957-5	X	500/RS	130	24	Clear Rough Service Ratings @120V=442W	C, C-9	7	9 3/4	1000 2854		9350 7134
			33730-3	■ (12, 19, 31, 53)	500R/3FL/2S	130	24	Swimming Pool Ratings @120V=442W	C, C-7A		6 3/4	2000 5707		6120 4669
	R-40	Med.	37450-4	★ (51, 53)	500R/3FL	120-130	24	Frost Reflector Flood	C, CC-11		7 1/4	2000		
		Mog.	24783-3	★ X (19)	500R/3FL	250	24	Frost Reflector Flood Special Service	C, C-7A		7 1/4	2000		
620	PS-40	Mog. Pf.	37451-2		620PS40P	120-130	24	Code Beacon	C, C-7A	5 1/4	10 1/4	3000		11,000

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INCANDESCENT LAMPS

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.*	Description	Class, Filament	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (93)	Approx. MBCP*	Lumens
Philinea Lamps														
60	T-10	2XS14s	34589-2	X	60T10/White	125-130	25	White Philinea	B, C-8		9 1/16	1500		400

Lamps Listed by Lumens

1950L	P-25	Med.	+	20494-1	1950L/P25/TS	120	60	Traffic Signal	C, C-9	3	4 3/4	8000		1950
			+	26482-0	1950L/P25/TS	130	60	Traffic Signal	C, C-9	3	4 3/4	8000		1950

Special Lighting

Night Light Plug In				25139-7	(94) BCPNL 4C7 12/1	120	12	Night Light Plug In w/Clear 4C7	B, C-7A		2 3/8	3000		16
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Street Lighting Lamps, Multiple

189	PS-25	Med.		39423-9	189PS25/64	125	60	Clear	C, C-9	5 1/4	6 1/16	3000		2900
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Street Lighting Lamps, Series

Rated Init. (67) Lumens	Amps	Bulb	Base	Product Number	Ordering Code	Initial Volts	Pkg. Qty.*	Description	Class, Filament	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (93)	Approx. MBCP*	Lumens
2500	6.6A	PS-35	Mog.	25065-4	2500/66R	22.8	24	Clear	C, C-2V	7	9 3/8	3000		
				36785-4	2500/66G	24.0	24	Clear	C, C-2V	7	9 3/8	6000		
4000		PS-35	Mog.	25069-6	4M/66R	34.0	24	Clear	C, C-2V	7	9 3/8	3000		
6000		PS-40	Mog.	20540-1	6M/66G	52.7	24	Clear (X)	C, C-2V	7	9 3/8	6000		

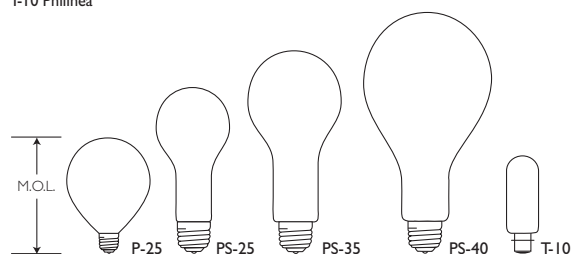
* Pursuant to California law, these incandescent lamps cannot be used or offered for sale for use in traffic signals in the State of California.

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Incandescent symbols and footnotes located on page 50

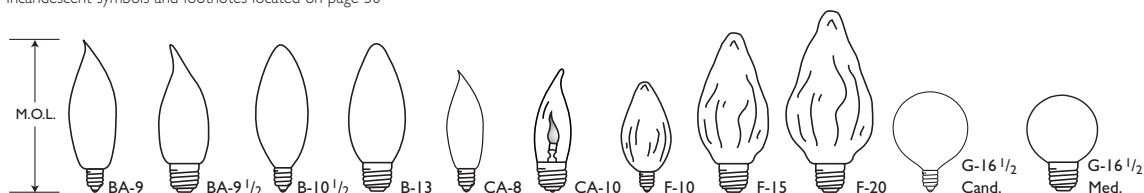


T-10 Philinea



Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty. •	Description	Class, Filament	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (93)	Approx. MBCP *	Lumens
Decoratives, Blister-Carded														
3	CA-10	Med.	I6697-4	▲ (12)	BC3CA10/CL/LL 6/1	120	6	Clear Long Life Flicker Flame	B, CC-2V		3 ⅜	2000		
		Cand.	I6698-2	▲ (12)	BC3CA10C/CL/LL 6/1	120	6	Clear Long Life Flicker Flame	B, CC-2V		4 ⅞	2000		
15	BA-9	Cand.	I6696-6	▲ (12)	BC15BA9C/CL/LL 6/4	120	24	Clear Long Life Bent Tip	B, CC-2V C-7A		3 ⅜	2000		110
			I6811-2	▲ (12)	BC15BA9C/CL/LL 6/2	120	12	Clear Long Life Bent Tip	B, CC-2V C-7A		4 ⅞	2000		110
	F-10	Cand.	I6830-2	▲ (12)	BC15F10C/CL/LL 6/2	120	12	Clear Long Life Flame	B, C-7A		3 ⅞	2000		95
			I6831-0	▲ (12)	BC15F10C/A/LL 6/2	120	12	Amber Long Life Flame	B, C-7A		3 ⅞	2000		85
25	BA-9	Cand.	I6719-7	▲ (12)	BC25BA9C/CL/LL 6/4	120	24	Clear Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		150
			I6806-2	▲ (12)	BC25BA9C/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		150
			I6810-4	▲ (12)	BC25BA9C/F/LL 6/2	120	12	Frost Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		145
	BA-9 ½	Med.	I6819-5	▲ (12)	BC25BA9-½/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		150
	B-10 ½	Cand.	I6824-5	▲ (12)	BC25B10-½/C/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, C-7A		4 ⅞	2000		150
	B-13	Med.	I6827-8	▲ (12)	BC25B13/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, C-7A		4 ⅞	2000		150
	CA-8	Cand.	I3568-1	▲ (12)	BC25CA8C/CL/LL 6/2	120	12	Clear Petite Long Life Bent Tip	C, CC-2V		3 ⅞	2000		220
	F-10	Cand.	I6832-8	▲ (12)	BC25F10C/CL/LL 6/2	120	12	Clear Long Life Flame	B, C-7A		3 ⅞	2000		105
	F-15	Med.	I6833-6	▲ (12)	BC25F15/CL/LL 6/2	120	12	Clear Long Life Flame	B, C-9		4 ½	2000		150
			I6839-3	▲ (12)	BC25F15/IR/LL 6/2	120	12	Indescent Long Life Flame	C, C-9		4 ½	2000		150
			I6840-1	▲ (12)	BC25F15/W/LL 6/2	120	12	White Long Life Flame	C, C-9		4 ½	2000		120
			I6841-9	▲ (12)	BC25F15/A/LL 6/2	120	12	Amber Long Life Flame	B, C-9		4 ½	2000		130
	G-16 ½	Cand.	I6845-0	▲ (12)	BC25G16-½/C/CL/LL 6/2	120	12	Clear Long Life Globe	B, C-7A		3	2000		200
			I6847-6	▲ (12)	BC25G16-½/CW/LL 6/2	120	12	White Long Life Globe	B, C-7A		3	2000		165
		Med.	I3535-0	▲ (12)	BC25G16-½/CL/LL 6/2	120	12	Clear Long Life Globe	C, CC-2V		2 ¾	2000		180
			I3534-3	▲ (12)	BC25G16-½/W/LL 6/2	120	12	White Long Life Globe	C, CC-2V		2 ¾	2000		120
40	BA-9	Cand.	I6720-5	▲ (12)	BC40BA9C/CL/LL 6/4	120	24	Clear Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		300
			I6807-0	▲ (12)	BC40BA9C/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		300
			I6809-6	▲ (12)	BC40BA9C/F/LL 6/2	120	12	Frost Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		295
	BA-9 ½	Med.	I6760-1	▲ (12)	BC40BA9-½/CL/LL 6/4	120	24	Clear Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		300
			I6820-3	▲ (12)	BC40BA9-½/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		300
			I6821-1	▲ (12)	BC40BA9-½/F/LL 6/2	120	12	Frost Long Life Bent Tip	C, CC-2V C-7A		4 ⅞	2000		295
	B-10 ½	Cand.	I6825-2	▲ (12)	BC40B10-½/C/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, C-7A		4 ⅞	2000		300
	B-13	Med.	I6828-6	▲ (12)	BC40B13/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, C-7A		4 ⅞	2000		300
	F-15	Med.	I6835-1	▲ (12)	BC40F15/CL/LL 6/2	120	12	Clear Long Life Flame	C, C-9		4 ½	2000		385
			I6837-7	▲ (12)	BC40F15/IR/LL 6/2	120	12	Indescent Long Life Flame	C, C-9		4 ½	2000		370
			I6838-5	▲ (12)	BC40F15/W/LL 6/2	120	12	White Long Life Flame	C, C-9		4 ½	2000		300
	G-16 ½	Cand.	I6846-8	▲ (12)	BC40G16-½/C/CL/LL 6/2	120	12	Clear Long Life Globe	C, C-7A		3	2000		300
			I6848-4	▲ (12)	BC40G16-½/CW/LL 6/2	120	12	White Long Life Globe	C, C-7A		3	2000		245
		Med.	I3537-6	▲ (12)	BC40G16-½/CL/LL 6/2	120	12	Clear Long Life Globe	C, CC-2V		2 ¾	2000		390
			I3536-8	▲ (12)	BC40G16-½/W/LL 6/2	120	12	White Long Life Globe	C, CC-2V		2 ¾	2000		270

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INCANDESCENT LAMPS

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.*	Description	Class, Filament	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (93)	Approx. MBCP*	Lumens
60	BA-9	Cand.	16808-8	▲ (12)	BC60BA9C/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V C-7A		4 3/8	2000		550
			16721-3	▲ (12)	BC60BA9C/CL/LL 6/4	120	24	Clear Long Life Bent Tip	C, CC-2V C-7A		4 3/8	2000		550
			16805-4	▲ (12)	BC60BA9C/F/LL 6/2	120	12	Frost Long Life Bent Tip	C, CC-2V C-7A		4 3/8	2000		545
	BA-9 1/2	Med.	16822-9	▲ (12)	BC60BA9-1/2/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V C-7A		4 3/8	2000		550
			16823-7	▲ (12)	BC60BA9-1/2/F/LL 6/2	120	12	Frost Long Life Bent Tip	C, CC-2V C-7A		4 3/8	2000		545
	B-10 1/2	Cand.	16826-0	▲ (12)	BC60B10-1/2/C/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, C-7A		4 3/8	2000		550
	B-13	Med.	16829-4	▲ (12)	BC60B13/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, C-7A		4 3/8	2000		550
	F-15	Med.	16842-7	▲ (12)	BC60F15/CL/LL 6/2	120	12	Clear Long Life Flame	C, C-9		4 1/2	2000		630
	G-16 1/2	Cand.	16699-0	▲ (12)	BC60G16-1/2/C/CL/LL 6/2	120	12	Clear Long Life Globe	C, C-7A		3	2000		540
			16700-7	▲ (12)	BC60G16-1/2/CW/LL 6/2	120	12	White Long Life Globe	C, C-7A		3	2000		450
		Med.	13538-4	▲ (12)	BC60G16-1/2/CL/LL 6/2	120	12	Clear Long Life Globe	C, CC-2V		2 3/4	2000		610
			13530-1	▲ (12)	BC60G16-1/2/W/LL 6/2	120	12	White Long Life Globe	C, CC-2V		2 3/4	2000		420
100	F-20	Med.	16844-3	(12)	100F20/POSTLT/CL/LL 6/1	120	6	Clear Long Life PostLight	C, C-9		5 1/8	4000		1250

Decoratives, Boxed

15	BA-9	Cand.	31087-0	▲ (12)	15BA9C/4M	120	25	Clear Bent Tip	B, C-7A		3 3/8	4000		90
	G-16 1/2	Cand.	31132-4	▲ (12)	15G16-1/2C/4M	120	25	Clear Globe	B, C-7A		3	4000		80
25	B-10 1/2	Cand.	31114-2	▲ (12)	25B10-1/2C/4M	120	25	Clear Blunt Tip	C, C-7A		4 1/8	4000		135
	G-16 1/2	Cand.	31133-2	▲ (12)	25G16-1/2C/4M	120	25	Clear Globe	C, C-7A		3	4000		170
40	BA-9	Cand.	31093-8	▲ (12)	40BA9C/4M	120	25	Clear Bent Tip	C, C-7A		4 3/8	4000		270
	BA-9 1/2	Med.	31098-7	▲ (12)	40BA9-1/2/4M	120	25	Clear Bent Tip	C, C-7A		4 3/8	4000		270
	B-10 1/2	Cand.	31115-9	▲ (12)	40B10-1/2C/4M	120	25	Clear Blunt Tip	C, C-7A		4 1/8	4000		270
	G-16 1/2	Cand.	31134-0	▲ (12)	40G16-1/2C/4M	120	25	Clear Globe	C, C-7A		3	4000		250
60	BA-9	Cand.	31095-3	▲ (12)	60BA9C/4M	120	25	Clear Bent Tip	C, C-7A		4 3/8	4000		530
	BA-9 1/2	Med.	31099-5	▲ (12)	60BA9-1/2/4M	120	25	Clear Bent Tip	C, C-7A		4 3/8	4000		530
	B-10 1/2	Cand.	31116-7	▲ (12)	60B10-1/2C/4M	120	25	Clear Blunt Tip	C, C-7A		4 1/8	4000		530

Decoratives, All Others

25	G-25	Med.	16887-2	▲	25G25/CL/LL 12/I	120	12	Clear Long Life Globe	C, CC-6		4 3/8	2000		235
			16748-6	▲	25G25/W/LL 12/I	120	12	White Long Life Globe	C, CC-6		4 3/8	2000		210
			16901-1	▲	25G25/CL/LL 4/3	120	12	Clear Long Life Globe	C, CC-6		4 3/8	2000		235
			16902-9	▲	25G25/W/LL 4/3	120	12	White Long Life Globe	C, CC-6		4 3/8	2000		210
40	G-25	Med.	16702-3	▲	40G25/CT	120	6	Clear Chrome-Top Long Life Globe	C, C-9		4 3/8	2000		200
			16747-8	▲	40G25/CL/LL 12/I	120	12	Clear Long Life Globe	C, CC-6		4 3/8	2000		460
			16746-0	▲	40G25/W/LL 12/I	120	12	White Long Life Globe	C, CC-6		4 3/8	2000		415
			16903-7	▲	40G25/CL/LL 4/3	120	12	Clear Long Life Globe	C, CC-6		4 3/8	2000		460
			16904-5	▲	40G25/W/LL 4/3	120	12	White Long Life Globe	C, CC-6		4 3/8	2000		415
	G-40	Med.	16857-5	▲	40G40/CL/LL 6/I	120	6	Clear Long Life Globe	C, C-9		6 15/16	3000		372
			16858-3	▲	40G40/W/LL 6/I	120	6	White Long Life Globe	C, C-9		6 15/16	3000		335
60	G-25	Med.	16896-2	▲	60G25/CL/LL 12/I	120	12	Clear Long Life Globe	C, CC-6		4 3/8	2000		775
			16749-4	▲	60G25/W/LL 12/I	120	12	White Long Life Globe	C, CC-6		4 3/8	2000		700
			16899-6	▲	60G25/CL/LL 4/3	120	12	Clear Long Life Globe	C, CC-6		4 3/8	2000		775
			16900-3	▲	60G25/W/LL 4/3	120	12	White Long Life Globe	C, CC-6		4 3/8	2000		700
	G-30	Med.	16849-2	▲	60G30/W/LL 6/I	120	6	White Long Life Globe	C, C-9		5 1/2	3000		580
	G-40	Med.	16851-8	▲	60G40/W/LL 6/I	120	6	White Long Life Globe	C, C-9		6 15/16	3000		595
			16852-6	▲	60G40/CL/LL 6/I	120	6	Clear Long Life Globe	C, C-9		6 15/16	3000		665
100	G-25	Med.	13423-9	▲	100G25/W/LL 12/I	120	12	White Long Life Globe	C, CC-6		4 3/8	2000		1180
	G-30	Med.	16850-0	▲	100G30/W/LL 6/I	120	6	White Long Life Globe	C, C-9		5 1/2	3000		945
	G-40	Med.	16853-4	▲	100G40/W/LL 6/I	120	6	White Long Life Globe	C, C-9		6 15/16	3000		985
			16859-1	▲	100G40/CL/LL 6/I	120	6	Clear Long Life Globe	C, C-9		6 15/16	3000		1100
150	G-40	Med.	16854-2	▲	150G40/W/LL 6/I	120	6	White Long Life Globe	C, C-9		6 15/16	3000		1770

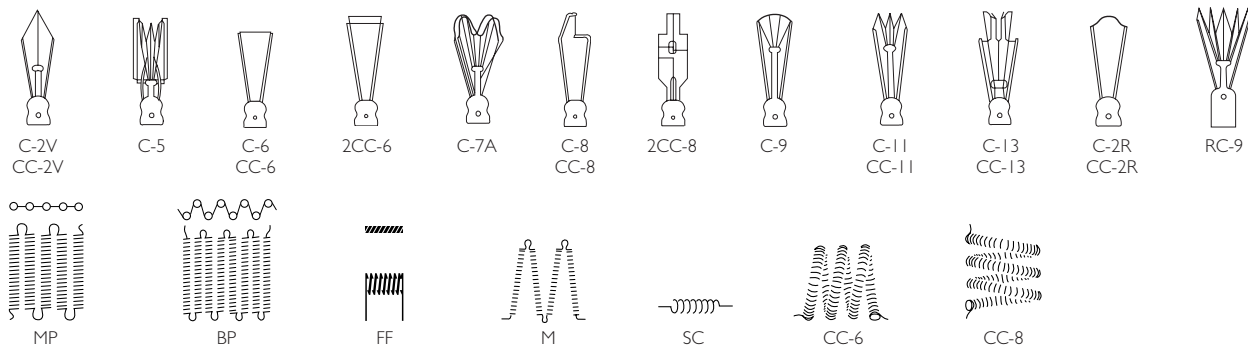
For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/
Incandescent symbols and footnotes located on page 50

INCANDESCENT LAMPS

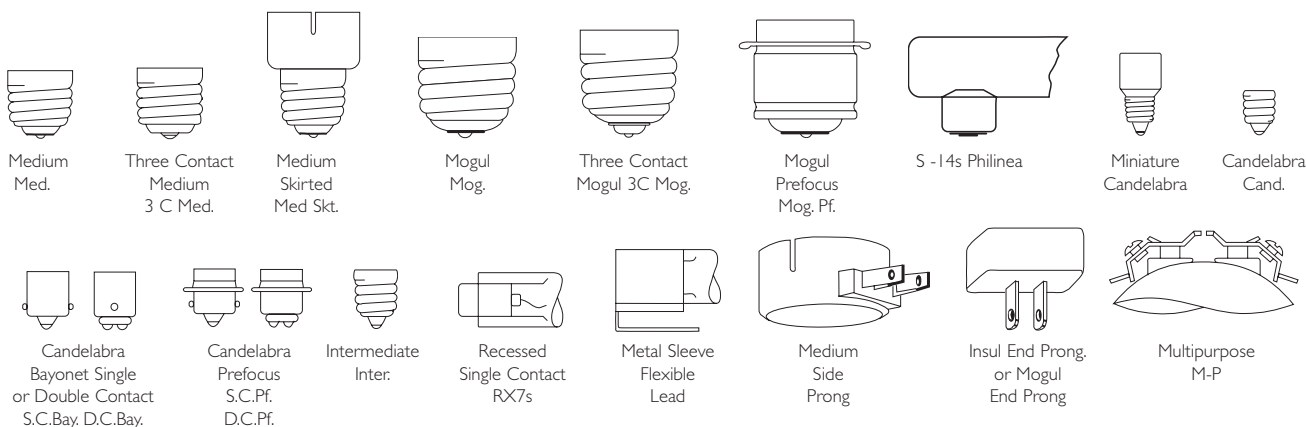
Filament Designations, Base Types, Bulb Shapes

Filament Designations (Not Actual Sizes)

Filament designations consist of a letter or letters to indicate how the wire is coiled and an arbitrary number sometimes followed by a letter to indicate the arrangement of the filament on the supports. Prefix letters include C (coil) — 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. Some of the more commonly used types of filament arrangements are illustrated.

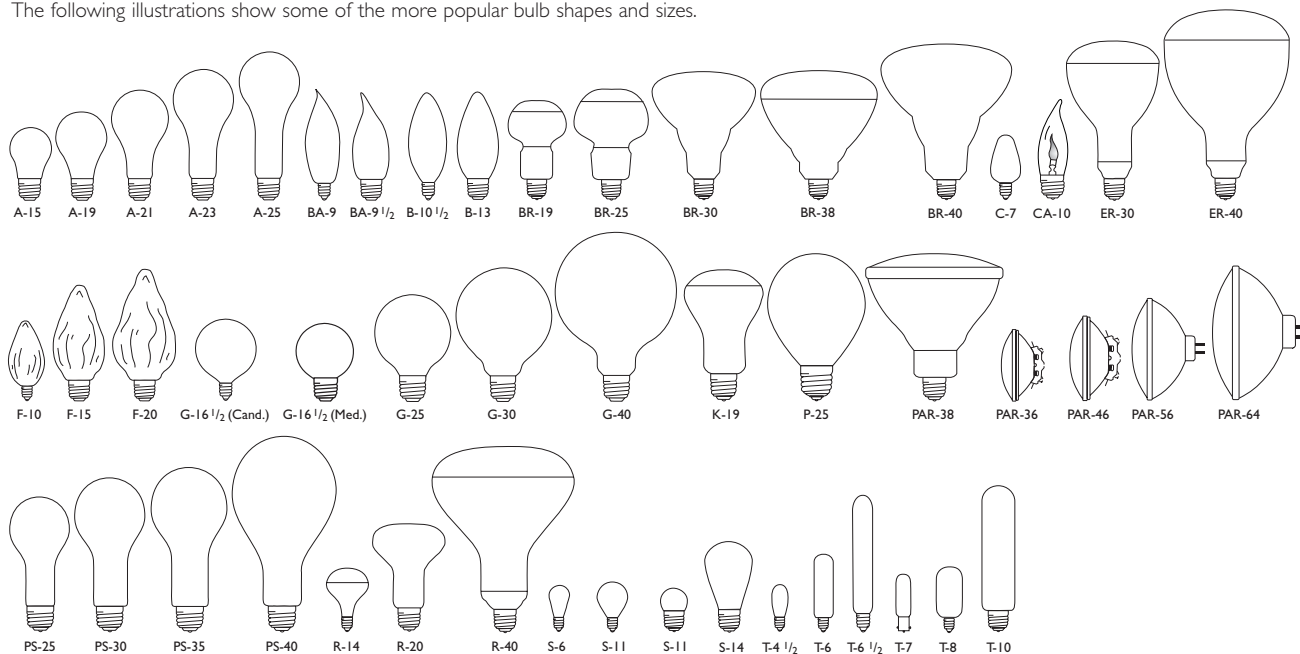


Base Shapes (Not Actual Sizes)



Bulb Shapes (Not Actual Sizes)

The size and shape of a bulb is designated by a letter or letters followed by a number. The letter indicates the shape of the bulb while the number indicates the diameter of the bulb in eighths of an inch. For example, "T-10" indicates a tubular shaped bulb having a diameter of $\frac{10}{8}$ or $1\frac{1}{4}$ inches. The following illustrations show some of the more popular bulb shapes and sizes.



Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty. •	Description	Class, Filament	MOL (In.)	Rated Avg. Life (93)	Approx. MBCP •	Lumens
Halogená® Classic Blister-Carded (96)													
60	BT-15	Med.	24924-3 (96)		BC60BT15/HAL/CL	120	10	Clear, Blister Card	C, CC-8	4	3000	—	900
			24926-8 (96)		BC60BT15/HAL/W	120	10	White, Blister Card	C, CC-8	4	3000	—	840
75	BT-15	Med.	24927-6 (96)		BC75BT15/HAL/W	120	10	White, Blister Card	C, CC-8	4	3000	—	1120
100	BT-15	Med.	24931-8 (96)		BC100BT15/HAL/W	120	10	White, Blister Card	C, CC-8	4	3000	—	1670
150	BT-15	Med.	24933-4 (96)		BC150BT15/HAL/W	120	10	White, Blister Card	C, CC-8	4	3000	—	2650

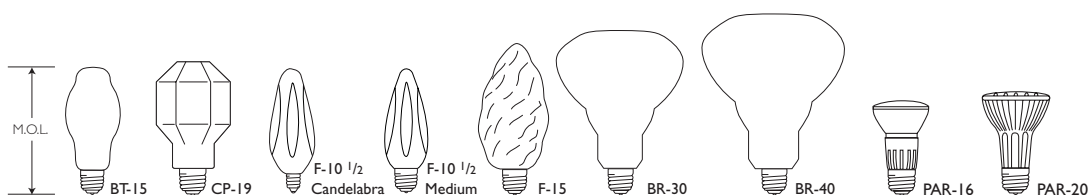
Halogená® Decorative Blister-Carded (96)													
25	CP-19	Med.	36472-9 □ (96)		BC25CP19/HAL/CL	120	6	Clear, Blister Card	C, CC-8	4 1/8	3000	—	300
	F-10 1/2	Cand.	38903-1 (96)		BC25F10-1/2C/HAL/CL	120	4	Clear, Blister Card	C, CC-8	4 3/8	3000	—	300
	F-10 1/2	Med.	38906-4 (96)		BC25F10-1/2/HAL/CL	120	4	Clear, Blister Card	C, CC-8	4 3/8	3000	—	300
	F-15	Med.	38904-9 (96)		BC25F15/HAL/CL	120	4	Clear, Blister Card	C, CC-8	4 13/16	3000	—	300
40	CP-19	Med.	36485-1 □ (96)		BC40CP19/HAL/CL	120	6	Clear, Blister Card	C, CC-8	4 1/8	3000	—	540
	F-10 1/2	Cand.	38901-5 (96)		BC40F10-1/2C/HAL/CL	120	4	Clear, Blister Card	C, CC-8	4 3/8	3000	—	540
	F-10 1/2	Med.	38895-9 (96)		BC40F10-1/2/HAL/CL	120	4	Clear, Blister Card	C, CC-8	4 3/8	3000	—	540
	F-15	Med.	38905-6 (96)		BC40F15/HAL/CL	120	4	Clear, Blister Card	C, CC-8	4 13/16	3000	—	540
60	CP-19	Med.	36411-7 □ (96)		BC60CP19/HAL/CL	120	6	Clear, Blister Card	C, CC-8	4 1/8	3000	—	900
	F-10 1/2	Cand.	39029-4 (96)		BC60F10-1/2C/HAL/CL	120	4	Clear, Blister Card	C, CC-8	4 3/8	3000	—	900
	F-10 1/2	Med.	38898-3 (96)		BC60F10-1/2/HAL/CL	120	4	Clear, Blister Card	C, CC-8	4 3/8	3000	—	900
	F-15	Med.	38551-8 (96)		BC60F15/HAL/POSTTOP	120	4	Clear, Blister Card	C, CC-8	4 13/16	3000	—	900

Halogená® Indoor Floodlight, Spotlight (97)													
60	BR-30	Med.	38875-1 \$ □ (97)		60BR30/HAL/SP	120	6	Spot	C, CC-8	5 3/8	3000	2250	700
			38849-6 \$ □ (97)		60BR30/HAL/FL	120	6	Flood	C, CC-8	5 3/8	3000	500	700
	BR-40	Med.	39174-8 \$ □ (97)		60BR40/HAL/FL	120	6	Flood	C, CC-8	6 1/2	3000	325	750

Halogená® PAR-16 Lamps (82, 86)													
45	PAR-16	Med.	26580-1 \$ + (82, 86)		BC45PAR16/HAL/NFL27	120	6	Blister Card, N. Flood 27°	C, CC-8	3 1/8	3000	—	—
			13412-2 \$ (82, 86)		BC45PAR16/HAL/FL/LL	120	6	Blister Card, Flood	C, CC-8	3 1/8	3000	1275	420
60	PAR-16	Med.	21390-0 \$ + (82, 86)		BC60PAR16/HAL/NFL27	120	6	Blister Card, N. Flood 27°	C, CC-8	3 1/8	3000	—	—
			13413-0 \$ (82, 86)		BC60PAR16/HAL/FL/LL	120	6	Blister Card, Flood	C, CC-8	3 1/8	3000	1900	580

Halogená® PAR-20 Lamps (82, 86)													
50	PAR-20	Med.	24954-0 \$ + (82, 86)		50PAR20/HAL/SP16	120	6	Spot 16°	C, CC-8	3 3/8	2000	—	—
			13411-4 \$ (82, 86)		50PAR20/HAL/SP/LL	120	6	Spot	C, CC-8	3 3/8	3000	4000	520
			38916-3 \$ + (82, 86)		50PAR20/HAL/NFL30	120	6	N. Flood 30°	C, CC-8	3 3/8	2000	—	—
			13410-6 \$ (82, 86)		50PAR20/HAL/FL/LL	120	6	Flood	C, CC-8	3 3/8	3000	900	520

✦ Orders will be shipped until inventory is depleted and no longer manufactured. This product will be replaced with the product listed directly below it and will be available by January, 2005.
For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/
Halogen symbols and footnotes located on page 50



Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty. *	Description	Class, Filament	MOL (In.)	Rated Avg. Life (93)	Approx. MBCP *	Lumens
Halogená® PAR-30 Long Lamps (82, 86)													
50	PAR-30L	Med.	38918-9	\$+ (82, 86) (E)	50PAR30L/HAL/FL40	120	6	Flood 40°	C, CC-8	4 1/2	2000	—	—
			13407-2	\$ (82, 86) (E)	50PAR30L/HAL/FL/LL	120	6	Flood	C, CC-8	4 1/2	3000	2100	590
75	PAR-30L	Med.	38921-3	\$+ (82, 86) (E)	75PAR30L/HAL/SP16	120	6	Spot 16°	C, CC-8	4 1/2	2000	—	—
			13409-8	\$ (82, 86) (E)	75PAR30L/HAL/SP/LL	120	6	Spot	C, CC-8	4 1/2	3000	12300	1000
			38919-7	\$+ (82, 86) (E)	75PAR30L/HAL/FL40	120	6	Flood 40°	C, CC-8	4 1/2	2500	—	—
			13408-0	\$ (82, 86) (E)	75PAR30L/HAL/FL/LL	130	6	Flood	C, CC-8	4 1/2	3000	3300	1000

Halogená® PAR-30 Short Lamps (82, 86)

60	PAR-30S	Med.	38922-1	\$+ (82, 86) (E)	60PAR30S/HAL/FL40	120	6	Flood 40°	C, CC-8	3 5/8	3000	—	—
			13406-4	\$ (82, 86) (E)	60PAR30S/HAL/FL/LL	120	6	Flood	C, CC-8	3 5/8	3000	2550	800

Halogená® PAR-38 Lamps (82, 86)

45	PAR-38	Med.	38926-2	\$+ (82, 86) (E)	45PAR38/HAL/SP12/LL	120	6	Spot 12°	C, CC-8	5 5/16	3000	—	—
		Standard Skt.	13404-9	\$ (82, 86) (E)	45PAR38/HAL/SP/LL	120	6	Spot	C, CC-8	5 5/16	3000	6200	530
		Reflector	38923-9	\$+ (82, 86) (E)	45PAR38/HAL/FL28/LL	120	6	Flood 28°	C, CC-8	5 5/16	3000	—	—
			13401-5	\$ (82, 86) (E)	45PAR38/HAL/FL/LL	120	6	Flood	C, CC-8	5 5/16	3000	2000	530
90	PAR-38	Med.	38927-0	\$+ (82, 86) (E)	90PAR38/HAL/SP12/LL	120	6	Spot 12°	C, CC-8	5 5/16	2500	—	—
		Standard Skt.	13405-6	\$ (82, 86) (E)	90PAR38/HAL/SP/LL	120	6	Spot	C, CC-8	5 5/16	3000	14,500	1350
		Reflector	24953-2	\$+ (82, 86) (E)	90PAR38/HAL/FL28/LL	120	6	Flood 28°	C, CC-8	5 5/16	2500	—	—
			13402-3	\$ (82, 86) (E)	90PAR38/HAL/FL/LL	120	6	Flood	C, CC-8	5 5/16	3000	4500	1350

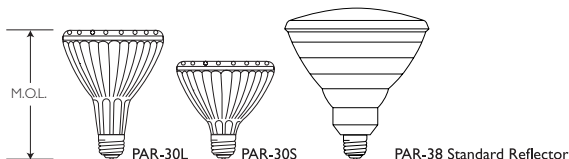
Halogen PAR-38 Lamps (82, 86)

45	PAR-38	Med.	14060-8	\$ (82, 86) (E)	45PAR38/HAL/SP	120	6	Spot	C, CC-8	5 5/16	2000	6200	560
		Skt.	26883-9	\$ (82, 86) (E)	45PAR38/HAL/FL	120	6	Flood	C, CC-8	5 5/16	2000	2000	560
90	PAR-38	Med.	14023-6	\$ (82, 86) (E)	90PAR38/HAL/SP	120	6	Spot	C, CC-8	5 5/16	2000	14,500	1370
		Skt.	26877-1	\$ (82, 86) (E)	90PAR38/HAL/FL	120	6	Flood	C, CC-8	5 5/16	2000	4500	1370

+ Orders will be shipped until inventory is depleted and no longer manufactured. This product will be replaced with the product listed directly below it and will be available by January, 2005.

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Halogen symbols and footnotes located on page 50



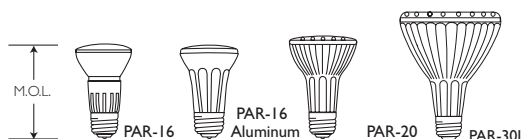
HALOGEN LAMPS

PAR-16, PAR-20, PAR-30L Lamps

HALOGEN

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty. •	Description	Class, Filament	MOL (In.)	Rated Avg. Life (93)	Approx. MBCP *	Lumens
Halogen PAR-16 Lamps (Formerly MasterLine) (82, 86)													
45	PAR-16	Med.	26335-0	\$ (82, 86)	45PAR16/HAL/SP10	120	15	Spot 10°	C, CC-8	3 1/8	3000	3850	420
			26345-9	\$ (82, 86)	45PAR16/HAL/FL27	120	15	Flood 27°	C, CC-8	3 1/8	3000	1275	420
60	PAR-16	Med.	33004-3	\$ (82, 86)	60PAR16/HAL/SP10	120	15	Spot 10°	C, CC-8	3 1/8	3000	5075	580
			33006-8	\$ (82, 86)	60PAR16/HAL/FL27	120	15	Flood 27°	C, CC-8	3 1/8	3000	1900	580
Halogen PAR-16 Lamps 130V (Formerly MasterLine) (82, 86)													
45	PAR-16	Med.	26338-4	\$ (82, 86)	45PAR16/HAL/SP10	130	15	Spot 10° Ratings @ 120V = 40W	C, CC-8	3 1/8	2500 5000	3850 —	450 340
			26348-3	\$ (82, 86)	45PAR16/HAL/FL27	130	15	Flood 27° Ratings @ 120V = 40W	C, CC-8	3 1/8	2500 5000	1275 —	450 340
60	PAR-16	Med.	33005-0	\$ (82, 86)	60PAR16/HAL/SP10	130	15	Spot 10° Ratings @ 120V = 53W	C, CC-8	3 1/8	3000 6000	5075 —	580 450
			33007-6	\$ (82, 86)	60PAR16/HAL/FL27	130	15	Flood 27° Ratings @ 120V = 53W	C, CC-8	3 1/8	3000 6000	1900 —	580 450
Halogen PAR-20 Lamps (Formerly MasterLine) WISO Reflector (82, 86)													
50	PAR-20	Med.	22906-2	\$ (82, 86)	50PAR20/HAL/SP10	120	15	Spot 10°	C, CC-8	3 3/8	3000	4000	520
			22911-2	\$ (82, 86)	50PAR20/HAL/FL25	120	15	Flood 25°	C, CC-8	3 3/8	3000	900	520
Halogen PAR-20 Lamps 130V (Formerly MasterLine) WISO Reflector (82, 86)													
50	PAR-20	Med.	13846-1	\$ (82, 86)	50PAR20/HAL/SP10	130	15	Spot 10° Ratings @ 120V = 44W	C, CC-8	3 3/8	2000 4000	4150 —	550 420
			22921-1	\$ (82, 86)	50PAR20/HAL/FL25	130	15	Flood 25° Ratings @ 120V = 44W	C, CC-8	3 3/8	2000 4000	1100 —	550 420
Halogen PAR-30L Long Neck (Formerly MasterLine) WISO Reflector (82, 86)													
50	PAR-30L	Med.	22922-9	\$ (82, 86) (E)	50PAR30L/HAL/SP10	120	15	Spot 10°	C, CC-8	4 1/2	3000	5550	590
	DiOptic Reflector		22923-7	\$ (82, 86) (E)	50PAR30L/HAL/WSP16	120	15	Wide Spot 16°	C, CC-8	4 1/2	3000	3500	590
			22925-2	\$ (82, 86) (E)	50PAR30L/HAL/FL25	120	15	Flood 25°	C, CC-8	4 1/2	3000	2100	590
			22927-8	\$ (82, 86) (E)	50PAR30L/HAL/WFL40	120	15	Wide Flood 40°	C, CC-8	4 1/2	3000	950	590
75	PAR-30L	Med.	22930-2	\$ (82, 86) (E)	75PAR30L/HAL/SP10	120	15	Spot 10°	C, CC-8	4 1/2	3000	12,300	1000
	DiOptic Reflector		22934-4	\$ (82, 86) (E)	75PAR30L/HAL/WSP16	120	15	Wide Spot 16°	C, CC-8	4 1/2	3000	6700	1000
			22941-9	\$ (82, 86) (E)	75PAR30L/HAL/FL25	120	15	Flood 25°	C, CC-8	4 1/2	3000	3300	1000
			22944-3	\$ (82, 86) (E)	75PAR30L/HAL/WFL40	120	15	Wide Flood 40°	C, CC-8	4 1/2	3000	1650	1000
Halogen PAR-30L Long Neck 130V (Formerly MasterLine) WISO Reflector (82, 86)													
50	PAR-30L	Med.	13847-9	\$ (82, 86) (E)	50PAR30L/HAL/SP10	130	15	Spot 10° Ratings @ 120V = 44W	C, CC-8	4 1/2	2000 4000	6550 —	630 470
	DiOptic Reflector		22926-0	\$ (82, 86) (E)	50PAR30L/HAL/FL25	130	15	Flood 25° Ratings @ 120V = 44W	C, CC-8	4 1/2	2000 4000	2300 —	630 470
			22928-6	\$ (82, 86) (E)	50PAR30L/HAL/WFL40	130	15	Wide Flood 40° Ratings @ 120V = 44W	C, CC-8	4 1/2	2000 4000	1050 —	630 470
75	PAR-30L	Med.	13848-7	\$ (82, 86) (E)	75PAR30L/HAL/SP10	130	15	Spot 10° Ratings @ 120V = 66W	C, CC-8	4 1/2	2500 5000	13,000 —	1050 780
	DiOptic Reflector		22943-5	\$ (82, 86) (E)	75PAR30L/HAL/FL25	130	15	Flood 25° Ratings @ 120V = 66W	C, CC-8	4 1/2	2500 5000	3700 —	1050 780
			22945-0	\$ (82, 86) (E)	75PAR30L/HAL/WFL40	130	15	Wide Flood 40° Ratings @ 120V = 66W	C, CC-8	4 1/2	2500 5000	1800 —	1050 780

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Halogen symbols and footnotes located on page 50



HALOGEN LAMPS

PAR-30S Lamps

HALOGEN

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.*	Description	Class, Filament	MOL (In.)	Rated Avg. Life (93)	Approx. MBCP*	Lumens
Halogen PAR-30 Short (Formerly MasterLine) WISO Reflector (82, 86)													
50	PAR-30S Med.		26349-1	\$ (82, 86) (E)	50PAR30S/HAL/SP10	120	15	Spot 10°	C, CC-8	3 5/8	3000	5800	610
	DiOptic		26358-2	\$ (82, 86) (E)	50PAR30S/HAL/FL25	120	15	Flood 25°	C, CC-8	3 5/8	3000	1800	610
	Reflector		26364-0	\$ (82, 86) (E)	50PAR30S/HAL/WFL40	120	15	Wide Flood 40°	C, CC-8	3 5/8	3000	900	610
60	PAR-30S Med.		35751-7	\$ (82, 86) (E)	60PAR30S/HAL/SP10	120	15	Spot 10°	C, CC-8	3 5/8	3000	8500	800
	DiOptic		35753-3	\$ (82, 86) (E)	60PAR30S/HAL/FL25	120	15	Flood 25°	C, CC-8	3 5/8	3000	2550	800
	Reflector		35758-2	\$ (82, 86) (E)	60PAR30S/HAL/WFL40	120	15	Wide Flood 40°	C, CC-8	3 5/8	3000	1300	800
75	PAR-30S Med.		28479-4	\$ (82, 86) (E)	75PAR30S/HAL/SP10	120	15	Spot 10°	C, CC-8	3 5/8	3000	9600	1050
	DiOptic		28488-5	\$ (82, 86) (E)	75PAR30S/HAL/FL25	120	15	Flood 25°	C, CC-8	3 5/8	3000	3100	1050
	Reflector		28491-9	\$ (82, 86) (E)	75PAR30S/HAL/WFL40	120	15	Wide Flood 40°	C, CC-8	3 5/8	3000	1600	1050

Halogen PAR-30 Short 130V (Formerly MasterLine) WISO Reflector (82, 86)

50	PAR-30S Med.		26357-4	\$ (82, 86) (E)	50PAR30S/HAL/SP10	130	15	Spot 10°	C, CC-8	3 5/8	2000	6000	630
	Reflector							Ratings@120V = 44W			4000	—	480
			26362-4	\$ (82, 86) (E)	50PAR30S/HAL/FL25	130	15	Flood 25°	C, CC-8	3 5/8	2000	2000	630
								Ratings@120V = 44W			4000	—	480
			26384-8	\$ (82, 86) (E)	50PAR30S/HAL/WFL40	130	15	Wide Flood 40°	C, CC-8	3 5/8	2000	1050	630
								Ratings@120V = 44W			4000	—	480
60	PAR-30S Med.		35752-5	\$ (82, 86) (E)	60PAR30S/HAL/SP10	130	15	Spot 10°	C, CC-8	3 5/8	3000	8500	800
								Ratings@120V = 53W			6000	—	610
			35788-9	\$ (82, 86) (E)	60PAR30S/HAL/FL25	130	15	Flood 25°	C, CC-8	3 5/8	3000	2550	800
								Ratings@120V = 53W			6000	—	610
			35762-4	\$ (82, 86) (E)	60PAR30S/HAL/WFL40	130	15	Wide Flood 40°	C, CC-8	3 5/8	3000	1300	800
								Ratings@120V = 53W			6000	—	610
75	PAR-30S Med.		13849-5	\$ (82, 86) (E)	75PAR30S/HAL/SP10	130	15	Spot 10°	C, CC-8	3 5/8	2500	11,700	1050
								Ratings@120V = 66W			5000	—	800
			13467-6	\$ (82, 86) (E)	75PAR30S/HAL/FL25	130	15	Flood 25°	C, CC-8	3 5/8	2500	3500	1050
								Ratings@120V = 66W			5000	—	800
			28492-7	\$ (82, 86) (E)	75PAR30S/HAL/WFL40	130	15	Wide Flood 40°	C, CC-8	3 5/8	2500	1700	1050
								Ratings@120V = 66W			5000	—	800

Halogen Long Life IR PAR-30S Short Featuring Halogen Infrared Technology and DiOptic™ Reflector (82, 86)

45	PAR-30S Med.		13850-3	\$ (82, 86) (E)	45PAR30S/IRC/HAL/SP10	120	15	Spot 10°	C, CC-8	3 5/8	6000	10,000	650
	DiOptic		13851-1	\$ (82, 86) (E)	45PAR30S/IRC/HAL/FL25	120	15	Flood 25°	C, CC-8	3 5/8	6000	2340	650
	Reflector		13852-9	\$ (82, 86) (E)	45PAR30S/IRC/HAL/WFL40	120	15	Wide Flood 40°	C, CC-8	3 5/8	6000	1050	650

Halogen Energy Advantage IR PAR-30S Short (Formerly MasterLine IRC) Featuring Halogen Infrared Technology and DiOptic™ Reflector (82, 86)

50	PAR-30S Med.		13052-6	\$+ (82, 86) (E)	50PAR30S/IRC/HAL/NSP	120	15	N. Spot	C, CC-8	3 5/8	3200	—	—
	DiOptic		13867-7	\$ (82, 86) (E)	50PAR30S/IRC/HAL/SP10	120	15	Spot 10°	C, CC-8	3 5/8	4200	11,000	840
	Reflector		13053-4	\$+ (82, 86) (E)	50PAR30S/IRC/HAL/NFL	120	15	N. Flood	C, CC-8	3 5/8	3200	—	—
			13868-5	\$ (82, 86) (E)	50PAR30S/IRC/HAL/FL25	120	15	Flood 25°	C, CC-8	3 5/8	4200	2800	840
			13054-2	\$+ (82, 86) (E)	50PAR30S/IRC/HAL/FL	120	15	Flood	C, CC-8	3 5/8	3200	—	—
			13869-3	\$ (82, 86) (E)	50PAR30S/IRC/HAL/WFL40	120	15	Wide Flood 40°	C, CC-8	3 5/8	4200	1400	840

Halogen Energy Advantage IR PAR-30S Short 130V (Formerly MasterLine IRC) Featuring Halogen Infrared Technology and DiOptic™ Reflector (82, 86)

50	PAR-30S Med.		13853-7	\$ (82, 86) (E)	50PAR30S/IRC/HAL/SP10	130	15	Spot 10°	C, CC-8	3 5/8	3000	11,000	840
								Ratings@120V = 44W			6000	—	650
			13854-5	\$ (82, 86) (E)	50PAR30S/IRC/HAL/FL25	130	15	Flood 25°	C, CC-8	3 5/8	3000	2800	840
								Ratings@120V = 44W			6000	—	650
			13855-2	\$ (82, 86) (E)	50PAR30S/IRC/HAL/WFL40	130	15	W. Flood 40°	C, CC-8	3 5/8	3000	1400	840
								Ratings@120V = 44W			6000	—	650

* Orders will be shipped until inventory is depleted and no longer manufactured. This product will be replaced with the product listed directly below it and will be available by January, 2005.

For the most current product information, go to www.nam.lighting.philips.com/us/catalog/

Halogen symbols and footnotes located on page 50



HALOGEN LAMPS

PAR-36, PAR-38 Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty. *	Description	Class, Filament	MOL (In.)	Rated Avg. Life (93)	Approx. MBCP *	Lumens
Halogen PAR-36 Lamps													
50	PAR-36	Mog. End Prong	13082-3	\$	50PAR36Q/VNSP6	12	12	PAR, Narrow Spot	C, C-6	2 3/4	4000	35,000	400

Halogen PAR-38 Lamps (Formerly MasterLine) (82, 86)

45	PAR-38	Med. Standard	22946-8	\$ (82, 86) (E)	45PAR38/HAL/SP10	120	12	Spot 10°	C, CC-8	5 5/16	3000	6200	530
		Skt. Reflector	22948-4	\$ (82, 86) (E)	45PAR38/HAL/FL25	120	12	Flood 25°	C, CC-8	5 5/16	3000	2000	530
60	PAR-38	Med. DiOptic	13318-1	\$ (82, 86) (E)	60PAR38/HAL/SP10	120	12	Spot 10°	C, CC-8	5 5/16	3000	10,500	800
		Skt. Reflector	13305-8	\$ (82, 86) (E)	60PAR38/HAL/FL25	120	12	Flood 25°	C, CC-8	5 5/16	3000	3200	800
			13309-0	\$ (82, 86) (E)	60PAR38/HAL/WFL40	120	12	W. Flood 40°	C, CC-8	5 5/16	3000	1300	800
75	PAR-38	Med. DiOptic	13321-5	\$ (82, 86) (E)	75PAR38/HAL/SP10	120	12	Spot 10°	C, CC-8	5 5/16	3000	14,000	1050
		Skt. Reflector	13312-4	\$ (82, 86) (E)	75PAR38/HAL/FL25	120	12	Flood 25°	C, CC-8	5 5/16	3000	3800	1050
90	PAR-38	Med. Standard	23069-8	\$ (82, 86) (E)	90PAR38/HAL/SP10	120	12	Spot 10°	C, CC-8	5 5/16	3000	14,500	1350
		Skt. Reflector	23070-6	\$ (82, 86) (E)	90PAR38/HAL/FL25	120	12	Flood 25°	C, CC-8	5 5/16	3000	4500	1350
		DiOptic	13308-2	\$ (82, 86) (E)	90PAR38/HAL/WFL40	120	12	W. Flood 40°	C, CC-8	5 5/16	3000	2200	1350

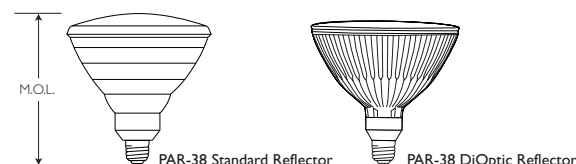
Halogen PAR-38 Lamps 130V (Formerly MasterLine) (82, 86)

45	PAR-38	Med. Standard	22947-6	\$ (82, 86) (E)	45PAR38/HAL/SP10	130	12	Spot 10°	C, CC-8	5 5/16	2500	6200	530
		Skt. Reflector	22949-2	\$ (82, 86) (E)	45PAR38/HAL/FL25	130	12	Flood 25°	C, CC-8	5 5/16	2500	2000	530
								Ratings @ 120V = 40W			5000	—	410
60	PAR-38	Med. DiOptic	13319-9	\$ (82, 86) (E)	60PAR38/HAL/SP10	130	12	Spot 10°	C, CC-8	5 5/16	3000	10,500	800
		Skt. Reflector	13307-4	\$ (82, 86) (E)	60PAR38/HAL/FL25	130	12	Flood 25°	C, CC-8	5 5/16	3000	3200	800
								Ratings @ 120V = 53W			6000	—	610
			13320-7	\$ (82, 86) (E)	60PAR38/HAL/WFL40	130	12	W. Flood 40°	C, CC-8	5 5/16	3000	1300	800
								Ratings @ 120V = 53W			6000	—	610
75	PAR-38	Med. DiOptic	13450-2	\$ (82, 86) (E)	75PAR38/HAL/NSP8	130	12	N. Spot 8°	C, CC-8	5 5/16	2500	16,750	1100
		Skt. Reflector	13311-6	\$ (82, 86) (E)	75PAR38/HAL/SP10	130	12	Spot 10°	C, CC-8	5 5/16	2500	14,000	1100
								Ratings @ 120V = 66W			5000	—	840
			13313-2	\$ (82, 86) (E)	75PAR38/HAL/FL25	130	12	Flood 25°	C, CC-8	5 5/16	2500	4350	1100
								Ratings @ 120V = 66W			5000	—	840
90	PAR-38	Med. Standard	23650-5	\$ (82, 86) (E)	90PAR38/HAL/SP10	130	12	Spot 10°	C, CC-8	5 5/16	2500	14,500	1350
		Skt. Reflector	23651-3	\$ (82, 86) (E)	90PAR38/HAL/FL25	130	12	Flood 25°	C, CC-8	5 5/16	2500	4500	1350
								Ratings @ 120V = 79W			5000	—	1020
		DiOptic	13310-8	\$ (82, 86) (E)	90PAR38/HAL/WFL40	130	12	W. Flood 40°	C, CC-8	5 5/16	2500	2200	1350
		Skt. Reflector						Ratings @ 120V = 79W			5000	—	1020

Halogen Long Life IR PAR-38 Featuring Halogen Infrared Technology and DiOptic Reflector (82, 86)

45	PAR-38	Med. DiOptic	13919-6	\$ (82, 86) (E)	45PAR38/IRC/HAL/SP10	120	12	Spot 10°	C, CC-8	5 5/16	6000	9000	675
		Skt. Reflector	13856-0	\$ (82, 86) (E)	45PAR38/IRC/HAL/FL25	120	12	Flood 25°	C, CC-8	5 5/16	6000	3000	675
			13857-8	\$ (82, 86) (E)	45PAR38/IRC/HAL/WFL40	120	12	W. Flood 40°	C, CC-8	5 5/16	6000	1140	675
55	PAR-38	Med. DiOptic	13858-6	\$ (82, 86) (E)	55PAR38/IRC/HAL/SP10	120	12	Spot 10°	C, CC-8	5 5/16	6000	10,700	880
		Skt. Reflector	13859-4	\$ (82, 86) (E)	55PAR38/IRC/HAL/FL25	120	12	Flood 25°	C, CC-8	5 5/16	6000	3730	880
			13860-2	\$ (82, 86) (E)	55PAR38/IRC/HAL/WFL40	120	12	W. Flood 40°	C, CC-8	5 5/16	6000	1500	880
90	PAR-38	Med. DiOptic	13864-4	\$ (82, 86) (E)	90PAR38/IRC/HAL/SP10	120	12	Spot 10°	C, CC-8	5 5/16	6000	19,500	1650
		Skt. Reflector	13865-1	\$ (82, 86) (E)	90PAR38/IRC/HAL/FL25	120	12	Flood 25°	C, CC-8	5 5/16	6000	7200	1650
			13866-9	\$ (82, 86) (E)	90PAR38/IRC/HAL/WFL40	120	12	W. Flood 40°	C, CC-8	5 5/16	6000	2500	1650

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Halogen symbols and footnotes located on page 50



HALOGEN LAMPS

PAR-38, PAR-56, PAR-64 Lamps

HALOGEN

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty. *	Description	Class, Filament	MOL (In.)	Rated Avg. Life (93)	Approx. MBCP *	Lumens
Halogen Energy Advantage IR PAR-38 Featuring Halogen Infrared Technology and DiOptic Reflector (82, 86)													
50	PAR-38 DiOptic Reflector	Med. Skt.	13317-3	\$+ (82, 86) (E)	50PAR38/IRC/HAL/SP	120	15	Spot	C, CC-8	5 3/16	3200	—	—
			13870-1	\$ (82, 86) (E)	50PAR38/IRC/HAL/SP10	120	12	Spot 10°	C, CC-8	5 3/16	4200	11,000	860
			13301-7	\$+ (82, 86) (E)	50PAR38/IRC/HAL/FL	120	15	Flood	C, CC-8	5 3/16	3200	—	—
			13871-9	\$ (82, 86) (E)	50PAR38/IRC/HAL/FL25	120	12	Flood 25°	C, CC-8	5 3/16	4200	3750	860
			13302-5	\$+ (82, 86) (E)	50PAR38/IRC/HAL/WFL	120	12	W. Flood	C, CC-8	5 3/16	3200	—	—
			13872-7	\$ (82, 86) (E)	50PAR38/IRC/HAL/WFL40	120	12	W. Flood 40°	C, CC-8	5 3/16	4200	1400	860
60	PAR-38 DiOptic Reflector	Med. Skt.	13315-7	\$+ (82, 86) (E)	60PAR38/IRC/HAL/SP	120	12	W. Spot	C, CC-8	5 3/16	3200	—	—
			13873-5	\$ (82, 86) (E)	60PAR38/IRC/HAL/SP10	120	12	W. Spot 10°	C, CC-8	5 3/16	4200	15,500	1120
			13314-0	\$+ (82, 86) (E)	60PAR38/IRC/HAL/FL	120	12	Flood	C, CC-8	5 3/16	3200	—	—
			13874-3	\$ (82, 86) (E)	60PAR38/IRC/HAL/FL25	120	12	Flood 25°	C, CC-8	5 3/16	4200	5100	1120
			13324-9	\$+ (82, 86) (E)	60PAR38/IRC/HAL/WFL	120	12	W. Flood	C, CC-8	5 3/16	3200	—	—
			13875-0	\$ (82, 86) (E)	60PAR38/IRC/HAL/WFL40	120	12	W. Flood 40°	C, CC-8	5 3/16	4200	1800	1120
70	PAR-38 DiOptic Reflector	Med. Skt.	13861-0	\$ (82, 86) (E)	70PAR38/IRC/HAL/SP10	120	12	Spot 10°	C, CC-8	5 3/16	4200	17,800	1550
			13862-8	\$ (82, 86) (E)	70PAR38/IRC/HAL/FL25	120	12	Flood 25°	C, CC-8	5 3/16	4200	6170	1550
			13863-6	\$ (82, 86) (E)	70PAR38/IRC/HAL/WFL40	120	12	W. Flood 40°	C, CC-8	5 3/16	4200	2320	1550
100	PAR-38 DiOptic Reflector	Med. Skt.	35960-4	\$+ (82, 86) (E)	100PAR38/IRC/HAL/SP	120	12	Spot	C, CC-8	5 3/16	3200	—	—
			13876-8	\$ (82, 86) (E)	100PAR38/IRC/HAL/SP10	120	12	Spot 10°	C, CC-8	5 3/16	4200	26,400	2200
			13327-2	\$+ (82, 86) (E)	100PAR38/IRC/HAL/FL	120	12	Flood	C, CC-8	5 3/16	3200	—	—
			13877-6	\$ (82, 86) (E)	100PAR38/IRC/HAL/FL25	120	12	Flood 25°	C, CC-8	5 3/16	4200	8500	2200
			35968-7	\$+ (82, 86) (E)	100PAR38/IRC/HAL/WFL	120	12	W. Flood	C, CC-8	5 3/16	3200	—	—
			13878-4	\$ (82, 86) (E)	100PAR38/IRC/HAL/WFL40	120	12	W. Flood 40°	C, CC-8	5 3/16	4200	3500	2200

Halogen Energy Advantage IR PAR-38 130V Featuring Halogen Infrared Technology and DiOptic Reflector (82, 86)

60	PAR-38 DiOptic Reflector	Med. Skt.	36055-2	\$+ (82, 86) (E)	60PAR38/IRC/HAL/SP	130	12	Spot	C, CC-8	5 3/16	3200	—	—
								Ratings @ 120V = 53W			6400	—	—
			13920-4	\$ (82, 86) (E)	60PAR38/IRC/HAL/SP10	130	12	Spot 10°	C, CC-8	5 3/16	4200	15,500	1120
								Ratings @ 120V = 53W			8400	—	880
			35957-0	\$+ (82, 86) (E)	60PAR38/IRC/HAL/FL	130	12	Flood	C, CC-8	5 3/16	3200	—	—
								Ratings @ 120V = 53W			6400	—	—
			13879-2	\$ (82, 86) (E)	60PAR38/IRC/HAL/FL25	130	12	Flood 25°	C, CC-8	5 3/16	4200	5100	1120
								Ratings @ 120V = 53W			8400	—	880
			35958-8	\$+ (82, 86) (E)	60PAR38/IRC/HAL/WFL	130	12	W. Flood	C, CC-8	5 3/16	3200	—	—
								Ratings @ 120V = 53W			6400	—	—
			13918-8	\$ (82, 86) (E)	60PAR38/IRC/HAL/WFL40	130	12	W. Flood	C, CC-8	5 3/16	4200	1800	1120
								Ratings @ 120V = 53W			8400	—	880

Halogen PAR-38 Lamps, Medium Side Prong Base (82, 86)

60	PAR-38 Standard Reflector	Med. Side Prong	38887-6	(82, 86) (E)	60PAR38/HAL/3FL	120	12	Flood 25°	C, CC-8	4 1/16	3000	3000	770
			38884-3	(82, 86) (E)	60PAR38/HAL/2FL	130	12	Flood 25°	C, CC-8	5 3/16	3000	2500	770
90	PAR-38 Standard Reflector	Med. Side Prong	38890-0	\$ (82, 86) (E)	90PAR38/HAL/3FL	130	12	Flood 25°	C, CC-8	4 1/16	2500	4500	1350
								Ratings @ 120V = 79W			5000	—	1000
			38886-8	\$ (82, 86) (E)	90PAR38/HAL/2FL	130	12	Flood 25°	C, CC-8	5 3/16	2500	4500	1350
								Ratings @ 120V = 79W			5000	—	1000

Halogen PAR-56, PAR-64 Lamps (9, 55)

500	PAR-56	Mog. End Prong	35621-2	(9, 55)	500PAR56Q/MFL	120	8	PAR Med. Flood	C, CC-6	5	4000	47,000	—
			35620-4	(9, 55)	500PAR56Q/WFL	120	8	PAR Wide Flood	C, CC-6	5	4000	47,000	—
			35619-6	(9, 55)	500PAR56Q/NSP	120	8	PAR Narrow Spot	C, CC-8	5	4000	88,000	—
1000	PAR-64	Ext. Mog. End Prong	27556-0	(9, 55)	1000PAR64Q/MFL	120	8	PAR Med. Flood	C, CC-8	5	4000	80,000	—
			27558-6	(9, 55)	1000PAR64Q/WFL	120	8	PAR Wide Flood	C, CC-8	5	4000	31,000	—
			27555-2	(9, 55)	1000PAR64Q/NSP	120	8	PAR Narrow Spot	C, CC-8	5	4000	200,000	—

+ Orders will be shipped until inventory is depleted and no longer manufactured. This product will be replaced with the product listed directly below it and will be available by January, 2005.

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

Halogen symbols and footnotes located on page 50



HALOGEN LAMPS

MRC-11, MR-16, MRC-16 Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty. •	Description	Class, Filament	MOL (In.)	Rated Avg. Life (93)	Approx. MBCP *	Lumens
Halogen MRC-11 (Formerly BrilliantLine Pro) (92)													
20	MRC-11	GU4	13345-4	(92)	BC20MRC11/FL30	12	12	Blister Card, Flood 30°	C, CC-8	1 5/8	4000	690	320
Halogen MRC-11 (Formerly BrilliantLine Pro) (92)													
20	MRC-11	GU4	37821-6	(92)	20MRC11/SPI0 PRO FTB	12	50	Spot 10°	C, CC-8	1 5/8	4000	4800	310
			37822-4	(92)	20MRC11/FL30 PRO FTD	12	50	Flood 30°	C, CC-8	1 5/8	4000	690	320
MRC-16 Halogen Display Lamps (Formerly AccentLine) Dichroic Reflector With Lens; Blister-Carded (92)													
20	MRC-16	GU5.3	39248-0	(92)	BC20MRC16/FL36-BAB	12	12	Blister Card, Flood 36°	C, C-8	1 7/8	3000	550	240
35	MRC-16	GU5.3	39256-3	(92)	BC35MRC16/FL36-FMX	12	12	Blister Card, Flood 36°	C, C-8	1 7/8	3000	1000	540
50	MRC-16	GU5.3	39262-1	(92)	BC50MRC16/SPI0-EXT	12	12	Blister Card, Spot 10°	C, C-8	1 7/8	3000	8800	790
			39259-7	(92)	BC50MRC16/FL36-EXN	12	12	Blister Card, Flood 36°	C, C-8	1 7/8	3000	1600	850
Halogen MR (Formerly AccentLine) (91)													
20	MR-16	GU5.3	37802-6	(91)	20MR16/SPI0 ESX	12	50	Spot 10°	C, C-8	1 7/8	3000	3400	240
			37803-4	(91)	20MR16/FL36 BAB	12	50	Flood 36°	C, C-8	1 7/8	3000	550	240
35	MR-16	GU5.3	14055-8	(91)	35MR16/SPI0	12	50	Spot 10°	C, C-8	1 7/8	3000	6000	510
			14056-6	(91)	35MR16/FL36	12	50	Flood 36°	C, C-8	1 7/8	3000	1000	540
50	MR-16	GU5.3	37804-2	(91)	50MR16/SPI0 EXT	12	50	Spot 10°	C, C-8	1 7/8	3000	8800	790
			37807-5	(91)	50MR16/NFL24 EXZ	12	50	N. Flood 24°	C, C-8	1 7/8	3000	2500	800
			37805-9	(91)	50MR16/FL36 EXN	12	50	Flood 36°	C, C-8	1 7/8	3000	1600	850
Halogen MR Long Life (Formerly BrilliantLine Pro and Continuum Color) (91, 92)													
20	MRC-16	GU5.3	37814-1	(92)	20MRC16/SPI0 ESX	12	50	Spot 10°	C, C-8	1 7/8	6000	5000	310
			26966-2	(92)	20MRC16/NFL24 BBF	12	50	N. Flood 24°	C, C-8	1 7/8	6000	1700	320
			37815-8	(92)	20MRC16/FL36 BAB	12	50	Flood 36°	C, C-8	1 7/8	6000	780	320
35	MRC-16	GU5.3	14054-1	(92)	35MRC16/SPI0	12	50	Spot 10°	C, C-8	1 7/8	6000	8000	680
			14052-5	(92)	35MRC16/NFL24	12	50	N. Flood 24°	C, C-8	1 7/8	6000	3100	690
			14053-3	(92)	35MRC16/FL36	12	50	Flood 36°	C, C-8	1 7/8	6000	1500	710
50	MRC-16	GU5.3	37816-6	(92)	50MRC16/SPI0 EXT	12	50	Spot 10°	C, C-8	1 7/8	6000	13000	920
			14061-6	(92)	50MRC16/SPI5	12	50	Spot 15°	C, C-8	1 7/8	6000	8000	930
			37817-4	(92)	50MRC16/NFL24 EXZ	12	50	N. Flood 24°	C, C-8	1 7/8	6000	4400	960
			37818-2	(92)	50MRC16/FL36 EXN	12	50	Flood 36°	C, C-8	1 7/8	6000	2200	970
75	MR-16	GU5.3	37808-3	(91)	75MR16/SPI0 EYF	12	50	Spot 10°	C, C-8	1 7/8	6000	14000	1320
			37809-1	(91)	75MR16/FL36 EYC	12	50	Flood 36°	C, C-8	1 7/8	6000	2500	1410
Halogen MR Energy Advantage IR (Formerly MasterLine ES IRC) (92)													
20	MRC-16	GU5.3	13451-0	(92)	20MRC16/IRC/SP8	12	20	Spot 8°	C, C-8	1 7/8	5000	6500	370
			13452-8	(92)	20MRC16/IRC/FL36	12	20	Flood 36°	C, C-8	1 7/8	5000	1000	400
30	MRC-16	GU5.3	14057-4	(92)	30MRC16/IRC/SP8	12	20	Spot 8°	C, C-8	1 7/8	5000	11000	640
			14058-2	(92)	30MRC16/IRC/NFL24	12	20	N. Flood 24°	C, C-8	1 7/8	5000	3350	660
			14063-2	(92)	30MRC16/IRC/FL36	12	20	Flood 36°	C, C-8	1 7/8	5000	1600	680
35	MRC-16	GU5.3	13453-6	(92)	35MRC16/IRC/SP8	12	20	Spot 8°	C, C-8	1 7/8	5000	14000	780
			13454-4	(92)	35MRC16/IRC/NFL24	12	20	N. Flood 24°	C, C-8	1 7/8	5000	4400	800
			13455-1	(92)	35MRC16/IRC/FL36	12	20	Flood 36°	C, C-8	1 7/8	5000	2200	830
			13456-9	(92)	35MRC16/IRC/WFL60	12	20	W. Flood 60°	C, C-8	1 7/8	5000	1050	870
45	MRC-16	GU5.3	13457-7	(92)	45MRC16/IRC/SP8	12	20	Spot 8°	C, C-8	1 7/8	5000	16000	1020
			13458-5	(92)	45MRC16/IRC/NFL24	12	20	N. Flood 24°	C, C-8	1 7/8	5000	5450	1080
			13459-3	(92)	45MRC16/IRC/FL36	12	20	Flood 36°	C, C-8	1 7/8	5000	2850	1100
			13460-1	(92)	45MRC16/IRC/WFL60	12	20	W. Flood 60°	C, C-8	1 7/8	5000	1300	1180
Halogen MR Aluminum (Formerly Continuum Pro) (92)													
50	MRC-16	GU5.3	13981-6	(92)	50 MRC16/NFL24/A	12	50	N. Flood 24°			5000	3300	940
			13982-4	(92)	50 MRC16/FL36/A	12	50	Flood 36°			5000	2100	950

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/
Halogen symbols and footnotes located on page 50

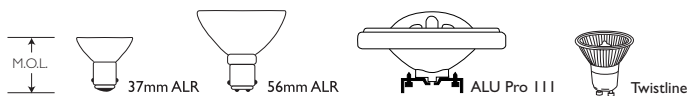


HALOGEN LAMPS

ALR, ALUline Pro III, Twistline GU10

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty. *	Description	Class, Filament	MOL (In.)	Rated Avg. Life (93)	Approx. MBCP *	Lumens
Closed Aluminum Reflector (ALR) Lamps Aluminum Reflector With Lens (92)													
20	37mm	BA15d	32840-1	□ (92)	20ALR12/NSP6-GBD Clear	12	50	Clear, N. Spot 6°	C, C-8	1 ½	2000	7000	—
			34002-6	□ (92)	20ALR12/SPI8-GBE Frost	12	50	Frost, Spot 18°	C, C-8	1 ½	2000	1500	—
			34003-4	□ (92)	20ALR12/FL32-GBF Frost	12	50	Frost, Flood 32°	C, C-8	1 ½	2000	750	250
50	56mm	B15d	32826-0	□ (92)	50ALR18/SPI0-GBJ Clear	12	50	Clear, Spot 10°	C, C-8	2 ¼	2000	13,000	—
			34091-9	□ (92)	50ALR18/NFL25-GBK Frost	12	50	Frost, N. Flood 25°	C, C-8	2 ¼	2000	2500	820
ALUline PRO III													
50	ALU Pro III	G53	13396-6		ALU111MM 50W G53 12V 8D	12	6	Spot 8°	C, C-8	2 ¾	3000	23,000	950
			13397-4		ALU111MM 50W G53 12V 24D	12	6	Flood 24°	C, C-8	2 ¾	3000	4000	950
75	ALU Pro III	G53	13398-2		ALU111MM 75W G53 12V 8D	12	6	Spot 8°	C, C-8	2 ¾	3000	30,000	1575
			13399-0		ALU111MM 75W G53 12V 24D	12	6	Flood 24°	C, C-8	2 ¾	3000	5300	1575
			13400-7		ALU111MM 75W G53 12V 45D	12	6	Wide Flood 45°	C, C-8	2 ¾	3000	1900	1575
Twistline GU10 (98)													
25	Twistline	GU10	13587-1	(98)	BC25TWISTLINE GU10/FL25	120	6	Blister Card, Flood 25°	C, C-6	2	2000	345	160
35	Twistline	GU10	13347-0	(98)	BC35TWISTLINE GU10/FL25	120	6	Blister Card, Flood 25°	C, C-6	2	3000	480	265
50	Twistline	GU10	13081-5	(98)	BC50TWISTLINE GU10/NFL25	120	6	Blister Card, N. Flood 25°	C, C-6	2	3000	700	430

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/
Halogen symbols and footnotes located on page 50



HALOGEN LAMPS

Single-Ended, Double-Ended, Capsule Lamps

HALOGEN

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty. *	Description	Class, Filament	MOL (In.)	Rated Avg. Life (93)	Approx. MBCP *	Lumens
Halogen Single-Ended Linear Lamps (95)													
50	T-4	Mini-Can	13803-2	(95)	BC50Q/CL	120	12	Blister Card	C, CC-8	2 3/4	1000	—	500
75	T-4	Mini-Can	39249-8	(95)	BC75Q/CL	120	12	Blister Card	C, CC-8	3	1000	—	1050
100	T-4	Mini-Can	21365-2	(95)	BC100Q/CL/MC ESN	120	12	Blister Card	C, CC-8	2 13/16	1000	—	1600
150	T-4	Mini-Can	34754-2	(95)	BC150Q/CL ETG	120	12	Blister Card	C, CC-8	3	1000	—	2800

Halogen Single-Ended Linear Lamps (95)

100	T-4	D.C. Bay	44278-0	(95)	100Q/CL/DC ESR	120	12	Clear	C, CC-8	2 7/16	1000	—	1600
150	T-4	Mini-Can	29856-2	(95)	150Q ETH	120	12	Frost	C, CC-8	3	1000	—	2700
			20049-3	(95)	150Q/CL	130	12	Clear	C, CC-8	3	1000	—	2800
		D.C. Bay	26676-7	(95)	150Q/CL/DC ETC	120	12	Clear	C, CC-8	2 1/2	1000	—	2800
			29850-5	(95)	150Q/DC ETF	120	12	Frost	C, CC-8	2 1/2	1000	—	2700
250	T-4	Mini-Can	37857-0	(95)	250Q/CL EHT	120	12	Clear	C, CC-8	3 1/8	2000	—	5000
			22886-6	(95)	250Q/CL	130	12	Clear	C, CC-8	3 1/8	2000	—	5000
		D.C. Bay	31584-6	(95)	250Q/CL/DC ESS	120	12	Clear	C, CC-8	3	2000	—	5000
			22894-0	(95)	250Q/CL/DC	130	12	Clear	C, CC-8	3	2000	—	5000
500	T-4	Mini-Can	38079-0	(95)	500Q/CL EVR	120	12	Clear	C, C-8	3 5/8	2000	—	10,000
750	T-5	Med. 2-Pin	26972-0	(95)	750Q/CL EHG	120	24	Clear	C, CC-8	4 1/4	2000	—	15,000

Halogen Double-Ended Linear Lamp (99)

100	T-3	RSC	21750-5	(99)	BC100T3Q/CL	120	12	Blister Card	C, C-8	3 1/8	2000	—	1600
150	T-3	RSC	21751-3	(99)	BC150T3Q/CL	120	12	Blister Card	C, C-8	3 1/8	2000	—	2400
			13444-5	(99)	BC150T3Q/CL LONG	120	12	Blister Card	C, C-8	4 11/16	1500	—	2250
250	T-3	RSC	39250-6	(99)	BC250T3Q/CL	120	12	Blister Card	C, C-8	3 1/8	2000	—	4000
300	T-3	RSC	39246-4	(99)	BC300T3Q/CL	120	12	Blister Card	C, C-8	4 11/16	2000	—	5200
500	T-3	RSC	39247-2	(99)	BC500T3Q/CL	120	12	Blister Card	C, C-8	4 11/16	2000	—	9500

Halogen Double-Ended Linear Lamp (99)

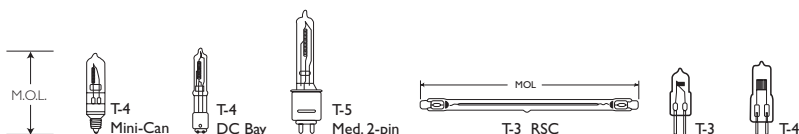
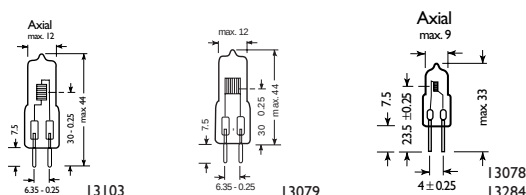
300	T-3	RSC	39282-9	(99)	300T3Q/P/CL EHM	120	12	Clear	C, C-8	4 11/16	2000	—	5200
500	T-3	RSC	13223-3	(99)	500T3Q/P/CL	125-130	12	Clear; Plusline	C, C-8	4 11/16	2000	—	9200
			20010-5	(99)	500T3Q/P/CL FCL	120	12	Clear	C, C-8	4 11/16	2000	—	9500
1000	T-3	RSC	38320-8	(99)	1000T3Q/P/CL	240	12	Clear; Plusline	C, C-8	10 1/16	3000	—	21,000
1500	T-3	RSC	23868-3	(99)	1500T3Q/P/CL	277	12	Clear; Plusline	C, C-8	10 1/16	3000	—	33,000
			13226-6	(99)	1500T3Q/P/CL	240	12	Clear; Plusline	C, C-8	10 1/16	2000	—	32,250

Halogen Low-Voltage Capsule Lamp (95)

10	T-3	G4	39251-4	(95)	BC10W/T3/12V	12	12	Blister Card	C, C-8	1 1/4	2000	—	120
20	T-3	G4	13015-3	(95)	BC20W/T3/12V	12	12	Blister Card	C, C-8	1 1/4	2000	—	300
35	T-4	GY6.35	13346-2	(95)	BC35W/T4/12V	12	12	Blister Card	C, C-8	1 3/4	2000	—	600
50	T-4	GY6.35	13016-1	(95)	BC50W/T4/12V	12	12	Blister Card	C, C-8	1 3/4	2000	—	800
75	T-4	GY6.35	13441-1	(95)	BC75W/T4/12V	12	12	Blister Card	C, C-8	1 3/4	2000	—	1575

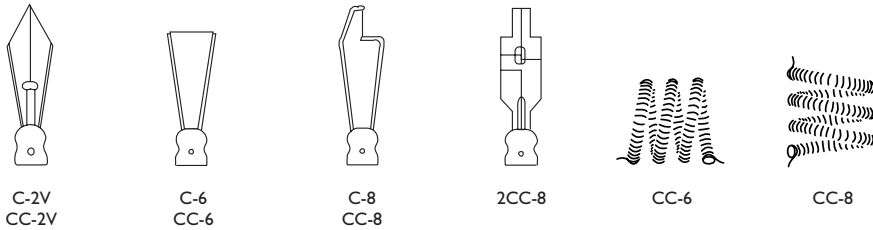
Halogen Low-Voltage Capsule Lamp All Lamps Contain UV Block and are Low Pressure (95)

10	T-3	G4	23262-9	(95)	10W/T3/12V	12	100	Capsule Type 13284	C, C-8	1 1/4	4000	—	140
20	T-3	G4	23264-5	(95)	20W/T3/12V	12	100	Capsule Type 13078	C, C-8	1 1/4	4000	—	320
35	T-4	GY6.35	29553-5	(95)	35W/T4/12V	12	100	Capsule Type 13103	C, C-8	1 3/4	4000	—	600
50	T-4	GY6.35	23265-2	(95)	50W/T4/12V	12	100	Capsule Type 13079	C, C-8	1 3/4	4000	—	800

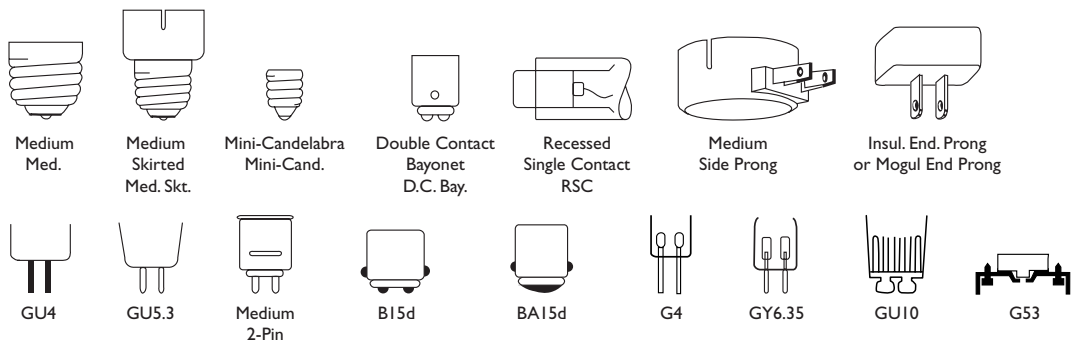


Filament Designations (Not Actual Sizes)

Filament Designations consist of a letter or letters to indicate how the wire is coiled and an arbitrary number sometimes followed by a letter to indicate the arrangement of the filament on the supports. Prefix letters include C (coil) — 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. Some of the more commonly used types of filament arrangements are illustrated.

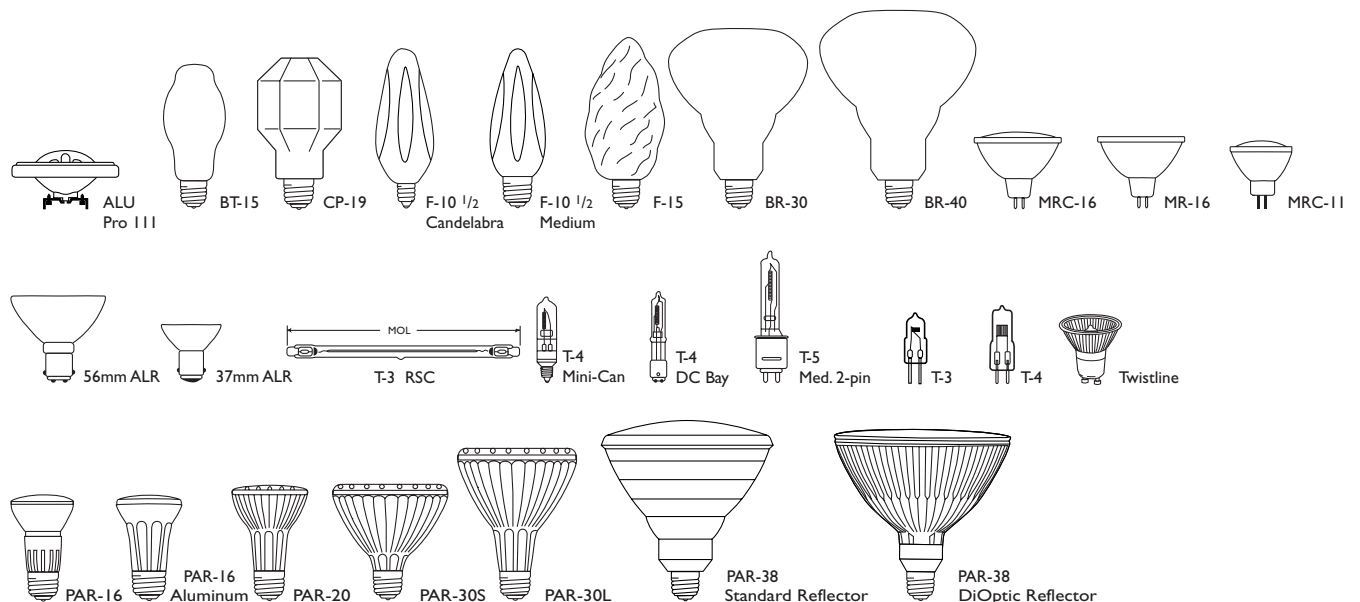


Base Types (Not Actual Sizes)



Bulb Shapes (Not Actual Sizes)

The size and shape of a bulb is designated by a letter or letters followed by a number. The letter indicates the shape of the bulb while the number indicates the diameter of the bulb in eighths of an inch. For example, "T-10" indicates a tubular shaped bulb having a diameter of 10/8 or 1 1/4 inches. The following illustrations show some of the more popular bulb shapes and sizes.



INCANDESCENT AND HALOGEN LAMPS

Footnotes

- Exclusive to Philips Lighting Company
- Quantity shown is minimum shipping container — refer to Net Price Schedule for number of lamps to qualify as a standard case.
- * Two Lamp Carded Pack.
- ▲ Aluminum base.
- Nickel plated brass base.
- ★ Heat resisting glass bulb.
- Consider the compact fluorescent lamps listed on pages 53–54 for energy savings
- \$ Energy Saving Product
- Maximum Beam Candlepower
- X Orders will be shipped until inventory is depleted; no longer manufactured
- (E) This Bulb Meets US Federal Minimum Efficiency Standard
- (2) Although the lamp is of the highest quality in material and workmanship, it has been designed to meet certain purchase requirements which preclude a guarantee of performance.
- (3) Indefinite-long life.
- (4) Average laboratory life is 200 hours for vacuum cleaner and 600 hours for sewing machine service. Design life 1000 hours.
- (8) Operate base down.
- (9) This lamp should be shielded from moisture to prevent breakage.
- (10) Operating position—horizontal.
- (11) Design volts 115.
- (12) Operate base down to horizontal.
- (13) Not recommended for horizontal burning.
- (14) Operate base up.
- (15) Operate base down. Filaments operated separately.
- (18) Base is medium left hand thread.
- (19) May not give satisfactory performance if any accessory equipment is attached to or touches the glass bulb.
- (22) Unsatisfactory lamp operation is likely to occur in operating positions between horizontal and base up, particularly between 45° from base up and base up.
- (23) May be operated in any position.
- (25) Base pins approximately parallel to plane of filament.
- (26) Use only on circuits supplying the voltage as marked on the lamp. DO NOT use in household sockets.
- (27) Average laboratory life in excess of 5000 hours. In-service life depends upon service conditions.
- (29) Suitable for indoor and outdoor service.
- (31) Operate only in porcelain sockets.
- (34) Operate base up to horizontal.
- (37) Should not be used in equipment where the base temperature will exceed 500°F.
- (41) Avoid use at short distances on materials that are inflammable or susceptible to heat damage.
- (43) Unless otherwise noted, may be operated in any position, but lumen maintenance is best when operated vertically base up.
- (46) Stippled, rounded cover.
- (49) Should not be used in equipment where the seal temperature exceeds 750°F.
- (50) For use on 50-60 cycle A.C. circuits.
- (51) Light output is maintained best when operated within 45° of vertically base up.
- (53) The bulb, though made of heat-resistant glass, may break if moisture falls on it. Not recommended for use in enclosed, close-fitting housings.
- (55) For use only with heat resistant connector and with lamp supported by bulb rim.
- (59) Life dependent upon service conditions.
- (63) Design volts 145.
- (64) For use only in equipment specially designed to maintain bulb and base temperature within safe limits.
- (65) AA tolerance ½", L.C.L. tolerance ⅜".
- (66) Silicone Coating reduces lumen output from Standard Values less than 3%.
- (72) Light Center Length & Axial Alignment tolerance ¼".
- (75) 2½" diameter unsilvered spot on end of bulb.
- (81) LCL & Axial Alignment tolerance ⅛".
- (82) To avoid deterioration of lampholder by heat, use only heat resistant lampholders or fixtures listed by a nationally recognized electrical testing organization for use with reflector or PAR lamps.

- (83) Base does not have ceramic insulator.
- (86) **PAR Halogen Caution Notice:** Before using bulb, see operating instructions on inside flap. Adherence to the operating instructions will reduce the risk of personal injury or fire. The filament capsule contained inside this glass bulb is pressurized, operates at high temperature and could unexpectedly shatter. Should the outer bulb break, particles of extremely hot glass could be discharged into the fixture and/or the surrounding environment, thereby creating a risk of personal injury or fire.
- Operating Instructions:** Before replacing, turn off power and let lamp cool to avoid electrical shock or burn.
 - For indoor or outdoor use. A weather-protected fixture is recommended for wet locations.
 - Suitable for use in open fixtures.
 - Do not exceed the maximum wattage rating of the fixture.
 - Do not use if outer glass is scratched or broken since it may break during operation or removal.
 - If outer glass breaks the lamp may continue to light, however, immediately discontinue use.
 - Due to the heat that radiates from the bulb, do not use in close proximity to combustible materials or objects susceptible to drying or fading.
 - Manage in accord with disposal laws.
- (87) Do not allow hot bulb to come in contact with liquid or metal parts of the fixture, as glass may shatter. Do not use outdoors. Do not operate in close proximity to flammable materials or those adversely affected by heat or drying. Operate only in heat resistant sockets.
- (89) **CAUTION:** Do not operate in close proximity to flammable materials or those adversely affected by heat or drying. Operate only in heat resistant sockets.
- WARNING:** Use carefully. May cause serious burns. Do not use over insensitive skin areas or in the presence of poor circulation. The unattended use of infrared heat by children or incapacitated persons may be dangerous.
 - Lamp should not be placed closer than 18" to the surface being irradiated.
 - Do not use for therapeutic or topical applications unless recommended by a physician.
 - For food warming, use only lamps with heat resisting glass.
- (90) Since there is considerable heat radiation in the beam of this lamp, care should be taken against using it without suitable protection, in close proximity to combustible materials or those adversely affected by drying action.
- (91) **NOTICE:** Do not touch capsule with bare hands. Fingerprints may result in reduced performance unless they are removed with alcohol. **CAUTION: THIS LAMP IS PRESSURIZED AND COULD SHATTER** so to avoid injury and to avoid exposure to ultraviolet radiation, use only in equipment specifying this lamp and that provides a protective shield of tempered glass. Provide adequate ventilation to ensure that seal temperature does not exceed 350° C. To avoid risks of burns or other injury, turn power off and allow lamp to fully cool before attempting to replace. Socket condition may affect lamp life. Inspect and replace socket if deterioration has occurred.
- (92) **CAUTION: THIS LAMP IS PRESSURIZED AND COULD SHATTER** so to avoid injury and to avoid exposure to ultraviolet radiation, this lamp should be used in a fixture that provides a protective shield of tempered glass. Provide adequate ventilation to ensure that seal temperature does not exceed 350° C and use only in fixtures rated for the wattage stated on this package. To avoid risks of burns or other injury, turn power off and allow lamp to fully cool before attempting to replace. Socket condition may affect lamp life. Inspect and replace socket if deterioration has occurred.
- (93) Rated average life is the length of operation (in hours) at which point an average of 50% of the lamps will still be operational and 50% will not.
- (94) To prevent electrical shock, match wide blade of plug to wide slot of outlet, fully insert. Do not cover night light; overheating may occur. Do not plug in near radiator or source of heat. **WARNING:** for indoor use only.

- (95) **NOTICE:** Do not touch bulb with bare hands. Fingerprints may result in shorter life. Remove fingerprints with alcohol. **CAUTION: THIS LAMP IS PRESSURIZED AND COULD SHATTER** so to avoid injury and to avoid exposure to ultraviolet radiation, use only in fixtures that provide a protective shield of tempered glass. Provide adequate ventilation to ensure that seal temperature does not exceed 350° C and use only in fixtures rated for the wattage stated on this package. To avoid risks of burns or other injury, turn power off and allow lamp to fully cool before attempting to replace. Socket condition may affect lamp life. Inspect and replace socket if deterioration has occurred.
- (96) **Operating Instructions:** Do not use lamp in close proximity to combustible materials. If used outdoors, use in an enclosed fixture only. If used indoors, no additional shield is required. Can be operated in all positions. **CAUTION:** Read operating instructions before use. If outer glass breaks, turn power off immediately and avoid touching any metal components. To avoid potential burn and electrical shock during lamp replacement, always turn power off and let lamp cool before replacing bulb. Lasts 2 years based on 4 hours average usage per day/7 days per week.
- (97) **Operating Instructions:** Before replacing, turn off power and let lamp cool to avoid electrical shock or burn. For indoor use only. Do not allow hot bulb to come in contact with liquid or metal parts of the fixture as glass may shatter. Do not exceed the maximum wattage rating of the fixture. Do not use if outer glass is scratched or broken since it may break during operation or removal. If outer glass breaks the lamp may continue to light, however, immediately discontinue use. Due to the heat that radiates from the bulb, do not use in close proximity to combustible materials or objects susceptible to drying or fading. Manage in accord with disposal laws. **CAUTION:** Adherence to the operating instructions will reduce the risk of personal injury or fire. The filament capsule contained inside this glass bulb is pressurized, operates at high temperature and could unexpectedly shatter. Should the outer bulb break, particles of extremely hot glass could be discharged into the fixture and/or the surrounding environment, thereby creating a risk of personal injury or fire.
- (98) **Note:** This twistline has a GU10 base and may be used in fixtures that have either GU10 or GZ10 sockets. **Operating Instructions:** Do not use in close proximity to combustible materials or objects adversely affected by drying or fading. Can be operated in all positions. **CAUTION:** This lamp is pressurized and could shatter so to avoid injury and to avoid exposure to ultraviolet radiation, this lamp should be used in a fixture that provides a protective shield of tempered glass. If outer glass breaks, immediately discontinue use. Always turn power off and let lamp cool before removal to avoid potential burn or electric shock.
- (99) **WARNING: BULB OPERATES AT VERY HIGH TEMPERATURES AND MUST BE USED PROPERLY TO AVOID/REDUCE RISK OF FIRE.** Do not use bulbs greater than 300 watts in indoor residential fixtures. Use only in fixtures specifying this bulb type and that meet revised UL 153 standard for tungsten-halogen torchiere lamps. Bulb is pressurized and could shatter and should only be used in fixtures that provide a protective shield of tempered glass. To avoid exposure to ultraviolet radiation which could cause skin and eye irritation use only in fixtures that provide a protective shield of tempered glass. **NOTICE:** Do not touch bulb with bare hands. Fingerprints may result in reduced performance unless they are removed with alcohol. When operating, bulb is hot. To avoid risks of burns or injury, turn power off and allow bulb to cool before replacing. Socket conditions may affect bulb life. Inspect and replace socket if deterioration has occurred. Provide adequate ventilation to ensure that seal temperature does not exceed 350°C. **TO AVOID/REDUCE RISK OF FIRE, DO NOT USE NEAR COMBUSTIBLE MATERIALS.**

COMPACT FLUORESCENT AND FLUORESCENT LAMPS



COMPACT FLUORESCENT LAMPS

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FLUORESCENT LAMPS

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Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty. •	Description	MOL (In.)	Avg. Hrs. Life (230)	Approx. Initial (231) Lumens	CRI
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Marathon® Lamps Screw-in Compact Fluorescent—a direct replacement for incandescent, offering energy savings, high color rendering and long life. Lasts up to 10 times longer compared to standard incandescent bulbs Uses less energy, saving you money on your electric bill. Saves up to 70% in electricity costs compared to standard incandescent lamps. Gives off an incandescent-quality light. Has a flicker-free start Lasts up to 7 years! Most Marathon lamps are ENERGY STAR® qualified (217, 218).

Marathon® Mini-Decorative Twister

11	EL/mdT	Med.	13804-0	† \$	Mini-Deco Twister EL/mdT 11	6	Small, Decorative Shape (228) Energy Saving Substitute for 40W Incandescent Lamp	4 1/8	8000	675	82
15	EL/mdT	Med.	13363-7	† \$	Mini-Deco Twister BC-EL/mdT 15	6	Small, Decorative Shape/Blister (228) Energy Saving Substitute for 60W Incandescent Lamp	5 1/4	10,000	900	82
			13581-4	† \$	Mini-Deco Twister EL/mdT 15	6	Small, Decorative Shape (228) Energy Saving Substitute for 60W Incandescent Lamp	5 1/4	10,000	900	82
20	EL/mdT	Med.	13805-7	† \$	Mini-Deco Twister EL/mdT 20	6	Small, Decorative Shape (228) Energy Saving Substitute for 75W Incandescent Lamp	5 3/8	10,000	1250	82
27	EL/mdT	Med.	13715-8	† \$	Mini-Deco Twister EL/mdT 27	6	Small, Decorative Shape (228) Energy Saving Substitute for 100W Incandescent Lamp	5 3/8	8000	1750	82

Marathon® Twister

20	EL/DT	Med.	38110-3	X \$	Decorative Twister BC-EL/DT 20	6	Decorative Shape/Blister (228) Energy Saving Substitute for 75W Incandescent Lamp	5 3/8	6000	1100	82
23	EL/DT	Med.	38111-1	X \$	Decorative Twister BC-EL/DT 23	6	Decorative Shape/Blister (228) Energy Saving Substitute for 90W Incandescent Lamp	5 1/8	6000	1400	82

Marathon® Universal

15	SLS	Med.	37104-7	\$	Universal SLS 15	6	Ultra-Compact (216) Energy Saving Substitute for 60W Incandescent Lamp	4 1/8	10,000	900	82
			37105-4	\$	Universal BC-SLS 15	6	Ultra-Compact/Blister (216) Energy Saving Substitute for 60W Incandescent Lamp	4 1/8	10,000	900	82
20	SLS	Med.	37108-8	\$	Universal SLS 20	6	Long Life (216) Energy Saving Substitute for 75W Incandescent Lamp	5 3/8	10,000	1200	82
			37109-6	\$	Universal BC-SLS 20	6	Long Life/Blister (216) Energy Saving Substitute for 75W Incandescent Lamp	5 3/8	10,000	1200	82
25	SLS	Med.	37114-6	\$	Universal SLS 25	6	Long Life (216) Energy Saving Substitute for 100W Incandescent Lamp	6 3/8	10,000	1750	82
			37115-3	\$	Universal BC-SLS 25	6	Long Life/Blister (216) Energy Saving Substitute for 100W Incandescent Lamp	6 3/8	10,000	1750	82

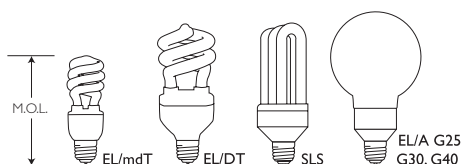
Marathon® Vanity Globe

12	EL/A G25	Med.	13072-4	† \$	Vanity Globe BC-EL/A G25 12	6	G25 Globe/Blister (216, 228) Energy Saving Substitute for 40W Incandescent Lamp	5 1/2	7000	480	82
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Marathon® Décor Globe

16	EL/A G30	Med.	38854-6	\$	Décor Globe EL/A G30	6	G30 Globe (216, 228) Energy Saving Substitute for 60W Incandescent Lamp	5 1/2	7000	800	82
20	EL/A G40	Med.	38855-3	\$	Décor Globe EL/A G40	6	G40 Globe (216, 228) Energy Saving Substitute for 100W Incandescent Lamp	7 1/4	7000	1050	82

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/
Compact Fluorescent symbols and footnotes located on page 77



Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	MOL (In.)	Avg. Hrs. Life (230)	Approx. Initial (231) Lumens	CRI
Marathon® Reflector Flood											
16	EL/A BR30	Med	13073-2	† \$	Reflector Flood BC-EL/A BR30 16	6	BR30 Reflector/Blister (216, 238) Energy Saving Substitute for 65W Incandescent Lamp	5 1/2	7000	590	82

Marathon® Flood

15	SLS/R30	Med	37246-6	X \$	Flood SLS/R30 15	6	Snap-On Reflector (216) Energy Saving Substitute for 50W Incandescent Lamp	6	8000	500	82
	SLS/R40	Med	37256-5	\$	Flood SLS/R40 15	6	Snap-On Reflector (216) Energy Saving Substitute for 60W Incandescent Lamp	6 3/8	8000	625	82
20	SLS/R30	Med.	37248-2	X \$	Flood SLS/R30 20	6	Snap-On Reflector (216) Energy Saving Substitute for 55W Incandescent Lamp	6	8000	575	82
	SLS/R40	Med.	37262-3	\$	Flood SLS/R40 20	6	Snap-On Reflector (216) Energy Saving Substitute for 75W Incandescent Lamp	6 3/8	8000	825	82

Marathon® Dimmable Flood

20	SLS/R30	Med.	38488-3	□ \$	Dimmable Flood SLS/R30 20	6	Dimmable Snap-On Reflector (216, 232) Energy Saving Substitute for 55W Incandescent Lamp	6 3/8	7000	575	82
	SLS/R40	Med.	38489-1	□ \$	Dimmable Flood SLS/R40 20	6	Dimmable Snap-On Reflector (216, 232) Energy Saving Substitute for 75W Incandescent Lamp	6 1/8	7000	800	82

Marathon® Outdoor

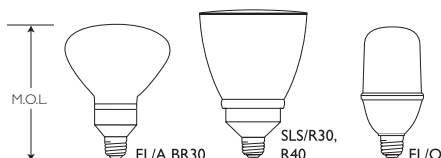
15	EL/O	Med.	37118-7	\$	Outdoor EL/O 15	6	Translucent Cover (216) Energy Saving Substitute for 60W Incandescent Lamp	5 3/8	10,000	800	82
			37119-5	\$	Outdoor BC-EL/O 15	6	Translucent Cover/Blister (216) Energy Saving Substitute for 60W Incandescent Lamp	5 3/8	10,000	800	82
			28781-3	\$	Outdoor EL/O DL50 15	6	Daylight 50 (216) Energy Saving Substitute for 52W Incandescent Lamp	5 3/8	10,000	750	80
18	EL/O	Med.	37123-7	\$	Outdoor EL/O 18	6	Translucent Cover (216) Energy Saving Substitute for 75W Incandescent Lamp	6 7/8	10,000	1100	82
			13578-0	† \$	Outdoor EL/O 18 ALTO	6	Translucent Cover (216) Energy Saving Substitute for 75W Incandescent Lamp	6 1/8	10,000	1000	82
			37152-5	\$	Outdoor BC-EL/O 18	6	Translucent Cover/Blister (216) Energy Saving Substitute for 75W Incandescent Lamp	6 1/8	10,000	1100	82

Marathon® Bug-A-Way

15	EL/O	Med.	37148-4	\$	Bug-A-Way EL/O 15 BAW	6	Yellow Cover (216) Energy Saving Substitute for 75W Incandescent Lamp	5 3/8	10,000	750	—
			37149-2	\$	Bug-A-Way BC-EL/O 15 BAW	6	Yellow Cover/Blister (216) Energy Saving Substitute for 75W Incandescent Lamp	5 3/8	10,000	750	—

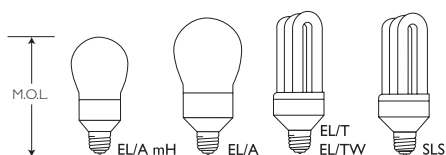
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Compact Fluorescent symbols and footnotes located on page 77

□ This product utilizes ALTO® Lamp Technology



Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.*	Description	MOL (In.)	Avg. Hrs. Life (230)	Approx. Initial (231) Lumens	CRI
Marathon® Mini-Household											
16	EL/A mH	Med.	13070-8	† \$	Mini-Household BC-EL/A mH 16	6	Small, Incandescent-like Shape/Blister (216, 228) Energy Saving Substitute for 75W Incandescent Lamp	4 29/32	6000	800	82
Marathon® Household											
20	EL/A	Med.	37096-5	\$	Household BC-EL/A 20	6	Incandescent-like Shape/Blister (216, 228) Energy Saving Substitute for 60W Incandescent Lamp	6	6000	1100	82
Marathon® 3-Way											
34	EL/TW	Med.	37216-9	\$	3-Way EL/TW 34	6	50/100/150W Equivalents (216, 227, 236) Energy Saving Substitute for 3-Way Incandescent Lamp	6 3/8	7000	1100 1600 2100	82
			37219-3	\$	3-Way BC-EL/TW 34	6	50/100/150W Equivalents/Blister (216, 227, 236) Energy Saving Substitute for 3-Way Incandescent Lamp	6 3/8	7000	1100 1600 2100	82
Marathon® Dimmable											
23	SLS	Med.	37202-9	\$	Dimmable BC-SLS/D 23	6	Dimmable/Blister (216, 232, 233) Energy Saving Substitute for 90W Incandescent Lamp	6 3/8	10,000	1400	82
Marathon® Table Lamp											
34	EL/T	Med.	37082-5	\$	Table Lamp EL/T 34	6	High Light Output (216, 227, 236) Energy Saving Substitute for 120W Incandescent Lamp	6 3/8	7000	2100	82
			37084-1	\$	Table Lamp BC-EL/T 34	6	High Light Output/Blister (216, 227, 236) Energy Saving Substitute for 120W Incandescent Lamp	6 3/8	7000	2100	82
Marathon® Lamp Anti-Theft Devices											
			23671-1		Locking Device SLS	100	Bulk, one driver per case				
			23672-9	X	Locking Device SLS/RH	100	Bulk, one driver per case				

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Compact Fluorescent symbols and footnotes located on page 77



COMPACT FLUORESCENT LAMPS

PL-H, PL-S, PL-C Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Generic Designation	Pkg. Qty. •	Description	MOL (In.)	Avg. Hrs. Life (202)	Approx. Initial (203) Lumens	Design Lumens (208)	CRI
PL-H High Fluorescent Lamps (204)													
60	PL-H	2G8	13368-6		PL-H 60W/830/4P	TBD	10	3000K	7 1/4	20,000	4000	3440	82
			13369-4		PL-H 60W/841/4P	TBD	10	4100K	7 1/4	20,000	4000	3440	82
85	PL-H	2G8	13370-2		PL-H 85W/830/4P	TBD	10	3000K	8 25/32	20,000	6000	5160	82
			13371-0		PL-H 85W/841/4P	TBD	10	4100K	8 25/32	20,000	6000	5160	82
120	PL-H	2G8	13372-8		PL-H 120W/830/4P	TBD	10	3000K	11 13/16	20,000	9000	7740	82
			13373-6		PL-H 120W/841/4P	TBD	10	4100K	11 13/16	20,000	9000	7740	82

PL-S Short Fluorescent Lamps (204)

5	PL-S	G23	33233-8	\$	PL-S 5W/827	CFT5W/G23/827	60	2700K	4 1/8	10,000	250	210	82
7	PL-S	G23	34256-8	\$	PL-S 7W/827	CFT7W/G23/827	60	2700K	5 1/4	10,000	400	340	82
			30663-9	\$	PL-S 7W/827	CFT7W/G23/827	50	2700K, Bulk	5 1/4	10,000	400	340	82
			32780-9	\$	PL-S 7W/835	CFT7W/G23/835	60	3500K	5 1/4	10,000	400	340	82
			33869-9	\$	PL-S 7W/841	CFT7W/G23/841	60	4100K	5 1/4	10,000	400	340	82
			36809-2	\$	PL-S 7W/841	CFT7W/G23/841	50	4100K, Bulk	5 1/4	10,000	400	340	82
			33384-9	\$	PL-S 7W/850	CFT7W/G23/850	60	5000K	5 1/4	10,000	380	320	82
9	PL-S	G23	34257-6	\$	PL-S 9W/827	CFT9W/G23/827	60	2700K	6 1/2	10,000	600	510	82
			30665-4	\$	PL-S 9W/827	CFT9W/G23/827	50	2700K, Bulk	6 1/2	10,000	600	510	82
			32786-6	\$	PL-S 9W/835	CFT9W/G23/835	60	3500K	6 1/2	10,000	600	510	82
			33870-7	\$	PL-S 9W/841	CFT9W/G23/841	60	4100K	6 1/2	10,000	600	510	82
			36810-0	\$	PL-S 9W/841	CFT9W/G23/841	50	4100K, Bulk	6 1/2	10,000	600	510	82
			33385-6	\$	PL-S 9W/850	CFT9W/G23/850	60	5000K	6 1/2	10,000	570	485	82
13	PL-S	GX23	26219-6	\$	PL-S 13W/827	CFT13W/GX23/827	60	2700K	7	10,000	825	700	82
			26212-1	\$	PL-S 13W/827	CFT13W/GX23/827	50	2700K, Bulk	7	10,000	825	700	82
			26202-2	\$	PL-S 13W/830	CFT13W/GX23/830	60	3000K	7	10,000	825	700	82
			26214-7	\$	PL-S 13W/835	CFT13W/GX23/835	60	3500K	7	10,000	825	700	82
			26213-9	\$	PL-S 13W/841	CFT13W/GX23/841	60	4100K	7	10,000	825	700	82
			26229-5	\$	PL-S 13W/841	CFT13W/GX23/841	50	4100K, Bulk	7	10,000	825	700	82
			26216-2	\$	PL-S 13W/850	CFT13W/GX23/850	60	5000K	7	10,000	800	680	82

PL-C Cluster 2-Pin Fluorescent Lamps

13	PL-C	GX23-2	38310-9	\$	PL-C13W/827/USA/ALTO	CFQ13W/GX23/827	10	2700K	4 3/8	10,000	860	735	82
			38311-7	\$	PL-C13W/830/USA/ALTO	CFQ13W/GX23/830	10	3000K	4 3/8	10,000	860	735	82
			38312-5	\$	PL-C13W/835/USA/ALTO	CFQ13W/GX23/835	10	3500K	4 3/8	10,000	860	735	82
			38313-3	\$	PL-C13W/841/USA/ALTO	CFQ13W/GX23/841	10	4100K	4 3/8	10,000	860	735	82
		G24d-1	38314-1	\$	PL-C13W/827/ALTO	CFQ13W/G24d/827	10	2700K	5 1/2	10,000	900	770	82
			38315-8	\$	PL-C13W/830/ALTO	CFQ13W/G24d/830	10	3000K	5 1/2	10,000	900	770	82
18	PL-C	G24d-2	38316-6	\$	PL-C18W/827/ALTO	CFQ18W/G24d/827	10	2700K	6	10,000	1250	1070	82
			38317-4	\$	PL-C18W/830/ALTO	CFQ18W/G24d/830	10	3000K	6	10,000	1250	1070	82
			38318-2	\$	PL-C18W/835/ALTO	CFQ18W/G24d/835	10	3500K	6	10,000	1250	1070	82
			38319-0	\$	PL-C18W/841/ALTO	CFQ18W/G24d/841	10	4100K	6	10,000	1250	1070	82
26	PL-C	G24d-3	38321-6	\$	PL-C26W/827/ALTO	CFQ26W/G24d/827	10	2700K	6 13/16	10,000	1800	1545	82
			38322-4	\$	PL-C26W/830/ALTO	CFQ26W/G24d/830	10	3000K	6 13/16	10,000	1800	1545	82
			38323-2	\$	PL-C26W/835/ALTO	CFQ26W/G24d/835	10	3500K	6 13/16	10,000	1800	1545	82
			38324-0	\$	PL-C26W/841/ALTO	CFQ26W/G24d/841	10	4100K	6 13/16	10,000	1800	1545	82

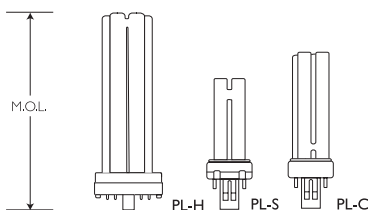
PL-C Cluster 2-Pin Fluorescent Lamps, 15mm Tube Diameter

20	PL-C	GX32d-2	20478-4	\$	PL-C15mm/22W/827	CFQ20W/GX32d/827	40	2700K	6	10,000	1200	995	82
27	PL-C	GX32d-3	20479-2	\$	PL-C15mm/28W/827	CFQ27W/GX32d/827	40	2700K	6 13/16	10,000	1600	1325	82

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Compact Fluorescent symbols and footnotes located on page 77

■ This product utilizes ALTO® Lamp Technology



COMPACT FLUORESCENT LAMPS

PL-C, PL-L, PL-T Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Generic Designation	Pkg. Qty. •	Description	MOL (In.)	Avg. Hrs. Life (202)	Approx. Initial (203) Lumens	Design Lumens (208)	CRI
PL-C Cluster 4-Pin Fluorescent Lamps, Electronic Operation													
13	PL-C	G24q-1	38325-7	\$	PL-C 13W/827/4P/ALTO	CFQ13W/G24q/827	10	2700K	5 3/8	12,000	900	775	82
			38326-5	\$	PL-C 13W/830/4P/ALTO	CFQ13W/G24q/830	10	3000K	5 3/8	12,000	900	775	82
			38327-3	\$	PL-C 13W/835/4P/ALTO	CFQ13W/G24q/835	10	3500K	5 3/8	12,000	900	775	82
			38328-1	\$	PL-C 13W/841/4P/ALTO	CFQ13W/G24q/841	10	4100K	5 3/8	12,000	900	775	82
18	PL-C	G24q-2	38329-9	\$	PL-C 18W/827/4P/ALTO	CFQ18W/G24q/827	10	2700K	5 1/2	12,000	1250	1075	82
			38330-7	\$	PL-C 18W/830/4P/ALTO	CFQ18W/G24q/830	10	3000K	5 1/2	12,000	1250	1075	82
			38332-3	\$	PL-C 18W/835/4P/ALTO	CFQ18W/G24q/835	10	3500K	5 1/2	12,000	1250	1075	82
			38333-1	\$	PL-C 18W/841/4P/ALTO	CFQ18W/G24q/841	10	4100K	5 1/2	12,000	1250	1075	82
26	PL-C	G24q-3	38334-9	\$	PL-C 26W/827/4P/ALTO	CFQ26W/G24q/827	10	2700K	6 1/2	12,000	1800	1550	82
			38335-6	\$	PL-C 26W/830/4P/ALTO	CFQ26W/G24q/830	10	3000K	6 1/2	12,000	1800	1550	82
			38336-4	\$	PL-C 26W/835/4P/ALTO	CFQ26W/G24q/835	10	3500K	6 1/2	12,000	1800	1550	82
			38337-2	\$	PL-C 26W/841/4P/ALTO	CFQ26W/G24q/841	10	4100K	6 1/2	12,000	1800	1550	82

PL-L Long Fluorescent Lamps

18	PL-L	2G11	34500-9	\$	PL-L 18W/830/4P	FT18W/2G11/830	25	3000K	8 15/16	15,000	1250	1125	82
			35932-3	\$	PL-L 18W/835/4P	FT18W/2G11/835	25	3500K	8 15/16	15,000	1250	1125	82
			34501-7	\$	PL-L 18W/841/4P	FT18W/2G11/841	25	4100K	8 15/16	15,000	1250	1125	82
24	PL-L	2G11	34505-8	\$	PL-L 24W/830/4P	FT24W/2G11/830	25	3000K	12 1/16	15,000	1800	1620	82
			35933-1	\$	PL-L 24W/835/4P	FT24W/2G11/835	25	3500K	12 1/16	15,000	1800	1620	82
			34508-2	\$	PL-L 24W/841/4P	FT24W/2G11/841	25	4100K	12 1/16	15,000	1800	1620	82
36	PL-L	2G11	34511-6	\$	PL-L 36W/830/4P	FT36W/2G11/830	25	3000K	16 3/8	15,000	2900	2610	82
			34942-3	\$	PL-L 36W/835/4P	FT36W/2G11/835	25	3500K	16 3/8	15,000	2900	2610	82
			34513-2	\$	PL-L 36W/841/4P	FT36W/2G11/841	25	4100K	16 3/8	15,000	2900	2610	82
40	PL-L	2G11	30042-6	\$	PL-L 40W/830/4P/RS/IS	FT40W/2G11/RS/830	25	3000K	22 1/2	20,000	3300	2970	82
			30043-4	\$	PL-L 40W/835/4P/RS/IS	FT40W/2G11/RS/835	25	3500K	22 1/2	20,000	3300	2970	82
			30044-2	\$	PL-L 40W/841/4P/RS/IS	FT40W/2G11/RS/841	25	4100K	22 1/2	20,000	3300	2970	82
			13798-3	†	PL-L 40W/841/4P/RS/IS BULK	FT40W/2G11/RS/841	50	4100K	22 1/2	20,000	3300	2970	82
50	PL-L	2G11	34747-6	\$	PL-L 50W/830/4P/RS	FT50W/2G11/RS/830	25	3000K	22 1/2	20,000	4300	3870	82
			34753-4	\$	PL-L 50W/835/4P/RS	FT50W/2G11/RS/835	25	3500K	22 1/2	20,000	4300	3870	82
			34770-8	\$	PL-L 50W/841/4P/RS	FT50W/2G11/RS/841	25	4100K	22 1/2	20,000	4300	3870	82
55	PL-L	2G11	13844-6	†	PL-L 55W/950/4P/RS	FT55W/2G11/RS/950	25	5000K	21 3/8	20,000	3650	3358	91
80	PL-L	2G11	38697-9	\$	PL-L 80W/830/4P	FT80W/2G11/830	25	3000K	22 1/2	20,000	6000	5400	82
			38698-7	\$	PL-L 80W/835/4P	FT80W/2G11/835	25	3500K	22 1/2	20,000	6000	5400	82
			38699-5	\$	PL-L 80W/841/4P	FT80W/2G11/841	25	4100K	22 1/2	20,000	6000	5400	82

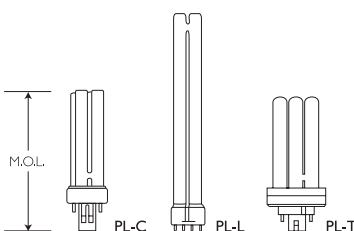
PL-T Triple 4-Pin Fluorescent Lamps

18	PL-T	GX24q-2	38437-0	\$	PL-T 18W/827/4P/ALTO	CFTR18W/GX24q/827	12	2700K	4 3/8	12,000	1200	1020	82
			26802-9	\$	PL-T 18W/830/4P/ALTO	CFTR18W/GX24q/830	12	3000K	4 3/8	12,000	1200	1020	82
			26820-1	\$	PL-T 18W/835/4P/ALTO	CFTR18W/GX24q/835	12	3500K	4 3/8	12,000	1200	1020	82
			26822-7	\$	PL-T 18W/841/4P/ALTO	CFTR18W/GX24q/841	12	4100K	4 3/8	12,000	1200	1020	82
26	PL-T	GX24q-3	38440-4	\$	PL-T 26W/827/4P/ALTO	CFTR26W/GX24q/827	12	2700K	5	12,000	1800	1530	82
			26823-5	\$	PL-T 26W/830/4P/ALTO	CFTR26W/GX24q/830	12	3000K	5	12,000	1800	1530	82
			26824-3	\$	PL-T 26W/835/4P/ALTO	CFTR26W/GX24q/835	12	3500K	5	12,000	1800	1530	82
			26825-0	\$	PL-T 26W/841/4P/ALTO	CFTR26W/GX24q/841	12	4100K	5	12,000	1800	1530	82
32	PL-T	GX24q-3	38443-8	\$	PL-T 32W/827/4P/ALTO	CFTR32W/GX24q/827	12	2700K	5 5/8	12,000	2400	2040	82
			26832-6	\$	PL-T 32W/830/4P/ALTO	CFTR32W/GX24q/830	12	3000K	5 5/8	12,000	2400	2040	82
			26833-4	\$	PL-T 32W/835/4P/ALTO	CFTR32W/GX24q/835	12	3500K	5 5/8	12,000	2400	2040	82
			26872-2	\$	PL-T 32W/841/4P/ALTO	CFTR32W/GX24q/841	12	4100K	5 5/8	12,000	2400	2040	82
42	PL-T	GX24q-4	38450-3	\$	PL-T 42W/827/4P/ALTO	CFTR42W/GX24q/827	12	2700K	6 3/8	12,000	3200	2720	82
			26873-0	\$	PL-T 42W/830/4P/ALTO	CFTR42W/GX24q/830	12	3000K	6 3/8	12,000	3200	2720	82
			26875-5	\$	PL-T 42W/835/4P/ALTO	CFTR42W/GX24q/835	12	3500K	6 3/8	12,000	3200	2720	82
			26876-3	\$	PL-T 42W/841/4P/ALTO	CFTR42W/GX24q/841	12	4100K	6 3/8	12,000	3200	2720	82

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

Compact Fluorescent symbols and footnotes located on page 77

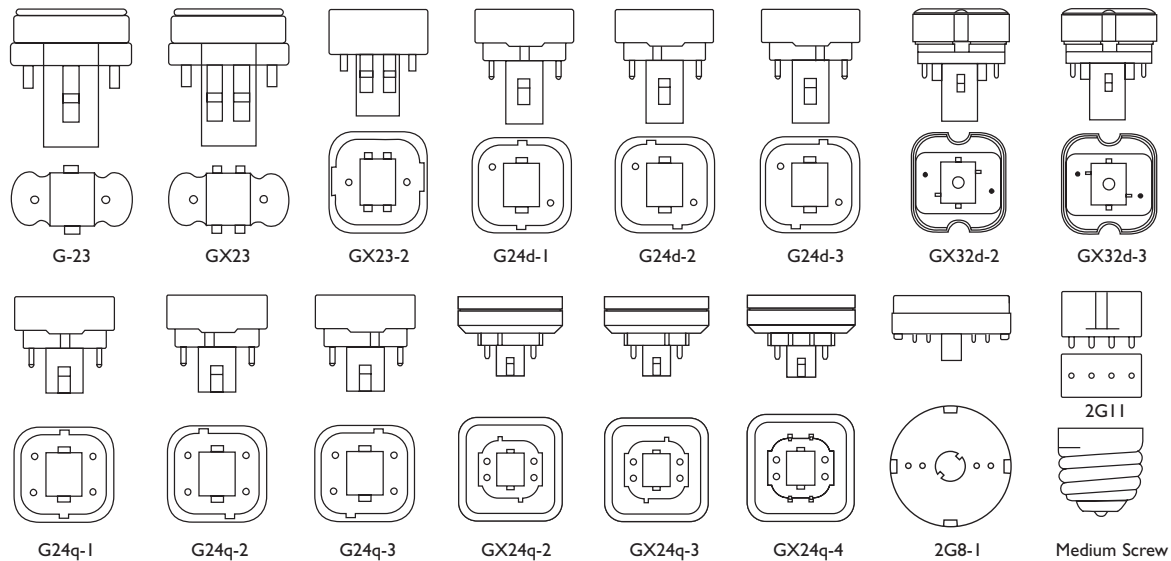
■ This product utilizes ALTO® Lamp Technology



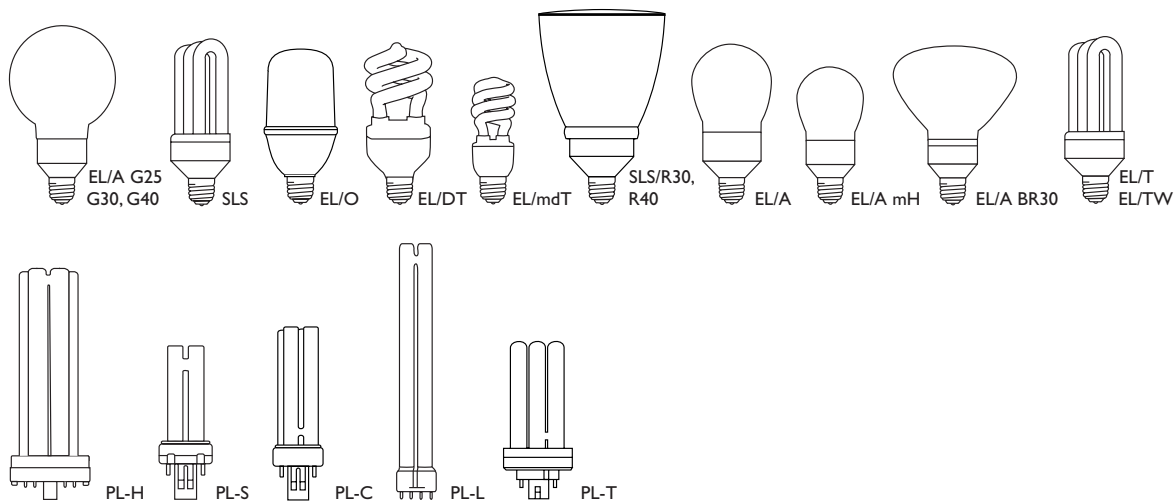
COMPACT FLUORESCENT LAMPS

Base Types and Bulb Shapes

Base Types (Not Actual Sizes)



Bulb Shapes (Not Actual Sizes)



ALTO® SILHOUETTE T5 Fluorescent Lamps

ALTO® SILHOUETTE T5 High Output Fluorescent Lamps:
Powerful, Environmentally-Responsible Ultra-Slim Lamps

Miniaturization: Slim Profile Lamp and Ballast

Operates on Programmed Start Electronic Ballasts

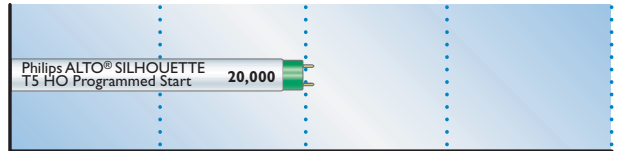
Environmentally Responsible: Low mercury—TCLP*-compliant;
energy efficient; long life

Sustainable Lighting Solution: Less mercury and fewer lamps in landfills,
combined with energy efficiency, reduces the impact on the environment

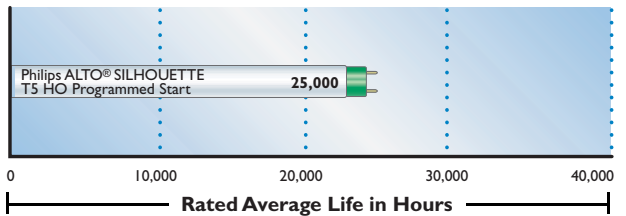
Ideal for Medium and High Bay Retail

Ideal for Industrial Applications

ALTO® SILHOUETTE™ T5 HO Lamp Rated Average Life
Based on 3 Hours Per Start



ALTO® SILHOUETTE™ T5 HO Lamp Rated Average Life
Based on 12 Hours Per Start



ALTO SILHOUETTE T5 Warranty: 24 months



Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life, Hrs.		Approx. Initial Lumens (203, 204)	Design Lumens (208)	CRI
							3-Hr. Start (202)	12-Hr. Start (241)			
ALTO® SILHOUETTE™ T5 High Output Fluorescent Lamps T5 Miniature Bipin; Programmed Start											
54	29026-2	(E) \$	F54T5/830/HO/ALTO	40	TL 830, 3000K	46	20,000	25,000	5000	4750	85
	29028-8	(E) \$	F54T5/835/HO/ALTO	40	TL 835, 3500K	46	20,000	25,000	5000	4750	85
	29083-3	(E) \$	F54T5/841/HO/ALTO	40	TL 841, 4100K	46	20,000	25,000	5000	4750	85
	13510-3	(E) \$	F54T5/850/HO/ALTO	40	TL 850, 5000K	46	20,000	25,000	5000	4750	85

Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life, Hrs. (202)	Approx. Initial Lumens (203, 204)	Design Lumens (208)	CRI
SILHOUETTE Series 2'-5' T5 Fluorescent Lamps T5 Miniature Bipin; Programmed Start										
14	23077-1	\$	F14T5/830	40	TL 830, 3000K	22	20,000	1350	1275	85
	23079-7	\$	F14T5/835	40	TL 835, 3500K	22	20,000	1350	1275	85
	23080-5	\$	F14T5/841	40	TL 841, 4100K	22	20,000	1350	1275	85
21	23081-3	\$	F21T5/830	40	TL 830, 3000K	34	20,000	2100	2000	85
	23082-1	\$	F21T5/835	40	TL 835, 3500K	34	20,000	2100	2000	85
	23083-9	\$	F21T5/841	40	TL 841, 4100K	34	20,000	2100	2000	85
28	23084-7	(E) \$	F28T5/830	40	TL 830, 3000K	46	20,000	2900	2750	85
	23085-4	(E) \$	F28T5/835	40	TL 835, 3500K	46	20,000	2900	2750	85
	23086-2	(E) \$	F28T5/841	40	TL 841, 4100K	46	20,000	2900	2750	85
35	23088-8	\$	F35T5/830	40	TL 830, 3000K	58	20,000	3650	3450	85
	23091-2	\$	F35T5/835	40	TL 835, 3500K	58	20,000	3650	3450	85
	23095-3	\$	F35T5/841	40	TL 841, 4100K	58	20,000	3650	3450	85

SILHOUETTE Series 2'-5' T5 High Output Fluorescent Lamps T5 Miniature Bipin; Programmed Start										
24	29019-7	\$	F24T5/830/HO	40	TL 830, 3000K	22	20,000	2000	1900	85
	29020-5	\$	F24T5/835/HO	40	TL 835, 3500K	22	20,000	2000	1900	85
	29021-3	\$	F24T5/841/HO	40	TL 841, 4100K	22	20,000	2000	1900	85
39	29022-1	\$	F39T5/830/HO	40	TL 830, 3000K	34	20,000	3500	3325	85
	29023-9	\$	F39T5/835/HO	40	TL 835, 3500K	34	20,000	3500	3325	85
	29025-4	\$	F39T5/841/HO	40	TL 841, 4100K	34	20,000	3500	3325	85
80	29084-1	\$	F80T5/830/HO	40	TL 830, 3000K	58	20,000	7000	6650	85
	29088-2	\$	F80T5/841/HO	40	TL 841, 4100K	58	20,000	7000	6650	85

For the most current product information, go to www.nam.lighting.philips.com/us/catalog/

Fluorescent symbols and footnotes located on page 77

□ This product utilizes ALTO® Lamp Technology

* The TCLP is the US EPA's Toxicity Characteristic Leaching Procedure.



T5 Miniature Bipin

Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty. •	Description	Nom. Length (In.)	Rated Avg. Life, Hrs. (202)	Approx. Initial Lumens (203, 204)	Design Lumens (208)	CRI
SILHOUETTE™ Series T5 Circular Fluorescent Lamps 2GX13 Base; Programmed Start										
22	29010-6	\$	FC9T5/830	10	TL 830, 3000K	9 OD	16,000	1800	1530	85
	29011-4	\$	FC9T5/835	10	TL 835, 3500K	9 OD	16,000	1800	1530	85
	29012-2	\$	FC9T5/841	10	TL 841, 4100K	9 OD	16,000	1800	1530	85
40	29014-8	\$	FC12T5/830	10	TL 830, 3000K	12 OD	16,000	3300	2805	85
	29016-3	\$	FC12T5/835	10	TL 835, 3500K	12 OD	16,000	3300	2805	85
	29017-1	\$	FC12T5/841	10	TL 841, 4100K	12 OD	16,000	3300	2805	85

SILHOUETTE Series T5 High Output Circular Fluorescent Lamps 2GX13 Base; Programmed Start										
55	38479-2	\$	FC12T5/830/HO	10	TL 830, 3000K	12 OD	16,000	4400	3750	85
	38480-0	\$	FC12T5/841/HO	10	TL 841, 4100K	12 OD	16,000	4400	3750	85

Preheat Fluorescent Lamps T5 Miniature Bipin; Requires Use of Starters										
4	33236-1		F4T5/CW	25	Cool White, 4100K	6	6000	135	95	62
	33241-1		F6T5/CW	25	Cool White, 4100K	9	7500	295	230	62
	33242-9		F6T5/D	25	Daylight, 6500K	9	7500	230	180	79
8	33252-8		F8T5/WW	25	Warm White, 3000K	12	7500	400	300	53
	33247-8		F8T5/CW	25	Cool White, 4100K	12	7500	400	300	62
	20702-7	□	F8T5/30U	25	Ultralume, 3000K	12	7500	450	360	85
	33249-4		F8T5/D	25	Daylight, 6500K	12	7500	330	265	79
13	33253-6		F13T5/CW	25	Cool White, 4100K	21	7500	820	655	62
	20703-5	□	F13T5/30U	25	Ultralume, 3000K	21	7500	1000	800	85

For the most current product information, go to www.nam.lighting.philips.com/us/catalog/

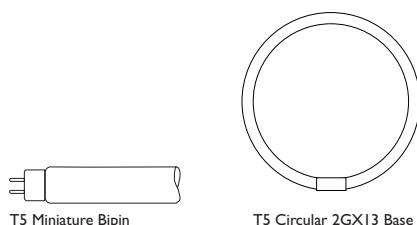
Fluorescent symbols and footnotes located on page 77

T5 Lumens at 35°C and 25°C

LAMP TYPE	INITIAL LUMENS AT 35°C	INITIAL LUMENS AT 25°C
F14T5	1350	1200
F21T5	2100	1900
F28T5	2900	2600
F35T5	3650	3300
F24T5/HO	2000	1800
F39T5/HO	3500	3150
F54T5/HO	5000	4500
F80T5/HO	7000	6300

SILHOUETTE and SILHOUETTE High Output Dimensions (226)

TYPE	A MAX.		B MIN.		B MAX.		C MAX.	
	inches	mm	inches	mm	inches	mm	inches	mm
T5 14W/24W	21.61	549.0	21.80	553.7	21.89	556.1	22.17	563.2
T5 21W/39W	33.42	849.0	33.61	853.7	33.70	856.1	33.98	863.2
T5 28W/54W	45.24	1149.0	45.42	1153.7	45.52	1156.1	45.80	1163.2
T5 35W/80W	57.05	1449.0	57.23	1453.7	57.33	1456.1	57.61	1463.2



Alto® Universal T8 Fluorescent Lamps

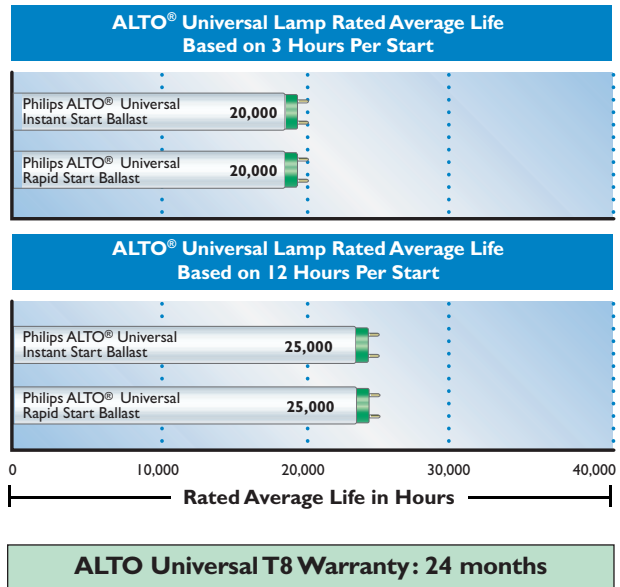
Philips Exclusive Universal Design: The only T8 lamp to deliver full rated average life on all T8 ballast types (Instant Start, Rapid Start, Programmed Start and Hybrid ballasts)

Environmentally Responsible: Low mercury—TCLP*-compliant; energy efficient; long life

Sustainable Lighting Solution: Less mercury and fewer lamps in landfills, combined with energy efficiency, reduces the impact on the environment

Outstanding Lumen Maintenance: HI-VISION® Phosphor combined with Philips exclusive cathode guard delivers 95% lumen maintenance and reduced lamp-end blackening

Enhanced CRI: 86 CRI for TL80 lamps; 78 CRI for TL70 lamps



Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life, Hrs. 3-Hr. Start (202)	12-Hr. Start (241)	Approx. Initial Lumens (203, 204)	Design Lumens (208)	CRI
ALTO Universal T8 Fluorescent Lamps T8 Medium Bipin											
17	36787-0	\$	F17T8/TL830/ALTO	25	TL 830, 3000K	24	20,000	25,000	1400	1300	86
	36791-2	\$	F17T8/TL835/ALTO	25	TL 835, 3500K	24	20,000	25,000	1400	1300	86
	36793-8	\$	F17T8/TL841/ALTO	25	TL 841, 4100K	24	20,000	25,000	1400	1300	86
	36807-6	\$	F17T8/TL730/ALTO	25	TL 730, 3000K	24	20,000	25,000	1325	1200	78
	36808-4	\$	F17T8/TL735/ALTO	25	TL 735, 3500K	24	20,000	25,000	1325	1200	78
	36812-6	\$	F17T8/TL741/ALTO	25	TL 741, 4100K	24	20,000	25,000	1325	1200	78
25	36813-4	\$	F25T8/TL830/ALTO	25	TL 830, 3000K	36	20,000	25,000	2225	2050	86
	36814-2	\$	F25T8/TL835/ALTO	25	TL 835, 3500K	36	20,000	25,000	2225	2050	86
	36825-8	\$	F25T8/TL841/ALTO	25	TL 841, 4100K	36	20,000	25,000	2225	2050	86
	36826-6	\$	F25T8/TL730/ALTO	25	TL 730, 3000K	36	20,000	25,000	2125	1925	78
	36828-2	\$	F25T8/TL735/ALTO	25	TL 735, 3500K	36	20,000	25,000	2125	1925	78
	36829-0	\$	F25T8/TL741/ALTO	25	TL 741, 4100K	36	20,000	25,000	2125	1925	78
32	24667-8	ⓔ \$	F32T8/TL830/ALTO	25	TL 830, 3000K	48	20,000	25,000	2950	2800	86
	27236-9	ⓔ \$	F32T8/TL830/ALTO PLZ	1350	TL 830, 3000K	48	20,000	25,000	2950	2800	86
	24670-2	ⓔ \$	F32T8/TL835/ALTO	25	TL 835, 3500K	48	20,000	25,000	2950	2800	86
	27233-6	ⓔ \$	F32T8/TL835/ALTO PLZ	1350	TL 835, 3500K	48	20,000	25,000	2950	2800	86
	24671-0	ⓔ \$	F32T8/TL841/ALTO	25	TL 841, 4100K	48	20,000	25,000	2950	2800	86
	27235-1	ⓔ \$	F32T8/TL841/ALTO PLZ	1350	TL 841, 4100K	48	20,000	25,000	2950	2800	86
	27229-4	ⓔ \$	F32T8/TL850/ALTO	25	TL 850, 5000K	48	20,000	25,000	2950	2800	86
	27252-6	ⓔ \$	F32T8/TL730 ALTO	25	TL 730, 3000K	48	20,000	25,000	2800	2660	78
	27282-3	ⓔ \$	F32T8/TL730/ALTO PLZ	1350	TL 730, 3000K	48	20,000	25,000	2800	2660	78
	27249-2	ⓔ \$	F32T8/TL735/ALTO	25	TL 735, 3500K	48	20,000	25,000	2800	2660	78
	27259-1	ⓔ \$	F32T8/TL735/ALTO PLZ	1350	TL 735, 3500K	48	20,000	25,000	2800	2660	78
	27248-4	ⓔ \$	F32T8/TL741/ALTO	25	TL 741, 4100K	48	20,000	25,000	2800	2660	78
	38351-3	ⓔ \$	F32T8/TL741/ALTO	10	TL 741, 4100K, 10 Pk.	48	20,000	25,000	2800	2660	78
	27255-9	ⓔ \$	F32T8/TL741/ALTO PLZ	1350	TL 741, 4100K	48	20,000	25,000	2800	2660	78
	27268-2	ⓔ \$	F32T8/TL750/ALTO	25	TL 750, 5000K	48	20,000	25,000	2700	2550	78

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

Fluorescent symbols and footnotes located on page 77

ⓔ This product utilizes ALTO® Lamp Technology

* The TCLP is the US EPA's Toxicity Characteristic Leaching Procedure.



T8 Medium Bipin



PLUS T8 Fluorescent Lamps

Long Life: Up to 36,000 hours rated average life; 50% more life than standard T8 lamps means reduced maintenance and disposal costs

Environmentally Responsible: Low mercury—TCLP*-compliant; energy efficient; long life

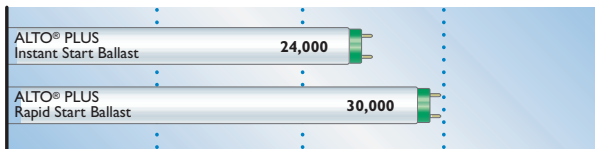
Sustainable Lighting Solution: Less mercury and fewer lamps in landfills, combined with energy efficiency, reduces the impact on the environment

Outstanding Lumen Maintenance: HI-VISION® Phosphor combined with Philips exclusive cathode guard delivers 95% lumen maintenance and reduced lamp-end blackening

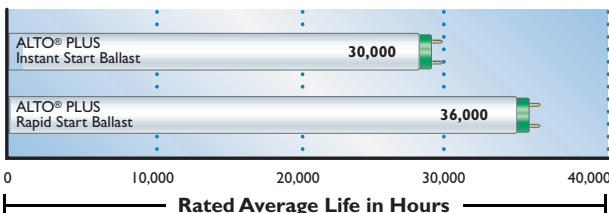
Enhanced CRI: 86 CRI for TL80 lamps; 78 CRI for TL70 lamps

PHILIPS
ALTO PLUS
F32T8/TL830/PLUS/ALTO
32 WATT
Alto Collection

ALTO® PLUS Lamp Rated Average Life Based on 3 Hours Per Start



ALTO® PLUS Lamp Rated Average Life Based on 12 Hours Per Start



ALTO PLUS T8 Warranty: 30 months

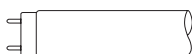
Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life, Hrs. 3-Hr. Start (202)	Rated Avg. Life, Hrs. 12-Hr. Start (241)	Approx. Initial Lumens (203, 204)	Design Lumens (208, 239)	CRI
ALTO PLUS T8 Fluorescent Lamps T8 Medium Bipin Featuring HI-VISION® Phosphor											
15	38419-8	(E)◇□\$	F15T8/TL865/PLUS/ALTO	24	TL 865, 6500K	18	24,000	30,000	975	925	86
17	38215-0	(E)\$	F17T8/TL865/PLUS/ALTO	25	TL 865, 6500K	24	24,000	30,000	1300	1235	86
25	38258-0	(E)\$	F25T8/TL865/PLUS/ALTO	25	TL 865, 6500K	36	24,000	30,000	2150	2040	86
32	36000-8	(E)\$	F32T8/TL830/PLUS/ALTO	25	TL 830, 3000K	48	30,000	36,000	2950	2800	86
	36001-6	(E)\$	F32T8/TL835/PLUS/ALTO	25	TL 835, 3500K	48	30,000	36,000	2950	2800	86
	36002-4	(E)\$	F32T8/TL841/PLUS/ALTO	25	TL 841, 4100K	48	30,000	36,000	2950	2800	86
	13686-1	(E)\$	F32T8/TL841/PLUS/ALTO PLZ	1350	TL 841, 4100K	48	30,000	36,000	2950	2800	86
	36003-2	(E)\$	F32T8/TL850/PLUS/ALTO	25	TL 850, 5000K	48	30,000	36,000	2950	2800	86
	38261-4	(E)\$	F32T8/TL865/PLUS/ALTO	25	TL 865, 6500K	48	30,000	36,000	2800	2660	86
	36004-0	(E)\$	F32T8/TL730/PLUS/ALTO	25	TL 730, 3000K	48	30,000	36,000	2800	2660	78
	36005-7	(E)\$	F32T8/TL735/PLUS/ALTO	25	TL 735, 3500K	48	30,000	36,000	2800	2660	78
	38383-6	(E)\$	F32T8/TL735/PLUS/ALTO PLZ	1350	TL 735, 3500K	48	30,000	36,000	2800	2660	78
	36013-1	(E)\$	F32T8/TL741/PLUS/ALTO	25	TL 741, 4100K	48	30,000	36,000	2800	2660	78
32	38384-4	(E)\$	F32T8/TL741/PLUS/ALTO PLZ	1350	TL 741, 4100K	48	30,000	36,000	2800	2660	78
	36014-9	(E)\$	F32T8/TL750/PLUS/ALTO	25	TL 750, 5000K	48	30,000	36,000	2700	2550	78

For the most current product information, go to www.nam.lighting.philips.com/us/catalog/

Fluorescent symbols and footnotes located on page 77

□ This product utilizes ALTO® Lamp Technology

*The TCLP is the US EPA's Toxicity Characteristic Leaching Procedure.



T8 Medium Bipin



Advantage T8 Fluorescent Lamps

High Performance: 3100 lumens is 10% more than standard T8 lamps

Long Life: Up to 36,000 hours rated average life; 50% more life than standard T8 lamps means reduced maintenance and disposal costs

Environmentally Responsible: Low mercury—TCLP*-compliant; energy efficient; long life

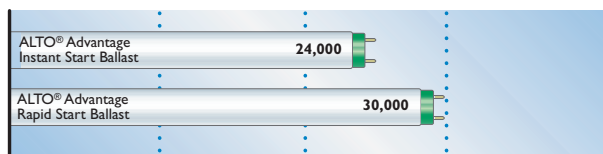
Sustainable Lighting Solution: Less mercury and fewer lamps in landfills, combined with energy efficiency, reduces the impact on the environment

Ultimate System Solution: Higher lumens enables multiple system options to maximize energy saving and reduce lighting costs; fully dimmable without burn-in; ideal for light harvesting

Outstanding Lumen Maintenance: HI-VISION® Phosphor combined with Philips exclusive cathode guard delivers 95% lumen maintenance and reduced lamp-end blackening

Enhanced CRI: 86 CRI for TL80 lamps

ALTO® Advantage Lamp Rated Average Life Based on 3 Hours Per Start



ALTO® Advantage Lamp Rated Average Life Based on 12 Hours Per Start



0 10,000 20,000 30,000 40,000
Rated Average Life in Hours

ALTO Advantage T8 Warranty: 36 months



Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life, Hrs.		Approx. Initial Lumens (203, 204)	Design Lumens (208, 239)	CRI
							3-Hr. Start (202)	12-Hr. Start (241)			
ALTO Advantage T8 Fluorescent Lamps T8 Medium Bipin Featuring HI-VISION® Phosphor											
32	27064-5	(E) □ \$	F32T8/ADV830/ALTO	25	Advantage 830, 3000K	48	30,000	36,000	3100	2950	86
	27065-2	(E) □ \$	F32T8/ADV835/ALTO	25	Advantage 835, 3500K	48	30,000	36,000	3100	2950	86
	27066-0	(E) □ \$	F32T8/ADV841/ALTO	25	Advantage 841, 4100K	48	30,000	36,000	3100	2950	86
	27068-6	(E) □ \$	F32T8/ADV850/ALTO	25	Advantage 850, 5000K	48	30,000	36,000	3100	2950	86

ALTO Advantage T8 Systems vs. Standard T8 Systems

Energy Savings: 2 Lamp vs. 2 Lamp System

Electronic Ballast	Ballast Factor	No. of Lamps	Lamp Watts	Standard T8 Lumens	Advantage T8 Lumens	System Watts	Savings
Standard T8	0.87	2	32	2850		58	
Reduced Light Output T8	0.75	2	32		3100	51	\$2.80/yr

Energy Savings: 2 Lamp vs. 3 Lamp System

Electronic Ballast	Ballast Factor	No. of Lamps	Lamp Watts	Standard T8 Lumens	Advantage T8 Lumens	System Watts	Savings
Standard T8	0.87	3	32	2850		88	
Increased Light Output T8	1.20	2	32		3100	78	\$4.00/yr

Combine Advantage T8 lamps with Reduced Light Output Electronic Ballasts, with these Results:

- ▶ Produce comparable light output
- ▶ Save 7 system watts vs. standard T8 system
- ▶ Save \$2.80 per fixture per year
- ▶ Energy savings based on 4000 hrs/yr @ \$.10 kw/hr

Combine Advantage T8 Lamps with Increased Light Output Ballasts. A 2 Lamp Advantage T8 System vs. a 3 Lamp Standard T8 System will:

- ▶ Produce comparable light output
- ▶ Save 10 system watts
- ▶ Save \$4.00 per fixture per year
- ▶ Energy savings based on 4000 hrs/yr @ \$.10 kw/hr
- ▶ Reduce lighting installation costs (lamps, ballasts, fixtures and labor)
- ▶ Philips Advantage T8 lamps operate on ballast with ballast factors up to 1.32 with warranty intact

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

Fluorescent symbols and footnotes located on page 77

□ This product utilizes ALTO® Lamp Technology

* The TCLP is the US EPA's Toxicity Characteristic Leaching Procedure.



T8 Medium Bipin



ALTO® Energy Advantage T8: Superior Energy-Saving, Environmentally-Responsible Lamps. Ideal for any lighting application requiring maximum energy savings.



Energy Advantage T8 Fluorescent Lamps

Replace standard 32 watt T8 lamps with Philips ALTO Energy Advantage 25 watt T8 and save 7 watts per lamp instantly!

Replace standard 32 watt T8 lamps with Philips ALTO Energy Advantage 30 watt T8 and save 2 watts per lamp instantly!

Environmentally Responsible: Low mercury—TCLP*-compliant; energy efficient; long life

Sustainable Lighting Solution: Less mercury and fewer lamps in landfills, combined with energy efficiency, reduces the impact on the environment

High Energy Efficiency: Replace 32 watt T8 lamps with 25 watt or 30 watt T8 lamps and save in energy costs

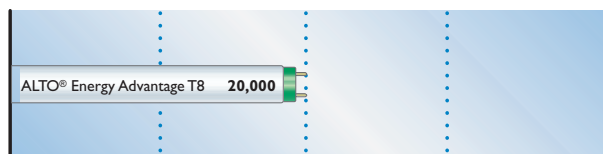
Instant Start Operation: Operates on any standard Instant Start system

Enhanced CRI: 85 CRI for 25 watt lamps/86 CRI for 30 watt lamps

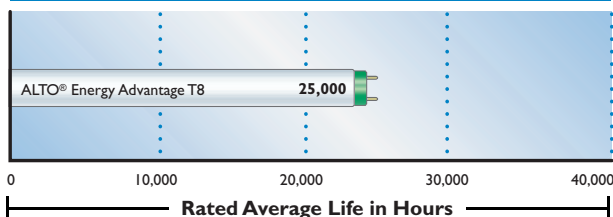
PHILIPS
ENERGY ADVANTAGE
F32T8/ADV841/EW

Alto® Collection

ALTO® Energy Advantage Lamp Rated Average Life Based on 3 Hours Per Start



ALTO® Energy Advantage Lamp Rated Average Life Based on 12 Hours Per Start



ALTO Energy Advantage T8 Warranty: 24 months

Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life, Hrs.		Approx. Initial Lumens	Design Lumens	CRI
	046677-						3-Hr. Start (202)	12-Hr. Start (241)	(203, 204)	(208)	
ALTO Energy Advantage T8 Fluorescent Lamps T8 Medium Bipin Featuring HI-VISION® Phosphor											
25	13781-0	(E) \$	F32T8/ADV830/XEW/ALTO	25	Advantage 830, 3000K	48		25,000	2400	2280	85
	13782-8	(E) \$	F32T8/ADV835/XEW/ALTO	25	Advantage 835, 3500K	48		25,000	2400	2280	85
	13783-6	(E) \$	F32T8/ADV841/XEW/ALTO	25	Advantage 835, 4100K	48		25,000	2400	2280	85
	13784-4	(E) \$	F32T8/ADV850/XEW/ALTO	25	Advantage 841, 5000K	48		25,000	2400	2280	85
30	38780-3	(E) \$	F32T8/ADV830/EW/ALTO	25	Advantage 830, 3000K	48	20,000	25,000	2900	2750	86
	38781-1	(E) \$	F32T8/ADV835/EW/ALTO	25	Advantage 835, 3500K	48	20,000	25,000	2900	2750	86
	38783-7	(E) \$	F32T8/ADV841/EW/ALTO	25	Advantage 841, 4100K	48	20,000	25,000	2900	2750	86

ALTO Energy Advantage 25W T8 Savings

Save 7 Watts Instantly			
7 watts per lamp saved	Energy Savings Calculator		
	Annual Operating Hours*	Savings Over Lamp Life	
KWH Rate	4380	8760	25,000 hrs.
\$0.06	\$1.84	\$3.68	\$10.50
\$0.08	\$2.45	\$4.90	\$14.00
\$0.10	\$3.07	\$6.13	\$17.50
\$0.12	\$3.68	\$7.36	\$21.00
\$0.20	\$6.13	\$12.26	\$35.00

*4380 hours are based on operating the lamps 12 hours per day/7 days per week.
8760 hours are based on operating the lamps 24 hours per day/7 days per week.

Cost of Ownership Savings

ALTO Energy Advantage T8 Fluorescent Lamps vs. Standard T8 Lamps.

General Overview

ALTO Energy Advantage 25 watt T8 fluorescent lamps provide energy savings of up to 25% versus standard 32 watt T8, so the benefits and financial impact can be significant.

Benefits

By using ALTO Energy Advantage 25W T8 lamps the energy savings of 7 watts per lamp can be achieved instantly by simply changing the lamp.

Financial Impact

Energy Savings per Lamp	7 Watts
Operating Hours per Year	8760 hours, continuous burn
Cost per KWh	\$.10

Cost of Ownership Savings = \$6.13 per lamp per year

For the most current product information, go to www.nam.lighting.philips.com/us/catalog/

Fluorescent symbols and footnotes located on page 77

□ This product utilizes ALTO® Lamp Technology

* The TCLP is the US EPA's Toxicity Characteristic Leaching Procedure.



T8 Medium Bipin

FLUORESCENT LAMPS

T8 Lamps—Professional

Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life, Hrs. 3-Hr. Start (202)	Rated Avg. Life, Hrs. 12-Hr. Start (241)	Approx. Initial Lumens (203, 204)	Design Lumens (208)	CRI
Rapid Start Fluorescent Lamps T8 Medium Bipin; High CRI											
17	22083-0	□ \$	F17T8/TL930	26	TL 930, 3000K	24	20,000	20,000	910	850	95
	22154-9	\$	F17T8/TL950	25	TL 950, 5000K	24	20,000	20,000	910	850	98
25	22158-0	□ \$	F25T8/TL930	25	TL 930, 3000K	36	20,000	20,000	1550	1450	95
	22159-8	\$	F25T8/TL950	25	TL 950, 5000K	36	20,000	20,000	1550	1450	98
32	20904-9	□ \$	F32T8/TL930	25	TL 930, 3000K	48	20,000	20,000	2000	1860	95
	20905-6	\$	F32T8/TL950	25	TL 950, 5000K	48	20,000	20,000	2000	1860	98

Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life, Hrs. (202)	Approx. Initial Lumens (203, 204)	Design Lumens (208)	CRI
U-Bent Rapid Start Fluorescent Lamps T8 Medium Bipin with 6" Long Spacing (212)										
32	37897-6	\$	FB32T8/TL830/6/ALTO	20	TL 830, 3000K	22 7/8	20,000	2800	2535	85
	37900-8	\$	FB32T8/TL835/6/ALTO	20	TL 835, 3500K	22 7/8	20,000	2800	2535	85
	37902-4	\$	FB32T8/TL841/6/ALTO	20	TL 841, 4100K	22 7/8	20,000	2800	2535	85
	37880-2	\$	FB32T8/TL850/6/ALTO	20	TL 850, 5000K	22 7/8	20,000	2750	2500	84
	37892-7	\$	FB32T8/TL730/6/ALTO	20	TL 730, 3000K	22 7/8	20,000	2650	2370	75
	37893-5	\$	FB32T8/TL735/6/ALTO	20	TL 735, 3500K	22 7/8	20,000	2650	2370	75
	37894-3	\$	FB32T8/TL741/6/ALTO	20	TL 741, 4100K	22 7/8	20,000	2650	2370	75
	37882-8	\$	FB32T8/TL750/6/ALTO	20	TL 750, 5000K	22 7/8	20,000	2600	2325	75

Rapid Start Fluorescent Lamps T8 Medium Bipin										
40	36831-6	\$	F40T8/TL830/ALTO	25	TL 830, 3000K	60	20,000	3775	3500	86
	36834-0	\$	F40T8/TL835/ALTO	25	TL 835, 3500K	60	20,000	3775	3500	86
	36847-2	\$	F40T8/TL841/ALTO	25	TL 841, 4100K	60	20,000	3775	3500	86
	36851-4	\$	F40T8/TL730/ALTO	25	TL 730, 3000K	60	20,000	3600	3250	78
	36852-2	\$	F40T8/TL735/ALTO	25	TL 735, 3500K	60	20,000	3600	3250	78
	36853-0	\$	F40T8/TL741/ALTO	25	TL 741, 4100K	60	20,000	3600	3250	78

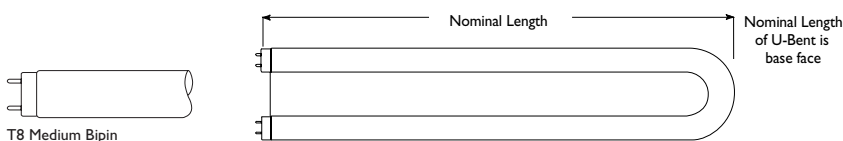
Preheat Fluorescent Lamps T8 Medium Bipin Linear Fluorescent Lamps; Requires Use of Starters (202)										
15	37823-2	F15T8D/ALTO	24	Daylight, 6500K	18	7500	750	660	79	
	38298-6	F15T8/WW/ALTO	24	Warm White, 3000K	18	7500	870	740	53	
	36720-1	F15T8/CW/ALTO	24	Cool White, 4100K	18	7500	870	765	62	
	36436-4	F15T8/CW BULK	96	Cool White, 4100K	18	7500	850	750	62	
	39226-6	F15T8/PLANT	6	Plant Lite, Sleeved	18	7500	410	—	—	
30	26063-8	F30T8/D	24	Daylight, 6500K	36	7500	1500	1350	79	
	38691-2	F30T8/CW/ALTO	24	Cool White, 4100K	36	7500	2200	2000	62	

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

Fluorescent symbols and footnotes located on page 77

■ This product utilizes ALTO® Lamp Technology

*The TCLP is the US EPA's Toxicity Characteristic Leaching Procedure.





ALTO® PLUS Slimline T8 8-Foot Fluorescent Lamps

Long Life, Environmentally-Responsible Lamps.
Ideal for applications where long life is important.

ALTO® PLUS Slimline T8 8-Ft. Fluorescent Lamps

Long Life: Up to 30,000 hours rated average life; 60% more life than standard T8 lamps means reduced maintenance and disposal costs

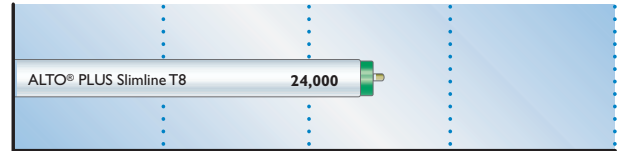
Environmentally Responsible: Low mercury—TCLP*-compliant; energy efficient; long life

Sustainable Lighting Solution: Less mercury and fewer lamps in landfills, combined with energy efficiency, reduces the impact on the environment

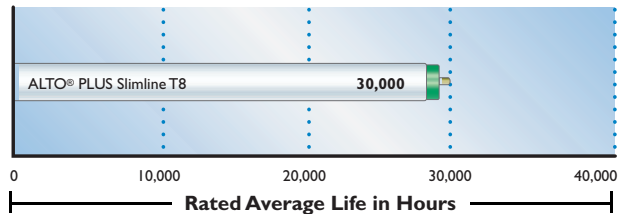
Outstanding Lumen Maintenance: HI-VISION® Phosphor combined with Philips exclusive cathode guard delivers 90% lumen maintenance and reduced lamp-end blackening

Enhanced CRI: 86 CRI for TL80 lamps; 78 CRI for TL70 lamps

ALTO® PLUS Slimline Lamp Rated Average Life Based on 3 Hours Per Start



ALTO® PLUS Slimline Lamp Rated Average Life Based on 12 Hours Per Start



ALTO PLUS Slimline T8 Warranty: 24 months

PHILIPS
F96T8/TL830/PLUS/ALTO
LONG LIFE
59 WATT
Alto Collection

Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty. • Description	Nom. Length (In.)	Rated Avg. Life, Hrs. 3-Hr. Start (202) 12-Hr. Start (241)	Approx. Initial Lumens (203, 204)	Design Lumens (208)	CRI
ALTO® PLUS Slimline T8 8-Foot Fluorescent Lamps T8 Single Pin; Featuring ALTO® Lamp Technology; Instant Start									
59	38800-9	(E) □ \$	F96T8/TL830/PLUS/ALTO	24 TL 830, 3000K	96	24,000 30,000	5900	5490	86
	38801-7	(E) □ \$	F96T8/TL835/PLUS/ALTO	24 TL 835, 3500K	96	24,000 30,000	5900	5490	86
	38802-5	(E) □ \$	F96T8/TL841/PLUS/ALTO	24 TL 841, 4100K	96	24,000 30,000	5900	5490	86
	38803-3	(E) □ \$	F96T8/TL850/PLUS/ALTO	24 TL 850, 5000K	96	24,000 30,000	5780	5375	86
	38805-8	(E) □ \$	F96T8/TL735/PLUS/ALTO	24 TL 735, 3500K	96	24,000 30,000	5700	5190	78
	38806-6	(E) □ \$	F96T8/TL741/PLUS/ALTO	24 TL 741, 4100K	96	24,000 30,000	5700	5190	78

ALTO PLUS Slimline T8 8-Foot Cost of Ownership Savings

ALTO PLUS Slimline 8-foot T8 Fluorescent Lamps vs. Standard 8-foot T8 Lamps

General Overview

ALTO PLUS Slimline 8-foot T8 fluorescent lamps provide up to 60% longer life than standard 8-foot T8 products. With an incremental cost as little as \$1.00 per lamp, benefits and financial impact can be significant.

Benefits

By using ALTO PLUS Slimline 8-foot T8 lamps the lamp replacement and labor costs are extended by an extra 2 years on a facility that operates an average of 4000 hours per year. For example, a standard 8-foot T8 product, with a rated average life expectancy of 15,000 hours, will last nearly 4 years (15,000 hours rated average life/4000 hours per year = 3 3/4 years). Conversely, ALTO PLUS Slimline 8-foot T8 lamps will operate for 6 years due to their rated average life expectancy of 24,000 hours (24,000 hours rated average life/4000 hours per year = 6 years).

Financial Impact

With the extended life expectancy of 2 years and the benefits of Philips' exclusive ALTO TCLP-compliant low mercury technology, the positive financial impact of installing ALTO PLUS Slimline 8-foot T8 lamps will provide cost of ownership savings per lamp as follows:

Incremental Cost	\$ (1.00)
Material Cost Avoidance ^A	\$ 4.00
Labor Cost Avoidance ^B	\$ 3.72
Disposal Cost Avoidance ^C	\$ 0.72
Cost of Ownership Savings	\$ 7.44

A Material Cost Avoidance is the annualized acquisition cost per lamp (average cost per lamp of \$7.50 for standard 8-Foot T8 product / 3 3/4 years = \$2.00 per year). By installing ALTO PLUS Slimline 8-Foot T8 lamps, a material cost per lamp of \$4.00 is avoided due to the extra 2 years of life expectancy. Note that the average cost per lamp may vary.

B Labor Cost Avoidance is the annualized labor replacement cost per lamp (labor replacement cost per lamp of \$7.00 / 3 years = \$1.86 per year). By installing ALTO PLUS Slimline 8-Foot T8 lamps, a labor replacement cost per lamp of \$3.72 is avoided due to the extra 2 years life expectancy. Note that the labor replacement cost per lamp may vary.

C Disposal Cost Avoidance is based on an average of \$.09 per foot for lamp recycling or \$.72 per 8-foot lamp. Philips Lighting Company encourages the recycling of all fluorescent lamps.

For the most current product information, go to www.nam.lighting.philips.com/us/catalog/

Fluorescent symbols and footnotes located on page 77

□ This product utilizes ALTO® Lamp Technology

* The TCLP is the US EPA's Toxicity Characteristic Leaching Procedure.



T8 Single Pin

ALTO® PLUS High Output T8: Long Life, Environmentally-Responsible Lamps.

Ideal for industrial applications where the quality of light over the life of the lamp is important.



ALTO® PLUS High Output T8 Fluorescent Lamps

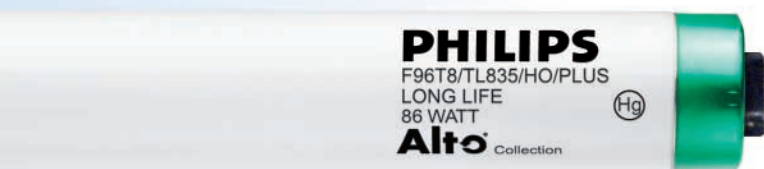
Long Life: Up to 30,000 hours rated average life; 50% more life than competitor's T8 8-foot lamps† means reduced maintenance and disposal costs

Environmentally Responsible: Low mercury—TCLP*-compliant; energy efficient; long life

Sustainable Lighting Solution: Less mercury and fewer lamps in landfills, combined with energy efficiency, reduces the impact on the environment

Outstanding Lumen Maintenance: HI-VISION® Phosphor combined with Philips exclusive cathode guard delivers 95% lumen maintenance and reduced lamp-end blackening

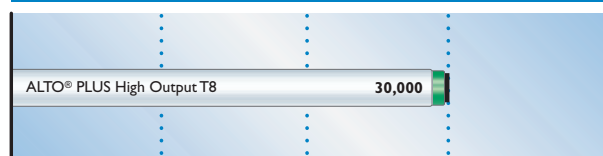
Enhanced CRI: 86 CRI for TL80 lamps; 78 CRI for TL70 lamps



ALTO® PLUS High Output Lamp Rated Average Life Based on 3 Hours Per Start



ALTO® PLUS High Output Lamp Rated Average Life Based on 12 Hours Per Start



0 10,000 20,000 30,000 40,000
Rated Average Life in Hours

ALTO PLUS High Output T8 Warranty: 24 months

Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life, Hrs. 3-Hr. Start (202)	12-Hr. Start (241)	Approx. Initial Lumens (203, 204)	Design Lumens (208)	CRI
ALTO® PLUS High Output T8 8-Foot Fluorescent Lamps T8 Recessed D.C.; Featuring ALTO® Lamp Technology											
86	38826-4	(E) □ \$	F96T8/TL830/HO/PLUS/ALTO	24	TL 830, 3000K	96	24,000	30,000	8200	7625	86
	38827-2	(E) □ \$	F96T8/TL835/HO/PLUS/ALTO	24	TL 835, 3500K	96	24,000	30,000	8200	7625	86
	38828-0	(E) □ \$	F96T8/TL841/HO/PLUS/ALTO	24	TL 841, 4100K	96	24,000	30,000	8200	7625	86
	38831-4	(E) □ \$	F96T8/TL741/HO/PLUS/ALTO	24	TL 741 4100K	96	24,000	30,000	7900	7100	78

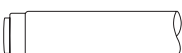
Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Average Life, Hours (205)	Approx. Initial Lumens (203, 204)	Design Lumens (208)	CRI
ALTO® High Output Fluorescent Lamps T8 Recessed D.C.; Featuring ALTO® Lamp Technology										
44	38808-2	□ \$	F48T8/TL830/HO/ALTO	24	TL 830, 3000K	48	18,000	4000	3600	86
	38809-0	□ \$	F48T8/TL835/HO/ALTO	24	TL 835, 3500K	48	18,000	4000	3600	86
	38810-8	□ \$	F48T8/TL841/HO/ALTO	24	TL 841, 4100K	48	18,000	4000	3600	86
55	38814-0	□ \$	F60T8/TL830/HO/ALTO	24	TL 830, 3000K	60	18,000	5050	4545	86
	38815-7	□ \$	F60T8/TL835/HO/ALTO	24	TL 835, 3500K	60	18,000	5050	4545	86
	38816-5	□ \$	F60T8/TL841/HO/ALTO	24	TL 841, 4100K	60	18,000	5050	4545	86
65	38820-7	□ \$	F72T8/TL830/HO/ALTO	24	TL 830, 3000K	72	18,000	6100	5490	86
	38821-5	□ \$	F72T8/TL835/HO/ALTO	24	TL 835, 3500K	72	18,000	6100	5490	86
	38822-3	□ \$	F72T8/TL841/HO/ALTO	24	TL 841, 4100K	72	18,000	6100	5490	86

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

Fluorescent symbols and footnotes located on page 77

□ This product utilizes ALTO® Lamp Technology

*The TCLP is the US EPA's Toxicity Characteristic Leaching Procedure.



T8 Recessed Double Contact

FLUORESCENT LAMPS

T12 Lamps—Professional

Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty. •	Description	Nom. Length (In.)	Rated Avg. Life, Hrs. (202)	Approx. Initial Lumens (203, 204)	Design Lumens (208)	CRI
Rapid Start Fluorescent Lamps T12 Medium Bipin										
25	27247-6	\$	F25T12/CW/RS/EW/ALTO	30	Cool White, 4100K	36	18,000	1950	1650	62
	31365-0	\$	F25T12/WW/RS/EW	30	Warm White, 3000K	36	18,000	2000	1700	53
30	31377-5		F30T12/30U/RS	30	Ultralume, 3000K	36	18,000	2400	2160	85
	31379-1		F30T12/35U/RS	30	Ultralume, 3500K	36	18,000	2400	2160	85
	31380-9	□	F30T12/41U/RS	30	Ultralume, 4100K	36	18,000	2400	2160	85
	31381-7	□	F30T12/50U/RS	30	Ultralume, 5000K	36	18,000	2380	2140	85
	31369-2		F30T12/SPEC30/RS	30	SPEC30, 3000K	36	18,000	2350	2080	70
	31371-8		F30T12/SPEC35/RS	30	SPEC35, 3500K	36	18,000	2350	2080	73
	31372-6		F30T12/SPEC41/RS	30	SPEC41, 4100K	36	18,000	2350	2080	70
	31376-7		F30T12/C50/RS	30	Colortone 50, 5000K	36	18,000	1550	1300	92
	37649-1		F30T12/D/RS/ALTO	30	Daylight, 6500K	36	18,000	1950	1700	79
	27242-7		F30T12/CW/RS/ALTO	30	Cool White, 4100K	36	18,000	2250	1900	62
	31374-2		F30T12/WW/RS	30	Warm White, 3000K	36	18,000	2300	1950	53
34	23781-8	\$	F34/30U/RS/EW/ALTO	30	Ultralume, 3000K	48	20,000	2900	2600	85
	23782-6	\$	F34/35U/RS/EW/ALTO	30	Ultralume, 3500K	48	20,000	2900	2600	85
	23783-4	\$	F34/41U/RS/EW/ALTO	30	Ultralume, 4100K	48	20,000	2900	2600	85
	23784-2	\$	F34/50U/RS/EW/ALTO	30	Ultralume, 5000K	48	20,000	2880	2580	85
	23775-0	\$	F34/SPEC30/RS/EW/ALTO	30	SPEC30, 3000K	48	20,000	2800	2520	70
	23777-6	\$	F34/SPEC35/RS/EW/ALTO	30	SPEC35, 3500K	48	20,000	2800	2520	73
	23779-2	\$	F34/SPEC41/RS/EW/ALTO	30	SPEC41, 4100K	48	20,000	2800	2520	70
	28511-4	\$	F34/CWX/RS/EW	30	Cool White Deluxe, 4100K	48	20,000	1925	1580	89
	26659-3	\$	F34/DX/RS/EW/ALTO	30	Daylight Deluxe, 6500K	48	20,000	2025	1775	84
	24470-7	\$	F34/CW/RS/EW/ALTO	30	Cool White, 4100K	48	20,000	2650	2300	62
	22046-7	\$	F34/CW/RS/EW/ALTO	10	Cool White, 4100K, 10 Pk.	48	20,000	2650	2300	62
	24472-3	\$	F34/CW/RS/EW/ALTO PLZ	650	Cool White, 4100K	48	20,000	2650	2650	62
	25686-7	\$	F34/WW/RS/EW/ALTO	30	Warm White, 3000K	48	20,000	2700	2350	53
	27321-9	\$	F34/LW/RS/EW/ALTO	30	Lite White, 4200K	48	20,000	2750	2400	51

U-Bent Fluorescent Lamps T12 Medium Bipin

34	37871-1	\$	FB34/SPEC30/6/EW/ALTO	12	SPEC30, 3000K	22 7/8	18,000	2760	2500	70
	37872-9	\$	FB34/SPEC35/6/EW/ALTO	12	SPEC35, 3500K	22 7/8	18,000	2760	2500	73
	37874-5	\$	FB34/SPEC41/6/EW/ALTO	12	SPEC41, 4100K	22 7/8	18,000	2760	2500	70
	37863-8		FB34/CW/6/EW/ALTO	12	Cool White, 4100K	22 7/8	18,000	2400	2050	62
	37865-3		FB34/LW/6/EW/ALTO	12	Lite White, 4200K	22 7/8	18,000	2500	2150	62
	37862-0		FB34/WW/6/EW/ALTO	12	Warm White, 3000K	22 7/8	18,000	2400	2050	53
	20704-3		FB34/CW/3/EW	12	Cool White, 4100K	22 7/8	18,000	2350	2050	62
	20705-0		FB34/WW/3/EW	12	Warm White, 3000K	22 7/8	18,000	2425	2125	51

Advantage Rapid Start Ultimate Performance Fluorescent Lamps T12 Medium Bipin Linear Fluorescent Lamps

40	26604-9	□	F40T12/ADV30/ALTO	30	Advantage 30,T12, 3000K	48	24,000	3600	3250	85
	26631-2	□	F40T12/ADV35/ALTO	30	Advantage 35,T12, 3500K	48	24,000	3600	3250	85
	26640-3	□	F40T12/ADV41/ALTO	30	Advantage 41,T12, 4100K	48	24,000	3600	3250	85
	26643-7	□	F40T12/ADV50/ALTO	30	Advantage 50,T12, 5000K	48	24,000	3600	3250	85

Rapid Start Fluorescent Lamps T12 Medium Bipin Linear Fluorescent Lamps

40	27298-9		F40/30U/ALTO	30	Ultralume, 3000K	48	20,000	3300	2970	85
	27299-7		F40/35U/ALTO	30	Ultralume, 3500K	48	20,000	3300	2970	85
	27309-4		F40/41U/ALTO	30	Ultralume, 4100K	48	20,000	3300	2970	85
	27315-1		F40/50U/ALTO	30	Ultralume, 5000K	48	20,000	3280	2950	85
	27311-0		F40/SPEC30/ALTO	30	SPEC30, 3000K	48	20,000	3200	2880	70
	27291-4		F40/SPEC35/ALTO	30	SPEC35, 3500K	48	20,000	3200	2880	73
	27295-5		F40/SPEC41/ALTO	30	SPEC41, 4100K	48	20,000	3200	2880	70
	33464-9		F40/C75	30	Colortone 75, 7500K	48	20,000	2000	1720	95
	30203-4		F40/C50	30	Colortone 50, 5000K	48	20,000	2200	1915	92
	30198-6		F40/N	30	Natural, 3700K	48	20,000	2000	1780	90
	27359-9		F40/DX/ALTO	30	Daylight Deluxe, 6500K	48	20,000	2325	2025	84
	39228-2		F40/PLANT	6	Plant Lite, Sleeved	48	20,000	1600	1360	—
	20189-7		F40/BB	6	Special Blue	48	20,000	550	385	—
	22630-8		F40/GO	30	Gold Sleeved Lamp	48	20,000	1700	1465	—

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

Fluorescent symbols and footnotes located on page 77

■ This product utilizes ALTO® Lamp Technology



T12 Medium Bipin

FLUORESCENT LAMPS

T12 Lamps—Professional

Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty. •	Description	Nom. Length (In.)	Rated Avg. Life, Hrs. (202)	Approx. Initial Lumens (203, 204)	Design Lumens (208)	CRI
U-Bent Fluorescent Lamps T12 Medium Bipin										
40	37879-4		FB40/30U/6/ALTO	12	Ultralume, 3000K	22 7/16	18,000	3100	2850	85
	37840-6		FB40/35U/6/ALTO	12	Ultralume, 3500K	22 7/16	18,000	3100	2850	85
	37876-0		FB40/41U/6/ALTO	12	Ultralume, 4100K	22 7/16	18,000	3100	2850	85
	37866-1		FB40/SPEC30/6/ALTO	12	SPEC30, 3000K	22 7/16	18,000	3050	2775	70
	37854-7		FB40/SPEC35/6/ALTO	12	SPEC35, 3500K	22 7/16	18,000	3050	2775	73
	37868-7		FB40/SPEC41/6/ALTO	12	SPEC41, 4100K	22 7/16	18,000	3050	2775	70
	21993-1		FB40/DX/6	12	Daylight Deluxe, 6500K	22 7/16	18,000	2250	1950	84

Slimline Fluorescent Lamps T12 Single Pin Linear Fluorescent Lamps; Instant Start

20	26277-4	X	F24T12/CW	24	Cool White, 4100K	24	7500	1090	960	62
30	26284-0	\$	F36T12/CW	24	Cool White, 4100K	36	7500	1850	1630	62
35	26303-8		F42T12/CW	24	Cool White, 4100K	42	7500	2200	1920	62
30	36609-6	\$	F48T12/SPEC41/EW/ALTO	15	SPEC41, 4100K	48	9000	2575	2350	70
	38700-1	\$	F48T12/CW/EW/ALTO	15	Cool White, 4100K	48	9000	2400	2150	62
39	36613-8		F48T12/SPEC35/ALTO	15	SPEC35, 3500K	48	9000	3000	2800	73
	38701-9		F48T12/D/ALTO	30	Daylight, 6500K	48	9000	2500	220	79
	38702-7		F48T12/CW/ALTO	30	Cool White, 4100K	48	9000	2950	2600	62
	36660-9		F48T12/WW/ALTO	15	Warm White, 3000K	48	9000	2950	2650	53
50	35564-4		F60T12/D	15	Daylight, 6500K	60	12,000	3150	2850	79
	35563-6		F60T12/CW	15	Cool White, 4100K	60	12,000	3450	3050	62
51	35577-6		F64T12/D	15	Daylight, 6500K	64	12,000	3200	2800	79
	35576-8		F64T12/CW	15	Cool White, 4100K	64	12,000	3750	3050	62
56	36614-6		F72T12/30U/ALTO	15	Ultralume, 3000K	72	12,000	4850	4550	85
	36618-7		F72T12/35U/ALTO	15	Ultralume, 3500K	72	12,000	4850	4550	85
	36621-1		F72T12/41U/ALTO	15	Ultralume, 4100K	72	12,000	4850	4550	85
	36623-7		F72T12/SPEC35/ALTO	15	SPEC35, 3500K	72	12,000	4700	4400	73
	36985-0		F72T12/D/ALTO	15	Daylight, 6500K	72	12,000	3800	3350	79
	36989-2		F72T12/CW/ALTO	15	Cool White, 4100K	72	12,000	4450	3900	62
	36661-7		F72T12/WW/ALTO	15	Warm White, 3000K	72	12,000	4550	4000	53
60	36624-5	\$	F96T12/30U/EW/ALTO	15	Ultralume, 3000K	96	12,000	5900	5550	85
	36625-2	\$	F96T12/35U/EW/ALTO	15	Ultralume, 3500K	96	12,000	5900	5550	85
	36627-8	\$	F96T12/41U/EW/ALTO	15	Ultralume, 4100K	96	12,000	5900	5550	85
	36628-6	\$	F96T12/50U/EW/ALTO	15	Ultralume, 5000K	96	12,000	5850	5500	85
	36630-2	\$	F96T12/SPEC30/EW/ALTO	15	SPEC30, 3000K	96	12,000	5750	5400	70
	26018-2	\$	F96T12/SPEC35/EW/ALTO	15	SPEC35, 3500K	96	12,000	5750	5400	73
	26022-4	\$	F96T12/SPEC41/EW/ALTO	15	SPEC41, 4100K	96	12,000	5750	5400	70
	34198-2	\$	F96T12/C50/EW	15	Colortone 50, 5000K	96	12,000	4100	3700	92
	36654-2		F96T12/DX/EW/ALTO	15	Daylight Deluxe, 6500K	96	12,000	4200	3675	84
	25840-0		F96T12/CW/EW/ALTO	15	Cool White, 4100K	96	12,000	5400	4750	62
	36656-7		F96T12/WW/EW/ALTO	15	Warm White, 3000K	96	12,000	5500	4850	53
	36655-9		F96T12/LW/EW/ALTO	15	Lite White, 4200K	96	12,000	5600	4950	51
75	36633-6		F96T12/30U/ALTO	15	Ultralume, 3000K	96	12,000	6600	6225	85
	36634-4		F96T12/35U/ALTO	15	Ultralume, 3500K	96	12,000	6600	6225	85
	36635-1		F96T12/41U/ALTO	15	Ultralume, 4100K	96	12,000	6600	6225	85
	36636-9		F96T12/50U/ALTO	15	Ultralume, 5000K	96	12,000	6500	6125	85
	36647-6		F96T12/SPEC30/ALTO	15	SPEC30, 3000K	96	12,000	6425	6050	70
	36648-4		F96T12/SPEC35/ALTO	15	SPEC35, 3500K	96	12,000	6425	6050	73
	36650-0		F96T12/SPEC41/ALTO	15	SPEC41, 4100K	96	12,000	6425	6050	70
	34170-1		F96T12/C50	15	Colortone 50, 5000K	96	12,000	4650	4200	92
	34165-1		F96T12/N	15	Natural, 3700K	96	12,000	4300	3850	90
	37282-1		F96T12/DX/ALTO	15	Daylight Deluxe, 6500K	96	12,000	4500	3950	84
	22689-4	X	F96T12/GO	15	Gold Sleeved Lamp	96	12,000	3400	—	—

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Fluorescent symbols and footnotes located on page 77

■ This product utilizes ALTO® Lamp Technology



T12 Medium Bipin



T12 Single Pin

FLUORESCENT LAMPS

T12 Lamps—Professional

Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty. •	Description	Nom. Length (In.)	Rated Avg. Life, Hrs. (202)	Approx. Initial Lumens (203, 204)	Design Lumens (208)	CRI
High Output Fluorescent Lamps (800ma) T12 Recessed D.C. Linear Fluorescent Lamps (207, 214)										
35	26274-1		F24T12/D/HO	24	Daylight, 6500K	24	9000	1400	1180	79
	26279-0		F24T12/CW/HO	24	Cool White, 4100K	24	9000	1650	1390	62
40	34334-3		F30T12/D/HO	24	Daylight, 6500K	30	9000	1920	1590	79
	22646-4		F30T12/CW/HO	24	Cool White, 4100K	30	9000	2290	1900	62
50	26290-7		F36T12/D/HO	24	Daylight, 6500K	36	9000	2500	2150	79
	26286-5		F36T12/CW/HO	24	Cool White, 4100K	36	9000	2800	2450	62
51	35584-2		F64T12/D/HO	15	Daylight, 6500K	64	12,000	4900	4250	79
	35578-4		F64T12/CW/HO	15	Cool White, 4100K	64	12,000	5600	4850	62
55	26306-1		F42T12/D/HO	24	Daylight, 6500K	42	9000	3000	2610	79
	26304-6		F42T12/CW/HO	24	Cool White, 4100K	42	9000	3400	2950	62
60	13222-5		F48T12/4IU/HO/ALTO	15	Ultralume, 4100K	48	12,000	4400	4000	85
	26773-2		F48T12/4IU/HO	15	Ultralume, 4100K	48	12,000	4400	4000	85
	21896-6		F48T12/SPEC30/HO	15	SPEC30, 3000K	48	12,000	4250	3830	70
	21897-4		F48T12/SPEC35/HO	15	SPEC35, 3500K	48	12,000	4250	3830	73
	26775-7		F48T12/SPEC41/HO	15	SPEC41, 4100K	48	12,000	4250	3830	70
	36984-3		F48T12/D/HO/ALTO	15	Daylight, 6500K	48	12,000	3400	3000	79
	36978-5		F48T12/CW/HO/ALTO	15	Cool White, 4100K	48	12,000	4050	3500	62
	21816-4		F48T12/WW/HO	15	Warm White, 3000K	48	12,000	4100	3550	53
75	35567-7		F60T12/D/HO	15	Daylight, 6500K	60	12,000	4400	3800	79
	35566-9		F60T12/CW/HO	15	Cool White, 4100K	60	12,000	5150	4500	62
80	35584-2		F64T12/D/HO	15	Daylight, 6500K	64	12,000	4900	4250	79
	35578-4		F64T12/CW/HO	15	Cool White, 4100K	64	12,000	5600	4850	62
85	27305-2		F72T12/30U/HO	15	Ultralume, 3000K	72	12,000	6800	6200	85
	26723-7		F72T12/35U/HO	15	Ultralume, 3500K	72	12,000	6800	6200	85
	26742-7		F72T12/4IU/HO	15	Ultralume, 4100K	72	12,000	6800	6200	85
	30001-2		F72T12/SPEC35/HO	15	SPEC35, 3500K	72	12,000	6650	6000	73
	30756-1		F72T12/SPEC41/HO	15	SPEC41, 4100K	72	12,000	6650	6000	70
	21204-3		F72T12/N/HO	15	Natural, 3700K	72	12,000	4200	3610	90
	36653-4		F72T12/D/HO/ALTO	15	Daylight, 6500K	72	12,000	5600	4850	79
	36651-8		F72T12/CW/HO/ALTO	15	Cool White, 4100K	72	12,000	6350	5500	62
	33053-0		F72T12/WW/HO	15	Warm White, 3000K	72	12,000	6500	5700	53
			F84T12/D/HO	15	Daylight, 6500K	84	12,000	6900	6000	79
100	21206-8		F84T12/D/HO	15	Daylight, 6500K	84	12,000	6900	6000	79
	21205-0		F84T12/CW/HO	15	Cool White, 4100K	84	12,000	7800	6800	62
95	27319-3	\$	F96T12/30U/HO/EW	15	Ultralume, 3000K	96	12,000	8625	7750	85
	34862-3	\$	F96T12/4IU/HO/EW	15	Ultralume, 4100K	96	12,000	8620	7750	85
	20525-2	\$	F96T12/50U/HO/EW	15	Ultralume, 5000K	96	12,000	8520	7675	85
	34861-5	\$	F96T12/SPEC30/HO/EW	15	SPEC30, 3000K	96	12,000	8350	7500	70
	22117-6	\$	F96T12/SPEC35/HO/EW	15	SPEC35, 3500K	96	12,000	8350	7500	73
	34848-2	\$	F96T12/SPEC41/HO/EW	15	SPEC41, 4100K	96	12,000	8350	7500	70
	21471-8	\$	F96T12/DX/HO/EW	15	Daylight Deluxe, 6500K	96	12,000	5850	5000	84
	26660-1	\$	F96T12/CW/HO/EW/ALTO	15	Cool White, 4100K	96	12,000	8000	6950	62
	34219-6	\$	F96T12/WW/HO/EW	15	Warm White, 3000K	96	12,000	8100	7050	53
	34216-2	\$	F96T12/LW/HO/EW	15	Lite White, 4200K	96	12,000	8300	7200	51
110	34863-1		F96T12/30U/HO	15	Ultralume, 3000K	96	12,000	9500	8550	85
	26710-4		F96T12/35U/HO	15	Ultralume, 3500K	96	12,000	9500	8550	85
	34864-9		F96T12/4IU/HO	15	Ultralume, 4100K	96	12,000	9500	8550	85
	34865-6		F96T12/50U/HO	15	Ultralume, 5000K	96	12,000	9350	8350	85
	27276-5		F96T12/SPEC30/HO	15	SPEC30, 3000K	96	12,000	9300	8375	70
	27681-6		F96T12/SPEC35/HO	15	SPEC35, 3500K	96	12,000	9300	8375	73
	27279-9		F96T12/SPEC41/HO	15	SPEC41, 4100K	96	12,000	9300	8375	70
	34226-1		F96T12/C50/HO	15	Colortone 50, 5000K	96	12,000	6300	5400	92
	34230-3		F96T12/N/HO	15	Natural, 3700K	96	12,000	6250	5400	90
	34222-0		F96T12/CWX/HO	15	Cool White Deluxe, 5000K	96	12,000	6600	5500	89
	21489-0		F96T12/DX/HO	15	Daylight Deluxe, 6500K	96	12,000	6750	5800	84

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Fluorescent symbols and footnotes located on page 77

■ This product utilizes ALTO® Lamp Technology



T12 Recessed D.C.

FLUORESCENT LAMPS

T12 Lamps—Professional

Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty. •	Description	Nom. Length (In.)	Rated Avg. Life, Hrs. (202)	Approx. Initial Lumens (203, 204)	Design Lumens (208)	CRI
High Output Fluorescent Lamps (800ma) T12 Recessed D.C. Linear Fluorescent Lamps; For Low Temperature Applications (223)										
110	38177-4		F96T12/D/HO-O/ALTO	15	Daylight, 6500K	96	12,000	7800	6800	79
	38176-4		F96T12/CW/HO-O/ALTO	15	Cool White, 4100K	96	12,000	8800	7650	62

Very High Output Fluorescent Lamps (1500ma) T12 Recessed D.C. Linear Fluorescent Lamps (214)

110	21819-8		F48T12/CW/VHO	15	Cool White, 4100K	48	12,000	7050	4950	62
135	21785-1		F60T12/CW/VHO	15	Cool White, 4100K	60	12,000	9000	6300	62
160	33054-8		F72T12/D/VHO	15	Daylight, 6500K	72	12,000	12,000	6400	79
	21210-0		F72T12/CW/VHO	15	Cool White, 4100K	72	12,000	11,000	7600	62
185	34232-9	\$	F96T12/CW/VHO/EW	15	Cool White, 4100K	96	12,000	13,000	9000	62
	34233-7	\$	F96T12/LW/VHO/EW	15	Lite White, 4200K	96	12,000	14,400	10,100	51
215	38213-5	□	F96T12/41U/VHO/ALTO	15	Ultralume, 4100K	96	12,000	17,500	16,100	85
	34237-8		F96T12/D/VHO	15	Daylight, 6500K	96	12,000	12,505	8750	79
	34234-5		F96T12/CW/VHO	15	Cool White, 4100K	96	12,000	15,200	10,700	62

Outdoor Very High Output Fluorescent Lamps (1500ma) T12 Recessed D.C. Linear Fluorescent Lamps

116	21820-6		F48T12/CW/VHO-O	12	Cool White, 4100K	48	10,000	7000	4900	62
140	37543-6		F60T12/50U/VHO-O	15	Ultralume, 5000K	60	10,000	7300	5200	85
	21786-9		F60T12/CW/VHO-O	12	Cool White, 4100K	60	10,000	8900	8250	62
162	21211-8		F72T12/CW/VHO-O	8	Cool White, 4100K	72	10,000	11,250	7750	62
212	34243-6		F96T12/CW/VHO-O	8	Cool White, 4100K	96	10,000	14,900	10,400	62

Low-Temperature Jacketed Very High Output Fluorescent Lamps (1500ma) T14 ½ (1 ½" Diameter Jacket)

T12 Recessed D.C. Linear Fluorescent Lamps

116	28409-1	X	FJ48T12/CW/VHO-O	12	Cool White, 4100K	48	10,000	7000	4900	62
140	26471-3	X	FJ60T12/CW/VHO-O	12	Cool White, 4100K	60	10,000	8900	6250	62
162	28410-9	X	FJ72T12/CW/VHO-O	8	Cool White, 4100K	72	10,000	11,100	7750	62
212	28397-8	X	FJ96T12/CW/VHO-O	8	Cool White, 4100K	96	10,000	14,900	10,400	62

Preheat Fluorescent Lamps T12 Medium Bipin Linear Fluorescent Lamps

14	25916-8		F14T12/CW	24	Cool White, 4100K	15	9000	710	590	62
15	25980-4		F15T12/D	24	Daylight, 6500K	18	9000	650	535	79
	25971-3		F15T12/CW	24	Cool White, 4100K	18	9000	800	695	62
	25975-4	X	F15T12/WW	24	Warm White, 3000K	18	9000	800	670	53
20	31399-9		F20T12/30U	30	Ultralume, 3000K	24	9000	1350	1270	85
	31400-5	X	F20T12/35U	30	Ultralume, 3500K	24	9000	1350	1270	85
	31401-3		F20T12/41U	30	Ultralume, 4100K	24	9000	1350	1270	85
	31403-9		F20T12/50U	30	Ultralume, 5000K	24	9000	1340	1260	85
	31386-6		F20T12/SPEC30	24	SPEC30, 3000K	24	9000	1275	1190	70
	31388-2		F20T12/SPEC35	24	SPEC35, 3500K	24	9000	1275	1190	73
	31396-5		F20T12/C50	30	ColorTone 50, 5000K	24	9000	850	755	92
	27328-4		F20T12/D/ALTO	30	Daylight, 6500K	24	9000	960	960	79
	27332-6		F20T12/CW/ALTO	30	Cool White, 4100K	24	9000	1200	1050	62
	27349-0		F20T12/WW/ALTO	30	Warm White, 3000K	24	9000	1250	1100	53
	39227-4		F20T12/PLANT	6	Plant Lite, Sleeved	24	9000	600	500	—
	31745-3		F20T12/BB	6	Special Blue	24	9000	225	180	—
25	26041-4	X	F25T12/D	24	Daylight, 6500K	33	7500	1600	1440	79
	26030-7		F25T12/CW	24	Cool White, 4100K	33	7500	1900	1710	62

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

Fluorescent symbols and footnotes located on page 77

□ This product utilizes ALTO® Lamp Technology



T12 Recessed D.C.



T12 Medium Bipin

FLUORESCENT LAMPS

Appliance & Circline Fluorescent Lamps—Professional

Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty. •	Description	Nom. Length (In.)	Rated Avg. Life, Hrs. (202)	Approx. Initial Lumens (203, 204)	Design Lumens (208)	CRI
Appliance Fluorescent Lamps T8 Medium Bipin Linear Fluorescent Lamps; For Use With Starters										
14	25914-3		F14T8/CW/15	24	Cool White, 4100K	15	7500	700	595	62
16	25989-5		F16T8/CW/26	24	Cool White, 4100K	26	7500	1275	1020	62
17	25990-3		F17T8/CW/28	24	Cool White, 4100K	28	7500	1300	1030	62
18	38302-6		F18T8/CW/30/ALTO	24	Cool White, 4100K	30	7500	1350	1070	62
	36520-5		F18T8/CW/24	24	Cool White, 4100K	24	7500	1175	940	62

Appliance Fluorescent Lamps T12 Medium Bipin Linear Fluorescent Lamps; For Use With Starters

25	26034-9		F25T12/CW/28	24	Cool White, 4100K	28	7500	1600	1280	62
	26033-1	X	F25T12/CW/30	24	Cool White, 4100K	30	7500	1600	1280	62

Circline Fluorescent Lamps T9 4-Pin Circular Fluorescent Lamps

20	24982-1		FC6T9/Cool White Plus	12	Cool White, 4100K	6 1/2 OD	12,000	800	590	62
22	39222-5		FC8T9/Soft White	12/I	3000K	8 OD	12,000	1150	875	85
	26234-5		FC8T9/D	12	Daylight, 6500K	8 1/4 OD	12,000	910	675	79
	39235-7		FC8T9/DayDLX	12/I	6500K	8 OD	12,000	910	675	79
	39116-9		FC8T9/Cool White Plus	12/I	Cool White, 4100K	8 OD	12,000	1050	775	62
32	39122-7		FC12T9/Soft White	12/I	3000K	12 OD	12,000	1900	1600	85
	26260-0		FC12T9/D	12	Daylight, 6500K	12 OD	12,000	1570	1300	79
	39238-1	X	FC12T9/DayDLX	12/I	6500K	12 OD	12,000	1570	1300	79
	39117-7		FC12T9/Cool White Plus	12/I	Cool White, 4100K	12 OD	12,000	1800	1500	62
40	39118-5		FC16T9/Cool White Plus	12/I	Cool White, 4100K	16 OD	12,000	2500	1975	62

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

Fluorescent symbols and footnotes located on page 77

□ This product utilizes ALTO® Lamp Technology

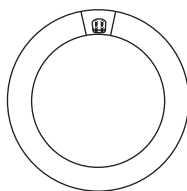
For Black Light lamps, turn to page 111.



T8 Medium Bipin



T12 Medium Bipin



T9 Circline

HomeLight Fluorescent Lamps

HomeLight Collection	 Cool White Plus	 Soft White	 Natural Sunshine	 Daylight Deluxe
The mood of the light	General purpose light for the home. Ideal for the garage, workshop or basement.	Comfortable, pleasant light that shows color accurately. Ideal for the kitchen, bathroom, or any room.	Simulates natural, full-spectrum light. Bright white light. Ideal for any room where more natural light is desired.	Creates a cool, refreshing environment. Arctic white light. Can be used in any room.
Color Scale: 3000 = Soft light 6500 = Vibrant, white light (a)	4100K	3000K	5000K	6500K
On a scale of 0 to 100, the lamp's ability to show colors accurately (b)	62	85	92	79
Also known as. . .	Cool, Cool White, Residential, Shoplight	Warm Deluxe, Kitchen & Bath, Warm White	Full Spectrum, Sunshine, Sunlight	Daylight, Daybright
(a) Color is a personal preference. Select a bulb that creates the mood you desire to have in the room. (b) A higher number can make a big difference, even in laundry rooms. You will be able to distinguish between similar colors.				

Philips Specialty Fluorescent Lamps

PLANT & AQUARIUM

Helps promote plant growth. Enhances the appearance of aquarium fish.



BLACKLIGHT

True blacklight-blue fluorescent light. Great special effects.



Color is a personal preference. Select a bulb that creates the mood you desire to have in the room.



FLUORESCENT

Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life, Hrs. (202)	Rated Avg. Life, Years (240)	Approx. Initial Lumens (203, 204)	Design Lumens (208)	CRI
HomeLight T5 Fluorescent Lamps Blister-Carded Linear Fluorescent Lamps; Miniature Bipin											
4	39218-3		F4T5/Soft White	12/1	3000K	6	6000	3	150	120	85
6	39219-1		F6T5/Soft White	12/1	3000K	9	7500	3	325	260	85
8	39220-9		F8T5/Soft White	12/1	3000K	12	7500	3	450	360	85
	39114-4		F8T5/Cool White Plus	12/1	4100K	12	7500	3	400	300	62
13	39221-7		F13T5/Soft White	12/1	3000K	21	7500	3	1000	800	85

HomeLight T8 Fluorescent Lamps

 Individually Sleeved Fluorescent Lamps; Medium Bipin

15	39212-6		F15T8/Soft White	6/1	3000K	18	7500	3	1000	900	85
	39207-6		F15T8/Cool White Plus	6/1	4100K	18	7500	3	870	765	62
	39108-6		F15T8/Cool White Plus	6/1	4100K	24	7500	3	1175	1035	62
	39232-4		F15T8/DayDLX	6/1	6500K	18	7500	3	750	660	79
	39229-0		F15T8/Natural Sunshine	6/1	5000K	18	7500	3	590	475	92
	39223-3		F15T8/Blacklight	6/1	—	18	7500	—	—	—	—
	39226-6		F15T8/Plant	6/1	—	18	7500	—	410	—	—
30	39216-7		F30T8/Soft White	6/1	3000K	36	7500	3	2500	2250	85
	39210-0		F30T8/Cool White Plus	6/1	4100K	36	7500	3	2200	1760	62
32	13360-3		F32T8/Cool White Plus	72/2	4100K, Coffin Pack	48	20,000	7	2850	2710	78
	13427-0		F32T8/Natural Sunshine	6	5000K	48	20,000	7	2950	2800	86
	13426-2		F32T8/Soft White	6	3000K	48	20,000	7	2950	2800	86

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

Fluorescent symbols and footnotes located on page 77

 This product utilizes ALTO® Lamp Technology



T5 Miniature Bipin



T8 Medium Bipin

Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life, Hrs. (202)	Rated Avg. Life, Years (240)	Approx. Initial Lumens (203, 204)	Design Lumens (208)	CRI
HomeLight T12 Fluorescent Lamps Individually Sleeved Fluorescent Lamps; Medium Bipin											
14	39213-4		F14T12/Soft White	6/1	3000K	15	9000	4	700	560	85
15	39214-2		F15T12/Soft White	6/1	3000K	18	9000	4	800	720	85
	39208-4		F15T12/Cool White Plus	6/1	4100K	18	9000	4	800	695	62
20	39120-1		F20T12/Soft White	6/1	3000K	24	9000	4	1350	1215	85
	39209-2		F20T12/Cool White Plus	6/1	4100K	24	9000	4	1200	1050	62
	39230-8		F20T12/Natural Sunshine	6/1	5000K	24	9000	4	850	755	92
	39233-2		F20T12/DayDLX	6/1	6500K	24	9000	4	1075	960	79
	39224-1		F20T12/Blacklight	6/1	—	24	9000	—	—	—	—
	39227-4		F20T12/Plant	6/1	—	24	9000	—	600	—	—
30	39215-9		F30T12/Soft White	6/1	3000K	36	18000	7	2400	2160	85
	39109-4		F30T12/Cool White Plus	6/1	4100K	36	18000	7	2250	1900	62
40	39121-9		F40T12/Soft White	6/1	3000K	48	20,000	7	3300	2970	85
	39240-7		F40T12/Soft White/15/2PK	15/2	3000K	48	20,000	7	3300	2970	85
	39217-5		F40T12/Soft White/84/2PK	84/2	3000K	48	20,000	7	3300	2970	85
	39111-0		F40T12/Cool White Plus	6/1	4100K	48	20,000	7	3200	2880	70
	39239-9		F40T12/Cool White Plus/15/2PK	15/2	4100K	48	20,000	7	3200	2880	70
	39211-8		F40T12/Cool White Plus/84/2PK	84/2	4100K	48	20,000	7	3200	2880	70
	39231-6		F40T12/Natural Sunshine	6/1	5000K	48	20,000	7	2200	1915	92
	39234-0		F40T12/DayDLX	6/1	6500K	48	20,000	7	2325	2025	84
	39241-5		F40T12/DayDLX/15/2PK	15/2	6500K	48	20,000	7	2325	2025	84
	39123-5		F40T12/DayDLX/84/2PK	84/2	6500K	48	20,000	7	2325	2025	84
	39225-8		F40T12/Blacklight	6/1	—	48	20,000	—	—	—	—
	39228-2		F40T12/Plant	6/1	—	48	20,000	—	1600	—	—

HomeLight Circline Fluorescent Lamps T9 Circular 4-Pin Fluorescent Lamps

22	39222-5		FC8T9/Soft White	12/1	3000K	8 OD	12,000	4	1150	875	85
	39116-9		FC8T9/Cool White Plus	12/1	4100K	8 OD	12,000	4	1050	775	62
	39235-7		FC8T9/DayDLX	12/1	6500K	8 OD	12,000	4	910	675	79
32	39122-7		FC12T9/Soft White	12/1	3000K	12 OD	12,000	4	1900	1600	85
	39117-7		FC12T9/Cool White Plus	12/1	4100K	12 OD	12,000	4	1800	1500	62
	39238-1	X	FC12T9/DayDLX	12/1	6500K	12 OD	12,000	4	1570	1300	79
40	39118-5		FC16T9/Cool White Plus	12/1	4100K	16 OD	12,000	4	2500	1975	62

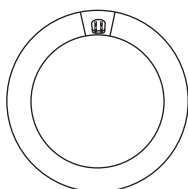
For the most current product information, go to www.nam.lighting.philips.com/us/catalog/

Fluorescent symbols and footnotes located on page 77

☼ This product utilizes ALTO® Lamp Technology



T12 Medium Bipin



T9 Circline



FLUORESCENT LAMPS

Individually Packaged—Consumer

Nom. Lamp Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty. •	Description	Nom. Length (In.)	Rated Avg. Life, Hrs. (202)	Approx. Initial Lumens (203, 204)	Design Lumens (208)	CRI
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UPC Lamps Labeled For Retail Sale (225)

Preheat T8 T8 Medium Bipin Linear Fluorescent Lamps; Requires Use of Starters

30	13348-8		F30T8/Cool White Plus UPC	24	Cool White, 4100K	36	7500	2200	2000	62
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Rapid Start T8 T8 Medium Bipin Linear Fluorescent Lamps

17	13599-5		F17T8/TL950 UPC	25	TL90, 5000K	24	20,000	910	850	98
	16069-0		F17T8/Soft White UPC	25	TL80, 3000K	24	20,000	1400	1300	85
32	13600-2		F32T8/TL950 UPC	25	TL90, 5000K	48	20,000	2000	1860	98
	13555-6		F32T8/TL850 UPC	25	TL80, 5000K	48	20,000	2950	2800	86
	27278-1		F32T8/TL730 UPC	25	TL70, 3000K	48	20,000	2850	2710	78
	27274-0		F32T8/TL735 UPC	25	TL70, 3500K	48	20,000	2850	2710	78
	27269-0		F32T8/TL741 UPC	25	TL70, 4100K	48	20,000	2850	2710	78

Rapid Start U-Bent T8 T8 Medium Bipin

32	37888-5		FB32T8/TL735/6 UPC	20	TL70, 3500K	22 7/8	20,000	2650	2370	75
	37889-3		FB32T8/TL741/6 UPC	20	TL70, 4100K	22 7/8	20,000	2650	2370	75

Preheat T12 T12 Medium Bipin Linear Fluorescent Lamps

20	38693-8		F20T12/SPEC35 UPC	30	SPEC, 3500K	24	9,000	1275	1190	73
	21331-4		F20T12/D UPC	30	Daylight, 6500K	24	9,000	1075	960	79
	33948-1		F20T12/Cool White Plus UPC	30	Cool White, 4100K	24	9,000	1200	1050	62

Rapid Start T12 T12 Medium Bipin Linear Fluorescent Lamps

30	38694-6		F30T12/SPEC35 UPC	30	SPEC, 3500K	36	18,000	2350	2080	73
	13579-8		F30T12/C50 UPC	30	Colortone 50, 5000K	36	18,000	1650	1400	92
	38692-0		F30T12/D UPC	30	Daylight, 6500K	36	18,000	1950	1700	79
	33949-9		F30T12/Cool White Plus UPC	30	Cool White, 4100K	36	18,000	2250	1900	62
34	26793-0		F34/SPEC35/EW UPC	30	SPEC, 3500K	48	20,000	2800	2520	73
	38695-3		F34/SPEC41/EW UPC	30	SPEC, 4100K	48	20,000	2800	2520	70
	24475-6		F34/CW/RS/EW UPC	30	Cool White, 4100K	48	20,000	2650	2300	62

Rapid Start U-Bent T12 T12 Medium Bipin

34	37839-8		FB34/CW/6/EW UPC	12	Cool White, 4100K	22 7/8	18,000	2400	2050	62
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Rapid Start T12 T12 Medium Bipin Linear Fluorescent Lamps

40	37530-3		F40/DX UPC	30	Daylight, 6500K	48	20,000	2325	2025	84
	13096-2		F40/Cool White Plus UPC	30	Cool White Plus, 4100K	48	20,000	3200	2880	70

Rapid Start U-Bent T12 T12 Medium Bipin

40	37875-8		FB40/SPEC35/6 UPC	12	SPEC, 3500K	22 7/8	18,000	3050	2775	73
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Slimline T12 T12 Single Pin Linear Fluorescent Lamps; Instant Start

39	38703-5		F48T12/CW UPC	15	Cool White, 4100K	48	9,000	2950	2600	62
56	36999-1		F72T12/CW UPC	15	Cool White, 4100K	72	12,000	4450	3900	62
60	36631-0		F96T12/SPEC35/EW UPC	15	SPEC, 3500K	96	12,000	5750	5400	73
	33994-5		F96T12/CW/EW UPC	15	Cool White, 4100K	96	12,000	5400	4750	62
75	20574-0		F96T12/C50 UPC	15	Colortone 50, 5000K	96	12,000	4650	4200	92

High Output T12 T12 Recessed D.C. Linear Fluorescent Lamps (207, 214)

60	36982-7		F48T12/CW/HO UPC	15	Cool White, 4100K	48	12,000	4050	3500	62
85	36652-6		F72T12/CW/HO UPC	15	Cool White, 4100K	72	12,000	6350	5500	62
110	38178-0		F96T12/CW/HO-O UPC	15	Cool White, 4100K	96	12,000	8800	7650	62

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

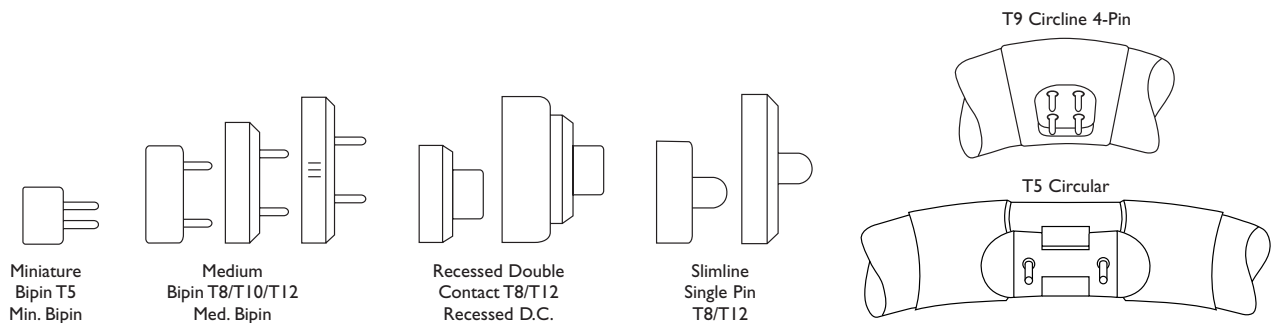
Fluorescent symbols and footnotes located on page 77

This product utilizes ALTO® Lamp Technology

FLUORESCENT LAMPS

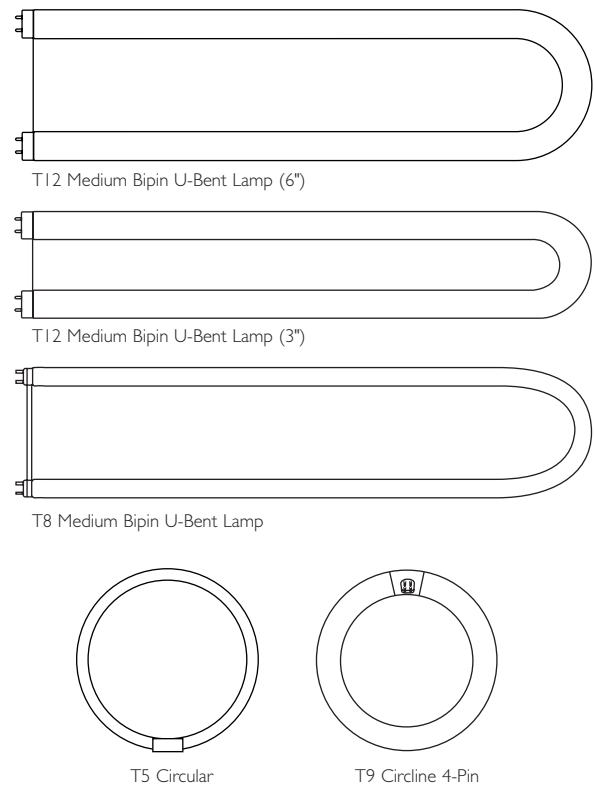
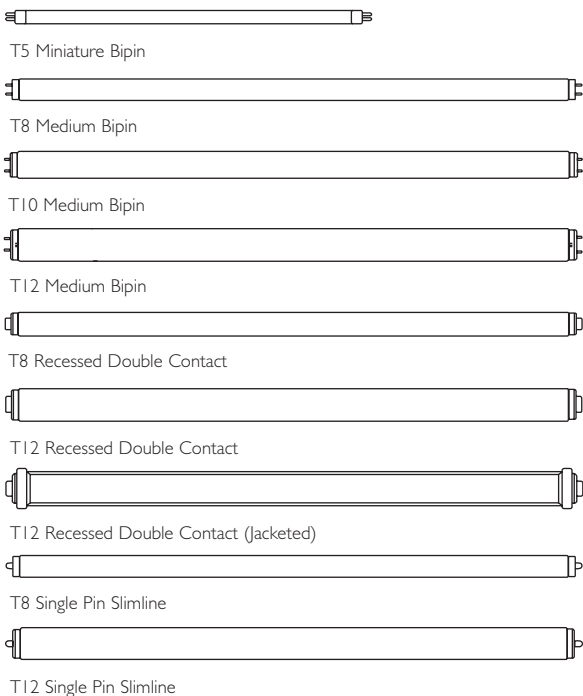
Fluorescent Base Types and Bulb Shapes

Base Types (Not Actual Sizes)



Bulb Shapes (Not Actual Sizes)

The size and shape of a bulb is designated by a letter or letters followed by a number. The letter indicates the shape of the bulb while the number indicates the diameter of the bulb in eighths of an inch. For example, "T12" indicates a tubular shaped bulb having a diameter of $\frac{1}{2}$ or $1\frac{1}{2}$ inches. The following illustrations show some of the more popular bulb shapes and sizes.



Because of frequent improvements, the values listed may not be current ratings. For design purposes, obtain ratings from current Product Bulletins.

- Exclusive to Philips Lighting Company
- Quantity shown is minimum shipping container—refer to Net Price Schedule for number of lamps to qualify as a standard case.
- \$ Energy Saving Product
- ♦ Maximum Beam Candlepower
- X Orders will be shipped until inventory is depleted; no longer manufactured
- (E) This Bulb Meets US Federal Minimum Efficiency Standard
- † New since last printing
- ◇ Designed for Instant Start Operation

(202) Average life under specified test conditions with lamps turned off and restarted no more frequently than once every 3 operating hours. Lamp life is appreciably longer if lamps are started less frequently.

(203) Approximate initial lumens. The lamp lumen output is based upon lamp performance after 100 hours of operating life, when the output is measured during operation on a reference ballast under standard laboratory conditions.

(204) For expected lamp lumen output, commercial ballast manufacturers can advise the appropriate ballast factor for each of their ballasts when they are informed of the designated lamp. The ballast factor is a multiplier applied to the designated lamp lumen output.

(205) Approximate hours of life for F40 lamps operated by standard rapid start ballasts at three hours per start. When these lamps are operated on modified rapid start or preheat circuits the operating life will be reduced by approximately 25 percent. When employing dimming systems or energy-saving device systems, the device manufacturer can advise of the effect of their system upon lamp life.

(206) The pins of these lamps are short-circuited inside the end caps and the lamp will not operate on preheat or rapid start ballast circuits.

(207) Approximate initial lumens are for 800 ma. operation. For 1000 ma. operation, lumens are approximately 10% higher and watts approximately 15% higher.

(208) Design lumens are the approximate lamp lumen output at 40% of the lamp's rated average life. This output is based upon measurements obtained during lamp operation on a reference ballast under standard laboratory conditions.

(209) Operation on existing single lamp ballasts is not recommended because of marginal starting.

(210) Approximate initial lumens are for operation at 200 ma.

(211) Designed for service other than illumination.

(212) Nominal length measured from face of base to maximum distant outside point of U. Measurement does not include base pins. Leg spacing center to center approximately 6", for 1/6 and 3/8" for 1/3 lamps.

(213) Unique construction maintains light output over a wide range of operating temperatures.

(214) Econ-o-watt® lamps are only recommended for use on high power factor lead, indoor ballasts that meet ANSI standards. The lamps are not recommended for use in drafty areas, or locations where the ambient temperature is less than 60°F, except as noted. Also they should not be operated on low power factor ballasts, reduced light or reduced current ballasts, dimming ballasts or emergency system inverter ballasts.

(215) This lamp will operate on rapid start circuits provided ambient temperature is above 60°F, line voltage is 116 volts or higher and the lamps are located within 1/4" of the grounded starting aid (usually the reflector).

(216) The use of Amalgam Technology results in relatively stable light output across a broad range of ambient temperatures and operating positions.

(217) All Marathon® lamps are suitable for indoor or outdoor use down to -10°F. Outdoor use requires weather-protected fixture. All these products comply with part 18 of the FCC rules. These products may cause interference with AM radios, cordless telephones, and remote control devices. Interference may be caused after a brief 90-second lamp warm-up period. If interference continues, relocate the lamp away from the device or plug into a different outlet.

(218) All lamps are electronically ballasted and designed for 120 volt operation. Lamps operated in extreme environments will have reduced life (ie. recessed or enclosed lighting fixtures with elevated line voltage). Caution: except for lamps marked dimmable, do not use with dimmers. Before using these lamps with electronic timing or photocell devices, check to determine whether the device is compatible with compact fluorescent lamps. Use with incompatible devices will result in premature lamp failure. These products are UL listed.

(219) PL-S 5W lamps should not be used in sockets or adapters intended for PL-S 7W and PL-S 9W lamps.

(220) Total wattage consumption for adapter systems is higher than lamp wattage due to ballast losses. Total system wattage equals lamp wattage plus 2 ballast watts.

(221) The PL-C13W/27 is physically and electrically incompatible with the more popular PL-C13W/27/USA types.

(222) Low temperature starting down to -20°F at nominal line voltage.

(223) Meets the National Energy Policy Act of 1992 exemption for outdoor or cold temperature applications only.

(225) Lamp includes scannable Universal Product Code (UPC).

(226) SILHOUETTE™ T5 nominal lamp lengths are shorter than standard sizes. See chart on page 65 for details.

(227) Do not use in recessed cans or totally enclosed fixtures.

(228) Use in recessed cans or enclosed indoor fixtures could result in reduced lamp life.

(230) Average life under specified test conditions with lamps turned off and restarted no more frequently than once every 3 operating hours.

(231) Approximate initial lumens. The lamp lumen output is based upon lamp performance after 100 hours of operating life under standard laboratory conditions.

(232) Lamp is designed for use with most standard incandescent dimmers.

(233) Rated average life of 7,000 hours when wired in recessed cans or totally enclosed fixtures.

(234) Rated average life 15,000 hours. Operate on Instant Start ballasts only.

(235) Universal T8 lamps have full rated average life on Instant Start, Rapid Start and Programmed Start ballasts.

(236) Use base down only.

(237) Do not use in totally enclosed indoor fixtures.

(238) UL approved for outdoor wet location applications when used base up. Base down use requires a weather-protected enclosed fixture.

(239) Design lumens rated at 3 hours per start on Instant Start ballast.

(240) Life is based upon household usage of 6 hours average usage per day, 7 days per week. See individual product packaging for details.

(241) Average life under engineering data with lamps turned off and restarted once every 12 operating hours.

NOTES

HIGH INTENSITY DISCHARGE LAMPS



MasterColor® Ceramic Metal Halide	81–84
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HIGH INTENSITY DISCHARGE LAMPS

MasterColor® Ceramic Metal Halide Lamps

MasterColor Ceramic Metal Halide Lamps featuring ALTO® Lamp Technology

The latest breakthrough in the field of metal halide technology, MasterColor lamps provide unparalleled uniformity and consistency in lamp-to-lamp color—both initial and throughout life—as well as higher efficacy than any other low-wattage metal halide source available. The secret to MasterColor's unequalled performance is its ceramic discharge tube, which combines the white light and high efficacy of metal halide lamps with the color stability and reliable, long life of polycrystalline alumina (PCA) technology.

- ▶ Excellent color rendition (up to 96 CRI)
- ▶ Superior Color Stability over life of lamp $\pm 200K$ vs. up to $\pm 600K$ for standard metal halide lamps
- ▶ Increased efficacy—up to 93 LPW—results in reduced energy consumption
- ▶ Universal operation—can operate in any position
- ▶ Lamps operate on standard metal halide ballasts offers simple retrofit options
- ▶ FadeBlock™—lamps feature integrated UV blocking medium for reduced fading of photo sensitive materials

ANSI Code:

E = Enclosed Fixture Rated
O = Open Fixture Rated;
S = Open or Enclosed Fixture Rated

Explanation of suffix in ordering code (no suffix = clear):

/C Coated
/M Medium Base
/SP Spot 10°
/FL Flood 30°
/MP Protected

Operating Position—Universal, unless otherwise noted

Descriptive symbols for MasterColor:

CDM Ceramic Discharge Metal Halide
MHC Metal Halide Ceramic
G General Lighting

Lamp	Product	Symbols,	Ordering	ANSI	Description	LCL	MOL	Rated Avg.	Approximate				
Watts	Bulb	Base	Number	Footnotes	Code/	Pkg. •	(Operating Position—Universal,	Life, Hrs.	Lumens, (352)				
			Code		Ballast Ref.	Qty.	unless otherwise indicated) (401)	(351)	Initial	Mean(353)	CRI		(K)

Mini MasterColor Ceramic Metal Halide Tubular Single-Ended BT-5 Lamps

Enclosed luminaires only; lifetime color stability within $\pm 200K$

- ▶ PGJ5 twist and lock base miniaturized low wattage ceramic metal halide lamps; approved for Advance e-Vision® RMH-20-E-LF electronic ballast only
- ▶ FadeBlock UV filtering
- ▶ No shut off required in 24-hour-a-day/7-day-a-week operations (relamp fixtures at or before the end of rated life)
- ▶ For **Warnings, Cautions and Operating Instructions**, see page 96

22	BT-5	PGJ5	14040-0	† □ ★	CDM20/ TM/830	/E	12	G, Clear; FadeBlock (391, 392, 396, 397)	0.87	1 1/4	9000	1500	1050	83	3000
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MasterColor Ceramic Metal Halide Tubular Single-Ended T-4 Lamps

Enclosed luminaires only; lifetime color stability within $\pm 200K$

- ▶ G8.5 bipin based low wattage ceramic metal halide lamps; approved for electronic ballast only
- ▶ FadeBlock UV filtering
- ▶ No shut off required in 24-hour-a-day/7-day-a-week operations (relamp fixtures at or before the end of rated life)
- ▶ For **Warnings, Cautions and Operating Instructions**, see page 96

39	T-4	G8.5	37372-0	★	CDM35/ TC/830	M130/E	12	G, Clear; FadeBlock (391, 392, 396, 397)	2	3 1/2	9000	3300	2640	81	3000
70	T-4	G8.5	37373-8	★	CDM70/ TC/830	M139/E	12	G, Clear; FadeBlock (391, 392, 396, 397)	2	3 1/2	6000	6400	5440	83	3000

MasterColor Ceramic Metal Halide Tubular Single-Ended T-6 Lamps

Enclosed luminaires only; lifetime color stability within $\pm 200K$

- ▶ G12 bipin based low wattage ceramic metal halide lamps
- ▶ FadeBlock UV filtering
- ▶ No shut off required in 24-hour-a-day/7-day-a-week operations (relamp fixtures at or before the end of rated life)
- ▶ For **Warnings, Cautions and Operating Instructions**, see page 96

39	T-6	G12	22328-9	★	CDM35/ T6/830	M130/E	12	G, Clear; FadeBlock (391, 392, 396, 397)	2 1/2	3 1/8	12,000	3300	2600	81	3000
70	T-6	G12	22337-0	★	CDM70/ T6/830	M139/E	12	G, Clear; FadeBlock (391, 392, 396, 397)	2 1/2	3 1/8	12,000	6600	4950	81	3000
			28137-8	★	CDM70/ T6/942	M139/E	12	G, Clear; FadeBlock (391, 392, 396, 397)	2 1/2	3 1/8	12,000	6600	4620	92	4200
150	T-6	G12	23272-8	★	CDM150/ T6/830	M142/E	12	G, Clear; FadeBlock, also ANSI M102 (391, 392, 396, 397)	2 1/2	4 1/2	12,000	14,000	9800	85	3000
			37369-6	★	CDM150/ T6/942	M142/E	12	G, Clear; FadeBlock, also ANSI M102 (391, 392, 396, 397)	2 1/2	4 1/2	9000	12,700	8900	96	4200

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

HID symbols and footnotes located on page 95

HIGH INTENSITY DISCHARGE LAMPS

MasterColor® Ceramic Metal Halide Lamps

Lamp			Product	Symbols,	Ordering	ANSI	Pkg. •	Description (Operating Position—Universal, unless otherwise indicated) (401)	LCL MOL		Rated Avg.	Approximate		CCT	
Watts	Bulb	Base	Number	Footnotes		Code/			Ballast Ref.	(In.)	(In.)	Life, Hrs. (351)	Initial		Mean(353)	CRI	(K)
MasterColor Ceramic Metal Halide Tubular Double-Ended Lamps															
Double-Ended TD-6 & TD-7 Style; enclosed luminaires only; lifetime color stability within ±200K															
▶ RX7s single-pin based low wattage ceramic metal halide lamps															
▶ FadeBlock™ UV filtering															
▶ No shut off required in 24-hour-a-day/7-day-a-week operations (relamp fixtures at or before the end of rated life)															
▶ For Warnings, Cautions and Operating Instructions, see page 96															
70	TD-6	RX7s	23160-5	★	CDM70/ TD/830	M139/ M85/E	12	G, Clear, FadeBlock, Hor: ± 45° (374, 391, 392, 396)	2 ¼	4 1/8	15,000	6500	5200	82	3000
			37370-4	★	CDM70/ TD/942	M139/ M85/E	12	G, Clear, FadeBlock, Hor: ± 45° (374, 391, 392, 396)	2 ¼	4 1/8	15,000	6000	4500	92	4200
150	TD-7	RX7s	23167-0	★	CDM150/ TD/830	M142/ M102/M81E	12	G, Clear, FadeBlock, Hor: ± 45° (374, 391, 392, 396)	2 1/2	5 ¾	15,000	13,250	11,260	88	3000
			37371-2	★	CDM150/ TD/942	M142/ M102/M81E	12	G, Clear, FadeBlock, Hor: ± 45° (374, 391, 392, 396)	2 1/2	5 ¾	15,000	14,200	12,070	96	4200

Lamp			Product	Symbols,	Ordering	ANSI	Pkg. •	Description (Operating	MBCP	MOL	Rated Avg.	Approximate		CCT	
Watts	Bulb	Base	Number	Footnotes		Code		Code/ Ballast Ref.		Position—Universal, unless otherwise indicated) (401)	(In.)	Life, Hrs.	Lumens, (352)		Initial	Mean(353)	CRI	(K)
Protected MasterColor Ceramic Metal Halide R111 Lamps															
Open or Enclosed luminaires; lifetime color stability within ±200K															
▶ GX8.5 twist and lock base low wattage ceramic metal halide lamps; approved for electronic ballast only															
▶ FadeBlock UV filtering															
▶ No shut off required in 24-hour-a-day/7-day-a-week operations (relamp fixtures at or before the end of rated life)															
▶ For Warnings, Cautions and Operating Instructions, see page 97															
38	R111	GX8.5	13554-1	† □ ★	CDM-R111/ 35W/830 10DG	M130/O	6	G, R111, Spot 10°, (391, 392, 396, 397)	35,000	3¾	9000	1400	900	81	3000
			13556-6	† □ ★	CDM-R111/ 35W/830 24DG	M130/O	6	G, R111, N. Flood 24°, (391, 392, 396, 397)	8500	3¾	9000	1600	1040	81	3000
			13921-2	† □ ★	CDM-R111/ 35W/830 40DG	M130/O	6	G, R111, Flood 40°, (391, 392, 396, 397)	4000	3¾	9000	1800	1170	81	3000

Protected MasterColor Ceramic Metal Halide PAR Lamps

Open or enclosed luminaires; lifetime color stability within ±200K

▶ FadeBlock UV filtering

▶ No shut off required in 24-hour-a-day/7-day-a-week operations (relamp fixtures at or before the end of rated life)

▶ For Warnings, Cautions and Operating Instructions, see page 97

39	PAR-20	Med.	23365-0	★	CDM35/PAR20 /M/SP	M130/O	12	G, PAR WISO Spot 10° (391, 392, 396, 397)	23,000	3 3/4	9000	2000	1600	81	3000
			23364-3	★	CDM35/PAR20 /M/FL	M130/O	12	G, PAR WISO Flood 30° (391, 392, 396, 397)	5000	3 3/4	9000	2000	1600	81	3000
	PAR-30L	Med.	22329-7	★	CDM35/PAR30L /M/SP	M130/O	6	G, PAR WISO Spot 10° (391, 392, 396, 397)	44,000	4 3/4	9000	2000	1600	81	3000
			22330-5	★	CDM35/PAR30L /M/FL	M130/O	6	G, PAR WISO Flood 30° (391, 392, 396, 397)	7400	4 3/4	9000	2200	1760	81	3000
70	PAR-30L	Med.	23224-9	★	CDM70/PAR30L /M/SP	M143/ M98/O	6	G, PAR WISO Spot 10° (391, 392, 396)	68,000	4 3/4	9000	4850	3880	82	3000
			23221-5	★	CDM70/PAR30L /M/FL	M143/ M98/O	6	G, PAR WISO Flood 40° (391, 392, 396)	10,000	4 3/4	9000	4850	3880	82	3000
	PAR-38	Med.	22250-5	★	CDM70/PAR38 /SP/3K/ALTO	M143/ M98/O	12	G, PAR WISO Spot 15° (391, 392, 396, 399)	42,000	5 3/8	12,500	4100	2870	85	3000
			22249-7	★	CDM70/PAR38 /FL/3K/ALTO	M143/ M98/O	12	G, PAR WISO Flood 25° (391, 392, 396, 399)	18,000	5 3/8	12,500	4100	2870	85	3000
			28872-0	□ ★	CDM70/PAR38 /SP/4K/ALTO	M143/ M98/O	12	G, PAR WISO Spot 15° (391, 392, 396, 399)	40,000	5 3/8	12,500	3700	2590	92	4000
			28873-8	□ ★	CDM70/PAR38 /FL/4K/ALTO	M143/ M98/O	12	G, PAR WISO Flood 25° (391, 392, 396, 399)	15,000	5 3/8	12,500	3700	2590	92	4000

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

HID symbols and footnotes located on page 95

■ This product utilizes ALTO® Lamp Technology

HIGH INTENSITY DISCHARGE LAMPS

MasterColor® Ceramic Metal Halide Lamps

Lamp Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code/ Ballast Ref.	Pkg. • Qty.	Description (Operating Position—Universal, unless otherwise indicated) (401)	MBCP	MOL (In.)	Rated Avg. Life, Hrs. (351)	Approximate Lumens, (352) Initial	Mean(353)	CRI	CCT (K)
Protected MasterColor Ceramic Metal Halide PAR Lamps, continued															
100	PAR-38	Med.	24477-2	★	CDM100/PAR38 /SP/3K/ALTO	M140/ M90/O	12	G, PAR WISO Spot 15° (391, 392, 396, 399)	65,000	5 7/8	12,500	6200	4340	85	3000
			24476-4	★	CDM100/PAR38 /FL/3K/ALTO	M140/ M90/O	12	G, PAR WISO Flood 25° (391, 392, 396, 399)	24,000	5 7/8	12,500	6200	4340	85	3000
			28876-1	□★	CDM100/PAR38 /SP/4K/ALTO	M140/ M90/O	12	G, PAR WISO Spot 15° (391, 392, 396, 399)	52,000	5 7/8	12,500	5700	3990	92	4000
			28878-7	□★	CDM100/PAR38 /FL/4K/ALTO	M140/ M90/O	12	G, PAR WISO Flood 25° (391, 392, 396, 399)	19,000	5 7/8	12,500	5700	3990	92	4000

Lamp Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code/ Ballast Ref.	Pkg. • Qty.	Description (Operating Position—Universal, unless otherwise indicated) (401)	LCL	MOL (In.)	Rated Avg. Life, Hrs. (351)	Approximate Lumens, (352) Initial	Mean(353)	CRI	CCT (K)
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Protected MasterColor Ceramic Metal Halide Lamps

ED-17P sleeved arc tube; open or enclosed luminaires; lifetime color stability within ±200K; pulse start

- ▶ FadeBlock™ UV filtering
- ▶ No shut off required in 24-hour-a-day/7-day-a-week operations (relamp fixtures at or before the end of rated life)
- ▶ Protective quartz sleeve surrounds the arc tube
- ▶ MP designation indicates lamps are suitable for open fixture applications
- ▶ For Warnings, Cautions and Operating Instructions, see page 97

50	ED-17P	Med.	36891-0	□★	MHC50/U/ MP/3K/ALTO	M148/ M110/O	12	G, Clear, FadeBlock (391, 392, 396, 399)	3 7/8	5 7/8	10,000	4000	2680	85	3000
			36893-6	□★	MHC50/U/ MP/4K/ALTO	M148/ M110/O	12	G, Clear, FadeBlock (391, 392, 396, 399)	3 7/8	5 7/8	20,000	3600	2450	92	4000
70	ED-17P	Med.	23366-8	★	MHC70/U/ MP/3K/ALTO	M143/ M98/O	12	G, Clear, FadeBlock (391, 392, 396, 399)	3 7/8	5 7/8	16,000	5900	4365	85	3000
			23367-6	★	MHC70/C/U/ MP/3K/ALTO	M143/ M98/O	12	G, Coated, FadeBlock (391, 392, 396, 399)	—	5 7/8	16,000	5400	3995	85	3000
			36057-8	□★	MHC70/U/ MP/4K/ALTO	M143/ M98/O	12	G, Clear, FadeBlock (391, 392, 396, 399)	3 7/8	5 7/8	20,000	5800	4060	92	4000
			36059-4	□★	MHC70/C/U/ MP/4K/ALTO	M143/ M98/O	12	G, Coated, FadeBlock (391, 392, 396, 399)	—	5 7/8	20,000	5200	3640	92	4000
100	ED-17P	Med.	23368-4	★	MHC100/U/ MP/3K/ALTO	M140/ M90/O	12	G, Clear, FadeBlock (391, 392, 396, 399)	3 7/8	5 7/8	16,000	8600	6450	85	3000
			23444-3	★	MHC100/C/U/ MP/3K/ALTO	M140/ M90/O	12	G, Coated, FadeBlock (391, 392, 396, 399)	—	5 7/8	16,000	7900	5925	85	3000
			36060-2	□★	MHC100/U/ MP/4K/ALTO	M140/ M90/O	12	G, Clear, FadeBlock (391, 392, 396, 399)	3 7/8	5 7/8	20,000	8200	6150	92	4000
			36061-0	□★	MHC100/C/U/ MP/4K/ALTO	M140/ M90/O	12	G, Coated, FadeBlock (391, 392, 396, 399)	—	5 7/8	20,000	7500	5625	92	4000
150	ED-17P	Med.	13463-5	†★	MHC150/U/ MP/3K/ALTO	M142/ M102/O	12	G, Clear, FadeBlock (391, 392, 396, 399)	3 7/8	5 7/8	10,000	12,900	9545	85	3000
			13464-3	†★	MHC150/C/U/ MP/3K/ALTO	M142/ M102/O	12	G, Coated, FadeBlock (391, 392, 396, 399)	—	5 7/8	10,000	11,900	8805	85	3000
			37724-2	□★	MHC150/U/ MP/4K/ALTO	M142/ M102/O	12	G, Clear, FadeBlock (391, 392, 396, 399)	3 7/8	5 7/8	20,000	12,000	9000	92	4000
			37726-7	□★	MHC150/C/U/ MP/4K/ALTO	M142/ M102/O	12	G, Coated, FadeBlock (391, 392, 396, 399)	—	5 7/8	20,000	11,000	8250	92	4000

For the most current product information, go to www.nam.lighting.philips.com/us/catalog/

HID symbols and footnotes located on page 95

■ This product utilizes ALTO® Lamp Technology

HIGH INTENSITY DISCHARGE LAMPS

MasterColor® Ceramic Metal Halide Lamps

Lamp Watts	Bulb Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code/Ballast Ref.	Pkg. Qty.	Description (Operating Position—Universal, unless otherwise indicated) (401)	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (351)	Approx. Lumens (352) Initial	Mean(353)	CRI	CCT (K)
MasterColor Ceramic Metal Halide ED-17, ED-28 Lamps														
Enclosed luminaires only; lifetime color stability within ±200K; pulse start														
No shut off required in 24-hour-a-day/7-day-a-week operations (relamp fixtures at or before the end of rated life)														
For Warnings, Cautions and Operating Instructions, see page 97														
50	ED-17 Med.	36020-6	□★	MHC50/U/ M/3K/ALTO	M148/ M110/E	12	G, Clear (391, 392, 399)	3 7/8	5 7/8	10,000	4100	2750	85	3000
		36022-2	□★	MHC50/C/U/ M/3K/ALTO	M148/ M110/E	12	G, Coated (391, 392, 399)	—	5 7/8	10,000	3800	2545	85	3000
		36023-0	□★	MHC50/U/ M/4K/ALTO	M148/ M110/E	12	G, Clear (391, 392, 399)	3 7/8	5 7/8	20,000	3750	2550	92	4000
		36024-8	□★	MHC50/C/U/ M/4K/ALTO	M148/ M110/E	12	G, Coated (391, 392, 399)	—	5 7/8	20,000	3600	2450	92	4000
70	ED-17 Med.	20884-3	★	MHC70/U/ M/3K/ALTO	M143/ M98/E	12	G, Clear (391, 392, 399)	3 7/8	5 7/8	16,000	6200	4585	85	3000
		20887-6	★	MHC70/C/U/ M/3K/ALTO	M143/ M98/E	12	G, Coated (391, 392, 399)	—	5 7/8	16,000	5800	4290	85	3000
		28129-5	□★	MHC70/U/ M/4K/ALTO	M143/ M98/E	12	G, Clear (391, 392, 399)	3 7/8	5 7/8	20,000	5900	4130	92	4000
		28133-7	□★	MHC70/C/U/ M/4K/ALTO	M143/ M98/E	12	G, Coated (391, 392, 399)	—	5 7/8	20,000	5500	3850	92	4000
100	ED-17 Med.	20888-4	★	MHC100/U/ M/3K/ALTO	M140/ M90/E	12	G, Clear (391, 392, 399)	3 7/8	5 7/8	16,000	9500	7125	85	3000
		20889-2	★	MHC100/C/U/ M/3K/ALTO	M140/ M90/E	12	G, Coated (391, 392, 399)	—	5 7/8	16,000	8800	6600	85	3000
		28135-2	□★	MHC100/U/ M/4K/ALTO	M140/ M90/E	12	G, Clear (391, 392, 399)	3 7/8	5 7/8	20,000	9000	6750	92	4000
		28136-0	□★	MHC100/C/U/ M/4K/ALTO	M140/ M90/E	12	G, Coated (391, 392, 399)	—	5 7/8	20,000	8400	6300	92	4000
	ED-28 Mog.	36543-7	□★	MHC100/U/ ED28/HR/4K	M140/ M90/E	12	G, Clear (372, 377, 378)	5	8 7/8	10,000	8500	6800	92	4100
150	ED-17 Med.	13022-9	†□★	MHC150/U/ M/3K/ALTO	M142/ M102/E	12	G, Clear (391, 392, 399)	3 1/2	5 7/8	10,000	14,000	10,500	85	3000
		13023-7	†□★	MHC150/C/U/ M/3K/ALTO	M142/ M102E	12	G, Coated (391, 392, 399)	—	5 7/8	10,000	12,500	9375	85	3000
		37720-0	□★	MHC150/U/ M/4K/ALTO	M142/ M102/E	12	G, Clear (391, 392, 399)	3 7/8	5 7/8	20,000	13,000	9750	92	4000
		37721-8	□★	MHC150/C/U/ M/4K/ALTO	M142/ M102/E	12	G, Coated (391, 392, 399)	—	5 7/8	20,000	12,000	9000	92	4000

HIGH INTENSITY DISCHARGE LAMPS

MasterColor® Ceramic Metal Halide Lamps

Lamp Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code/ Ballast Ref.	Pkg. Qty. •	Description (Operating Position—Universal, unless otherwise indicated) (401)	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (351)	Approx. Lumens (352) Initial	Mean(353)	CRI	CCT (K)
Protected MasterColor Pulse Start Ceramic Metal Halide Lamps															
Open or Enclosed luminaires; lifetime color stability within ±200K; V = Vertical Operation ±15°															
► Higher Lumen maintenance (85%) and 80% of initial lumens at 8000 hours															
► For operation on Metal Halide Pulse Start ballasts															
► No shut off required in 24-hour-a-day/7-day-a-week operations (relamp fixtures at or before the end of rated life)															
► Patent-pending coil design offers protection for open fixture rating															
► For Warnings, Cautions and Operating Instructions , see page 98															
400	ED-37	EX39	I3290-2	† ★	CDM400/V/O/ PS/4K/ALTO	M172/ M155/O	6	G, Clear; Vertical ±15° (374, 391, 392, 399)	7	11 1/2	15,000	35,000	29,750	88	4200
			I3293-6	† ★	CDM400/C/V/O/ PS/4K/ALTO	M172/ M155/O	6	G, Coated; Vertical ±15° (374, 391, 392, 399)	—	11 1/2	15,000	34,000	28,900	88	4200

MasterColor Ceramic Metal Halide HPS-Retro White™

ED-18, open or enclosed luminaires; lifetime color stability within ±200K; V = Vertical Operation ±15°

► Replace yellow light with white light with just a simple twist!

► For operation on HPS ballasts; 85% lumen maintenance

► No shut off required in 24-hour-a-day/7-day-a-week operations (relamp fixtures at or before the end of rated life)

► Patent-pending coil design offers protection for open fixture rating

► For **Warnings, Cautions and Operating Instructions**, see page 98

250	ED-18	Mog	I3093-0	★	CDM250 S50 /V/O/4K/ALTO	M168/O S50	12	G, Clear; Vertical ±15° (374, 399)	5 3/4	9 3/4	20,000	22,500	19,125	85	4000
400	ED-18	Mog	I3094-8	★	CDM400 S51 /V/O/4K/ALTO	M169/O S51	12	G, Clear; Vertical ±15° (374, 399)	5 3/4	9 3/4	20,000	34,000	28,900	85	4000

HIGH INTENSITY DISCHARGE LAMPS

Metal Halide Lamps

Metal Halide Lamps

General Information

White light source offers improved color rendition over HPS and all dimmable down to 50%

Explanation of suffix in ordering code

(no suffix = clear, mogul base):

/C Coated

/M Medium Base

/MP Protected

ANSI Code:

E = Enclosed Fixture Rated

O = Open Fixture Rated

S = Open or Enclosed Fixture Rated

Descriptive symbols for Metal Halide:

MH Metal Halide

PS Pulse Start

MS High Output Metal Halide

MHT Safety Lifeguard Metal Halide

Operating Position:

/U Universal

/BU Base up $\pm 15^\circ$ unless specified otherwise

/BD Base down $\pm 15^\circ$ unless specified otherwise

/HOR Horizontal

Lamp	Product	Ordering	ANSI	Description	LCL	MOL	Rated Avg.	Approximate		
Watts	Number	Code	Code/	(Operating Position—Universal,	(In.)	(In.)	Life, Hrs.	Lumens, (352)		
Bulb	Base	Footnotes	Ballast Ref.	unless otherwise indicated)			(351)	Initial	Mean(353)	CRI
										(K)

Pulse Start Metal Halide Lamps

Enclosed luminaires only unless otherwise noted; base up operation $\pm 15^\circ$ unless otherwise noted.

Pulse start metal halide is designed for operation on only approved ballasts with metal halide pulse ignitors, offering:

Quicker start/restrike (2 minute start/4 minute restrike vs. 4 minute start/15 minute restrike for standard metal halide lamps)

Longer life (15,000–20,000+ hours)

Improved lumen maintenance (20%) increase

Increased efficacy (up to 120 LPW)

For Warnings, Cautions and Operating Instructions, see page 99

175	ED-28 Mog.	27662-6	■ ★	MS175/ BU/PS	M152/ M137/E	12	G, Base Up $\pm 15^\circ$, Pulse Start (372, 374, 391)	5	8 ⅞	15,000	16,000	11,200	62	3700
250	ED-28 Mog.	27661-8	■ ★	MS250/ BU/PS	M153/ M138/E	12	G, Base Up $\pm 15^\circ$, Pulse Start (372, 374, 391)	5	8 ⅞	15,000	23,750	16,625	65	4300
320	ED-28 Mog.	38381-0	■ □ ★	MS320/ U/PS	M154/ M132/E	12	G, Clear; Pulse Start (372, 374, 391)	5	8 ⅞	20,000	30,000	21,000	62	4100
		38386-9	■ □ ★	MS320/ C/U/PS	M154/ M132/E	12	G, Coated; Pulse Start (372, 374, 391)	—	8 ⅞	20,000	29,000	20,300	70	3600
350	ED-37 Mog.	38387-7	■ ★	MS350 /BU/PS	M131/E	12	G, Clear; Base Up $\pm 15^\circ$, Pulse Start (372, 374, 391)	7	11 ½	20,000	36,000	25,200	62	4000
		38388-5	■ ★	MS350/ C/BU/PS	M131/E	6	G, Coated; Base Up $\pm 15^\circ$, Pulse Start (372, 374, 391)	—	11 ½	20,000	35,000	24,500	65	3600
400	ED-37 Mog.	27816-8	■) ★	MS400/ BU/PS	M155/M128/ M135/S	6	G, Clear; Base Up $\pm 15^\circ$, Pulse Start (372, 374, 391)	7	11 ½	20,000	42,600	29,820	62	4100
		28362-2	■) ★	MS400/ C/BU/PS	M155/M128/ M135/S	6	G, Coated; Base Up $\pm 15^\circ$, Pulse Start (372, 374, 391)	—	11 ½	20,000	41,500	29,050	66	3700
1000	BT-37 Mog.	36019-8	■ □ ★	MS1000/BU/ BT37/PS	M141/E	6	G, Clear; Base Up $\pm 15^\circ$, Pulse Start (372, 374, 391)	7	11 ½	15,000	120,000	96,000	65	3700

Protected Pulse Start Metal Halide “O” Rated Lamps

Open or enclosed luminaires; pulse start metal halide is designed for operation on only approved ballasts with metal halide pulse ignitors, offering:

Quicker start/restrike (2 minute start/4 minute restrike vs. 4 minute start/15 minute restrike for standard metal halide lamps)

No shut off required in 24-hour-a-day/7-day-a-week operations (relamp fixtures at or before the end of rated life)

Longer life (20,000+ hours)

Improved lumen maintenance (20%) increase

Increased efficacy (up to 100 LPW)

For Warnings, Cautions and Operating Instructions, see page 99

320	ED-37 EX39	13039-3	■ † ★	MP320/ BU/PS	M154/ M132/O	6	G, Clear; Base Up $\pm 15^\circ$ Pulse Start (372, 374, 391)	7	11 ½	20,000	29,500	20,650	65	3800
	Excl. Mog.	13040-1	■ † ★	MP320/C/ BU/PS	M154/ M132/O	6	Coated; Base Up $\pm 15^\circ$ Pulse Start (372, 374, 391)	—	11 ½	20,000	27,200	19,040	65	3700
350	ED-37 EX39	39101-1	■ † ★	MP350/ BU/PS	M131/O	6	Clear; Base Up $\pm 15^\circ$ Pulse Start (372, 374, 391)	7	11 ½	20,000	34,000	23,800	64	4000
	Excl. Mog.	39102-9	■ † ★	MP350/C/ BU/PS	M131/O	6	Coated; Base Up $\pm 15^\circ$ Pulse Start (372, 374, 391)	—	11 ½	20,000	31,000	21,700	67	3700
400	ED-37 EX39	13334-8	■ † ★	MP400/ BU/PS	M155/M128/ M135/O	6	G, Clear; Base Up $\pm 15^\circ$ Pulse Start (372, 374, 391)	7	11 ½	20,000	40,000	28,000	65	3800
	Excl. Mog.	13335-5	■ † ★	MP400/C/ BU/PS	M155/M128/ M135/O	6	G, Coated; Base Up $\pm 15^\circ$ Pulse Start (372, 374, 391)	—	11 ½	20,000	36,000	23,400	68	3600

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

HID symbols and footnotes located on page 95

HIGH INTENSITY DISCHARGE LAMPS

Metal Halide Lamps

Lamp Watts	Bulb	Base	Product Number 046677-	Symbols, Footnotes	Ordering Code	ANSI Code/ Ballast Ref.	Pkg. Qty.	Description (Operating Position—Universal, unless otherwise indicated)	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (351)	Approximate Lumens, (352) Initial	Mean(353)	CRI	CCT (K)
Protected Metal Halide “O” Rated Lamps															
► Protective quartz sleeve surrounds the arc tube ► No shut off required in 24-hour-a-day/7-day-a-week operations (relamp fixtures at or before the end of rated life) ► MP designation indicates lamps are suitable for open fixture applications ► For Warnings, Cautions and Operating Instructions , see page 100															
175	ED-28	EX39	28119-6	■ ★	MP175/BU	M57/O	12	Base Up ±15°, Clear (372, 374, 377)	5	8 ⅞	10,000	15,000	12,000	65	3800
			Excl. Mog.												
250	ED-28	EX39	28124-6	■ ★	MP250/BU	M58/O	12	Base Up ±15°, Clear (372, 374, 377)	5	8 ⅞	10,000	22,000	16,500	62	3800
			Excl. Mog.												
360	ED-37	EX39	13067-4	■ \$ † ★	MP360BU/ EW	M165/ M59/O	6	Base Up ±15° (372, 374, 377)	7	11 ½	20,000	34,200	23,940	65	4000
			Excl. Mog.												
			13068-2	■ \$ † ★	MP360C/ BU/EW	M165/ M59/O	6	Base Up ±15°, Coated (372, 374, 377)	—	11 ½	20,000	31,700	20,605	68	3600
400	ED-37	EX39	13332-2	■ † ★	MP400/BU	M59/O	6	Base Up ±15°, Clear (372, 374, 377)	7	11 ½	20,000	38,000	26,600	65	4000
			Excl. Mog.												
			13333-0	■ † ★	MP400C/BU	M59/O	6	Base Up ±15°, Coated (372, 374, 377)	—	11 ½	20,000	34,500	22,425	67	3700
1000	BT-56	EX39	28118-8	■ ★	MP1000/BU	M47/O	6	Base Up ±15°, Clear (372, 374, 377)	9 ½	15 ⅞	12,000	107,000	75,000	65	3900
			Excl. Mog.												

Metal Halide Lamps

Enclosed luminaires only unless otherwise noted.

► For **Warnings, Cautions and Operating Instructions**, see page 100

150	BD-17	Med.	35462-1	★	MH150/U/M	M107/E	12	G, Clear (372, 385, 400)	3 ⅞	5 ⅞	10,000	12,500	8500	65	3700
			35463-9	★	MH150C/ U/M	M107/E	12	G, Coated (372, 385, 400)	—	5 ⅞	10,000	12,000	7900	65	3400
175	BD-17	Med.	31358-5	★	MH175/U/M	M57/E	12	G, Clear (372, 377, 385, 393)	3 ⅞	5 ⅞	10,000	13,500	9100	65	4000
			31359-3	★	MH175C/ U/M	M57/E	12	G, Coated (372, 377, 385)	—	5 ⅞	10,000	13,000	8380	65	3700
	ED-28	Mog.	28733-4	★	MH175/U	M57/E	12	G, S, Clear (372, 377, 385, 393)	5	8 ⅞	10,000	13,500	8775	65	4000
			28728-4	★	MH175C/U	M57/E	12	G, S, Coated (372, 374, 377, 385)	—	8 ⅞	10,000	13,000	8200	70	3700
			31287-6	★	MH175/ 3K/BU	M57/E	12	G, Base Up ± 15°, Coated (372, 374, 377)	—	8 ⅞	10,000	12,000	7560	70	3200
			24725-4	★	MS175/BU	M57/E	12	G, Base Up ± 15° (372, 374, 377)	5	8 ⅞	10,000	15,000	9400	65	4000
	POMB		28649-2	X ★	MS175/HOR	M57/E	12	G, Hor. ± 45°, Clear (372, 374, 377)	5	8 ⅞	10,000	15,000	9000	65	4300
			28650-0	X ★	MS175/ C/HOR	M57/E	12	G, Hor. ± 45°, Coated (372, 374, 377)	—	8 ⅞	10,000	14,500	8400	70	4100
	PAR-38	Med.	30858-5	▼ ★	MH175/RFL	M57/E	6	G, Clear, 55° Beam (372, 377)	—	5 ⅞	7500	10,000	—	55	3700
250	ED-28	Mog.	27484-5	★	MH250/U	M58/E	12	G, S, Clear (372, 377, 385, 393)	5	8 ⅞	10,000	20,500	13,500	65	4000
			29169-0	★	MH250C/U	M58/E	12	G, S, Coated (372, 377, 385, 393)	—	8 ⅞	10,000	19,475	12,500	70	3700
			31137-3	★	MH250/ 3K/BU	M58/E	12	G, Base Up ± 15°, Coated (372, 377, 393)	—	8 ⅞	10,000	18,000	11,300	70	3200
	POMB		28652-6	X ★	MS250/HOR	M58/E	12	G, Hor. ± 45°, Clear (372, 374, 377)	5	8 ⅞	10,000	23,000	13,800	65	4300
			28654-2	X ★	MS250/ C/HOR	M58/E	12	G, Hor. ± 45°, Coated (372, 374, 377)	—	8 ⅞	10,000	21,850	12,700	70	3800
360	ED-37	Mog.	39065-8	\$ † ★	MS360/ BU/EW	M165/ M59/S	6	High Efficacy, Base Up ± 15°, Clear (372, 374, 377)	7	11 ½	20,000	36,000	24,500	60	4300
			39066-6	\$ † ★	MS360C/ BU/EW	M165/ M59/S	6	High Efficacy, Base Up ± 15°, Coated (372, 374, 377)	—	11 ½	20,000	34,200	22,600	65	4000

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

HID symbols and footnotes located on page 95

HIGH INTENSITY DISCHARGE LAMPS

Metal Halide Lamps

Lamp Watts	Bulb	Base	Product Number 046677-	Symbols, Footnotes	Ordering Code	ANSI Code/ Ballast Ref.	Pkg. • Qty.	Description (Operating Position—Universal, unless otherwise indicated)	LCL (In.)	MOL (In.)	Rated Avg.	Approximate		CCT (K)
											Life, Hrs. (351)	Initial	Mean(353)		Lumens, (352)
Metal Halide Lamps, continued														
400	ED-28	Mog.	27862-2	★	MH400/U /ED28	M59/E	12	G, Clear (372, 377, 385, 393)	5	8 3/8	20,000	36,000	24,000	65 4000
			24673-6	★	MS400/BU /ED28	M59/E	12	G, Clear, Base Up ± 15° (372, 374, 377)	5	8 3/8	20,000	40,000	26,000	62 4100
	ED-37	Mog.	34415-0	)★	MH400/U	M59/S	6	G, S, Clear (372, 377, 385, 393)	7	11 1/2	20,000	36,000	24,000	65 4000
			34416-8	)★	MH400/C/U	M59/S	6	G, S, Coated (372, 377, 385, 393)	—	11 1/2	20,000	34,200	22,300	70 3700
			31285-0	)★	MH400/3K/U	M59/S	6	G, Coated (372, 377, 385)	—	11 1/2	20,000	34,400	22,360	63 3300
			30170-5	)★	MS400/BU	M59/S	6	High Efficacy, Base Up ± 15° Clear (372, 374, 377)	7	11 1/2	20,000	40,000	26,500	65 4000
			30172-1	)★	MS400/C/BU	M59/S	6	High Efficacy, Base Up ± 15° Coated (372, 374, 377)	—	11 1/2	20,000	39,200	27,440	65 3900
			31135-7	)★	MS400/3K/BU	M59/S	6	G, Base Up ± 15°, Coated (372, 374, 377)	—	11 1/2	20,000	36,800	23,920	67 3200
1000	BT-37	Mog.	32150-5	★	MH1000/ U/BT37	M47/E	6	G, Clear (359, 372, 377, 385, 393)	7	11 1/2	10,000	110,000	71,500	65 3700
			BT-56	Mog.	29826-5	)★	MH1000/U	M47/S	6	G, S, Clear (372, 377, 385, 393)	9 1/2	15 3/8	12,000	110,000	71,000	65 3700
	29827-3	)★			MH1000/C/U	M47/S	6	G, S, Coated (372, 377, 385, 393)	—	15 3/8	12,000	104,500	65,800	70 3400
	25093-6	)★			MS1000/BU	M47/S	6	High Efficacy, Base Up ± 15° Clear (372, 374, 377)	9 1/2	15 3/8	10,000	120,000	78,000	65 3700
	25130-6	)★			MS1000/BD	M47/S	6	High Efficacy, Base Down ± 15° Clear (372, 374, 377)	9 1/2	15 3/8	10,000	120,000	78,000	65 3700
	25137-1	)★			MS1000/C/BU	M47/S	6	High Efficacy, Base Up ± 15° Coated (372, 374, 377)	—	15 3/8	10,000	115,000	72,500	70 3400
	1500	BT-56	Mog.	13162-3	★	MH1500/U	M48/E	6	G, S, Clear (359, 372, 374, 375, 377, 402)	9 1/2	15 3/8	3000	155,000	124,000	60 3700

Double-Ended Metal Halide Lamps Enclosed luminaires (387)

► For Warnings, Cautions and Operating Instructions, see page 100

70 TD-6 RX7s	30350-3	★	MHN70/TD/840	M85/F	12	G, Hor. ± 15° (372, 374, 387, 391, 392)	2 1/4 4 1/16	9000	5700	4560	80 4200
150 TD-7 RX7s	30355-2	□ ★	MHN150/TD/840	M81/F	12	G, Hor. ± 15° (372, 374, 387, 391, 392)	2 1/2 5 1/8	9000	12,900	9675	85 4200
1800 TD PSFc20-6 Special SFc20-6	31360-1		MHD1800W	—	4	Sports Ltg. Spot Hor. ± 15° (374, 387, 391)	4 1/4 14	4500	150,000	—	92 5600

Safety Lifeguard Metal Halide Lamps Open or enclosed luminaires.

► For Warnings, Cautions and Operating Instructions, see page 101

Safety Lifeguard lamps are designed to reduce the danger of possible injury from shortwave ultraviolet radiation. The lamp will self-extinguish automatically within 15 minutes after the outer envelope is broken by any means, accidental or intentional.

These lamps are particularly suited for use in open luminaires where the outer envelope is vulnerable to breakage and the risk of exposure to ultraviolet

radiation is present. However, the lamp's ability to self-extinguish does not protect against the danger of breakage itself. Accordingly, the users are advised to follow the good lamping practices noted in the Operating Instructions for Metal Halide Lamps.

In case of lamp failure, for safety and to preserve ballast life, turn off electric power and replace lamp promptly.

400 ED-37 Mog.	34598-3	★	MHT400/U	M59PJ-T400/U/S	6	G, S, Clear (364, 372, 377)	7 11 1/2	20,000	34,200	27,400	65 4000
	34601-5	★	MHT400/C/U	M59PK-T400/U/S	6	G, S, Coated (364, 372, 377)	— 11 1/2	20,000	32,500	25,000	65 3700
1000 BT-56 Mog.	23358-5	★	MHT1000/U	M47PA-T1000/U/S	6	G, S, Clear (359, 372, 377)	9 1/2 15 3/8	12,000	104,500	83,600	65 3700

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

HID symbols and footnotes located on page 95

HIGH INTENSITY DISCHARGE LAMPS

High Pressure Sodium Lamps

Ceramalux® High Pressure Sodium Lamps

Explanation of suffix in ordering code
(no suffix = clear, mogul base, std. color):

/C Comfort Color
/D Diffuse Coated
/LV Low Volt
/M Medium Base

Descriptive symbols for
High Pressure Sodium Lamps:

G General
W Wide Beam
EW Econ-o-watt®
S Street Lighting
VW Very Wide

Operating Position:

/U Universal

Lamp Watts	Bulb	Base	Product Number 046677-	Symbols, Footnotes	Ordering Code	ANSI Code/ Ballast Ref.	Pkg. Qty.	Description (Operating Position—Universal, unless otherwise indicated)	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (351)	Approximate Lumens, (352) Initial	Mean(353)	CRI	CCT (K)
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Mini WhiteSON® High Pressure Sodium Lamps

Incandescent color quality

► Longer white lifetime of 10,000 hours

► GX12-I base compact T-6 high pressure sodium lamps approved for Advance e-Vision® IWSN100CLF and IWSN100CBL electronic ballasts only

► For Warnings, Cautions and Operating Instructions, see page 102

100	T-6	GX12-I	13425-4	† □ ★	SDW-TG 100W/T6/825	S167	12	G, (360, 373, 376)	2 1/5	4 1/32	10,000	4900	4165	83	2550
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White SON® High Pressure Sodium Lamps

Incandescent color quality

► Excellent color rendition of 85 CRI

► Small compact source

► Incandescent color appearance of 2700K

► Long life—10,000 hours

► For Warnings, Cautions and Operating Instructions, see page 102

50	T-10	PG-12	30229-9	□ ★	SDW-T 50W/LV	S104	12	G (360, 373, 376, 394)	3 3/8	5 3/8	10,000	2300	2070	83	2500
	BD-17 Med.		31344-5	■ □ ★	SDW-50W/ LV/D	S104	12	G (360, 373, 376, 394)	—	5 3/8	10,000	2350	2000	85	2700
100	T-10	PG-12	30228-1	□ ★	SDW-T 100W/LV	S105	12	G (360, 373, 376, 394)	3 3/8	5 3/8	10,000	5000	4250	83	2550
	BD-17 Med.		31346-0	■ □ ★	SDW-100W/ LV/D	S105	12	G (360, 373, 376, 394)	—	5 3/8	10,000	4900	4170	85	2700

Ceramalux Comfort High Pressure Sodium Lamps

Improved color rendering

► Improved color rendition of 65 CRI

► High efficacy

► Warm white color appearance

► Operates on standard HPS ballasts

► For Warnings, Cautions and Operating Instructions, see page 102

70	BD-17 Med.		30617-5	★	C70S62/ C/M	S62	12	G (360, 373, 376)	3 3/8	5 3/8	15,000	4400	3960	60	2200
100	BD-17 Med.		30635-7	★	C100S54/ C/M	S54	12	G (360, 373, 376)	3 3/8	5 3/8	15,000	7800	7020	60	2200
	ED-23 1/2 Mog.		30637-3	★	C100S54/C	S54	12	G (360, 373, 376)	5	7 3/8	15,000	7900	7110	60	2200
150	BD-17 Med.		30647-2	★	C150S55/ C/M	S55	12	G (360, 373, 376)	3 3/8	5 3/8	15,000	12,000	10,800	60	2200
	ED-23 1/2 Mog.		30643-1	★	C150S55/C	S55	12	G (360, 373, 376)	5	7 3/8	15,000	12,000	10,800	60	2200
250	ED-18 Mog.		30245-5	★	C250S50/C	S50	12	G (360, 373, 376)	5 3/8	9 3/8	15,000	23,000	20,700	65	2200
400	ED-18 Mog.		30652-2	★	C400S51/C	S51	12	G (360, 373, 376)	5 3/8	9 3/8	15,000	37,500	33,750	65	2200

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

HID symbols and footnotes located on page 95

HIGH INTENSITY DISCHARGE LAMPS

High Pressure Sodium Lamps

Lamp Watts Bulb Base	Product		Ordering Code	ANSI Code/ Ballast Ref.	Pkg. • Qty.	Description (Operating Position—Universal, unless otherwise indicated)	LCL (In.)	MOL (In.)	Rated Avg.	Approximate		CCT (K)		
	Number 046677- Footnotes	Symbols,							Life, Hrs. (351)	Lumens, (352)	Initial		Mean(353)	
Ceralux® High Pressure Sodium Lamps														
Featuring ALTO® Lamp Technology														
▶ Low total cost of ownership														
▶ Long life—up to 24,000 hours														
▶ High efficacy up to 140 LPW														
▶ ALTO Lamp Technology passes EPA's TCLP test for non-hazardous waste														
▶ For Warnings, Cautions and Operating Instructions, see page 102														
35	BD-17 Med.	30632-4	★	C35S76/M	S76	12	G (360, 373, 376)	3 7/8	5 7/8	24,000+	2250	2025	21	2100
		30633-2	★	C35S76/ D/M	S76	12	G (360, 373, 376)	—	5 7/8	24,000+	2150	1935	21	2100
50	BD-17 Med.	30336-2	★	C50S68/M	S68	12	G (360, 373, 376)	3 7/8	5 7/8	24,000+	4000	3600	21	2100
		30337-0	★	C50S68/ D/M	S68	12	G (360, 373, 376)	—	5 7/8	24,000+	3800	3420	21	2100
	ED-23½ Mog.	36867-0	★	C50S68/ ALTO	S68	12	G, S (360, 373, 376)	5	7 3/4	24,000+	4000	3600	21	2100
		33154-6	★	C50S68/ D/ALTO	S68	12	G, S (360, 373, 376)	—	7 3/4	24,000+	3800	3420	21	2100
70	BD-17 Med.	33192-6	★	C70S62/M	S62	12	G (360, 373, 376)	3 7/8	5 7/8	24,000+	6300	5850	21	2100
		33214-8	★	C70S62/D/M	S62	12	G (360, 373, 376)	—	5 7/8	24,000+	5860	5270	21	2100
	ED-23½ Mog.	36869-6	★	C70S62/ ALTO	S62	12	G, S (360, 373, 376)	5	7 3/4	24,000+	6500	5670	21	2100
	PAR-38 Med.	30620-9	▼★	C70S62 /RFL	S62	12	G, VW, 50 (360, 373) 125° Beam	—	5 13/16	16,000	5000	3960	21	2100
100	BD-17 Med.	34446-5	★	C100S54/M	S54S	12	G (360, 373, 376)	3 7/8	5 7/8	24,000+	9500	8550	21	2100
		34448-1	★	C100S54/ D/M	S54S	12	G (360, 373, 376)	—	5 7/8	24,000+	8800	7920	21	2100
	ED-23½ Mog.	36872-0	★	C100S54/ ALTO	S54	12	G, S (360, 373, 376)	5	7 3/4	24,000+	9400	8460	21	2100
		33227-0	★	C100S54/ D/ALTO	S54	12	G, S (360, 373, 376)	—	7 3/4	24,000+	8610	7750	21	2100
150	BD-17 Med.	30347-9	★	C150S55/M	S55	12	G (360, 373, 376)	3 7/8	5 7/8	24,000+	16,000	14,400	21	2100
		30348-7	★	C150S55/ D/M	S55	12	G (360, 373, 376)	—	5 7/8	24,000+	15,000	13,500	21	2100
	ED-23½ Mog.	36874-6	★	C150S55/ ALTO	S55	12	G, S (360, 370, 373, 376)	5	7 3/4	24,000+	15,800	14,220	21	2100
	ED-28 Mog.	36876-1	★	C150S56/ ALTO	S56	12	G, S (360, 370, 373, 376)	5	8 15/16	24,000+	15,000	13,950	21	2100
200	ED-18 Mog.	36877-9	★	C200S66/ ALTO	S66MN-200	12	G, S (360, 373, 376)	5 3/4	9 3/4	24,000+	21,400	19,260	21	2100
225	ED-18 Mog.	32291-7	★	C225S50/ EW	S50	12	EW, G, S (360, 373, 376)	5 3/4	9 3/4	24,000+	27,300	24,620	21	2100
250	ED-18 Mog.	36879-5	★	C250S50/ ALTO	S50	12	G, S (360, 373, 376)	5 3/4	9 3/4	24,000+	27,000	24,300	21	2100
360	ED-18 Mog.	32292-5	★	C360S51/ EW	S51	12	EW, G, S (360, 373, 376)	5 3/4	9 3/4	24,000+	46,000	41,450	21	2100
400	ED-18 Mog.	36881-1	★	C400S51/ ALTO	S51	12	G, S (360, 373, 376)	5 3/4	9 3/4	24,000+	50,000	45,000	21	2100
430	ED-18 Mog.	31710-7	★	SON AGRO 430W	S145/S51	12	AGRO (360, 373, 389, 396)	5 3/4	9 3/4	16,000	54,000	48,600	21	2100
600	T-14 Mog.	23982-2	★	C600S106	S106	12	G (360, 373, 376)	6 7/8	11 7/8	24,000+	90,000	81,000	21	2100
1000	ED-37 Mog.	32386-5	★	C1000S52/ ED37	S52	6	G, S (360, 373, 376)	7	11 1/2	24,000+	125,000	112,000	21	2100
	E-25 Mog.	36883-7	★	C1000S52/ ALTO	S52XB-1000	6	G, S (359, 360, 362, 373, 376)	8 3/4	15 1/8	24,000+	140,000	126,000	21	2100

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

HID symbols and footnotes located on page 95

■ This product utilizes ALTO® Lamp Technology

HIGH INTENSITY DISCHARGE LAMPS

High Pressure Sodium Lamps

Lamp Watts	Bulb	Base	Product Number 046677-	Symbols, Footnotes	Ordering Code	ANSI Code/ Ballast Ref.	Pkg. • Qty.	Description (Operating Position—Universal, unless otherwise indicated) (401)	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (351)	Approximate Lumens, (352) Initial	Mean(353)	CRI	CCT (K)
MasterColor® Ceramic Metal Halide HPS-Retro White™															
- ED-18, open or enclosed luminaires; lifetime color stability within $\pm 200K$; V = Vertical Operation $\pm 15^\circ$ - Replace yellow light with white light with just a simple twist! - For operation on HPS ballasts; 85%+ lumen maintenance - No shut off required in 24-hour-a-day/7-day-a-week operations (relamp fixtures at or before the end of rated life) - Patent-pending coil design offers protection for open fixture rating - For Warnings, Cautions and Operating Instructions, see page 102															
250	ED-18	Mog.	13093-0	★	CDM250 S50 /I/O/4K/ALTO	M168/O S50	12	G, Clear; Vertical $\pm 15^\circ$ (374, 399)	5 3/4	9 3/4	20,000	22,500	19,125	85	4000
400	ED-18	Mog.	13094-8	★	CDM400 S51 /I/O/4K/ALTO	M169/O S51	12	G, Clear; Vertical $\pm 15^\circ$ (374, 399)	5 3/4	9 3/4	20,000	34,000	28,900	85	4000

Instant Restrike High Pressure Sodium Lamps

- Extra arc tube offers light instantly after momentary power interruption and will provide 80% light output within 1–2 minutes
- For applications where instant restrike is not required, rated average life is 40,000 hours
- Operates on standard HPS ballasts and auxiliary equipment
- For **Warnings, Cautions and Operating Instructions**, see page 102

Lamp Watts	Bulb	Base	Product Number 046677-	Symbols, Footnotes	Ordering Code	ANSI Code/ Ballast Ref.	Pkg. • Qty.	Description (Operating Position—Universal, unless otherwise indicated)	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (351)	Approximate Lumens, (352) Initial	Mean(353)	CRI	CCT (K)
50	ED-23 1/2	Mog.	35467-0	■ ★	C50S68/2	S68	12	G, S (360, 373, 376)	5	7 3/4	24,000+	3800	3450	21	2100
70	ED-23 1/2	Mog.	26541-3	■ ★	C70S62/2	S62	12	G, S (360, 373, 376)	5	7 3/4	24,000+	5600	5050	21	2100
100	ED-23 1/2	Mog.	26560-3	■ ★	C100S54/2	S54	12	G, S (360, 373, 376)	5	7 3/4	24,000+	9100	8190	21	2100
150	ED-23 1/2	Mog.	26561-1	■ ★	C150S55/2	S55	12	G, S (360, 373, 376)	5	7 3/4	24,000+	15,600	14,000	21	2100
250	ED-18	Mog.	37717-6	■ ★	C250S50/2	S50	12	G, S (360, 373, 376)	5 3/4	9 3/4	24,000+	27,500	24,750	21	2100
400	ED-18	Mog.	37688-9	■ ★	C400S51/2	S51	12	G, S (360, 373, 376)	5 3/4	9 3/4	24,000+	49,000	44,000	21	2100
1000	E-25	Mog.	20412-3	■ ★	C1000S52/2	S52	6	G, S (360, 373, 376)	8 3/4	15 1/4	24,000+	140,000	126,000	21	2100

Ceramalux® RetroLux High Pressure Sodium Lamps

For operation on all mercury vapor and metal halide ballasts of similar wattage

Operating position: universal

- 150W retrofits 175 watt mercury vapor or metal halide
- 220W retrofits 250 watt mercury vapor or metal halide
- 360W retrofits 400 watt mercury vapor or metal halide
- For **Warnings, Cautions and Operating Instructions**, see page 102

150	BT-28	Mog.	39194-6	★	C150S63/ RetroLux	S63	12	G, S	5 3/4	8 3/4	24,000	15,000	13,500	25	2100
220	BT-28	Mog.	39195-3	★	C220S65/ RetroLux	S65	12	G, S	5 3/4	8 3/4	24,000	25,000	22,500	25	2100
360	BT-37	Mog.	39196-1	★	C360S64/ RetroLux	S64	6	G, S	7 3/4	11 1/2	24,000	45,000	40,500	25	2100

Low Pressure Sodium Lamps—SOX

18	T-17	D.C. Bay	23404-7	□	SOX-E18	L69	12	Clear Base Up $\pm 110^\circ$	5 3/4	8 3/4	18,000	1800	1620	—	1700
35	T-17	D.C. Bay	32781-7		SOX35	L70	12	Clear Base Up $\pm 110^\circ$	—	12 3/4	18,000	4550	4095	—	1700
55	T-17	D.C. Bay	32151-3		SOX55	L71	12	Clear Base Up $\pm 110^\circ$	9 3/4	16 3/4	18,000	7800	7800	—	1700
90	T-21	D.C. Bay	32152-1		SOX90	L72	12	Clear Hor: $\pm 20^\circ$	—	20 3/4	18,000	14,300	12,155	—	1700
135	T-21	D.C. Bay	32153-9		SOX135	L73	12	Clear Hor: $\pm 20^\circ$	—	30 3/4	18,000	22,600	19,210	—	1700
180	T-21	D.C. Bay	32799-9		SOX180	L74	9	Clear Hor: $\pm 20^\circ$	—	44 3/4	18,000	32,000	22,400	—	1700

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

HID symbols and footnotes located on page 95

□ This product utilizes ALTO® Lamp Technology

HIGH INTENSITY DISCHARGE LAMPS

Mercury Vapor Lamps

Mercury Vapor Lamps

Lifeguard lamps with Weather Duty® bulbs, except as noted. Lamps may be operated in any position.

Explanation of suffix in ordering code

(no suffix = clear, non-phosphor coated):

/DX Deluxe White

/M Medium Base

WARNING: "These lamps 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. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available." See Safety Lifeguard Mercury Vapor Lamps for those applications where the lamps are to be used in luminaires to light areas where activities are conducted that can result in the outer envelope being broken or punctured and where prolonged exposure of a population confined to the area can occur.

Descriptive symbols for Mercury Vapor Lamps:

B Black Light
FF Frosted Face
G General Lighting
K Kleen-Beam
RF Reflector Flood
SR Semi Reflector
S Street Lighting
VW Very Wide
W Wide

► For Warnings, Cautions and Operating Instructions, see page 102

Lamp Watts	Bulb	Base	Product Number 046677- Symbols, Footnotes	Ordering Code (363)	ANSI Code	Pkg. Qty.	Description	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (351)	Approximate Lumens, (352)		CCT (K)
											Initial	Mean(353)	
50	BD-17 Med.		35664-2 ★	H46DL-40-50/DX	H46	12	G, (379, 384)	—	5 1/8	24,000+	1580	1260	45 3200
75	BD-17 Med.		27524-8 ★	H43AV-75/DX	H43	12	G, S, (379)	—	5 3/16	24,000+	2800	2250	45 3200
100	A-23 Med.		35658-4 ★	H38MP-100/DX	H38	24	G, (379)	—	5 7/16	24,000+	4300	3700	45 3700
	ED-23 1/2 Mog.		33712-1 ★	H38HT-100	H38	12	G, S, B (355)	5	7 1/2	24,000+	4100	3450	20 7000
			33713-9 ★	H38JA-100/DX	H38	12	G, S (379)	—	7 1/2	24,000+	4400	3400	45 3700
	R-40 Med.		31947-5 ★	H38BP-100/DX	H38	12	RF, FF, VW (379) 145° Beam	—	7 1/2	24,000+	3300	2300	45 4400
175	ED-28 Mog.		31965-7 ★	H39KB-175	H39	12	G, S, B (355)	5	8 5/16	24,000+	7900	7400	20 6800
			24805-4 ★	H39KC-175/DX	H39	12	G, S (379)	—	8 5/16	24,000+	7900	7600	45 3700
	R-40 Med.		32258-6 X ★	H39BM-175	H39	12	RF, FF, W	—	7 1/2	24,000+	6100	5150	20 6800
			30105-1 ★	H39BP-175/DX	H39	12	RF, FF, VW (379) 105° Beam	—	7 1/2	24,000+	6000	4800	40 4300
250	ED-28 Mog.		31985-5 ★	H37KB-250	H37	12	G, S, B (355)	5	8 5/16	24,000+	12,100	10,500	20 6700
			24814-6 ★	H37KC-250/DX	H37	12	G, S (379)	—	8 5/16	24,000+	13,000	10,700	45 3700
400	ED-37 Mog.		25205-6 ★	H33CD-400	H33	6	G, S, B (355)	7	11 1/2	24,000+	21,000	18,900	20 6500
			24842-7 ★	H33GL-400/DX	H33	6	G, S (379)	—	11 1/2	24,000+	23,000	19,100	45 3700
	R-60 Mog.		35661-8 ★	H33FS-400/DX	H33	6	K, FF, RF (379) 146° Beam	—	10 7/8	24,000+	15,000	12,400	45 3800
1000	BT-56 Mog.		35659-2 X ★	H34GW-1000/DX	H34	6	G (379)	—	15 3/8	16,000+	55,000	44,000	45 4000
			25107-4 ★	H36GV-1000	H36	6	G, S (359)	9 1/2	15 3/8	24,000+	57,500	48,400	20 6300
			39707-5 ★	H36GW-1000/DX	H36	6	G, S (359, 379)	—	15 3/8	24,000+	63,000	47,500	45 3700

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

HID symbols and footnotes located on page 95

QL Induction Lighting Systems

QL Induction Lighting is based on a technology which is fundamentally different from that of incandescent lamps or today's conventional gas discharge lamps. Instead of the glowing filaments of incandescent lamps, or the electrodes used in conventional gas discharge lamps, light generation is by means of induction—the transmission of energy via a magnetic field—combined with a gas discharge.

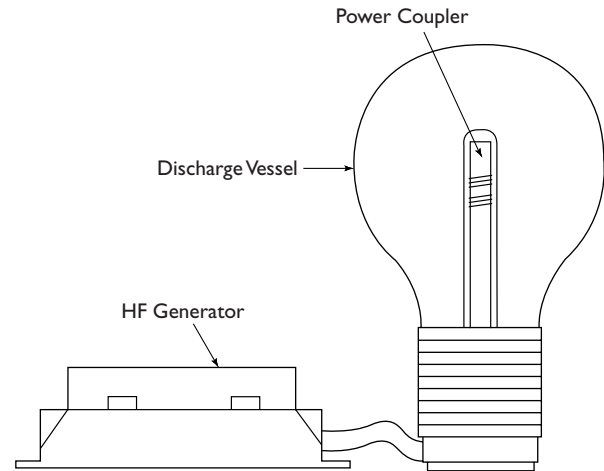
Induced Current In Lamp Bulb (Vessel)

In the QL induction lighting system, the energy source—equivalent to the primary coil of the transformer—is the lamp's induction coil, which is powered by the high-frequency electronics in the HF generator. The secondary coil is represented by the low-pressure gas and metal vapor inside the lamp bulb. The induced current causes the acceleration of charged particles in the metal vapor. These particles collide, resulting in excitation and ionization of the metal vapor atoms and raising the energy level of the free electrons from these atoms to a higher, unstable state. As these excited electrons fall back to their stable, lower-energy state, they emit ultraviolet radiation. This falls on the fluorescent coating inside the lamp bulb, causing light to be emitted.

QL System Components

The QL lamp system consists of three main components (see illustration), each of which can be replaced separately if service is required.

- The **vessel** or **discharge bulb** is a closed glass bulb containing a low-pressure inert gas filling with a small amount of mercury vapor. The walls of the vessel are coated on the inside with a fluorescent powder of any of the modern three-line phosphor types, providing a choice of color temperatures. At present, the colors/830 (3000K) and /840 (4000K) are available. The discharge vessel is fixed to the power coupler by the plastic lamp cap with a click system. These two components normally never need to be disassembled, due to the ultra-long lifetime of the system.



- The **power coupler** transfers energy from the HF generator to the discharge inside the glass bulb, using an antenna that comprises the primary induction coil and its ferrite core. Other parts of the power coupler are a plastic support for the antenna, a 40 cm coaxial connecting cable carrying current from the HF generator and a heat conducting rod with mounting flange. The mounting flange allows the QL lamp system to be mechanically attached to the luminaire and removes waste heat to a heat sink which forms part of the luminaire.
- The **HF generator** produces the 2.65 MHz alternating current supply to the antenna.

Watts	Bulb	Base	Product Number 046677-	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description (Operating Position—Universal, unless otherwise indicated)	LCL (In.)	MOL (In.)	Rated Avg. Life, Hrs. (351)	Approximate Lumens, (352) Initial Mean(353)	CRI	CCT (K)
55	P-26 Twist		27636-0	□	QL55W/S13	6	Generator, 120V ◇	—	5 1/2	100,000	—	—	—
			26787-2	□	QL55W/S03	6	Generator, 240V ◇	—	5 1/2	100,000	—	—	—
			13544-2	□	QL55W/PC	6	Power Coupler	—	5 1/2	100,000	—	—	—
			13545-9	□	QL55W/830	6	Discharge Vessel	—	5 1/2	100,000	3500	2800	80 3000
			13546-7	□	QL55W/840	6	Discharge Vessel	—	5 1/2	100,000	3500	2800	80 4000
85	P-35 Twist		24665-2	□	QL85W/S13	6	Generator, 120V ◇	—	5 1/2	100,000	—	—	—
			13548-3	□	QL85W/GEN 200-277V	6	Generator, 200–277V ◇◇	—	5 1/2	100,000	—	—	—
			13549-1	□	QL85W/PC	6	Power Coupler	—	6 1/2	100,000	—	—	—
			13550-9	□	QL85W/830 3K	6	Discharge Vessel	—	7 1/4	100,000	6000	4800	80 3000
			13551-7	□	QL85W/840	6	Discharge Vessel	—	7 1/4	100,000	6000	4800	80 4000
165	P-41 Click-In		37799-4	□	QL165W/S01	6	Generator, 200/277V ◇◇◇	—	7 1/2	100,000	—	—	—
			36916-5	□	QL165W/PC	6	Power Coupler	—	7 1/4	100,000	—	—	—
			36917-3	□	QL165W/830	6	Discharge Vessel	—	8 1/4	100,000	12,000	9600	80 3000
			36918-1	□	QL165W/840	6	Discharge Vessel	—	8 1/4	100,000	12,000	9600	80 4000

Operating Position: Universal

Power Factor > .9

Total Harmonic Distortion (THD) < 10%

QL System Listings: UL, CSA, FCC Class A

Note: QL System requires all three components to operate (order 3 product numbers)

Vessel maximum diameter: 55W=85mm; 85W=111mm; 165W=131mm

◇ Generator dimensions: L=130mm, W=103mm, H=41.5mm

◇◇ Generator dimensions: L=150mm, W=75.5mm, H=41.3mm

◇◇◇ Generator dimensions: L=161mm, W=112mm, H=50mm

To convert inches to millimeters multiply by 25.4001.

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

HID symbols and footnotes located on page 95

Because of frequent improvements, the values listed may not be current ratings. For design purposes, visit: <http://www.nam.lighting.philips.com/us/ecatalog/>

□ Exclusive to Philips Lighting Company

- Quantity shown is minimum shipping container—refer to Net Price Schedule for number of lamps to qualify as a standard case.

) Open luminaire only if operated vertically $\pm 15^\circ$

G = General Lighting

S = Street Lighting

▼ PAR-38 (one piece)

▲ Aluminum base.

■ Nickel plated brass base.

★ Heat resisting glass bulb.

\$ Energy Saving Product

X Orders will be shipped until inventory is depleted; no longer manufactured

† New since last printing

(E) This Bulb Meets US Federal Minimum Efficiency Standard

(351) Rated average life is the life obtained, on the average, from large representative groups of lamps in laboratory tests under controlled conditions at 10 or more operating hours per start. It is based on survival of at least 50% of the lamps and allows for individual lamps or groups of lamps to vary considerably from the average. For lamps with a rated average life of 24,000 hours, life is based on survival of 67% of the lamps.

(352) Approximate lumen values listed are for vertical operation of the lamp.

(353) Approximate lumen output at 40% of lamp rated average life.

(355) Separate filter is required for black light application.

(356) Opaque coating on reflecting section of bulb.

(357) Protect bulb from moisture when used in base down position.

(359) Electrically insulated support for bulb may be required, especially in horizontal and nearly horizontal operating positions.

(360) Follow fixture manufacturer's recommendations regarding proximity of ballast to bulb.

(362) This lamp should be shielded from moisture to prevent breakage.

(363) These ordering codes generally conform to the designation system of the American National Standards Institute (ANSI).

(364) Rated average life: vertical $\pm 30^\circ$ 20,000 hours; other positions, 15,000 hours.

(365) Supply voltage must be held to ± 10 volts of rated lamp voltage.

(367) Lamps will start down to -10°F .

(368) Supply voltage must be held to ± 5 volts of rated lamp voltage.

(369) Lamps will start down to 0°F .

(370) C150S55 and C150S56 lamps are not electrically interchangeable. Different ballasts are required for the proper operation of each lamp type. ANSI type S55 ballast is for the 55-volt (normal) lamp and the ANSI type S56 ballast is for the 100 volt (nominal) lamp.

(372) Color characteristics may vary somewhat from one lamp type to another. Time should be allowed for the lamp to stabilize in color when it is turned on for the first time or if for any reason its operating position is changed. This may require several hours' operation, with more than one start. Lamp color and output may change temporarily if the lamp is subjected to excess vibration or shock. Lamp color characteristics may change after long accumulate operating time.

(373) Fixtures should be designed so that sockets and wiring withstand starting pulse up to 5000 volts for 1000 watts and WHITE SON® types and 4000 volts for other sizes.

(374) Performance may not be satisfactory unless operated within specified operating positions.

(375) If specified operating position is base up or base down to horizontal, this permits 15° beyond the horizontal.

(376) For use in fixtures which do not redirect a substantial portion of the energy toward the arc tube; otherwise very early failure is anticipated.

(377) Requires a ballast specified or approved for Philips metal halide lamps, or one that is designed to operate all popular brands of metal halide lamps. 1000W types will operate from H36 conventional lag type ballast for Mercury Vapor lamps at ambient temperatures of 50°F or higher. 1000W types must not be operated at 1500W.

(378) Requires auxiliary 10KV pulse ignitor for instant restrike.

(379) It is a characteristic of phosphor-coated vapor lamps to require a few hundred hours of operation to gradually reach normal characteristic color. New lamps may have a slight pink appearance during this initial operating period.

(382) Though made of heat-resistant glass, breakage may result if moisture falls on bulb. Use in well ventilated housing.

(383) For indoor and outdoor use: if outdoors, in base down operation, lamp should be protected by a fully enclosed fixture, adequately ventilated. In base up operation, lamp can be used in open face fixture, 40° below horizontal. All fixtures should protect the lamp and wiring from water and corrosive atmospheric gases. The fixture, holder or shield should provide adequate ventilation near the socket and base of the lamp.

(384) For 40W operation use H45 ballast.

Ordering Code	Approx. Lumens	
	Initial	Mean
H46DL-40-50/DX	1140	910

(385) Rated average life: vertical $\pm 15^\circ$. Other positions 75% of vertical life.

(387) This lamp can cause serious skin burns and eye inflammation from shortwave ultraviolet radiation and must be fully enclosed in a fixture with an appropriate UV filter. To protect against possible risk of property damage or personal injury due to an arc tube rupture, the fixture enclosure must be capable of withstanding particles of glass having temperatures up to 1000°C . DO NOT USE THIS LAMP IF THE UV FILTER IS MISSING.

(389) Operates at rated output on ANSI 400W S145 ballasts.

(390) Where instant restrike is not required, rated lamp life is 40,000+ hours.

(391) Requires a ballast specified or approved for Philips Metal Halide lamp or one designed to the indicated ANSI Standard. A pulse ignitor is required. Sockets and wiring must withstand starting pulse.

(392) Supply volts must be $\pm 5\%$ of rated ballast line volts for reactor type and $\pm 10\%$ for CWA or electronic ballasts.

(393) Vertical lumens. Horizontal lumens 6%–10% lower.

(394) To maintain color consistency within 250K, group relamp at 7500 hours.

(395) Lamp color may change temporarily if the lamp is subjected to excessive vibration or shock.

(396) UV filtered design (FadeBlock™).

(397) Operate only on thermally protected ballasts

(398) Rated average life: vertical operation = 10,000 hours; horizontal = 12,000 hours.

(399) This product utilizes ALTO® Lamp Technology. ALTO products pass the US EPA's Toxicity Characteristic Leaching Procedure (TCLP) for non-hazardous waste status.

(400) Energy-saver retrofit for 175W, M107 ballast.

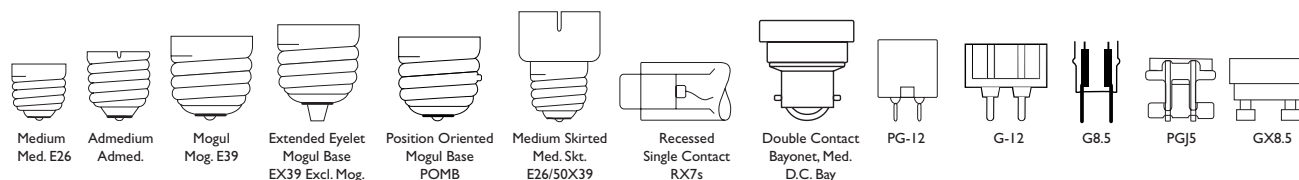
(401) MasterColor® Metal Halide Lamps are not recommended for use on dimmers and are not warranted if used on dimmer systems.

(402) Primarily used for sports-lighting applications. Life, initial and mean lumens are for horizontal operation. In vertical position and at 10 or more hours per start, lamp life is extended to 6000 hours, initial lumens are 170,000 and mean lumens are 136,000.

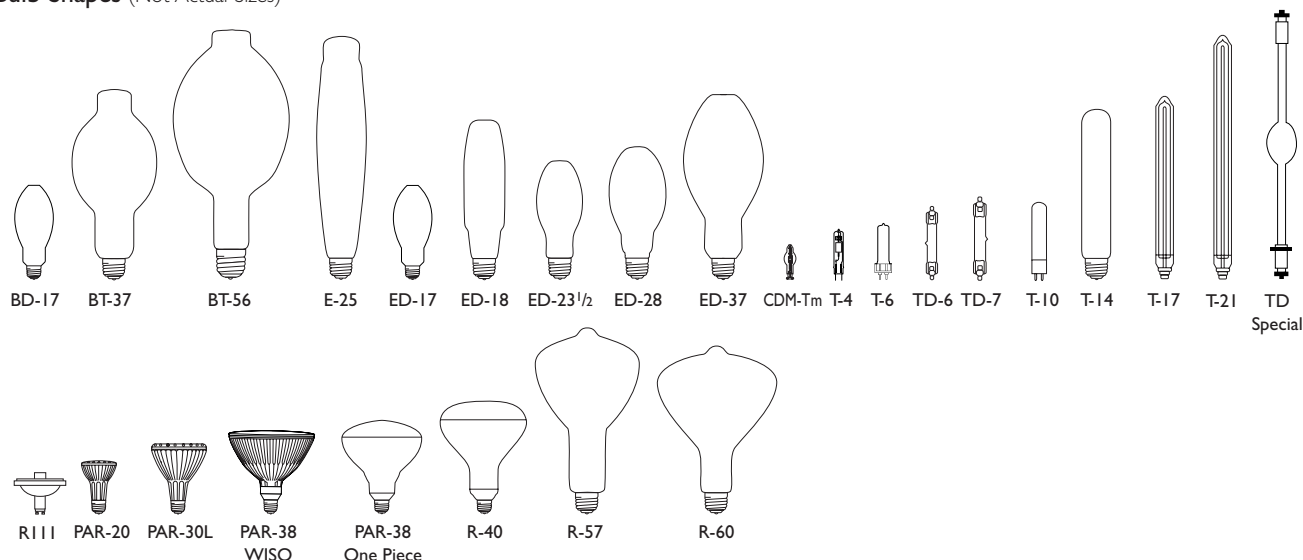
HIGH INTENSITY DISCHARGE LAMPS

HID Bulb Shapes and Base Types; HID Warnings, Cautions and Operating Instructions

Base Types (Not Actual Sizes)



Bulb Shapes (Not Actual Sizes)



WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for MasterColor® Ceramic Metal Halide Lamps: Single Ended CDM-T G12, CDM-TC G8.5 and CDM-Tm PGJ5 (Universal); Double-Ended CDM-TD RX7 (Horizontal $\pm 45^\circ$, Enclosed Fixtures Only)

Warnings, Cautions and Operating Instructions

R“**WARNING:** These lamps 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. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available.” This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21CFR 1040.30 Canada:SOR/DORS/80-381)

If the outer bulb is broken or punctured, turn off at once and replace the lamp to avoid possible injury from hazardous short wave ultraviolet radiation. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb may cause glass to fly if the envelope is struck.

WARNING: The arc-tube of metal halide lamps are designed to operate under high pressure and at temperatures up to 1000° C and can unexpectedly rupture due to internal or external factors such as a ballast failure or misapplication. If the arc-tube ruptures for any reason, the outer bulb may break and pieces of extremely hot glass might be discharged into the surrounding environment. If such a rupture were to happen, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

Certain lamps that will retain all the glass particles should inner arc-tube rupture occur are commercially available from Philips Lighting Company.

RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.

This lamp contains an arc tube with a filling gas containing Kr-85 and is distributed by Philips Lighting Company, a division of Philips Electronics North America Corporation, Somerset, New Jersey, 08875.

CAUTION: TO REDUCE THE RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE RESULTING FROM AN ARC-TUBE RUPTURE THE FOLLOWING **LAMP OPERATING INSTRUCTIONS** MUST BE FOLLOWED:

LAMP OPERATING INSTRUCTIONS:

1. RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
2. Use only in fully enclosed fixtures capable of withstanding particles of glass having temperatures up to 1000° C. Lens/diffuser material must be heat resistant. Consult fixture manufacturer regarding the suitability of the fixture for this lamp.
3. Do not operate a fixture with a missing or broken lens/diffuser. At high lighting levels or when illuminating light-sensitive materials the use of an extra UV filter is recommended.
4. Operate lamp only within specified limits of operating position.
5. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock

and potential burn hazards. When inserting a new CDM-Tm lamp, twist the lamp 45° clock-wise in the holder to ensure proper electrical and mechanical connection.

6. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.

- A. Operate lamp only within specified limits of operation.
- B. For total supply load refer to ballast manufacturers electrical data.

C. Operate CDM-T (G12 base), CDM-TC (G8.5 base) and CDM-Tm (PGJ5 base) lamps only on thermally protected ballasts.

D. Operate CDM-TC lamps (G8.5 base) and CDM-Tm (PGJ5 base) only on electronic ballasts.

7. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
8. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
9. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
10. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock and color appearance may vary between individual lamps.
11. Lamps may require 4 to 8 minutes (10-15 minutes for CDM-Tm) to re-light if there is a power interruption.
12. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.

HIGH INTENSITY DISCHARGE LAMPS

HID Warnings, Cautions and Operating Instructions

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Protected MasterColor® Ceramic Metal Halide PAR and CDM-R111 Lamps (Open or Enclosed Fixtures)

Warnings, Cautions and Operating Instructions

R“**WARNING:** These lamps 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. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available.” This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21CFR. 1040.30 Canada: SOR/DORS/80-381)

If the outer bulb is broken or punctured, turn off at once and replace the lamp to avoid possible injury from hazardous short wave ultraviolet radiation. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb may cause glass to fly if the envelope is struck.

WARNING: The arc-tube of metal halide lamps are designed to operate under high pressure and at temperatures up to 1000° C and can unexpectedly rupture due to internal or external factors such as a ballast failure or misapplication. If the arc-tube ruptures for any reason, the outer bulb may break and pieces of extremely hot glass might be discharged into the surrounding environment. If such a rupture were to happen, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

These lamps are designed to retain all the glass particles should an arc tube rupture occur. The following operating instructions are recommended to minimize these occurrences.

RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.

This lamp contains an arc tube with a filling gas containing Kr-85 and is distributed by Philips Lighting Company, a division of Philips Electronics North America Corporation, Somerset, New Jersey, 08875.

CAUTION: TO REDUCE THE RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE RESULTING FROM AN ARC-TUBE RUPTURE THE FOLLOWING **LAMP OPERATING INSTRUCTIONS** MUST BE FOLLOWED:

LAMP OPERATING INSTRUCTIONS:

1. RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
2. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
3. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer:

- A. Operate lamp only within specified limits of operation.
- B. For total supply load refer to ballast manufacturers electrical data.
- C. Operate 39W PAR-20 and PAR-30L lamps only on thermally protected ballast.
- D. Operate CDM-R111 lamp only on approved thermally protected electronic ballast.

4. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
5. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
6. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
7. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock, and color appearance may vary between individual lamps.
8. Lamps may require up to 10 minutes (4–8 minutes for CDM-R111) to re-light if there is a power interruption.
9. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
10. For proper installation and removal, lamp should be handled by the sides of the reflector and not by the aluminum front anti-glare cap.

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for MasterColor® Ceramic Metal Halide Lamps ED-17 (Enclosed Fixtures); Protected MasterColor® Ceramic Metal Halide Lamps ED-17P (Open or Enclosed Fixtures)

Warnings, Cautions and Operating Instructions

R“**WARNING:** These lamps 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. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available.” This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21CFR. 1040.30 Canada: SOR/DORS/80-381)

If the outer bulb is broken or punctured, turn off at once and replace the lamp to avoid possible injury from hazardous short wave ultraviolet radiation. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb may cause glass to fly if the envelope is struck.

WARNING: The arc-tube of metal halide lamps are designed to operate under high pressure and at temperatures up to 1000° C and can unexpectedly rupture due to internal or external factors such as a ballast failure or misapplication. If the arc-tube ruptures for any reason, the outer bulb may break and pieces of extremely hot glass might be discharged into the surrounding environment. If such a rupture were to happen, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

Use ED-17 lamps in enclosed luminaires **ONLY** that are capable of withstanding particles of glass having temperatures up to 1000° C. ED-17P types are designed to retain all the glass particles should an arc tube rupture occur.

RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.

This lamp contains an arc tube with a filling gas containing Kr-85 and is distributed by Philips Lighting Company, a division of Philips Electronics North America Corporation, Somerset, New Jersey, 08875.

CAUTION: TO REDUCE THE RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE RESULTING FROM AN ARC-TUBE RUPTURE THE FOLLOWING **LAMP OPERATING INSTRUCTIONS** MUST BE FOLLOWED:

LAMP OPERATING INSTRUCTIONS:

1. RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
2. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.

3. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer:
 - A. Operate lamp only within specified limits of operation.
 - B. For total supply load refer to ballast manufacturers electrical data.
4. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
5. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
6. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
7. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock and color appearance may vary between individual lamps.
8. Lamps may require 4 to 8 minutes to re-light if there is a power interruption.
9. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.

HIGH INTENSITY DISCHARGE LAMPS

HID Warnings, Cautions and Operating Instructions

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Protected MasterColor® Pulse Start Ceramic Metal Halide Lamps ED37 (Vertical Burn $\pm 15^\circ$, Open or Enclosed Fixtures)

Warnings, Cautions and Operating Instructions

R“**WARNING:** These lamps 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. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available.” This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21CFR 1040.30 Canada:SOR/DORS/80-381)

If the outer bulb is broken or punctured, turn off at once and replace the lamp to avoid possible injury from hazardous short wave ultraviolet radiation. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb may cause glass to fly if the envelope is struck.

WARNING: The arc-tube of metal halide lamps are designed to operate under high pressure and at temperatures up to 1000° C and can unexpectedly rupture due to internal or external factors such as a ballast failure or misapplication. If the arc-tube ruptures for any reason, the outer bulb may break and pieces of extremely hot glass might be discharged into the surrounding environment. If such a rupture were to happen, **THERE IS A RISK OF PERSONAL**

INJURY, PROPERTY DAMAGE, BURNS AND FIRE.

These lamps are designed to retain all the glass particles should an arc tube rupture occur. The following operating instructions are recommended to minimize these occurrences.

RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.

This lamp contains an arc tube with a filling gas containing Kr-85 and is distributed by Philips Lighting Company, a division of Philips Electronics North America Corporation, Somerset, New Jersey, 08875.

CAUTION: TO REDUCE THE RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE RESULTING FROM AN ARC-TUBE RUPTURE THE FOLLOWING **LAMP OPERATING INSTRUCTIONS** MUST BE FOLLOWED:

LAMP OPERATING INSTRUCTIONS:

1. RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
2. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.

3. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
 - A. Operate lamp only within specified limits of operation.
 - B. For total supply load refer to ballast manufacturers electrical data.
 - C. All Pulse Start mogul based lamps require a socket rated to withstand a 4,000 volt pulse.
4. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
5. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
6. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
7. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock, and color appearance may vary between individual lamps.
8. Lamps may require 10 to 20 minutes to re-light if there is a power interruption.
9. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
10. Use this lamp only in fixtures that contain Pulse Start metal halide ballasts and are specifically designed for use with Pulse Start metal halide lamps.

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Protected MasterColor® Ceramic Metal Halide HPS-Retro White™ Lamps ED-18 (Vertical Burn $\pm 15^\circ$, Open or Enclosed Fixtures)

Warnings, Cautions and Operating Instructions

R“**WARNING:** These lamps 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. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available.” This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21CFR 1040.30 Canada:SOR/DORS/80-381)

If the outer bulb is broken or punctured, turn off at once and replace the lamp to avoid possible injury from hazardous short wave ultraviolet radiation. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb may cause glass to fly if the envelope is struck.

WARNING: The arc-tube of metal halide lamps are designed to operate under high pressure and at temperatures up to 1000° C and can unexpectedly rupture due to internal or external factors such as a ballast failure or misapplication. If the arc-tube ruptures for any reason, the outer bulb may break and pieces of extremely hot glass might be discharged into the surrounding environment. If such a rupture were to happen, **THERE IS A RISK OF PERSONAL**

INJURY, PROPERTY DAMAGE, BURNS AND FIRE.

These lamps are designed to retain all the glass particles should an arc tube rupture occur. The following operating instructions are recommended to minimize these occurrences.

RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.

This lamp contains an arc tube with a filling gas containing Kr-85 and is distributed by Philips Lighting Company, a division of Philips Electronics North America Corporation, Somerset, New Jersey, 08875.

CAUTION: TO REDUCE THE RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE RESULTING FROM AN ARC-TUBE RUPTURE THE FOLLOWING **LAMP OPERATING INSTRUCTIONS** MUST BE FOLLOWED:

LAMP OPERATING INSTRUCTIONS:

1. RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
2. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.

3. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
 - A. Operate lamp only within specified limits of operation.
 - B. For total supply load refer to ballast manufacturers electrical data.
4. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
5. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
6. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
7. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock and color appearance may vary between individual lamps.
8. Lamps may require 10 to 20 minutes to re-light if there is a power interruption.
9. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.

HIGH INTENSITY DISCHARGE LAMPS

HID Warnings, Cautions and Operating Instructions

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Pulse Start Metal Halide Lamps (Base Up Operation $\pm 15^\circ$ Unless Otherwise Noted; Enclosed Fixtures Only Unless Otherwise Noted)

Warnings, Cautions and Operating Instructions

R“**WARNING:** These lamps 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. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available.” This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21CFR 1040.30 Canada: SOR/DORS/80-381)

If the outer bulb is broken or punctured, turn off at once and replace the lamp to avoid possible injury from hazardous shortwave ultraviolet radiation. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb may cause glass to fly if the envelope is struck.

WARNING: The arc-tube of metal halide lamps are designed to operate under high pressure and at temperatures up to 1000° C and can unexpectedly rupture due to internal or external factors such as a ballast failure or misapplication. If the arc-tube ruptures for any reason, the outer bulb may break and pieces of extremely hot glass might be discharged into the surrounding environment. If such a rupture were to happen, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

Certain lamps that will retain all the glass particles should inner arc-tube rupture occur are commercially available from Philips Lighting Company.

RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.

CAUTION: TO REDUCE THE RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE RESULTING FROM AN ARC-TUBE RUPTURE THE FOLLOWING **LAMP OPERATING INSTRUCTIONS** MUST BE FOLLOWED:

LAMP OPERATING INSTRUCTIONS:

1. Turn off lamps at least once a week for at least 15 minutes in systems which are operating on a continuous basis (24 hours/day-7days/week). FAILURE TO TURN OFF LAMPS FOR THE MINIMUM RECOMMENDED TIME MAY INCREASE THE POSSIBILITY OF AN INNER ARC-TUBE RUPTURE.
2. RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
3. Use only in an enclosed fixture capable of withstanding particles of glass having temperatures up to 1000° C, unless otherwise noted.
4. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.

5. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer:

- A. Operate lamp only within specified limits of operation.
- B. For total supply load refer to ballast manufacturers electrical data.
- C. All Pulse Start mogul based lamps require a socket rated to withstand a 4,000 volt pulse.

6. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
7. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
8. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
9. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock and color appearance may vary between individual lamps.
10. Lamps may require 2 to 4 minutes to relight if there is a power interruption.
11. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
12. Use this lamp only in fixtures that contain a Pulse Start metal halide ballast and are specifically designed for use with Pulse Start metal halide lamps.

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Protected Pulse Start Metal Halide Lamps (Base Up Operation $\pm 15^\circ$ Unless Noted; Open or Enclosed Fixtures)

Warnings, Cautions and Operating Instructions

R“**WARNING:** These lamps 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. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available.” This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21CFR 1040.30 Canada: SOR/DORS/80-381)

If the outer bulb is broken or punctured, turn off at once and replace the lamp to avoid possible injury from hazardous shortwave ultraviolet radiation. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb may cause glass to fly if the envelope is struck.

WARNING: The arc-tube of metal halide lamps are designed to operate under high pressure and at temperatures up to 1000° C and can unexpectedly rupture due to internal or external factors such as a ballast failure or misapplication. If the arc-tube ruptures for any reason, the outer bulb may break and pieces of extremely hot glass might be discharged into the surrounding environment. If such a rupture were to happen, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

These lamps are designed to retain all the glass particles should an arc tube rupture occur. The following operating instructions are recommended to minimize these occurrences.

RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.

CAUTION: TO REDUCE THE RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE RESULTING FROM AN ARC-TUBE RUPTURE THE FOLLOWING **LAMP OPERATING INSTRUCTIONS** MUST BE FOLLOWED:

LAMP OPERATING INSTRUCTIONS:

1. RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
2. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
3. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.

- A. Operate lamp only within specified limits of operation.

- B. For total supply load refer to ballast manufacturers electrical data.

- C. All Pulse Start mogul based lamps require a socket rated to withstand a 4,000 volt pulse.

4. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
5. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
6. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
7. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock and color appearance may vary between individual lamps.
8. Lamps may require 2 to 4 minutes to relight if there is a power interruption.
9. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
10. Use this lamp only in fixtures that contain a Pulse Start metal halide ballast and are specifically designed for use with Pulse Start metal halide lamps.

HIGH INTENSITY DISCHARGE LAMPS

HID Warnings, Cautions and Operating Instructions

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Protected Metal Halide Lamps (Base Up Operation $\pm 15^\circ$ Unless Noted; Open or Enclosed Fixtures)

Warnings, Cautions and Operating Instructions

R“**WARNING:** These lamps 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. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available.” This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA: 21CFR 1040.30 Canada: SOR/DORS/80-381)

If the outer bulb is broken or punctured, turn off at once and replace the lamp to avoid possible injury from hazardous short wave ultraviolet radiation. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb may cause glass to fly if the envelope is struck.

WARNING: The arc-tube of metal halide lamps are designed to operate under high pressure and at temperatures up to 1000° C and can unexpectedly rupture due to internal or external factors such as a ballast failure or misapplication. If the arc-tube ruptures for any reason, the outer bulb may break and pieces of extremely hot glass might be discharged into the surrounding environment. If such a rupture were to happen, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

These lamps are designed to retain all the glass particles should an arc tube rupture occur. The

following operating instructions are recommended to minimize these occurrences.

RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.

CAUTION: TO REDUCE THE RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE RESULTING FROM AN ARC-TUBE RUPTURE THE FOLLOWING **LAMP OPERATING INSTRUCTIONS** MUST BE FOLLOWED:

LAMP OPERATING INSTRUCTIONS:

1. RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
2. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
3. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
 - A. Operate lamp only within specified limits of operation.
 - B. For total supply load refer to ballast manufacturers electrical data.
4. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.

5. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
6. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
7. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock and color appearance may vary between individual lamps.
8. Lamps may require 10 to 20 minutes to re-light if there is a power interruption.
9. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
10. Do not use this lamp:
 - A. In a fixture that contains a Pulse Start metal halide ballast.
 - B. In a fixture that is specifically designed for use with Pulse Start metal halide lamps. **Operation of these lamps on Pulse Start Metal Halide systems may increase the chance of an outer bulb rupture and pieces of extremely hot glass might be discharged into the surrounding environment.** If such a rupture were to happen, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Standard Metal Halide Lamps (Enclosed Fixtures Only Unless Otherwise Noted)

Warnings, Cautions and Operating Instructions

R“**WARNING:** These lamps 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. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available.” This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA: 21CFR 1040.30 Canada: SOR/DORS/80-381)

If the outer bulb is broken or punctured, turn off at once and replace the lamp to avoid possible injury from hazardous short wave ultraviolet radiation. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb may cause glass to fly if the envelope is struck.

WARNING: The arc-tube of metal halide lamps are designed to operate under high pressure and at temperatures up to 1000° C and can unexpectedly rupture due to internal or external factors such as a ballast failure or misapplication. If the arc-tube ruptures for any reason, the outer bulb may break and pieces of extremely hot glass might be discharged into the surrounding environment. If such a rupture were to happen, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

Certain lamps that will retain all the glass particles should inner arc-tube rupture occur are commercially available from Philips Lighting Company.

RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.

CAUTION: TO REDUCE THE RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE RESULTING FROM AN ARC-TUBE RUPTURE THE FOLLOWING **LAMP OPERATING INSTRUCTIONS** MUST BE FOLLOWED:

LAMP OPERATING INSTRUCTIONS:

1. Turn off lamps at least once a week for at least 15 minutes in systems which are operating on a continuous basis (24 hours/day-7 days/week). FAILURE TO TURN OFF LAMPS FOR THE MINIMUM RECOMMENDED TIME MAY INCREASE THE POSSIBILITY OF AN INNER ARC-TUBE RUPTURE.
2. RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
3. Use only in an enclosed fixture capable of withstanding particles of glass having temperatures up to 1000° C.
4. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
5. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
 - A. Operate lamp only within specified limits of operation.
 - B. For total supply load refer to ballast manufacturers electrical data.

6. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
7. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
8. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
9. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock and color appearance may vary between individual lamps.
10. Lamps may require 10 to 20 minutes to re-light if there is a power interruption.
11. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
12. Do not use this lamp:
 - A. In a fixture that contains a Pulse Start metal halide ballast.
 - B. In a fixture that is specifically designed for use with Pulse Start metal halide lamps. **Operation of these lamps on Pulse Start Metal Halide systems may increase the chance of an outer bulb rupture and pieces of extremely hot glass might be discharged into the surrounding environment.** If such a rupture were to happen, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

HIGH INTENSITY DISCHARGE LAMPS

HID Warnings, Cautions and Operating Instructions

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Standard Metal Halide Lamps (Open or Enclosed Fixtures S Rated Lamps; Open Fixture Use Restricted to Base Up $\pm 15^\circ$ [Base Down, BD $\pm 15^\circ$])

Warnings, Cautions and Operating Instructions

WARNING: These lamps 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. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available. "This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21 CFR 1040.30 Canada: SOR/DORS/80-381)"

If the outer bulb is broken or punctured, turn off at once and replace the lamp to avoid possible injury from hazardous short wave ultraviolet radiation. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb may cause glass to fly if the envelope is struck.

WARNING: The arc-tube of metal halide lamps are designed to operate under high pressure and at temperatures up to 1000° C and can unexpectedly rupture due to internal or external factors such as a ballast failure or misapplication. If the arc-tube ruptures for any reason, the outer bulb may break and pieces of extremely hot glass might be discharged into the surrounding environment. If such a rupture were to happen, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

Certain lamps that will retain all the glass particles should inner arc-tube rupture occur are commercially available from Philips Lighting Company.

RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.

CAUTION: TO REDUCE THE RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE RESULTING FROM AN ARC-TUBE RUPTURE THE FOLLOWING **LAMP OPERATING INSTRUCTIONS** MUST BE FOLLOWED:

LAMP OPERATING INSTRUCTIONS:

1. Turn off lamps at least once a week for at least 15 minutes in systems which are operating on a continuous basis (24 hours/day-7days/week). FAILURE TO TURN OFF LAMPS FOR THE MINIMUM RECOMMENDED TIME MAY INCREASE THE POSSIBILITY OF AN INNER ARC-TUBE RUPTURE.
2. RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
3. **If operated other than vertical $\pm 15^\circ$, use only in an enclosed fixture capable of withstanding particles of glass having temperatures up to 1000° C.**
4. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
5. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
 - A. Operate lamp only within specified limits of operation.
 - B. For total supply load refer to ballast manufacturers electrical data.

6. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
7. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
8. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
9. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock and color appearance may vary between individual lamps.
10. Lamps may require 10 to 20 minutes to re-light if there is a power interruption.
11. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
12. Do not use this lamp:
 - A. In a fixture that contains a Pulse Start metal halide ballast.
 - B. In a fixture that is specifically designed for use with Pulse Start metal halide lamps. **Operation of these lamps on Pulse Start Metal Halide systems may increase the chance of an outer bulb rupture and pieces of extremely hot glass might be discharged into the surrounding environment. If such a rupture were to happen, THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Safety Lifeguard Metal Halide Lamps (Open or Enclosed Fixtures)

Warnings, Cautions and Operating Instructions

WARNING: This lamp should self extinguish within 15 minutes after 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 lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21 CFR 1040.30 Canada: SOR/DORS/80-381)" This lamp should not be used on dimmers and is not warranted if used on dimming systems.

If the outer bulb is broken or punctured, turn off at once and replace the lamp to avoid possible injury from hazardous short wave ultraviolet radiation. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb may cause glass to fly if the envelope is struck.

WARNING: The arc-tube of metal halide lamps are designed to operate under high pressure and at temperatures up to 1000° C and can unexpectedly rupture due to internal or external factors such as a ballast failure or misapplication. If the arc-tube ruptures for any reason, the outer bulb may break and pieces of extremely hot glass might be discharged into the surrounding environment. If such a rupture were to happen, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

Certain lamps that will retain all the glass particles should inner arc-tube rupture occur are commercially available from Philips Lighting Company.

RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.

CAUTION: TO REDUCE THE RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE RESULTING FROM AN ARC-TUBE RUPTURE THE FOLLOWING **LAMP OPERATING INSTRUCTIONS** MUST BE FOLLOWED:

LAMP OPERATING INSTRUCTIONS:

1. Turn off lamps at least once a week for at least 15 minutes in systems which are operating on a continuous basis (24 hours/day-7days/week). FAILURE TO TURN OFF LAMPS FOR THE MINIMUM RECOMMENDED TIME MAY INCREASE THE POSSIBILITY OF AN INNER ARC-TUBE RUPTURE.
2. RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
3. **If operated other than vertical $\pm 15^\circ$, use only in an enclosed fixture capable of withstanding particles of glass having temperatures up to 1000° C.**
4. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
5. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
 - A. Operate lamp only within specified limits of operation.
 - B. For total supply load refer to ballast manufacturers electrical data.

6. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
7. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
8. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
9. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock and color appearance may vary between individual lamps.
10. Lamps may require 10 to 20 minutes to re-light if there is a power interruption.
11. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
12. Do not use this lamp:
 - A. In a fixture that contains a Pulse Start metal halide ballast.
 - B. In a fixture that is specifically designed for use with Pulse Start metal halide lamps. **Operation of these lamps on Pulse Start Metal Halide systems may increase the chance of an outer bulb rupture and pieces of extremely hot glass might be discharged into the surrounding environment. If such a rupture were to happen, THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

HIGH INTENSITY DISCHARGE LAMPS

HID Warnings, Cautions and Operating Instructions

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Mini WhiteSON and White SON High Pressure Sodium Lamps

Warnings, Cautions and Operating Instructions

WARNING: These lamps must be operated in fixtures designed for use with High Pressure Sodium lamps. The fixture wattage rating must match the wattage indicated on the outer glass bulb. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb may cause glass to fly if the glass is struck. Operating the lamp improperly may result in **PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

1. If the outer glass bulb is broken, shut off power immediately and remove the lamp after it has cooled.
2. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer:
 - A. Operate lamp only within specified limits of operation.

- B. For total supply load refer to ballast manufacturers electrical data.
 - C. Operate Mini WhiteSON lamps only on approved electronic ballasts.
3. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
 4. Replace the lamp if the outer glass bulb has been scratched, cracked or damaged in any way.
 5. If a lamp bulb support is used, be sure to insulate the support electrically so as to avoid possible decomposition of the bulb glass.
 6. Do not use this lamp in a fixture which redirects a substantial portion of the energy toward the arc tube and its immediate vicinity, as this may lead to very early lamp failure.
 7. Take care in handling and disposing of lamps. If arc

tube is broken, avoid skin contact with any of the contents or fragments.

8. The arc tube of this lamp contains sodium and mercury. Dispose of in accordance with federal, state and local requirements.
9. It is possible that the light color will suddenly change. After some time the lamp will regain its old color.
10. In order to prevent damage to the ballast, the lamp should be replaced as quickly as possible at the end of its lifetime (lamp color turns yellow, lamp flickers and fails to start).
11. For Mini WhiteSON lamps, after 10,000 hours of burning the light color will become yellow. The lamp must then be replaced.
12. For WhiteSON lamps, after 7,500 hours of burning the light color will become yellow. The lamp must then be replaced.

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Ceramalux® High Pressure Sodium Lamps

Warnings, Cautions and Operating Instructions

WARNING: These lamps must be operated in fixtures designed for use with High Pressure Sodium lamps. The fixture wattage rating must match the wattage indicated on the outer glass bulb. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb may cause glass to fly if the glass is struck. Operating the lamp improperly may result in **PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

1. If the outer glass bulb is broken, shut off power immediately and remove the lamp after it has cooled.

2. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer:
 - A. Operate lamp only within specified limits of operation.
 - B. For total supply load refer to ballast manufacturers electrical data.
3. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
4. Replace the lamp if the outer glass bulb has been scratched, cracked or damaged in any way.
5. If a lamp bulb support is used, be sure to insulate the support electrically so as to avoid possible decomposition of the bulb glass.

6. Do not use this lamp in a fixture which redirects a substantial portion of the energy toward the arc tube and its immediate vicinity, as this may lead to very early lamp failure.
7. Take care in handling and disposing of lamps. If arc tube is broken, avoid skin contact with any of the contents or fragments.
8. The arc tube of this lamp contains sodium and mercury. Dispose of in accordance with federal, state and local requirements.

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Ceramalux® RetroLux High Pressure Sodium Lamps

Warnings, Cautions and Operating Instructions

CAUTION: Electric discharge lamp—Use only with proper circuits and auxiliary equipment designed to produce established electrical values for this lamp. Operating the lamp improperly may result in damage to equipment or personal injury, for which the lamp manufacturer does not assume any responsibility.

If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass. Do not scratch the bulb or subject it to pressure, as it could fail violently. If the outer bulb is broken, turn off the lamp and replace it promptly.

The arc tube of this lamp contains sodium and mercury. Use appropriate care in disposal. Protect lamp base,

socket and wiring against moisture, corrosive atmospheres and excessive heat.

Do not use this lamp in a fixture which redirects a substantial portion of the energy toward the arc tube and its immediate vicinity, as this may lead to very early lamp failure.

NOTICE: For total supply load, add auxiliary (ballast) watts to lamp watts.

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Mercury Vapor Lamps

Warnings, Cautions and Operating Instructions

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.” This lamp complies with FDA radiation performance standard 21 CFR subchapter J, (USA:21 CFR 1040.30 Canada:SOR/DORS/80-381)

WARNING: The following GOOD LAMP PRACTICES are recommended to reduce the possibility of an arc tube rupture and the associated risk of property damage or personal injury.

1. TURN LAMPS OFF AT LEAST ONCE PER WEEK FOR AT LEAST 15 MINUTES, in systems which are otherwise operating on a continuous basis (24 hours/day-7 days/week).
2. RELAMP FIXTURES AT OR BEFORE END OF RATED LIFE. Allowing such lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
3. OPERATE LAMP WITH PROPER CIRCUITS AND AUXILIARY EQUIPMENT.

CAUTION: Electric discharge lamp—use only with proper circuits and auxiliary equipment designed to produce established electrical values for this lamp. Operating the lamp improperly may result in damage to equipment or personal injury, for which the lamp

manufacturer does not assume any responsibility.

If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass. Do not scratch the bulb or subject it to pressure, as it could fail violently. If the outer bulb is broken, turn off the lamp and replace it promptly.

Do not use this lamp in a fixture which redirects a substantial portion of the energy toward the arc tube and its immediate vicinity, as this may lead to very early lamp failure.

NOTICE: For total supply load, add auxiliary (ballast) watts to lamp watts.

SPECIALTY LAMPS



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Photo/Projection Lamps

ANSI Code	Product Number	Std. Pkg. Qty.	Volts	Avg. Watts Amps.	Bulb	Base	Rated Avg. Life (Hrs.)	Coil Type	LCL (In.)	LCL (mm)	MOL (In.)	MOL (mm)	Rated Approx. Lumens	Color Temp. (K)	Operating Position	Fig. No.
BRL	31627-3	24	12	50	T-3.5	G6.35	50	C-6	1.18	30	1.73	44	1500	3400	BDTH	13
BVE	23922-8	24	120	625	T-6	GY9.5	75	C-13D	1.75	44.5	3.5	89		3350	BDTH	11
DDL	31509-3	24	20	150	GX5.3	GX5.3	500	CC-6			1.75	44.5		3150	BDTH	25
DDM	23937-6	24	19	80	MR-16	GX5.3	50	CC-6			1.75	44.5		3350	BDTH	25
DDS	31510-1	24	21	80	MR-16	GX5.3	1000	CC-6			1.75	44.5		3125	BDTH	25
DED	31475-7	24	13.8	85	MR-16	GX5.3	1000	C-8			1.75	44.5		3150	BDTH	25
DNE	23939-2	24	120	150	57 DICH	G7.9	12	CC-6	0.63	15.9	1.94	49.2		3350	Horiz.	28
DNF	25241-1	24	21	150	MR-16	GX7.9	25	CC-6	6.15	15.88	1.78	45.24		3400	Horiz.	28
DRA	23940-0	24	120	300	T-5	G6.35-20	300	CC-6	1.3	33	2	50	6900	3100	BDTH	12
DWZ	31750-3	100	30	375	T-4	RX7s	1000	CC-6			3.17	80.6	7000	2900	ANY	18
DXN	31202-5	12	120	1000	T-5	RX7s	30	CC-8			3.75	95.3	33,000	3400	ANY	21
DXW	31219-9	12	120	1000	T-5	RX7s	150	CC-8			3.75	95.3	28,000	3200	ANY	21
DYS/DYV/BHC	31639-8	24	120	600	G-7	GZ9.5	75	CC-6	1.44	36.5	2.5	63.5	17,000	3200	Horiz.	15
EFM	31484-9	50	8	50	MR-16	GZ6.35	50	C-6			1.65	42		3300	BDTH	25
EFN	31502-8	50	12	75	MR-16	GZ6.35	50	C-6			1.65	42		3350	BDTH	25
EFP	31488-0	50	12	100	50 DICH	GZ6.35	50	C-6			1.65	42		3350	BDTH	25
EFR	31490-6	50	15	150	MR-16	GZ6.35	50	C-6			1.65	42		3350	BDTH	25
EHA	31641-4	24	120	500	T-6	GZ9.5	50	C-13D	1.44	36.5	3	76.2	11,000	3250	BDTH	14
EHJ	31758-6	100	24	250	T-4	G6.35	50	C-6F	1.3	33	2.17	55	9400	3400	BD	13
EHJ-X	23175-3	200	24	250	T-4	G6.35	50	C-6F	1.3	33	2.17	55	10,000	3400	BD	13
EJA	44142-8	24	21	150	MR-16	GX5.3	40	CC-6			1.85	44.5		3350		25
EJL	31508-5	24	24	200	MR-16	GX5.3	50	CC-6			1.85	44.5		3400	BDTH	25
EJM	23942-6	24	21	150	MR-16	GX5.3	40	CC-6			1.75	44.5		3400	BDTH	25
EJV	33744-4	24	21	150	MR-16	GX5.3	40	CC-8			1.75	44.5		3400	BDTH	25
EKE	31592-9	24	21	150	MR-16	GX5.3	200	CC-6			1.75	44.5		3400	BDTH	25
EKZ	23945-9	24	10.8	30	MR-16	GX5.3	200	CC-6			1.75	44.5		3100	BDTH	25
ELB	23946-7	24	30	80	50 DICH	GX5.3	15	CC-6			1.75	44.5		3400	BDTH	25
ELC	23103-5	24	24	250	MR-16	GX5.3	50	CC-6			1.75	44.5		3200	BDTH	25
ELC-5	38166-5	24	24	250	MR-16	GX5.3	500	CC-6			1.75	44.5		3200	BDTH	25
ELD	31618-2	24	21	150	MR-16	GX5.3	40	CC-6			1.85	44.5		3350	BDTH	25
ELH	31619-0	24	120	300	MR-16	GY5.3	35	CC-8			1.85	44.5		3350	BDTH	25
ELZ	23950-9	24	21	150	57 DICH	G7.9	60	CC-6	0.63	15.9	1.94	45.1		3350	Horiz.	28
ENG	23951-7	24	120	300	MR-16	GY5.3	15	CC-8			1.75	44.5		3450	BDTH	25
ENH	31621-6	24	120	250	50 DICH	GY5.3	175	CC-8			1.75	44.5		3250	BDTH	25
ENX	31927-7	24	82	360	MR-16	GY5.3	75	CC-8			1.75	44.5		3300	BDTH	25
ENX-5	20497-4	24	86	360	MR-16	GY5.3	75	CC-8			1.75	44.5		3300	BDTH	25
ENZ	23954-1	24	30	50	50 DICH	GX50.3	25	CC-6			1.75	44.5		3400	BDTH	25
EPR	23959-0	24	120	500	T-6	G17t-7	50	C-13D	1.61	41	3.5	89		3250	BDTH	
EPW	23962-4	24	100	360	50 DICH	GY5.3	75	CC-8			1.75	44.5		3300	BDTH	25
EPX	23963-2	24	14.5	90	50 DICH	GX5.3	500	CC-6			1.75	44.5		3150	BDTH	25
ESA/EHD	26126-3	100	6	10	T-2.5	G-4	100	C-6	0.77	19.6	1.18	30	200	3200	ANY	3
ESB	25678-4	100	6	20	T-3	G-4	100	C-6	0.77	19.5	1.22	31	420	3200	ANY	3
ETA	31882-4	24	12	100	T-3.5	PG22d	50	C-6	0.71	18	1.89	48	3200	3400	BDTH	8
EVA	25676-8	100	12	100	T-3.5	GY6.35	1000	C-6F	1.18	30	1.73	44	2500	3200	ANY	7
EVA	25676-8	100	12	100	T-3.5	GY6.35	1000	C-6F	1.18	30	1.73	44	2500	3200	ANY	7
EVC	31884-0	100	24	250	T-5	G6.35	300	C-GF	1.3	33	2.24	57	8400	3200	ANY	13
EVD-X	23177-9	24	36	400	T-6	G6.35	50	C-6F	1.42	36.1	2.36	59.9	16,625	3400	BDTH	13
EVW	25284-1	24	82	250	50 DICH	GX5.3	50	CC-8			1.75	44.5		3300	BD TO 22° UP	25
EXR	25286-6	24	82	300	MR-13	GX5.3	35	CC-8			1.75	44.5		3350	BDTH	27
EXR-5	23967-3	24	86	300	MR-13	GX5.3	15	CC-8			1.75	44.5		3400	BDTH	27
EXW	23971-5	24	82	300	42 DICH	GX5.3	15	CC-8			1.75	44.5		3400	BDTH	27
EXY	20493-3	24	82	250	MR-13	GX5.3	250	CC-8			1.75	44.5		3250	BDTH	27
EYB	23257-9	24	82	360	T-5	G5.3	75	CC-8	1.25	31	2.25	57	10,000	3250	BDTH	6
EYB-5	23972-3	24	86	360	T-5	G5.3	75	CC-8	1.25	31.8	2.25	57	10,000	3300	BDTH	6
EYH/FKT	23973-1	24	120	250	GT-7	G5.3	150	CC-6	1.44	36.5	2.5	63	6050	3050	BDTH	

◆ — SPECIAL ORDER ITEM, Consult Customer Service for minimum order quantities and delivery.

D — Lamps to be discontinued after inventory is depleted. Please check with customer service for availability.

❖ — Not shown.

Unless otherwise noted all dimensions are in inches. To convert inches to millimeters multiply by 25.4001.

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

Photo/Projection Lamps, continued

ANSI Code	Product Number	Std. Pkg. Qty.	Volts	Avg. Watts Amps.	Bulb	Base	Rated Avg. Life (Hrs.)	Coil Type	LCL (In.)	LCL (mm)	MOL (In.)	MOL (mm)	Rated Approx. Lumens	Color Temp. (K)	Operating Position	Fig. No.
FAL	23976-4	24	120	420	T-6	RX7s	75	CC-8			2.63	66.7	11,000	3200	ANY	18
FCM	33269-2	12	120	1000	T-3	RX7s	300	C-8			4.72	119.9	27,000	3200	Horiz.	20
FCR	26101-6	100	12	100	T-3.5	GY6.35	50	C-6F	1.18	30	1.73	44	3400	3400	BDTH	7
FCS	20607-8	200	24	150	T-4	G6.35	50	C-6F	1.18	30	2	50.8	6000	3400	BDTH	13
FDS/DZE	31655-4	24	24	150	T-4 1/2	GZ9.5	50	C-6F	1.32	33.4	2.25	57	5000	3400	BD	5
FDV	23978-0	24	24	150	T-5	G6.35-15	100	C-6F	1.18	30	2	50	4300	3300	BDTH	13
FHM	26130-5	100	120	1000	T-3	RX7s	300	C-8			4.72	119.9	26,000	3200	Horiz.	20
FHS	25305-4	24	82	300	MR-13	GX5.3	70	CC-8			1.75	44.45		3300	BDTH	27
FHS-5	23981-4	24	86	300	MR-13	GX5.3	70	CC-8			1.75	44.5		3300	BDTH	27
FHV	31671-1	24	32	150	T-4	G6.35	50	C-6F	1.81	30	1.96	50	5000	3400	BDTH	13
FJX	31499-7	50	13.8	30	50 DICH	GX5.3	500	C-8			1.77	44.9		3150		25
FKY	31924-4	24	6	9	MR-11	G3.9	250	C-6			1.65	42			BDTH	26
FLN	31935-0	24	13.8	50	50 DICH	GX5.3	1000	C-8			1.75	44.5		3150	BDTH	25
FLT	23980-6	24	13.8	25	MR-11	GZ4	400	CC-6			1.38	35		3100	Horiz.	23
FLW	20492-5	24	24	300	T-6	GY6.3	50	C-6F	1.3	33	2.17	55	10,450	3400	BD±15°	13
FLZ	31929-3	24	18.7	125	50 DICH	GX5.3	120	CC-6			1.85	47			BDTH	25
FNT	20463-6	200	24	275	T-6	G6.35	75	C-6F	1.3	33	2.17	55	10,000	3400	BDTH	13
FXL	23030-0	24	82	410	50 DICH	GY5.3	50	CC-8			1.75	44.5		3300	BDTH	25
GDA	38684-7	100	120	500	T 3.5	RX7s	75	CC-8			5.25	133.3	11,000	3200	ANY	19
JCR 15V, 150W	24923-5	24	15	150	MR-16	GZ6.35	500	C-8			1.65	42			BDTH	25
5761	25713-9	100	6	30	T-3.5	G4	100	C-6F	0.77	19.6	1.22	31	765	3200	ANY	16
5972	31333-8	100	6	10	T-3	G4	200		0.95	24	1.5	38	150	3000	ANY	4
6605	25684-2	100	6	10	T-3	G4	2000	C-6	0.77	19.5	1.22	30	150	2700	ANY	3
7010	25702-2	10	120	300	T-6	GX6.35	150	C-6	1.28				7500	3200	ANY	
13117	37614-5	50	17	150	MR-16	GX5.3	1000	CC-6			1.85	47		3200	ANY	25
13139	33545-5	50	12	75	MR-16	GX5.3	1000	C-8			1.65	42			BD±105°	25
13165	44295-4	50	14	35	35 DICH	GZ4	50				1.5	38			BD±130°	25
13288	22146-5	50	13.8	85	MR-16	GX5.3	1000	C-8			1.81	46			BDTH	25
13298	35436-5	230	10	52	35 DICH	GZ4	20	CC-8			1.77	44.9			Horiz±40°	26
13347W	31453-4	100	6	15	T-6	BA15d	100	C-6F	1.75	44.5	2.13	54.1	210		Horiz.	❖
13477R	31349-4	150	220	800	T-3.5	RX7s	150				4.72	120	21,600	3200	Horiz.	22
13528	31504-4	360	6	15	35 DICH	GZ4	500	C-6			1.5	38			BD±105°	26
13529	31507-7	360	6	9	MR-11	GZ4	250	C-6			1.5	38			BD±105°	26
13865	26423-4	50	12	75	MR-11	G5.3	50				1.57	40			BD±105°	23
14553	26391-3	230	10	52	MR-11	GZ4	20				1.57	40			BD±105°	26

Cross Reference List of IEC and ANSI Base Designations

IEC	ANSI	IEC	ANSI	IEC	ANSI	IEC	ANSI
E10/12	Miniature Screw	G13	Medium Bipin	G17t	3-Pin Prefocus	GY9.5	Prefocus Two-Pin
E12/15	Candelabra Screw	G20	Mogul Bipin	G17q	4-Pin Prefocus		(Higher Wattage)
E17/20	Intermediate Screw	R17d	Recessed D.C.	GX17q	4-Pin Prefocus (Low-Volt)	GZ9.5	Prefocus Two-Pin
E26s	Medium Screw S.C.	BA15s	Candelabra Bayonet S.C.	G5.3	Miniature Two-Pin	G22	Medium Bipost
E26d	Medium Screw D.C.	BA15d	Candelabra Bayonet D.C.	G6.35	Glass Two-Pin	G38	Mogul Bipost
E39	Mogul Screw	P28S	Medium Prefocus	GY6.35	Glass Two-Pin	R7s	Recessed S.C.
Fa8	Single-Pin	P40s	Mogul Prefocus	G9.5	Medium Two-Pin	GY5.3	Two-Pin Reflector (Low-Volt)
G5	Miniature Bipin					GY5.3	Two-Pin Reflector

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

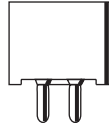
Base Types (Not Actual Sizes)



PG22-6.35
DIN: 4975 I
iec: 7004-48



RX7s
DIN: 49750
IEC: 7004-92
ANSI: Recessed
single contact base
C81.61-1990
sheet I-770-I



G5.3
IEC: 7004-73-2
ANSI: Miniature
2-pin
C81.61-1990
sheet I-20-I



BA 15s
DIN: 49720
IEC: 7004-11A
ANSI: Single contact
candelabra
bayonet base
C81.61-1990
sheet I-20-I



BA15d
DIN: 49720
IEC: 7004-11A
ANSI: Candelabra
bayonet base
double contact
C81.61-1990
sheet I-20-I



GX17q
GX17q
G17q
DIN: 49665
IEC: 7004-45
ANSI: Four-pin
prefocus base
C81.61-1990
sheet I-440-I



B15d
DIN: 4972 I
IEC: 7004-11



B22d/22
IEC: 7004-10



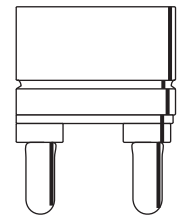
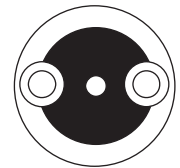
G3.9
ANSI:
C81.61-1990
sheet I-300-I



G4
IEC: 7004-72



GX5.3
(Round pin)
IEC: 7004-73
ANSI:
C61.61-1990
sheet I-321-I



G38
IEC: 7004-76
ANSI: Mogul
bipost
C81.61-1990
sheet I-519-I



G6.35
GX6.35
GY6.35
IEC: 7004-59
ANSI: C81.61-1990
sheet I-340-I



GZ6.35
DIN: 49754
IEC: 7004-59A



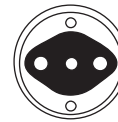
GZ4
IEC: 7004-67



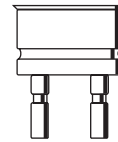
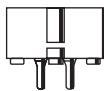
GX9.5
DIN: 49638
IEC: 7004-70A



GY9.5
IEC: 7004-70B
ANSI: C81.61-1990
sheet I-369-I



G22
IEC: 7004-75
ANSI: Medium
bipost
C81.61-1990
sheet I-466-I



Bulb Shapes (Not Actual Sizes)

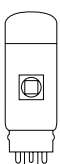


Fig. 1



Fig. 2



Fig. 3



Fig. 4

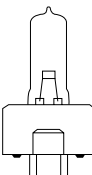


Fig. 5

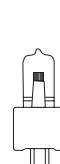


Fig. 6

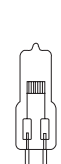


Fig. 7



Fig. 8



Fig. 9

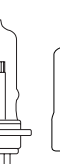


Fig. 10

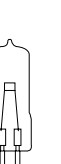


Fig. 11

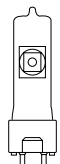


Fig. 12



Fig. 13

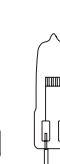


Fig. 14



Fig. 15

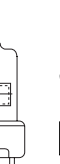


Fig. 16



Fig. 17

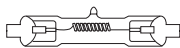


Fig. 18

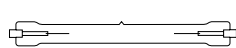


Fig. 19



Fig. 20

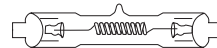


Fig. 21



Fig. 22



Fig. 23



Fig. 24



Fig. 25



Fig. 26



Fig. 27

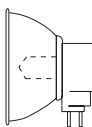


Fig. 28



Stage/Studio/TV Lamps

ANSI Code	Product Number	Watts	Description	Volts	Base	MOL (In.)	LL (In.)	LCL (In.)	Mean Lumens	Rated Avg. Life (Hrs.)	Filament	Color Temp. (K)	Envelope Finish
BTL	31891-5	500		120	Med. Pf.	4 1/2		2.18	11,000	500	C-13D	3050	Clear
BTN	20481-8	750		120	Med. Pf.	4 1/2		2 3/8	17,600	500	C-13D	3050	Clear
BTP	30514-4	750	750T7Q/4CL/2P	120	Med. Pf.	4 1/2		2.38	21,000	200	C-13D	3200	Clear
BTR	30533-4	1000	1000T7Q/4CL/2P	120	Med. Pf.	4 1/2		2 3/8	28,500	250	C-13D	3200	Clear
CYV	31892-3	1000		120	Mog. Bipost	7 3/4		5	28,500	200	C-13D	3200	Clear
CYX	31893-1	2000		120	Mog. Bipost	8 1/2		5	59,000	300	C-13D	3200	Clear
DPY	31922-8	5000		120	Mog. Bipost	11		6 1/2	143,000	500	C-13D	3200	Clear
DTY	32646-2	10000		120	Mog. Bipost	15 1/2		10	285,000	300	C-13	3200	Clear
DWT	38295-2	1000	1000T6Q/CL	120	RX7s	5 3/8	I		23,400	2000	CC-8	3000	Clear
DWZ	31750-3	375		30	RX7s	3 3/8			7800	1000	CC-8	2900	Clear
DXW	31219-9	1000	1000T5Q/CL	120	RX7s	3 3/8			28,000	150	CC-8	3200	Clear
DYS/DYV/BHC	31639-8	600		120	2-Pin Pf.	2 1/2		1 3/8	17,000	75	CC-6	3200	Clear
EGE	39069-0	500		120	Med. Pf.	5 1/2		3 1/2	10,450	2000	CC-8	3000	Clear
EGG	39067-4	750		120	Med. Pf.	6		3 1/2	15,000	2000	CC-8	3000	Clear
EGJ	39068-2	1000		120	Med. Pf.	6		3 1/2	27,500	400	CC-8	3200	Clear
EGR	22563-1	750		120	Med. Bipost	5 1/2		2 1/2	21,000	150	C-13D	3200	Clear
EGT	31896-4	1000		120	Med. Bipost	5 1/2		2 1/2	28,500	250	C-13D	3200	Clear
EHD	26971-2	500	500Q/CL	120	Med. 2-Pin	3 3/8		2 3/8	10,600	2000	CC-8	3000	Clear
EHG	26972-0	750	750Q/CL	120	Med. 2-Pin	4 1/4		2 3/8	15,000	2000	CC-8	3000	Clear
EHT	37857-0	250	250Q/CL	120	Mini-Can	3 1/2		1 3/8	5000	2000	CC-8	3000	Clear
ESN	30759-5	100	100Q/CL	120	Mini-Can	2 3/4		1 3/8	1900	1000	CC-2V	3000	Clear
ESS	31584-6	250	250Q/CL/DC	120	D.C. Bay	3		1 3/8	5000	2000	CC-8	3000	Clear
ETC	26676-7	150	150QCL/DC	120	D.C. Bay	2 3/8		1 1/2	2800	200	CC-8	2900	Clear
ETF	29850-5	150	150Q/DC	120	D.C. Bay	2 3/8		1 1/2	2700	2000	CC-8	2900	Frosted
ETG	34754-2	150	150Q/CL	120	Mini-Can	3		1 1/2	2800	2000	CC-8	2900	Clear
ETH	29856-2	150	150Q	120	Mini-Can	3		1 1/2	2700	2000	C-8	2900	Frosted
EVR	38079-0	500	500Q/CL	120	Mini-Can	3 3/4		2	10,000	2000	CC-8	3000	Clear
FAL	23976-4	420	420T6QCL	120	RX7s	2.63			11,000	75	CC-8	3200	Clear
FCL	20010-5	500	500T3Q/CL	120	RX7s	4 11/16			10,500	2600	C-8	3000	Clear
FCM	33269-2	1000	1000T3Q/CL	120	RX7s	4 11/16		2 1/2	28,000	300	C-8	3200	Clear
FEL	26979-5	1000	1000Q/CL	120	Med. 2-Pin	4		2 3/8	27,500	300	CC-8	3200	Clear
FER/EHS	31240-5	1000	1000T6Q/4CL	120	RX7s	5 3/8			27,500	500	CC-8	3200	Clear
FER/EHS	31240-5	1000	1000T6Q/4CL	120	RX7s	5 3/8			27,500	500	CC-8	3200	Clear
FEV	31904-6	200	200Q/CL/DC	120	D.C. Bay	2 1/2		1 3/8	5500	50	CC-2V	3200	Clear
FEY	31916-0	2000	2000T8Q/CL	120	RX7s	5 3/8			57,000	400	CC-8	3200	Clear
FFM	44235-0	420	420T6Q/CL	120	RX7s	3 3/8			11,000	75	CC-8	3200	Clear
FFN	34350-9	1000	1000PAR64QVNSP	120	Ext. Mog. End	6			400,000	800		3200	Clear
FFP	34351-7	1000	1000PAR64QNSP	120	Ext. Mog. End	6			330,000	800		3200	Clear
FFR	34352-5	1000	1000PAR64QMFL	120	Ext. Mog. End	6			125,000	800		3200	Clear
FFS	34353-3	1000	1000PAR64QWFL	120	Ext. Mog. End	6			40,000	800		3200	Clear
FFT	39070-8	1000	1000T4Q	120	RX7s	6 3/8		2.56	27,000	300	C-8	3200	Clear
FHM	26130-5	1000	1000T3Q	120	RX7s	4 11/16			27,300	400	C-8	3200	Frosted
FLK	24861-7	575		115	G9.5	4		2 3/8	16,500	300	CC-8	3200	Clear
FRK	39168-0	650	6638P	120	GY 9.5	1 3/8			17,500	200	C-13D	3200	Clear
GAC	23667-9	1000	6995I/BP 120V 1000W	120	2-Pin Pf.	3 3/4		1.8	27,000	250	C-13D	3200	Clear
GAE	25816-0	2000	6994M/BP	120	Med. Bipost	5 3/8		2.5	55,000	500	C-13D	3200	Clear
GCX	258590	500	6986P (JPD 120-500C-BP)	120	GY 9.5	1 3/8			13,200	120	CC-6	3200	Clear
GCY	280727	500	6986P (JPD 230-500C-BP)	230	GY 9.5	1 3/8			11,500	150	2-CC-6	3150	Clear

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

Stage/Studio/TV Lamps, continued

ANSI Code	Product Number	Watts	Description	Volts	Base	MOL (In.)	LL (In.)	LCL (In.)	Mean Lumens	Rated Avg. Life (Hrs.)	Filament	Color Temp. (K)	Envelope Finish
GKV	36372-1	575	6986P	230	G9.5	4 1/2		2 3/4	15,000	400	C-13D	3200	Clear
GLA	29432-2	575	6992P	115	G9.5	3.97		2 3/4	13,000	1500	C-13D	3100	Clear
GLB	36373-9	575	6999P	230	G9.5	4.33		2 3/4	13,000	1500	C-13D	3100	Clear
GLC	28739-1	575	6989P	115	G9.5	3.97		2 3/4	15,500	400	C-13D	3200	Clear
HPL575	39170-6	575	7007	115	Special			2 3/4	16,520	300	4-C8	3250	Clear
HPL575LL	39167-2	575	7007 LL	115	Special			2 3/4	12,360	2000	4-C8	3050	Clear
HPL750	391714	750	7008	115	Special			2 3/4	21,900	300	4-C8	3250	Clear
	22886-6	250	250Q/CL	130	Mini-Can	3 1/2		1 1/2	5000	2000	CC-8	3000	Clear
6980Z	32896-0	1200	6980Z	80	G 22			2 1/2	37,500	300	C-13D	3300	Clear
7010	25702-2	300	7010	120	GX6.35	2 1/2		1 1/2	7500	150	M	3200	Clear
7002Y	382978	1000	7002Y (V*L 1000)	115	G22	2 3/4			29,000	250	Biplane	3200	Clear

High Volt SSTV Halogen Lamps

ANSI Code	Product Number	Watts	Description	Volts	Base	MOL (In.)	LL (In.)	LCL (In.)	Initial Lumens	Rated Avg. Life (Hrs.)	Filament ²	Color Temp. (K)	Burning Position	Std. Pkg. Qty.	LIF	Monoplane Equivalent LIF
Single-Ended																
—	25813-7	300	6872 P	230	GY9.5	3 1/2		1 1/2	7800	180	M Shape	3200	Universal	10	CP/81	
GCV/GVH	25796-4	500	6820 P	230	GY9.5	3 1/2		1 1/2	11,000	360	Biplane	3000	BDTH	10	T/25	T/18
FRH	25806-1	500	6873P	230	GY9.5	3 1/2		1 1/2	13,500	180	M Shape	3200	Universal	10	CP/82	
GCK/GCT	25794-9	650	6823 P	230	GY9.5	3 1/2		1 1/2	14,500	600	Biplane	3050	BDTH	10	T/27	T/26
—	25820-2	650	6993 Z	230	G22	5 1/2		2 1/2	132,500	120	C-13D	3200	BDTH	10	CP/68	CP/39
FVA	25819-4	1000	6995 P	230	GX9.5	4 1/2		2.13	25,000	240	Biplane	3200	BDTH	10	CP/70	CP/24
FKD	25803-8	1000	6996 C	230	P28s	5		2.2	21,000	900	Biplane	3050	BDTH	10	T/20	T/14
FKK/FKP	25832-7	2000	6994Z	230	G38	8 1/4		5	50,000	480	Biplane	3200	BDTH	10	CP/73	CP/56, CP41
—	29093-2	5000	6963Z	230	G38	11.02		5	132,500	400	C-13D	3200	BDTH	1	CP/85	CP/29
Double-Ended																
—	36417-4	500	PF821 R	230	RX7s	5.31	3.03		11,000	75	CC-8	3200	Horizontal	10		
—	36418-2	500	PF821 R	240	RX7s	5 1/2	3.03		11,000	75	CC-6	3200	Horizontal	10		
EME ¹	31349-4	800	13477 R	230	RX7s	4 3/4	2 1/2		21,600	150	S.C.	3200	Horiz. ±15°	10	P2/11	
DXX ¹	25843-4	800	13162 R	230	RX7s	3	0.83	0.83	21,600	75	CC-8	3200	Horizontal	10	P2/13	
6358R	27493-6	1250	6358 R	230	RX7s	7 1/2	2 1/2		33,750	200	S.C.	3200	Horiz. ±15°	10	P2/12	

1) These lamp types must be operated with a separate rapid acting High Breaking-Capacity fuse, either 415V AC or 500V DC working in accordance with the supply in use as per end of table.

2) C.C. = coiled coil, S.C. = single coil

MSR Lamps Single-Ended Gas Discharge

Description	Product Number	Watts	Lamp Voltage	Lamp Current (Amps)	Initial Lumens	Rated Avg. Life (Hrs.) ¹	Arc Length (mm)	CRI	Color Temp. (K)	Base
Hot Restrike ²										
MSR 125 HR	35468-8	125	80	1.6	9400	200	4		6000	GZX9.5
MSR 200 HR	32466-5	200	70	3.3	15,000	200	5	92	6000	GZY9.5
MSR 400 HR	20477-6	400	70	6.9	32,000	750	6	95	6000	GZZ9.5
MSR 575 HR	31160-5	575	95	6.95	49,000	2000	7	95	6000	G 22
MSR 1200 HR	30270-3	1200	100	13.8	110,000	1000	10	95	6000	G 38
MSR 1200 HR/C	36041-2	1200	100	13.8	110,000	1000	10	95	6000	Special
MSR 2500 HR	30265-3	2500	115	25.6	240,000	500	14	95	6000	G 38
MSR 4000 HR	33579-4	4000	200	24	380,000	500	20	95	6000	G 38
MSR 6000 HR	36042-0	6000	125	55	570,000	500	24	95	6000	GY 38
MSR 12,000 HR	38280-4	12,000	160	86	1,200,000	300	30	95	6000	GY 38
Standard										
MSR 400	30268-7	400	70	6.9	32,000	1000	6	92	5900	GX 9.5
MSR 575/2	24528-2	575	95	6.95	49,000	1000	7	80	7200	GX 9.5
MSR700/2	28723-5	700	72	11	55,000	1000	8	80	7200	G 22/28x42
MSR 1200	30266-1	1200	100	13.8	110,000	800	10	95	5900	G 22/30x53
MSR 1200/2	28695-5	1200	90	13.8	110,000	800	10	85	7200	G 22/30x53
Short Arc										
MSR 400 SA	35365-6	400	54	8.4	30,000	750	3	92	5500	GY 9.5
MSR 700 SA	28718-5	700	72	11	45,000	750	4	80	5600	GY 9.5
MSR 1200 SA	29135-1	1200	100	13.8	96,000	750	7	80	5600	GY 22
MSR 2000 SA	38281-2	2000		20	155,000	750	7	80	6000	GY 22

1) Based on cycle 3.5 hours on/0.5 hour off, nominal wattage. Shorter life at short cycle operation.

2) Lamps must be used in fixtures designed for hot restrike.

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

MSD Lamps

Description	Product Number	Watts	Lamp Voltage	Lamp Current (Amps)	Initial Lumens	Rated Avg. Life (Hrs.) ¹	Arc Length (mm)	CRI	Color Temp. (K)	Base
MSD 200	34592-6	200	70	3.4	13,500	2000 ²	5	80	6000	GY 9.5
MSD 250	29152-6	250	90	3	17,000	3000	5	77	6700	GY 9.5
MSD 250/2	27721-0	250	90	3	17,000	3000	5	65	8500	GY 9.5
MSD 575	27479-5	575	95	6.95	45,000	3000	8	75	6000	GX 9.5
MSD 575 HR	391680	575	95	6.95	46,000	2000	8	75	6000	G 22
MSD 700	35364-9	700	72	11	55,000	3000	10	75	6000	G 22
MSD 1200	29134-4	1200	115	13.8	92,000	3000	14	95	6000	G 22

MHD Lamps

MHD 200	20985-8	200	63	4.5	12,500	2000	4.5	75	6600	Special Prefocus
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1) Based on cycle 3.5 hours on/0.5 hour off, nominal wattage. Shorter life at short cycle operation.

2) Vertical burning position life is 750 hours.

Sealed Beam

ANSI Code	Product Number	Watts	Description	Volts	Base	Diameter (In.) (mm)		MOL (In.) (mm)		Lumens	Rated Avg. Life (Hrs.)	Color Temp. (K)	Burning Position	Beam Shape
—	35619-6	500	500PAR56Q/NSP	120	Mog. End	7	179	5	127	88,000	4000	2950	Universal	Narrow Spot
—	35621-2	500	500PAR56Q/MFL	120	Mog. End	7	179	5	127	43,000	4000	2950	Universal	Med. Flood
—	35620-4	500	500PAR56Q/WFL	120	Mog. End	7	179	5	127	22,500	4000	2950	Universal	Wide Flood
—	27555-2	1000	1000PAR64Q/NSP	120	Ext. Mog. End	8	204	6	150	200,000	4000	3000	Universal	Narrow Spot
—	27556-0	1000	1000PAR64Q/MFL	120	Ext. Mog. End	8	204	6	150	80,000	4000	3000	Universal	Med. Flood
—	27558-6	1000	1000PAR64Q/WFL	120	Ext. Mog. End	8	204	6	150	31,000	4000	3000	Universal	Wide Flood
FFN	34350-9	1000	1000PAR64QVNSP	120	Ext. Mog. End	8	204	6	150	400,000	800	3200	Universal	Very Nar. Spot
FFP	34351-7	1000	1000PAR64QNSP	120	Ext. Mog. End	8	204	6	150	330,000	800	3200	Universal	Narrow Spot
FFR	34352-5	1000	1000PAR64QMFL	120	Ext. Mog. End	8	204	6	150	125,000	800	3200	Universal	Medium Flood
FFS	34353-3	1000	1000PAR64QWFL	120	Ext. Mog. End	8	204	6	150	40,000	800	3200	Universal	Wide Flood

MasterColor® CDM/SA (Short Arc)

ANSI Code	Product Number	Watts	Description	Volts	Base	MOL (In.)	LL (In.)	LCL (In.)	Mean Lumens	Rated Avg. Life (Hrs.)	CRI	Color Temp. (K)	Arc Gap (mm)
—	36039-6	150	CDM150SA/942	207	G12	5.71	—	2 1/4	12,900	6000	96	4200	6
—	38278-8	150	CDM-SA/R150942	207	Special	5 3/4	—	—	—	6000	96	4200	6

Micro Power Light (MPXL)

Product Number	Description	Type	Wattage	Life	Lumens	Color Temperature (K)	CRI	Burning Position	MOL (In.)
24958-1	MPXL DL35 50PK	DL35	35	5000	3600	4500	75	Horizontal ±10°	3
29001-5	MPXL DL50	DL50	50	3000	5300	3900	75	Horizontal ±10°	3
29468-6	MPXL RP50	RP50	35	5000	—	3900	75	Horizontal ±10°	2.6
29345-6	MPXL DUV	DUV	35	500	—	—	—	Horizontal ±10°	3

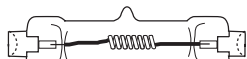
MSI Lamps

Product Number	Description	Watts	Lamp Current (Amps)	Initial Lumens	Rated Avg. Life (Hrs.)	Arc Length (mm)	Color Temperature (K)	MOL (mm)	Base	Burning Position
39072-4	MSI 575W	575	6.95	49,000	1000	7	5600	136	SFC10-4	Any
13091-4	MSI 1200W/S	1200	13.2	110,000	750	7	6000	136	SFC10-4	Any
39073-2	MSI 1200W	1200	13.8	110,000	1000	10	5600	220	SFC15.5-6	Any
39074-0	MSI 2500W	2500	25.6	240,000	600	20	5600	355	SFA21-12	Horiz. ± 30°
39075-7	MSI 4000W	4000	24	410,000	600	34	6000	405	SFA21-12	Horiz. ± 15°
39076-5	MSI 6000W	6000	55	570,000	400	22	6000	450	S25.5X60	Horiz. ± 15°
39165-6	MSI 12000W	12000	82	1,100,000	300	32	6000	470	S25.5X60	Horiz. ± 15°

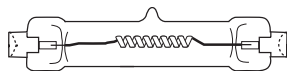
For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

Bulb Shapes and Base Types (Not Actual Sizes)

Double-Ended Tungsten Halogen Lamps
3 1/8, 3 3/4, 4 3/8, 4 1 1/16, 5 5/8 and 6 5/8 MOL
RX7s Base



DWY, DWZ, DXN, DXW, FBY

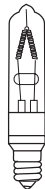


DWT, FER/EHS, FEY

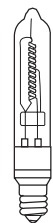


EHM, EHZ, EJG, FCL, FCM, FFT, FHM

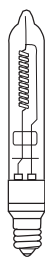
Mini-Can Base Single-Ended
Tungsten Halogen Lamps



ESN
ETH

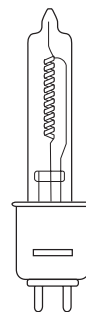


EHT
250Q/CL



EVR

Medium Two-Pin
Tungsten Halogen Lamps (G9.5)

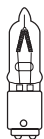


EHD
500Q/CL

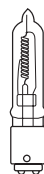


EHG
FEL

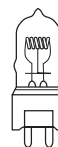
Double Contact Bayonet Bases (BA 15d)
Tungsten Halogen-Miniature Two-Pin Base (G5.3)
Tungsten Halogen-Two-Pin Prefocus Base (GZ 9.5)



FEV
150/DC

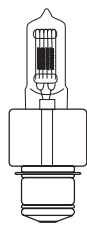


ESS
500Q/CL/DC

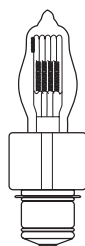


DYS/DYV/BHC
(GZ9.5)

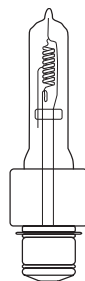
Medium Prefocus Lamps With 23/16" L.C.L. (P28s)
Medium Prefocus Lamps With 31/2" L.C.L. (P28s)



BTL

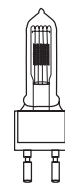


BTP
BTR

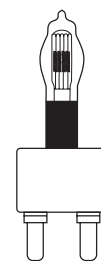


EGE, EGF,
EGG, EGJ

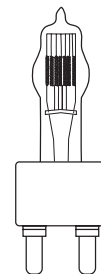
Medium Bipost Lamps With 21/2" L.C.L. (G 22)
Mogul Bipost Lamps With 5" And 61/2" L.C.L. (G 38)



EGR
EGT

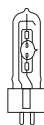


CYV



CYX
FKK (5" LCL)

MSR Lamps
(Medium Source Rare Earth Lamps)



MSR 400



MSR 700

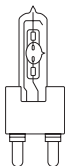


MSR 1200

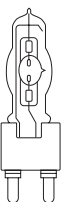
MSR/HR Lamps (Medium Source Rare Earth
Lamps Hot Restrike Version)



MSR
575/HR

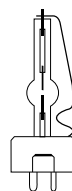


MSR
1200/HR



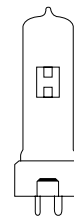
MSR
2500/HR

MSR Short
Arc Lamps



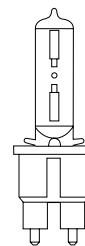
MSR
400W SA

MSD Lamps



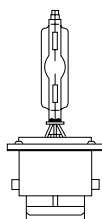
MSD
200W/2

MHD Lamps

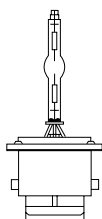


MHD
200

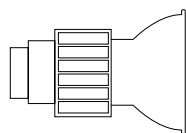
Micro Power Light (MPXL)



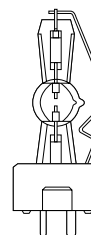
MPXL DL-35W
MPXL DL-50W



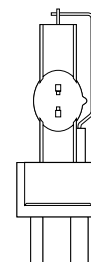
DUV-35W



MPXL RP50



MSR 400 SA/MSR 700 SA



MSR 1200 SA/MSR 2000 SA

SPECIALTY LAMPS

Short Arc Lamps

Product Number	Description	Nominal Watts	Volts	Lumens	Base	LCL (In.)	MOL (In.)	Fig. No.
31644-8	★SAH250B D.C. Operation Only ¹	250	42	10,000	Med. Pf.	2.8	6	—

¹) Should be operated on a control circuit which supplies direct current to the lamp.

★ Heat resisting glass bulb.

Medium Pressure Metal Halide Lamps

Product Number	Description	Nominal Wattage	Lamp Voltage	Nominal Length (mm)	Diameter (mm)	Fig. No.
44431-5	HPM 10/B	400	125	112	17	1-S
30832-0	HPM 12	460	120	98	21	2-S
44440-6	HPM 13	1000	125	147	27	1-S
44323-3	HPM 14	1200	525	200	17.5	2-S
30831-2	HPM 15	800-1950	240	203	32	2-S
30829-6	HPM 17	2000	243	175	27	2-S
30828-8	HPM 19	2000	200	179	27	2-S
30827-0	HPM 20	2900	350	236	27	1-S
44439-8	HPM 20C	2900	350	210	27	2-S
44448-9	HPA 400S	400	125	118	18	3-S

Low Pressure Pulsed Xenon Discharge Lamps

Product Number	Description	Nominal Wattage	Lamp Voltage	Maximum Length (mm)	Width or Diameter (mm)	Height (mm)	Fig. No.
30750-4	XOP 7 O/F	750	52	241	16.2	—	8-S
30749-6	XOP 15 O/F	1500	105	395	16.2	—	8-S

Fluorescent Lamps with Super Actinic Radiation

Product Number	Description	Nominal Wattage	Nominal Current (Amps)	Diameter (mm)	Nominal Length (mm)	(In.)	Fig. No.
29747-3	TLD 15W/03	15	—	26	18	—	—
30800-7	TL20W/03	20	0.37	38	60	24	9-S
22341-2	TL30W/03	30	0.41	38	92	36	—
30807-2	TLK40W/03	40	0.86	38	61	24	9-S
30808-0	TL140W/03	140	1.46	38	150	60	9-S

Fluorescent Lamps with Actinic Radiation

Product Number	Description	Nominal Wattage	Nominal Current (Amps)	Diameter (mm)	Nominal Length (mm)	(In.)	Fig. No.
30812-2	TLK40W/05	40	0.86	38	161	24	9-S

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

Black Light Lamps These lamps are not intended and should not be used for therapeutic or diagnostic purposes.

Product Number	Ordering Code	Nominal Lamp Watts	Description	Nominal Length (In.)	Bulb	Base	Average Life (Hrs.) ¹	UVA Watts	Fig. No.
35840-8	F4T5/BLB	4	Black Light-Integral Filter	6	T5	Min. Bipin	6000	0.5	11-S
35841-6	F6T5/BLB	6	Black Light-Integral Filter	9	T5	Min. Bipin	7500	0.9	11-S
11065-0	F8T5/BLB	8	Black Light-Integral Filter	12	T5	Min. Bipin	7500	1.2	11-S
31006-0	PL9W/10	9	Black Light	6 ½	PL-S	G23	10,000	1.9	16-S
20678-9	PL9W/08	9	Black Light-Integral Filter	6 ½	PL-S	G23	10,000	1.7	16-S
13036-9	F15T8/BL	15	Black Light	18	T8	Med. Bipin	7500	3.1	10-S
29271-4	F15T8/BLB	15	Black Light-Integral Filter	18	T8	Med. Bipin	7500	3.1	10-S
39151-6	F20T12/BLB	20	Black Light-Integral Filter	24	T12	Med. Bipin	9000	3.7	9-S
39152-4	F20BL	20	Black Light	24	T12	Med. Bipin	9000	3.7	9-S
26271-7	F30T8/BLB	30	Black Light-Integral Filter	36	T8	Med. Bipin	7500	6	10-S
39153-2	F40BL	40	Black Light	48	T12	Med. Bipin		9	9-S
39053-4	F40BLB	40	Black Light-Integral Filter	48	T12	Med. Bipin	20,000	9	9-S

1) Three or more hours per start.

Special Blue (Therapeutic) Lamps T12 Bipin

Product Number	Ordering Code	Nominal Lamp Watts	Description	Nominal Length (In.)	Average Life (Hrs.)	Approx. Initial Lumens	Design Lumens
31745-3	F20T12/BB	20	Special Blue	24	9000	200	180
20189-7	F40/BB	40	Special Blue	48	20,000	500	385

NOTE: Black Light and Special Blue Lamps are not designed for general illumination.

WARNING: Ultraviolet Radiation

Wear protective eyewear in occupational situations and in close proximity to these lamps. Failure to may result in severe burns and long-term injury to the eyes. Certain medications and chemicals may increase your sensitivity to ultraviolet radiation. Consult your physician. These lamps can be harmful to skin and eyes in situations where people are exposed for extended periods of time. Unshielded lamps should be installed at least 40 inches from people.

Germicidal Sterilamp® Tubes

Product Number	Description	Lamp Wattage ¹	UV-C Watts ²	Bulb	Base	Useful Life Hours ³	Nominal Length (In.)	Fig. No.
Hot Cathode								
36371-3	TUV4T5	4	0.9	T5	Min. Bipin	6000	6	12-S
24485-5	TUV6T5	6	1.5	T5	G5	8000	9	12-S
29930-5	TUV8T5	8	2.1	T5	Min. Bipin	8000	12 ⁴	12-S
30864-3	TUV15T8	15	4.7	T8	Med. Bipin	8000	18 ⁴	12-S
29268-0	TUV25T8	25	7	T8	Med. Bipin	8000	18 ⁴	12-S
36016-4	TUV30T8	30	11.2	T8	Med. Bipin	8000	36 ⁴	12-S
26269-1	TUV36W	36	15.3	T8	Med. Bipin	8000	48 ⁴	12-S
29090-8	TUV75WHO	75	26	T12	Med. Bipin	8000	48 ⁴	12-S
23596-0	TUV115W	115	38.8	T12	Med. Bipin	5000	48 ⁴	12-S
38186-3	TUV PL-S 5	5	0.18	PL-S	G23	8000	4	16-S
32512-6	PL-S9W/TUV	9	2.4	PL-S	G23	9000	6 ½	16-S
21064-1	PL-L18W/TUV	18	5.5	PL-L	2G11	9000	8 ⅞	15-S
13726-5	PL-L35W/TUV	35	11.0	PL-L	2G11	9000	8 ⅞	15-S
26585-0	PL-L36W/TUV	36	12	PL-L	2G11	9000	16 ⅞	15-S
29464-5	PL-L55W/TUV	55	17	PL-L	2G11	9000	22 ½	15-S
13035-1	PL-L60W/TUV	60	17.5	PL-L	2G11	9000	16 ⅞	15-S
13725-7	PL-L95W/TUV	95	32.0	PL-L	2G11	9000	22 ½	15-S
Slimline								
38542-7	TUV 11W	11	2.2	T5	2G11	8000	10	14-S
38541-9	TUV 16W	16	3.9	T5	2G11	8000	13	14-S
13341-3	TUV 25W	25		T5	4-Pin		20	14-S
29267-2	TUV36T5/SP	39 ⁵	15	T5	Single Pin	9000	34	13-S
36209-5	TUV36T5 4P SE	39 ⁵	15	T5	2G11	9000	34	14-S
29269-8	TUV64T5/SP	75	31	T5	Single Pin	9000	62	13-S
36217-8	TUV64T5 4P SE	75	31	T5	2G11	9000	62	14-S
13389-2	TUV36T5 HO 4P SE	75		T5	4-Pin	9000	34	14-S

1) Wattages shown are for operation from a transformer or ballast, currently standard, under specified test conditions.

2) 100 Hour

3) Lamp Life @ 85% UV-C Maintenance

4) Approximate overall length including two standard lamp holders.

5) Wattage shown is for lamp operating current of 420 ma.

Wattage will vary at other operating currents as follows:

120 ma. — 17 watts; 200 ma. — 25 watts; 300 ma. — 32 watts.

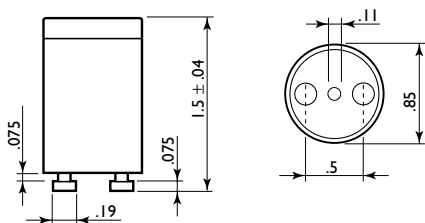
For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

SPECIALTY LAMPS

Starters

Product Number	Description	Circuit	Standard Package Quantity	Fluorescent Lamps
33118-1	S10 STARTER 25PK	Single 220-240V	25	4-85W
13367-2	Cleo Power Starter	Single 220-240V	500	100/180W

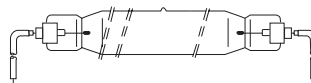
For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/



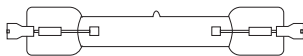
Specialty Bulb Shapes (Not Actual Sizes)



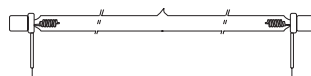
HPM 10/B, 13, 19, 20
Fig. 1-S



HPM 12, 14, 15, 17, 19, 20C,
Fig. 2-S



HPA 400S
Fig. 3-S



XOP 7, 15, 25, O/F
Fig. 8-S



T12 Medium Bipin
Figure 9-S



T8 Medium Bipin
Figure 10-S



T5 Miniature Bipin
Figure 11-S



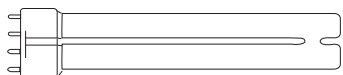
Hot Cathode Sterilamp
Figure 12-S



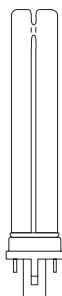
Cold Cathode and Slimline Sterilamp
Figure 13-S



Slimline Sterilamp
Figure 14-S



PL-L
Figure 15-S



PL-S
Figure 16-S

Quartz Infrared Heat Lamps

Watts	Product Number	Description	Volts	Bulb	Base	Pkg. Qty.	Finish	Filament	LL		MOL		Rated Avg. Life (Hrs.)	Diam. (mm)	W/cm	Color Temp. (K)	Burning Position	Fig. No.
200	36043-8	13912R	230	T-3	RX7s	10	Clear	C-8	4.7	120	7.4	189	5000	11	16.7	2300	Universal	2
375	20997-3	375T3/7	120	T-3	RX7s	10	Trans.	C-8	5	127	8.6	217.6	5000	11	29.5	2450	Universal	2
500	21651-5	500T3	120	T-3	U	10	Trans.	C-8	5	127	8.8	223.8	5000	11	39.4	2450	Horiz.±15°	6
	20994-0	500T3/7	120	T-3	RX7s	10	Trans.	C-8	5	127	8.6	217.6	5000	11	39.4	2450	Horiz.±15°	2
	31203-3	13169X	120	T-3	X	10	Clear	C-8	5.6	142	9.5	241	5000	11	35.2	2450	Horiz.±15°	3
	31207-4	13169Y	120	T-3	Y	10	Clear	C-8	5.6	142	8.6	218	5000	11	30.3	2450	Horiz.±15°	7
	31205-8	13169X/98 (1)	120	T-3	X	10	Reflector	C-8	5.6	142	9.5	241	5000	11	35.2	2450	Horiz.±15°	3
800	21680-4	800T3	120	T-3	U	10	Trans.	C-8	8	203	12	303	5000	11	39.4	2450	Horiz.±15°	6
1000	20995-7	1000T3	240	T-3	U	10	Trans.	C-8	10	254	13.8	350.8	5000	11	39.4	2450	Horiz.±15°	6
	21000-5	1000T3/CL	240	T-3	U	10	Clear	C-8	10	254	13.8	350.8	5000	11	39.4	2450	Horiz.±15°	6
	31213-2	13195X	235	T-3	X	10	Clear	C-8	10.7	272	14.6	370	5000	11	36.8	2450	Horiz.±15°	3
	31225-6	13195Y	235	T-3	Y	10	Clear	C-8	10.7	272	13.7	348	5000	11	36.8	2450	Horiz.±15°	7
	31267-8	13713Z/98 (1)	235	T-3	Z	10	Reflector	C-8	10.7	272	14	357.5	5000	11	36.8	2450	Horiz.±15°	4
	31260-3	13713X	235	T-3	X	10	Clear	C-8	10.7	272	14.6	370	5000	11	36.8	2450	Horiz.±15°	3
	31216-5	13195X/98 (1)	235	T-3	X	10	Reflector	C-8	10.7	272	14.1	360	5000	11	36.8	2450	Horiz.±15°	3
	29105-4	6990P	120	T6	G9.5	10	Clear	CC-8	1.375	60.3	4	101	300	20		2450	Universal	9
	29107-0	6990P Long Life	120	T6	G9.5	10	Clear	CC-8	1.375	60.3	4	101	450	20		3100	Universal	9
1200	28853-0	13561Y/00	144	T-3	Y	10	Clear	C-8	6.1	155	9	228	5000	11	77.4	2450	Horiz.±15°	1
	27063-7	13561Y/98 (1)	144	T-3	Y	10	Reflector	C-8	6.1	155	9	228	5000	11	77.4	2400	Horiz.±15°	1
1600	21676-2	1600T3	208	T-3	U	10	Trans.	C-8	16	406	19.8	503	5000	11	39.4	2450	Horiz.±15°	6
	20996-5	1600T3	240	T-3	U	10	Trans.	C-8	16	406	19.8	503	5000	11	39.4	2450	Horiz.±15°	6
	21590-5	1600T3	277	T-3	U	10	Trans.	C-8	16	406	19.8	503	5000	11	39.4	2450	Horiz.±15°	6
	21003-9	1600T3/7	240	T-3	RX7s	10	Trans.	C-8	16	406	19.6	498.5	5000	11	39.4	2450	Horiz.±15°	2
	21678-8	1600T3/CL	240	T-3	U	10	Clear	C-8	16	406	19.8	503	5000	11	39.4	2450	Horiz.±15°	6
	28875-3	13568Y/00	144	T-3	Y	10	Clear	C-8	6.1	155	9	228	5000	11	103.2	2450	Horiz.±15°	1
	27062-9	13568Y/98 (1,2)	144	T-3	Y	10	Reflector	C-8	6.1	155	9	228	5000	11	103.2	2500	Horiz.±15°	1
	28378-8	1600T3/CL	277	T-3	U	10	Clear	C-8	16	406	19.8	503	5000	11	39.4	2500	Horiz.±15°	6
2000	31198-5	13168X	235	T-3	X	10	Clear	C-8	11.1	282	14.6	370	5000	11	71.4	2450	Horiz.±15°	3
	31200-9	13168Z/98 (1)	235	T-3	Z	10	Reflector	C-8	11	280	14	357.5	5000	11	71.4	2450	Horiz.±15°	4
	21169-8	13213Y/00	235	T-3	Y	10	Clear	C-8	11	280	14	357.5	5000	11	71.4	2450	Horiz.±15°	1
	31252-0	13245X/98 (1)	400	T-3	X	10	Reflector	C-8	16.2	410	20	508	5000	11	48.8	2450	Horiz.±15°	3
	31269-4	13765X	400	T-3	X	10	Clear	C-8	16.2	410	20	508	5000	11	48.8	2450	Horiz.±15°	3
	26665-0	14103Z/98 (1)	235	T-3	SK15	10	Reflector	C-8	11	280	14.1	360	5000	11	71.4	2450	Horiz.±15°	5
	21592-1	2000T3/ICL/HT	240	T-3	U	10	Clear	C-8	10	254	12	303	5000	11	78.8	2500	Horiz.±15°	6
	21648-1	2000T3/ICL	240	T-3	U	10	Clear	C-8	10	254	12	303	5000	11	78.8	2450	Universal	6
	36855-5	13765X/98	400	T-3	X	10	Reflector	C-8	16.1	410	20	508	5000	11	48.8	2450	Universal	3
	35703-8	13168V	240	T-3	V	10	Clear	C-8	11	280	13.8	350	5000	11	71.4	2450	Horiz.±15°	8
2500	37811-7	13213Z/98	235	T-3	Z	10	Reflector	C-8	11	280	14.1	358	5000	11	71.1	2450	Horiz.±15°	4
	20998-1	2500T3	480	T-3	U		Trans.	C-8	25	635	28.8	731	5000	11	39.4	2450	Horiz.±15°	6
	21689-5	2500T3/7	480	T-3	RX7s	10	Trans.	C-8	25	635	28.7	730	5000	11	39.4	2450	Horiz.±15°	2
	23874-1	2500T3/CL	480	T-3	U	10	Clear	C-8	25	635	28.8	731	5000	11	39.4	2450	Horiz.±15°	6
	28217-8	14120R	480	T-3	RX7s	10	Clear	C-8	25	635	28.7	728	5000	11	39.4	2450	Horiz.±15°	2
3000	31244-7	13230X	400	T-3	X	10	Clear	C-8	27.6	700	31.4	798	5000	11	42.9	2450	Universal	3
	23648-9	13230X/98 (1)	400	T-3	X	10	Reflector	C-8	27.6	700	31.4	798	5000	11	42.9	2450	Horiz.±15°	3
3200	25435-9	3200T3/CL	240	T-3	U	10	Clear	C-8	32.1	815	41.8	1062	5000	11	39.3	2450	Horiz.±15°	6
3800	22128-3	3800T3	575	T-3	U	6	Trans.	C-8	38	965	41.8	1062	5000	11	39.4	2450	Horiz.±15°	6
	22127-5	3800T3/CL	570	T-3	U	6	Clear	C-8	38	965	41.8	1062	5000	11	39.4	2450	Horiz.±15°	6
	22129-1	3800T3/CL/UB	575	T-3	U	6	Clear	C-8	38	965	41.8	1062	5000	11	39.4	2450	Vertical	6
5000	36845-6	5000T3/ICL/HT	600	T-3	U	6	Clear	C-8	25.1	638	28.8	731	5000	11	78.4	2450	Horiz.±15°	6
6000	29114-6	13170V	480	T-3	V	10	Clear	C-8	11.2	284	13.8	350	5000	11	211.3	2450	Horiz.±15°	8
	29123-7	13138V	480	T-3	V	10	Clear	C-8	9.3	236	12	303	5000	11	194.7	3000	Horiz.±15°	8
6850	29170-8	14118V	480	T-3	V	10	Clear	C-8	9.52	242	11.9	303	1000	11	28.3	3000	Horiz.±15°	8

1) Lamps have white reflective coating on bulb

2) Lamps have fork terminals

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

HeLeN Quartz Infrared Heat Lamps

Infrared HeLeN glare reduction lamps have a gold coating which reduces visible glare and raises the infrared output when compared to existing zone ruby sleeve heating lamps. These lamps feature a substantially lower visible glare level than either ruby and neutral density zone heating lamps. They have a narrower diameter and better color rendering than ruby sleeve lamps

Watts	Product Number	Description	Volts	Bulb	Base	Pkg. Qty.	Finish	Filament	LL		MOL		Avg. Rated Life	Diam. (mm)	W/cm	Color Temp. (K)	Burning Position	Fig. No.
500	28836-5	I5018U	120	T-3	U	10	HeLeN	C-8	5	127	8.8	223.8	5000	11	39.4	N/A	Horiz±15°	6
1000	36516-3	I5024Z	120	T-3	SK15	10	HeLeN	C-8	11	280	14.1	360	5000	11	35.7	N/A	Horiz±15°	5
	28050-3	I5007Z	235	T-3	SK15	10	HeLeN	C-8	11	280	14.1	360	7000	11	35.7	N/A	Horiz±15°	5
	38175-6	I5019U	235	T-3	U	10	HeLeN	C-8	10.7	272	13.7	347	7000	11	36.8	N/A	Horiz±15°	6
	28925-6	I5019Z	235	T-3	SK15	10	HeLeN	C-8	11	280	14.1	360	7000	11	35.7	N/A	Horiz±15°	5
3000	249615	I5012U	235	T-3	U	10	HeLeN	C-8	16.3	413	19.9	504	5000	11	72.6	N/A	Universal	6

For the most current product information, go to www.nam.lighting.philips.com/us/ecatalog/

Tubular Quartz Infrared Bulb Shapes (Not Actual Sizes)

Tubular quartz infrared heat lamps are designed for service other than illumination. Unless otherwise noted,

1. Tubular quartz heat lamps should not be used in equipment where the seal temperatures exceed 350°F.
2. Operating position is HORIZONTAL.
3. RX7s Base = Recessed Single Contact

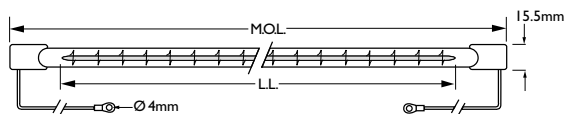


Fig. 1 (Y Base)
Leads Are Approximately 6"



Fig. 2 (RX7s Base)



Fig. 3 (X Base)

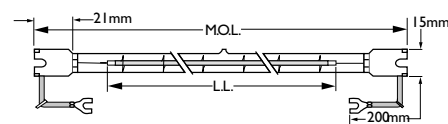


Fig. 4 (Z Base)

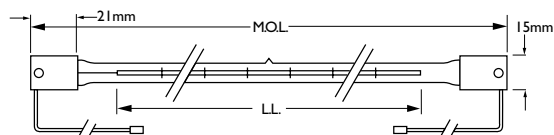


Fig. 5 (SK15 Base)
I3844Z/98—Lead is 15.7", I4103Z/98—Lead is 9"

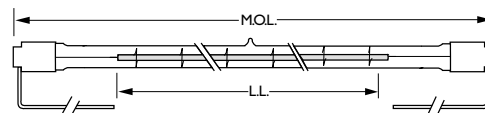


Fig. 6 (U Base)
Leads Are Approximately 6"

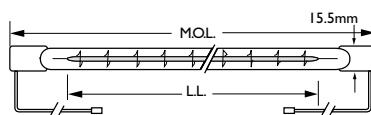


Fig. 7 (Y Base)
I3169Y—Lead is 6.3", I3195Y—Lead is 7.8"

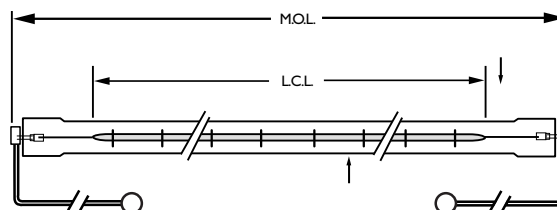


Figure 8 (V Base)
I3136V, I3170V, I3138V, I4118V lead is 1.5"
I3168V leads are 4.7" and 5.5"

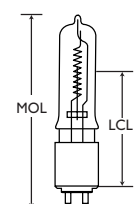


Fig. 9 (G9.5 Base)

Glossary <http://www.nam.lighting.philips.com/us/ecatalog/glossary.php>

Accent Lighting

Concentrated light on a subject which highlights it and causes it to stand out from its surrounding. Depending on degree of drama desired, accent light should minimally be 10x the general light or ambient light.

Accommodation

The involuntary muscular process by which the eye changes focus from one distance to another.

Adaptation

The involuntary process by which the visual system changes its sensitivity, depending on the luminances prevailing in the visual field. The process involves both the iris and the light sensitive cells of the retina.

ALTO® Lamps

ALTO means that the lamps pass the US government's TCLP test (Toxicity Characteristic Leaching Procedure). ALTO linear fluorescent lamps have the lowest mercury content of any linear fluorescent lamps in the market.

Ballast

The ballast is an electrical device that performs two basic functions: 1) provides the starting voltage and 2) limits the current to sustain lamp operation.

Ballast types for fluorescent lamps:

Instant Start: Instant start electronic ballasts are the most popular type of electronic ballast today because they provide maximum energy savings and they start lamps without delay or flashing. Since they do not provide lamp electrode heating, instant start ballasts consume less energy than comparable rapid start, program rapid start or programmed start ballasts. As a result, they provide the most energy efficient solution to fluorescent lamp ballasting. The instant start ballast uses 1.5 to 2 watts less energy per lamp than the rapid start alternative.

Instant-start electronic ballasts provide a high initial voltage (typically 600V for F32T8 lamps) to start the lamp. This high voltage is required to initiate discharge between the unheated electrodes of the lamp. However, the cold electrodes of lamps operated by an instant start ballast may deteriorate more quickly than the warmed electrodes of lamps operated by a rapid start, program rapid start or programmed start ballast. Lamps operated by instant start ballasts will typically withstand 10–15K switch cycles. Instant start ballasts are typically wired in *parallel*. This means that if one lamp fails, the other lamps in the circuit will remain lit.

Rapid Start: Rapid start ballasts have a separate set of windings which provide a low voltage (approx. 3.5 volts) to the electrodes for one second prior to lamp ignition. A starting voltage somewhat lower than that of instant ballast (typically 450–550V for F32T8 lamps) is applied, striking an electrical arc inside the lamp. Most rapid start electronic ballasts continue to heat the electrode even after the lamp has started, which results in a power loss of 1.5 to 2 watts per lamp. Lamps operated by a rapid start electronic ballast will typically withstand 15–20K switch cycles. Rapid start ballasts are typically wired in *series*. This means that if one lamp fails, all other lamps in the circuit will extinguish.

Programmed Start: Programmed start (PS) electronic ballasts provide maximum lamp life in frequent starting conditions (up to 50,000 starts). PS ballasts use a custom integrated circuit (IC) which monitors lamp and ballast conditions to ensure optimal system lighting performance. Life Program rapid start ballasts, PS ballasts also precisely heat the lamp cathodes. However, PS ballasts heat the lamp cathodes to 700° C prior to lamp ignition. This puts the least amount of stress on the lamp electrodes, resulting in maximum lamp life regardless of the number of lamp starts. Programmed start ballasts are typically wired in *series*.

Ballast types for HID lamps:

Reactor: Single coil, very efficient, but poor voltage regulation to the lamp.

Constant Wattage Autotransformer (CWA):

Employing two coils, the ballast is less efficient than reactor types, but have better voltage regulation. Most popular type in use.

Magnetically Regulated (Mag Reg) or Regulated

Lag (Reg Lag): Three coils make for very effective voltage regulation but also not very efficient.

Electronic: Allows for both high efficiency and the best voltage regulation.

Beam Angle

The beam angle defines the light pattern around the beam's central axis for which the luminous intensity is half that of the maximum luminous intensity.

Candela (Luminous Intensity)/Candlepower (USA)

The intensity base unit for light. Intensity is the luminous flux emitted from a point per unit solid angle into a particular direction, regardless of distance.

Color Rendering Index (CRI)

A method for describing the effect of a light source on the color appearance of objects, compared to a reference source of the same color temperature (CCT). The highest CRI attainable is 100. Originally based on an eight standardized color comparisons, it was later extended to fourteen colors.

Color Temperature or Correlated

Color Temperature (CCT)

The color temperature of a light emitter refers to the temperature to which one would have to heat a "blackbody" source (Planckian radiator) to produce light of similar overall appearance or chromaticity. A low color temperature implies warmer color (more yellow/red) light while high color temperature implies a cooler light (more blue). The standard unit for color temperature measurement is expressed in Kelvin (K).

Efficacy

The expression of efficiency in converting power (watts) into light (lumens). Expressed as lumens per watt or l/w.

Exitance

Refers to the total amount of visible light leaving a surface in all directions. Unit for luminous exitance is lumens per square meter (lm/m²).

Field Angle

The field angle defines the light pattern around the beam's central axis for which the luminous intensity is 10% that of the maximum luminous intensity.

Flux

Is the basic measure of light flow. Flux, expressed in lumens, includes only visible light and is weighted to match the response of the human eye. Thus it is a measure of Photometry rather than Radiometry.

Footcandle

The unit of measure for the density of light on a surface unique to the USA. One footcandle is equal to one lumen per foot (lm/ft²). One footcandle = 10.674 lux.

Glare

Glare is an interference with visual perception caused by an uncomfortably bright light source or reflection within one's field of view; a form of visual noise. In its simplest form, glare (unwanted light) is a consequence of the human eye to adapt to different light levels. In the case of glare, the eye adapts to the high level of the glare source, which makes it difficult to perceive details in the now too dark work area.

Direct Glare: Glare resulting from high luminances in the visual environment that are directly visible from a viewers position; such as an insufficiently shielded luminaire.

Reflected Glare or Veiling Reflection: A reflection of incident light that partially or totally obscures the details to be seen on a surface by reducing the contrast.

Discomfort Glare: Glare which is distracting or uncomfortable (subjective), which interferes with the perception of visual information, but which does not significantly reduce visual performance.

Disability Glare: The effect of light which significantly reduces visual performance and perception; such as car high beams in your face on a dark country road.

General Lighting (Ambient Lighting)

Lighting designed to deliver a predominately uniform level of light throughout an area.

Illuminance

The total density of visible light—from all directions—illuminating, falling on or incident to, a surface. Standard unit of measure for illuminance is LUX (lx) which is lumens per square meter (lm/m²). See **Footcandle**.

Inverse Square Law

This law says that the measured flux density from a light source decreases along any line from the source. It falls off in proportion to the square of the relative distance traversed. Thus the illuminance measurement 2 feet from the light source will be 1/4 of the measurement 1 foot from the source—not 1/2.

Initial vs. Mean Lumens

The measured luminous output of a new light source versus the output at 40% of lamp life.

Kelvin

The Kelvin unit is the basis of all temperature measurement. In lighting, Kelvin is the unit of measure for Color Temperature used to indicate the overall color of the light produced from a source. See **Color Temperature**.

ADDITIONAL INFORMATION

Glossary and Technical Descriptions

Glossary <http://www.nam.lighting.philips.com/us/ecatalog/glossary.php>

Kilowatt Hour (kWh)

The measure of electrical energy from which electricity billing is determined. For example, at the rate of \$0.10 per kWh, a 100 watt lamp operating for 2000 hours will cost \$20.00 ($100 \times 2000 / 1000 = 200 \text{ kWh} \times .10 = \20.00)

Light

Radiant energy that stimulates the sense of sight. The "visible" part of the electromagnetic spectrum from 380–770 nm. Light is the energy which allows us to see.

Luminaire (light fixture)

A complete lighting unit which consists of lamp(s), ballast(s)—if applicable—as well as mechanism for light distribution, lamp protection and alignment and connection to power.

Luminaire Efficacy

The ratio of luminous flux emitted by the fixture to that emitted by the lamp(s) within the fixture. Expressed as a percentage.

Luminance (The physical measure of brightness)

Luminance is the amount of visible light leaving a point on a surface in a given direction. The light leaving the surface can be due to reflection, transmission and/or emission. Standard unit of luminance is candela per square meter (cd/m^2).

Photometry

Photometry is the science of measuring visible light in units that are weighted according to the sensitivity of the human eye known as the Visual Wavelength (V_λ) factor. Photometric theory does not address how we perceive colors.

Radiometry

Radiometry is the science of quantifying the phenomena of electromagnetic radiation. In our context, we are interested in light, the limited range of electromagnetic radiation that is visible to the human eye, sometimes extended to the areas of infrared and ultraviolet.

Rated Average Life

The length of operation (in hours) at which point an average of 50% of a large sample of lamps will still be operational and 50% will not.

Task Lighting

Lighting designed for a specific visible operation which requires higher light levels; most often characterized by proximity to that task.

Voltage

A measure of electromotive force or simply said, the pressure of electricity. This is analogous to pressure in a water line. In this catalog, voltage refers to supply voltage required by the lamp (incandescent) or operating voltage required by the arc tube (discharge lamps).

Watt

Unit used to measure electric power consumed by a lamp or any electrical device.

TECHNICAL DESCRIPTIONS

Lamp Listing Sequence

Lamps are listed in wattage sequence except for special groupings such as Street Lighting, Tungsten Halogen, High Intensity and Silicone Coated Lamps.

Ordering Code

The complete information shown in the ordering code column together with the voltage, if applicable, should be used when placing orders. In a number of instances a lamp type may be available in different kinds of packaging such as 2 or 4 lamp wrappers. Some small lamp types which are generally multiple packed on a platform with an overwrap are also packaged as a blister-carded item for the retail market. Each of these items is shown as a separate listing. To identify them, additional information is included with the ordering code. The following examples illustrate this:

Ordering Code	BC-7T7/W 12/2
Pkg. Qty.*	12cds
Explanation	Carded pack—2 lamps per card. The number shown under "Pkg. Qty" is the number of cards per min. shipping case.
Ordering Code	60T/SW 12/4
Pkg. Qty.	48
Explanation	12-4 lamp wrappers = 48 lamps per min. shipping case.
Ordering Code	50/150T/WL/TP 96/I
Pkg. Qty.	96
Explanation	96-1 lamp wrappers = 96 lamps per min. shipping case.

* Quantity shown is minimum shipping container. Refer to Net Price Schedule for number of lamps required for qualification as a standard case.

Voltage

Lamps listed are available only in the voltage shown. Lamps listed in range voltages such as 115–125 or 230–250 are intended for use on circuits normally varying within these voltage limits and are designed for an average voltage suitable for operation on such circuits. Lamps intended for operation in range voltages have a design volt center as follows, unless otherwise noted by a footnote:

Range Voltage	Design Voltage
115–125	120
120–125	120
120–130	125
125–130	130
230–250	240

Class of Lamp

Incandescent lamps are classified as type B or type C. The type B lamp is one in which the filament operates in a vacuum. The type C lamp is one in which the filament operates in an atmosphere of inert gas. For gas-filled lamps which can be operated in any position the lumen maintenance is best when lamps are operated base up. For the vacuum type lamps which have no restrictions on operating position the lumen maintenance is the same in all operating positions.

Lamp Dimensions

Bulb designations consist of a letter or letters to indicate shape and a number to indicate the approximate diameter in eighths of an inch.

Maximum Overall Length (MOL)

Maximum Overall Length is measured from the top of the bulb to bottom of the base.

Nominal Length

A measurement of fluorescent lamp length based on the length of the lamp plus the proper allowance for standard lamp holders.

Light Center Length (LCL)

Light Center Length is the distance from a reference point on a lamp base (usually the eyelet) to the center of the light source. For high intensity discharge lamps, it is the distance from the center of the filament or center of the arc to the point shown below for the base indicated.

All Screw Bases: Bottom base contact

Medium and Mogul Prefocus: Top of base pin

Medium Bipost: Bottom of bulb

Bayonet Candelabra and Medium

Bayonet: Top of base pins

SC or DC Prefocus: Plane of locating bosses of prefocusing collar

Mini-Can: Intersection of 45° taper with max. diameter of base

Inches to Metric Conversion

To calculate the metric equivalent of inches in millimeters (mm) use the following formula: inches $\times 25.4001 =$ millimeters

Operating Position

Lamps may be operated in any position unless otherwise indicated.

Base Pin Position for Bayonet Candelabra-Based Lamps

When lamps are based with a bayonet candelabra base, the plane of the base pins will be approximately at right angles to the plane of the filament, unless otherwise indicated.

SC or DC Prefocus Based Lamps

The plane containing the base axis and the major locking eyelet which is the eyelet equidistant from the two other eyelets, will be at right angles to the plane of the filament or lead wires unless otherwise indicated. The letter (A) shown in the Base column after SC or DC Pref. based lamps indicates that the distance from the bottom of base contact or contacts to the bottom of the collar is .406". In the case of DC Pref. based lamps, the letter (A) also indicates that the plane containing the base axis and contacts is at right angles to the plane containing the base axis and the major locking eyelet.

Electricity represents, on average, 86% of your total lifecycle lighting costs. Lamps and ballasts represent less than 10% of your total cost. By investing in energy-efficient lighting upgrades, you can leverage the energy cost savings to achieve significant, even dramatic reductions in your operating costs. Often times, a lighting system used by a customer is not the most efficient, costs too much, or provides less than adequate light. It may be advantageous for customers to upgrade their lighting strategy during re-lamping instead of purchasing replacement lamps.

[illegible]

Note: Energy rate is based on \$0.10 per kilowatt hour. Use the local energy rate whenever possible.

ADDITIONAL INFORMATION

Cross Reference Guide

INCANDESCENT

Philips	GE	OSI
BC4C7	4C7 CARD 2	4C7/BL/2PK
BC4C7/W	4C7/W CD 2	4C7/W/BL/2PK
10C7	10C7 TRAY	10C7/CL
10S11N	10S11N	10S11N/CL
10S11N/IF	10S11N/F	10S11N/IF
BC15BA9C/CL/LL	15CAC/F-CD/2-12	15B10/BL/2PK
15BA9C/4M	--	15B10C/DL/BL
BC15T10	15T10	15T10/CL
20T61/2DC/IF	20T61/2DC/F	20T61/2DC/IF
20T61/2I/F	20T61/2I/F	20T61/2I
25A/RS	25A/RS	25A/RS
BC25BA9-1/2/CL/LL	--	25B10/DL/BL
BC25BA9C/CL/LL	25CAC-CD/2-120	25B10C/BL/2PK
25G16-1/2C/4M	25GC 12PK	25G161/2C
25G25/CL/LL	25G25	25G25
25G40/4M	25G40	25G40
25S11/2C	25S11/5C	25S11C/P
BC25T10	25T10	25T10
30/100A/W	30/100	30/100A21/W/RP
30A15	30A15-130	30A15
30R20	30R20-120	30R20
BC40A15/FAN/CL/LL	40A15/CF CD2	40A15/CL/FAN
40A/TF	40A15/CF/STG CD2	40A15/SL
40A	40A 48PK	40A
40A-34A/EW	40A/34WM	40A/34/SS
40A-34A/99/EW	40A/34/WMP/99	40A/34/SS/XL
BC40BA9-1/2/CL/LL	40CAM CD/2	40B10/BL/2PK
BC40BA9C/CL/LL	40CAC-CD/2-120	40B10C/BL/2PK
40BA-91/2/4M	--	40B10/DL/BL/2PK
40B101/2/4M	--	40B10C/DL/BL
BC40B9-1/2/F/LL	40CAM/F CD/2	40B10/W/BL/2PK
BC40F15/CL/LL	40FM/L	40F/CL
BC40G16-1/2C/CL/LL	40GC-12PK-120	40G161/2C
BC40G16-1/2C/W/LL	40GC/W/CD/2	40G161/2C/w/bl
40G25/CL/LL	40G25/L	40G25
40G25/W/LL	40G25/W/L/24	40G25/DLSW/RP
40G40/CL/LL	40G40/CL	40G40
40G40/W/LL	40G40/W	40G40/W
BC40S11N/TP	40S11N/1 CARD	40S11N/BL
40S11N/IF	40S11N/1/F	40S11N/CF
BC40T10/IF	40T10/F	40T10/IF
50/150A/W	50/150 12PK	50/150A21/W/RP
50/150A/DL	50/150 12PK	50/150/PS25
50A/RS/TF	50A/RS/CVG 24PK	50A/RS/SL
60A	60A	60A
60A-52A/EW	60A/52WM	60A/52/SS
60A19/B	60A21/B	60A/CB
60A19/G	60A21/G	60A/CG
60A/CL	60A/CL 24PK	60A/CL
60A/D	60A/D	60A/D
60A/WL	60A/W/LL-24PK-120	60A/DLSW/2PK/RP
60A/AGRO	60A/PL 6PK	60A/GRO
60A/TF	60A/CVG 24PK	60A/SL
60A/W/TP	60A/W 48PK	60A/W/4RP
60A/Y	60A/Y 24PK	60A/Y/RP
K60A19/TS/EW	69A21/60WM/TS	60A19/TS/8M/SS
K60A19/TS/EW	--	60A21/TS
BC60BA9-1/2C/LL	60CAM CD/2	60B10/BL/2PK
BC60BA9C/CL/LL	60CAC CD/2 6PK	60B10C/BL/2PK
60BA9-1/2/4M	--	60B10/DL/BL/2PK
60BA9C/4M	--	60B10C/DL/BL/2PK
BC60BA9-1/2/F/LL	--	60B10C/F/BL/2PK
BC60BA9C/F/LL	60CAM/F CD/2	60B10/W/BL/2PK
BC60F15/CL/LL	--	60F/BL
60G25/CL/LL	60G25 6PK 120V	60G25/RP
60G25/W/LL	--	60G25/DLSW/RP

Philips	GE	OSI
60G40/CL/LL	60G40 6PK	60G40/RP
60G40/W/LL	60G40/W 6PK	60G40/W
60K19/DL	--	60K19/DR
60T10/64/IF	60T10/F 24PK	60T10/CF
65BR30/FL/LL55	65BR30/FL/LL 6PK	65BR30/DL/FL/RP
65BR30/FL55	--	65BR30/FL
65BR30/FL55	75R30/FL/65WM	65BR30/FL/SS
65BR30/SP20/LL	65R30/SP/LL 6PK	65BR30/SP/RP
65BR30/SP20	75R30/SP/65WM	65BR30/SP/SS
75A	75A	75A
75A/CL	75A/CL 24PK	75A/CL
75A/RS/VS	75A/RS	75A19/RS
75A/RH/TF	75A/RT 6PK	75A21/RS/SL
75A/RH/TF	75A/RS/CVG 24PK	75A21/SL/RP
75A-67A/EW	75A/67WM	75A/67/SS
75A-67A/99/EW 120	75A/67WMP/99	75A/67/SS/XL
75BR30/PK	75R30/B	75BR30/B/FL/RP
75BR30/AGRO	75R30/PL/1 6PK	75BR30/GRO/FL/RP
75BR30/PK	75R30/PK	75BR30/PK/FL/RP
75ER30	75ER30	75ER30
75K19/DL	--	75K19/DR
75R20/LL	75R20 6PK	75R20/RP
75BR30/FL/TF	--	75R30/FL/SL
K90A19/TS/EW	100A21/90WM/TS 12	90A19/TS/8M/SS
100A/1SBIF	100A21/1SBIF 60 PK	100A21/1SB/IF
100A	100A	100A
100A/W	--	100A/DLSW/2PK/RP
100A/CL/RS/VS	100A/RS 12PK	100A19/RS
100A21	100A21	100A21
100A/RS/TF	100A/RS/CVG	100A21/RS/SL
100A/RS/VS	100A23/VS 24PK	100A21/V/S
100A-90A/EW	100A/90WM	100A/90/SS
100-90A/99EW	100A/90WMP/98	100A/90/SS/XL
100A/CL	100A/CL 24PK	100A/CL
120BR/FL60	100R/FL-120	100BR/FL
100G40/CL/LL	100G40	100G40
100G40/W/LL	100G40/W/L	100G40/W
120BR/FL60	120R40/FL/MI-6PK	120BR/FL
120BR/SP20	120R40/SP/MI-6PK	120BR/SP
120ER40	120ER40	120ER40
125R40/I	125R40	125BR40
150A	150A	150A21
150A-135A/EW	150A/135WM	150A21/135/SS
150A/99	150Q21/99/IF	150A21/99/XL
150A/CL	150A/CL 12PK	150A21/CL
150BR/AGRO	150R40/PL-1 6PK	150BR/GRO
150G40/W/LL	150G40/W	150G40/W/RP
200A (A23)	200A 12PK	200A21
200/99	200/99	200CL/99/XL
200/IF	200/IF	200PS/IF
200/99IF	200/99IF	200PS/IF/99/XL
250R40/I	250R40/I	250BR40
K250PAR38/FL	--	250KBR38/FL
K250PAR38/SP	--	250KBR38/SP
300R/FL/1	300R/FL	300BR/FL
300M/99IF	300M/99/IF	300M/99/IF/XL
300M	300M	300M/CL
300PAR56/MFL	300PAR56/MFL	300PAR56/MFL
300PAR56/NSP	300PAR56/NSP	300PAR56/NSP
300PAR56/WFL	300PAR56/WFL	300PAR56/WFL
300/99IF	300/99IF	300PS35/99/IF/XL

HALOGEN

Philips	GE	OSI
BC60BT15/HA/CL	—	—
BC60BT15/HA/W	60A/HA/	60A/HA/
BC75BT15/HA/W	75A/HA/	75A/HA/
BC100BT15/HA/W	—	100A/HA/RP
BC150BT15/HA/W	—	—
BC25CP19/HA/CL	—	—
BC25F10-1/2C/HA/CL	—	—
BC25F10-1/2/HA/CL	—	—
BC25F15/HA/CL	—	—
BC40CP19/HA/CL	—	—
BC40F10-1/2C/HA/CL	—	—
BC40F10-1/2/HA/CL	—	—
BC40F15/HA/CL	—	—
BC60CP19/HA/CL	—	—
BC60F10-1/2C/HA/CL	—	—
BC60F10-1/2/HA/CL	—	—
BC60F15/HA/POST TOP	—	—
45PAR16/HA/NSP10	—	—
45PAR16/HA/NFL27	—	—
60PAR16/HA/NSP10	60PAR16/H/NSP10	60PAR16/CAP/NSP10
60PAR16/HA/NFL27	60PAR16/H/NFL30	60PAR16/CAP/NFL30
50PAR20/HA/NSP9	50PAR20/H/NSP10	50PAR20/CAP/NSP10
50PAR20/HA/SP16	—	—
50PAR20/HA/NFL30	50PAR20/H/FL25	50PAR20/HA/SPL/NFL30
50PAR30L/HA/NSP9	50PAR30L/H/SP10	50PAR30L/N/CAP/SPL/NSP9
50PAR30L/HA/SP16	—	—
50PAR30L/HA/NFL30	—	50PAR30L/N/CAP/SPL/NFL25
50PAR30L/HA/FL40	50PAR30L/H/FL40	—
50PAR30L/HA/WFL60	50PAR30L/H/WFL	50PAR30L/N/CAP/SPL/WFL50
75PAR30L/HA/NSP9	75PAR30L/H/SP10	75PAR30L/CAP/SPL/NSP9
75PAR30L/HA/SP16	—	—
75PAR30L/HA/NFL30	75PAR30L/H/FL25	75PAR30L/CAP/SPL/NFL25
75PAR30L/HA/FL40	75PAR30L/H/WFL	75PAR30L/CAP/SPL/WFL50
50PAR30S/HA/NSP10	50PAR30/H/SP10	50PAR30/CAP/SPL/NSP9
50PAR30S/HA/NFL30	50PAR30/H/NFL25	50PAR30/CAP/SPL/NFL25
50PAR30S/HA/FL40	50PAR30/H/FL35	50PAR30/CAP/SPL/FL40
60PAR30S/HA/NSP10	60PAR30/H/NSP9	60PAR30/CAP/SPL/NSP9
60PAR30S/HA/NFL30	60PAR30/H/FL25	60PAR30/CAP/SPL/NFL25
60PAR30S/HA/FL40	60PAR30/H/FL35	—
75PAR30S/HA/NSP10	75PAR30/H/SP10	75PAR30/CAP/SPL/NSP9
75PAR30S/HA/NFL30	75PAR30/H/FL25	75PAR30/CAP/SPL/NFL25
75PAR30S/HA/FL40	75PAR30/H/WFL35	75PAR30/CAP/SPL/FL40
50PAR36Q/VNSP5	50PAR36/H/SP5	50PAR36/CAP/NSP6
45PAR38/HA/SP12	45PAR/H/SP10	45PAR/CAP/SPL/WSP12
45PAR38/HA/FL28	45PAR/H/FL25	45PAR/CAP/SPL/FL30
60PAR38/HA/SP12	60PAR/H/SP10	60PAR/CAP/SPL/WSP12
60PAR38/HA/FL28	60PAR/H/FL25	60PAR/CAP/SPL/FL30
75PAR38/HA/NSP	—	—
75PAR38/HA/SP10	75PAR/H/SP9	75PAR/CAP/SPL9
75PAR38/HA/FL28	75PAR/H/FL25	75PAR/CAP/FL30
90PAR38/HA/SP12	90PAR/H/SP10	90PAR/CAP/SPL/WSP12
90PAR38/HA/FL28	90PAR/H/FL25	90PAR/CAP/SPL/FL30
90PAR38/HA/WFL	90PAR/H/WFL	90PAR/CAP/SPL/WFL50
50PAR30S/IRC/NSP10	50PAR30/HIR/SP9	50PAR30/CAP/IR/NSP9
50PAR30S/IRC/NFL30	50PAR30/HIR/FL25	50PAR30/CAP/IR/NFL25
50PAR30S/IRC/FL40	50PAR30/HIR/FL35	50PAR30/CAP/IR/FL40
50PAR38/IRC/SP12	50PAR/HIR/SP9	50PAR/CAP/IR/SP10
50PAR38/IRC/FL25	50PAR/HIR/FL25	50PAR/CAP/IR/NFL25
50PAR38/IRC/WFL	—	—
60PAR38/IRC/SP12	60PAR/HIR/SP10	60PAR/CAP/IR/WSP12
60PAR38/IRC/FL25	60PAR/HIR/FL30	60PAR/CAP/IR/NFL25
60PAR38/IRC/WFL	60PAR/HIR/WFL	—
100PAR38/IRC/SP12	100PAR/HIR/SP10	100PAR/CAP/IR/SP10
100PAR38/IRC/FL25	100PAR/HIR/FL25	100PAR/CAP/IR/NFL25
100PAR38/IRC/WFL	100PAR/HIR/FL40	100PAR/CAP/IR/FL40
20MRC11/SP10	Q20MR11/SP15	20MR11/SP10/FTB
20MRC11/FL35	Q20MR11/NFL30	20MR11/FL35/FTD
20MR16/SP10-ESX	Q20MR16/SP	20MR16/NSP8/ESX
20MR16/FL36-BAB	Q20MR16/FL	20MR16/FL40/BAB
50MR16/SP10-EXT	Q50MR16/SP	50MR16/NSP12/EXT

Philips	GE	OSI
50MR16/NFL24-EXZ	—	50MR16/NFL25/EXZ
50MR16/FL36-EXN	Q50MR16/FL	50MR16/FL40/EXN
20MRC16/SP10	Q20MR16C/CG15ESX	20MR16/T/NSP10/ESX
20MRC16/FL36	Q20MR16C/CG40BAB	20MR16/T/FL40/BAB
50MRC16/SP10	Q50MR16C/CG15	50MR16/T/NSP10/EXT
50MRC16/NFL24	Q50MR16C/CG25	50MR16/T/NFL25/EXZ
50MRC16/FL36	Q50MR16C/CG40	50MR16/T/FL40/EXN
75MR16/SP10-EYF	Q71MR16C/CG15	65MR16/T/NSP10/FPA
75MR16/FL36-EYC	Q71MR16C/CG40	65MR16/T/FL40/FPB
20MRC16/CC/SP10	Q20MR16C/CG15ESX	20MR16/T/NSP10/ESX
20MRC16/CC/NFL24	—	—
20MRC16/CC/FL38	Q20MR16C/CG40BAB	20MR16/T/FL40/BAB
50MRC16/CC/SP10	Q50MR16C/CG15	50MR16/T/NSP10/EXT
50MRC16/CC/NFL24	Q50MR16C/CG25	50MR16/T/NFL25/EXZ
50MRC16/CC/FL38	Q50MR16C/CG40	50MR16/T/FL40/EXN
20MRC16/IRC/SP8	—	20MR16/IR/SP10/C
20MRC16/IRC/FL36	—	20MR16/IR/FL40/C
30MRC16/IRC/SP8	—	—
30MRC16/IRC/NFL24	—	—
30MRC16/IRC/FL36	—	—
35MRC16/IRC/SP8	Q37MR16/HIR/CG10	37MR16/IR/SP10/C
35MRC16/IRC/NFL24	Q37MR16/HIR/CG25	37MR16/IR/NFL25/C
35MRC16/IRC/FL36	Q37MR16/HIR/CG40	37MR16/IR/FL40/C
35MRC16/IRC/WFL60	—	—
45MRC16/IRC/SP8	Q50MR16/HIR/CG10	50MR16/IR/SP10/C
45MRC16/IRC/NFL24	Q50MR16/HIR/CG25	50MR16/IR/NFL25/C
45MRC16/IRC/FL36	Q50MR16/HIR/CG40	50MR16/IR/FL40/C
45MRC16/IRC/WFL60	—	—
50MRC16/SP12/A	—	50MR16/B/NSP11/C/EXT
50MRC16/NFL24/A	—	50MR16/B/NFL25/EXZ
50MRC16/FL40/A	—	50MR16/B/FL35/C/EXN
75Q/CL	Q75CL/MC	75Q/CL
100Q/CL ESN	Q100CL/MC	100Q/CL/MC/ESN
100Q/CL/DC ESR	Q100CL/DC	100Q/CL/DC/ESR
150Q/CL ETG	Q150CL/MC	150Q/CL/MC/2/ETG
150Q ETH	Q150MC	150Q/CL/MC/ETH
150Q/CL/DC ETC	Q150CL/DC	150Q/CL/DC/ETC
150Q/DC ETF	Q150DC	150Q/DC/ETF
250Q/CL EHT	Q250CL/MC	250Q/CL/MC/EHT
250Q/CL/DC ESS	Q250CL/DC	250Q/CL/DC/ESS
500Q/CL EVR	—	500Q/CL/MC/EVR
500Q/CL EHD	—	—
750Q/CL EHG	—	—
100T3Q/CL	Q100T3/CL	100T3Q/S/CL
150T3Q/CL	Q150T3/CL	150T3Q/S/CL
150T3Q/CL LONG	Q150T3/117/CL	150T3Q/CL
250T3Q/CL	Q250T3/CL	250T3Q/CL
300T3Q/P/CL EHM	Q300T3/CL	300T3Q/CL
500T3Q/P/CL	Q500T3/CL	500T3Q/CL
1000T3Q/P/CL 240V	Q1000T3/CL 240V	1000T3Q/CL 240V
1500T3Q/P/CL 208V	Q1500T3/CL 208V	1500T3Q/CL 208V
1500T3Q/P/CL 220V	Q1500T3/CL 220V	—
1500T3Q/P/CL 277V	Q1500T3/CL 277V	1500T3Q/CL 277V
1500T3Q/P/CL 240V	Q1500T3/CL 240V	1500T3Q/CL 240V
10W/T3/12V	Q10T3/CL	10T3Q/CL
20W/T3/12V	Q20T3/CL	20T3Q/CL
35W/T4/12V	Q35T3/CL	35T4Q/CL
50W/T4/12V	Q50T4/CL	50T4Q/CL
75W/T4/12V	Q75T4/CL	75T4Q/CL
ALU111MM 50W G53 12V 8D	—	50AR111/SP8
ALU111MM 50W G53 12V 24D	—	50AR111/FL25
ALU111MM 75W G53 12V 8D	—	75AR111/SP8
ALU111MM 75W G53 12V 24D	—	75AR111/FL25
ALU111MM 75W G53 12V 45D	—	75AR111/WFL45
BC25TWISTLINE GU10/FL25	Q20GU10/FL/CD	—
BC35TWISTLINE GU10/FL25	Q35GU10/FL/CD	—
BC50TWISTLINE GU10/NFL25	Q50GU10/FL/CD	50PAR16/CAP/GU10/FL40

ADDITIONAL INFORMATION

Cross Reference Guide

COMPACT FLUORESCENT

	Philips	Generic Description	GE	OSI
PL-S	PL-S 5W/827	CFT5W/G23/827	F5BX/SPX27	CF5DS/827
	PL-S 7W/827	CFT7W/G23/827	F7BX/SPX27	CF7DS/827
	PL-S 7W/835	CFT7W/G23/835	F7BX/SPX35	CF7DS/835
	PL-S 7W/841	CFT7W/G23/841	F7BX/SPX41	CF7DS/841
	PL-S 7W/850	CFT7W/G23/850	F7BX/SPX50	CF7DS/850
	PL-S 9W/827	CFT9W/G23/827	F9BX/SPX27	CF9DS/827
	PL-S 9W/835	CFT9W/G23/835	F9BX/SPX35	CF9DS/835
	PL-S 9W/841	CFT9W/G23/841	F9BX/SPX41	CF9DS/841
	PL-S 9W/850	CFT9W/G23/850	F9BX/SPX50	CF9DS/850
	PL-S 13W/827	CFT13W/GX23/827	F13BX/SPX27	CF13DS/827
	PL-S 13W/830	CFT13W/GX23/830	F13BX/SPX30	CF13DS/830
	PL-S 13W/835	CFT13W/GX23/835	F13BX/SPX35	CF13DS/835
	PL-S 13W/841	CFT13W/GX23/841	F13BX/SPX41	CF13DS/841
	PL-S 13W/850	CFT13W/GX23/850	F13BX/SPX50	CF13DS/850
PL-C 2-PIN	PL-C 13W/827/USA/ALTO	CFQ13W/GX23/827	F13DBX23T4/SPX27	CF13DD/827
	PL-C 13W/830/USA/ALTO	CFQ13W/GX23/830	F13DBX23T4/SPX30	CF13DD/830
	PL-C 13W/835/USA/ALTO	CFQ13W/GX23/835	F13DBX23T4/SPX35	CF13DD/835
	PL-C 13W/841/USA/ALTO	CFQ13W/GX23/841	F13DBX23T4/SPX41	CF13DD/841
	PL-C 13W/827/ALTO	CFQ13W/G24d/827	F13DBXT4/SPX27	—
	PL-C 13W/830/ALTO	CFQ13W/G24d/830	F13DBXT4/SPX30	—
	PL-C 18W/827/ALTO	CFQ18W/G24d/827	F18DBXT4/SPX27	CF18DD/827
	PL-C 18W/830/ALTO	CFQ18W/G24d/830	F18DBXT4/SPX30	CF18DD/830
	PL-C 18W/835/ALTO	CFQ18W/G24d/835	F18DBXT4/SPX35	CF18DD/835
	PL-C 18W/841/ALTO	CFQ18W/G24d/841	F18DBXT4/SPX41	CF18DD/841
	PL-C 26W/827/ALTO	CFQ26W/G24d/827	F26DBXT4/SPX27	CF26DD/827
	PL-C 26W/830/ALTO	CFQ26W/G24d/830	F26DBXT4/SPX30	CF26DD/830
	PL-C 26W/835/ALTO	CFQ26W/G24d/835	F26DBXT4/SPX35	CF26DD/835
	PL-C 26W/841/ALTO	CFQ26W/G24d/841	F26DBXT4/SPX41	CF26DD/841
PL-C 2-PIN 15MM	PL-C 15MM/22W/827	CFQ20W/GX32d/827	—	—
	PL-C 15MM/28W/827	CFQ27W/GX32d/827	—	—
PL-C 4-PIN	PL-C 13W/827/4P/ALTO	CFQ13W/G24q/827	F13DBX/SPX27/4P	CF13DD/E/827
	PL-C 13W/830/4P/ALTO	CFQ13W/G24q/830	F13DBX/SPX30/4P	CF13DD/E/830
	PL-C 13W/835/4P/ALTO	CFQ13W/G24q/835	F13DBX/SPX35/4P	CF13DD/E/835
	PL-C 13W/841/4P/ALTO	CFQ13W/G24q/841	F13DBX/SPX41/4P	CF13DD/E/841
	PL-C 18W/827/4P/ALTO	CFQ18W/G24q/827	F18DBX/SPX27/4P	CF18DD/E/827
	PL-C 18W/830/4P/ALTO	CFQ18W/G24q/830	F18DBX/SPX30/4P	CF18DD/E/830
	PL-C 18W/835/4P/ALTO	CFQ18W/G24q/835	F18DBX/SPX35/4P	CF18DD/E/835
	PL-C 18W/841/4P/ALTO	CFQ18W/G24q/841	F18DBX/SPX41/4P	CF18DD/E/841
	PL-C 26W/827/4P/ALTO	CFQ26W/G24q/827	F26DBX/SPX27/4P	CF26DD/E/827
	PL-C 26W/830/4P/ALTO	CFQ26W/G24q/830	F26DBX/SPX30/4P	CF26DD/E/830
	PL-C 26W/835/4P/ALTO	CFQ26W/G24q/835	F26DBX/SPX35/4P	CF26DD/E/835
	PL-C 26W/841/4P/ALTO	CFQ26W/G24q/841	F26DBX/SPX41/4P	CF26DD/E/841
PL-L	PL-L 18W/830	FT18W/2G11/830	F18BX/SPX30	FT18DL/830
	PL-L 18W/835	FT18W/2G11/835	F18BX/SPX35	FT18DL/835
	PL-L 18W/841	FT18W/2G11/841	F18BX/SPX41	FT18DL/841
	PL-L 18W/830	FT18W/2G11/RS/830	F18BX/SPX30/RS	FT18DL/830/RS
	PL-L 18W/835	FT18W/2G11/RS/835	F18BX/SPX35/RS	FT18DL/835/RS
	PL-L 18W/841	FT18W/2G11/RS/841	F18BX/SPX41/RS	FT18DL/841/RS
	PL-L 24W/830	FT24W/2G11/830	F27/24BX/SPX30	FT24DL/830
	PL-L 24W/835	FT24W/2G11/835	F27/24BX/SPX35	FT24DL/835
	PL-L 24W/841	FT24W/2G11/841	F27/24BX/SPX41	FT24DL/841
	PL-L 36W/830	FT36W/2G11/830	F39/36BX/SPX30	FT36DL/830
	PL-L 36W/835	FT36W/2G11/835	F39/36BX/SPX35	FT36DL/835
	PL-L 36W/841	FT36W/2G11/841	F39/36BX/SPX41	FT36DL/841
	PL-L 40W/830/RS/IS	FT40W/2G11/RS/830	F40/30BX/SPX30	FT40DL/830/RS
	PL-L 40W/835/RS/IS	FT40W/2G11/RS/835	F40/30BX/SPX35	FT40DL/835/RS
	PL-L 40W/841/RS/IS	FT40W/2G11/RS/841	F40/30BX/SPX41	FT40DL/841/RS
	PL-L 50W/830/RS	FT50W/2G11/RS/830	F50BX/SPX30/RS	—
	PL-L 50W/835/RS	FT50W/2G11/RS/835	F50BX/SPX35/RS	—
	PL-L 50W/841/RS	FT50W/2G11/RS/841	F50BX/SPX41/RS	—
	PL-L 80W/830	FT80W/2G11/830	—	—
	PL-L 80W/835	FT80W/2G11/835	—	—
	PL-L 80W/841	FT80W/2G11/841	—	—
PL-T 4-PIN	PL-T 18W/827/4P/ALTO	CFTR18W/GX24q/827	F18TBX/SPX27/A/4P	CF18DT/E/IN/827
	PL-T 18W/830/4P/ALTO	CFTR18W/GX24q/830	F18TBX/SPX30/A/4P	CF18DT/E/IN/830
	PL-T 18W/835/4P/ALTO	CFTR18W/GX24q/835	F18TBX/SPX35/A/4P	CF18DT/E/IN/835

COMPACT FLUORESCENT, continued

	Philips	Generic Description	GE	OSI
PL-T 4-PIN, cont.	PL-T 18W/841/4P/ALTO	CFTR18W/GX24q/841	F18TBX/SPX41/A/4P	CF18DT/E/IN/841
	PL-T 26W/827/4P/ALTO	CFTR26W/GX24q/827	F26TBX/SPX27/A/4P	CF26DT/E/IN/827
	PL-T 26W/830/4P/ALTO	CFTR26W/GX24q/830	F26TBX/SPX30/A/4P	CF26DT/E/IN/830
	PL-T 26W/835/4P/ALTO	CFTR26W/GX24q/835	F26TBX/SPX35/A/4P	CF26DT/E/IN/835
	PL-T 26W/841/4P/ALTO	CFTR26W/GX24q/841	F26TBX/SPX41/A/4P	CF26DT/E/IN/841
	PL-T 32W/827/4P/ALTO	CFTR32W/GX24q/827	F32TBX/SPX27/A/4P	CF32DT/E/IN/827
	PL-T 32W/830/4P/ALTO	CFTR32W/GX24q/830	F32TBX/SPX30/A/4P	CF32DT/E/IN/830
	PL-T 32W/835/4P/ALTO	CFTR32W/GX24q/835	F32TBX/SPX35/A/4P	CF32DT/E/IN/835
	PL-T 32W/841/4P/ALTO	CFTR32W/GX24q/841	F32TBX/SPX41/A/4P	CF32DT/E/IN/841
	PL-T 42W/827/4P/ALTO	CFTR42W/GX24q/827	F42TBX/SPX27/A/4P	CF42DT/E/IN/827
	PL-T 42W/830/4P/ALTO	CFTR42W/GX24q/830	F42TBX/SPX30/A/4P	CF42DT/E/IN/830
	PL-T 42W/835/4P/ALTO	CFTR42W/GX24q/835	F42TBX/SPX35/A/4P	CF42DT/E/IN/835
	PL-T 42W/841/4P/ALTO	CFTR42W/GX24q/841	F42TBX/SPX41/A/4P	CF42DT/E/IN/841
	PL-T 42W/827/4P/ALTO	CFTR42W/GX24q/827	F42QBX/SPX27/A/4P	CF42DT/E/IN/827
	PL-T 42W/830/4P/ALTO	CFTR42W/GX24q/830	F42QBX/SPX30/A/4P	CF42DT/E/IN/830
	PL-T 42W/835/4P/ALTO	CFTR42W/GX24q/835	F42QBX/SPX35/A/4P	CF42DT/E/IN/835
	PL-T 42W/841/4P/ALTO	CFTR42W/GX24q/841	F42QBX/SPX41/A/4P	CF42DT/E/IN/841

Ordering Code Cross Reference Guide: Although certain fluorescent lamp types listed by Philips, General Electric and Sylvania have different ordering codes, they are physically and electrically interchangeable. For your convenience, we are listing a direct type comparison between manufacturers. In the Econ-o-watt® line only Philips makes an F40/EV-PH lamp for preheat installations.

FLUORESCENT

Philips	GE	OSI
F15T8/CW/24/ALTO	F24" T8/CW/4	F18T8/CW/K/24
F16T8/CW/26	F26" T8/CW/4	F18T8/CW/K/26
F17T8/CW/28	F28" T8/CW/4	F18T8/CW/K/28
F18T8/CW/30	F30" T8/CW/4	F18T8/CW/K/30
F20T12/CW/ALTO (6 Pack)	F20T12/CW (6 Pack)	F20T12/CW/6
F25T12/CW	F25T12/CW/33	F25T12/CW/33
F30T12/CW/RS/EW/ALTO	F30T12/CW/RS/WM	F30T12/CW/RS/SS
TL 70	Trimline	Octron
F17T8/TL741/ALTO	F17T8/SP41/RS	FO17/741
F25T8/TL741/ALTO	F25T8/SP41/RS	FO25/741
F32T8/TL741/ALTO	F32T8/SP41/RS	FO32/741
F40T8/TL741/ALTO	F40T8/SP41/RS	FO40/741
F96T8/TL741/ALTO	F96T8/SP41	FO96T8/741
FB32T8/TL741/ALTO	F32T8/SP41/U/6	FB032/741/6
TL 80		
F17T8/TL841/ALTO	F17T8/SPX41	FO17/841
F25T8/TL841/ALTO	F25T8/SPX41	FO25/841
F32T8/TL841/ALTO	F32T8/SPX41	FO32/841
F40T8/TL841/ALTO	F40T8/SPX41	FO40/841
F96T8/TL841/ALTO	F96T8/SPX41	FO96/841
FB32T8/TL841/ALTO	F32T8/SPX41/U/6	FBO32/841/6
F40CW/RS/EW/ALTO	F40CW/RS/WM	F40CW/RS/SS
F40LW/RS/EW/ALTO	F40LW/RS/WM	F40LW/RS/SS
F40/SPEC41/ALTO	F40/SP41	F40/D41
F40/41 U/ALTO	F40/SPX41	F40/D841
F96T12/CW/EW/ALTO	F96T12/CW/WM	F96T12/CW/SS
F96T12/CW/HO/EW/ALTO	F96T12/CW/HO/WM	F96T12/CW/HO/SS
F96T12/CW/HO-O/ALTO	F96T12/CW/HO/CT	F96T12/CW/HO/COLD TEMP
F96T12/CW/VHO/EW/ALTO	F96PG17/CW/WM	F96T12/CW/VHO/SS
FB40CW/6/EW/ALTO	F40CW/U/6/WM	FB40CW/6/SS
FB40CW/3/ALTO	FB40CW/U/3	—
FB40CW/6/ALTO	F40CW/U/6	FB40/CW/6"
F48T12/CW/VHO	F48T12/CW/I500	F48T12/CW/VHO
F72T12/CW/VHO	F72T12/CW/I500	F72T12/CW/VHO
F96T12/CW/VHO	F96T12/CW/I500	F96T12/CW/VHO
F48T12/CW/VHO-O	F48T12/CW/I500/O	F48T12/CW/VHO/LT
F60T12/CW/VHO-O	F60T10/CW	—
F72T12/CW/VHO-O	F72T12/CW/I500/O	F72T12/CW/VHO/LT
F96T12/CW/VHO-O	F96T12/CW/I500/O	F96T12/CW/VHO/LT
FJ48T12/CW/VHO-O	F48T10/CW	FJ48T12/CW/VHO/LT
FJ60T12/CW/VHO-O	F60T10/CW	—
FJ72T12/CW/VHO-O	F72T10/CW	FJ72T12/CW/VHO/LT
FJ96T12/CW/VHO-O	F96T10/CW	FJ96T12/CW/VHO/LT

ADDITIONAL INFORMATION

Cross Reference Guide

FLUORESCENT Color Cross Reference Guide

Philips	GE	OSI
SPEC 30 or 730	SP 30	D 30
SPEC 35 or 735	SP 35	D 35
SPEC 41 or 741	SP 41	D 41
Ultralume 27 or 27U	Designer 800 SPX 27	27K
30U or 830	SPX 30	D 830
35U or 835	SPX 35	D 835
41U or 841	SPX 41	D 841
C50	C50	DSGN50

FLUORESCENT Light Source Color Chart

Fluorescent Color	Color Abbreviation	Atmosphere	Light Output (%) In 4' Lamp	CCT	CRI	Lighted Appearance CIE Color Coordinates	
						X	Y
Cool White	CW	Cool	100	4100K	62	0.380	0.380
Deluxe Cool White	CWX	Cool	72	4100K	89	0.376	0.367
Daylight	D	Cool Daylight	85	6500K	79	0.313	0.337
Daylight Deluxe	DX	Cool Daylight	76	6500K	84	0.314	0.341
Lite White	LW	Cool	104	4200K	51	0.376	0.386
Natural	N	Neutral	69	3700K	90	0.384	0.357
3000K, SPEC30	SPEC30	Warm	105	3000K	70	0.444	0.409
3500K, SPEC35	SPEC35	Neutral	105	3500K	73	0.410	0.395
4100K, SPEC41	SPEC41	Cool	105	4100K	70	0.382	0.385
Advantage T12 30	ADV30	Warm	118	3000K	82	0.444	0.409
Advantage T12 35	ADV35	Neutral	118	3500K	82	0.410	0.395
Advantage T12 41	ADV41	Cool	118	4100K	82	0.382	0.385
Advantage T12 50	ADV50	Daylight	118	5000K	82	0.346	0.360
Warm White	WW	Warm	102	3000K	53	0.440	0.403
Colortone 50	C50	Daylight	72	5000K	92	0.345	0.359
Colortone 75	C75	Daylight Plus	66	7500K	95	0.299	0.316
3000K, Ultralume	30U	Warm	108	3000K	85	0.444	0.409
3500K, Ultralume	35U	Neutral	108	3500K	85	0.413	0.395
4100K, Ultralume	41U	Cool	108	4100K	85	0.382	0.385
5000K, Ultralume	50U	Daylight	93	5000K	85	0.346	0.356
3000K, TL 70	TL730	Warm	93	3000K	78	0.439	0.402
3500K, TL 70	TL735	Neutral	93	3500K	78	0.410	0.395
4100K, TL 70	TL741	Cool	93	4100K	78	0.382	0.385
5000K, TL 70	TL750	Daylight	90	5000K	76	0.346	0.356
3000K, TL 80	TL830	Warm	98	3000K	86	0.439	0.402
3500K, TL 80	TL835	Neutral	98	3500K	86	0.410	0.395
4100K, TL 80	TL841	Cool	98	4100K	86	0.382	0.385
5000K, TL 80	TL850	Daylight	97	5000K	86	0.346	0.356
3000K, TL 90	TL930	Warm	66	3000K	95	0.438	0.399
5000K, TL 90	TL950	Daylight	66	5000K	98	0.344	0.355
Advantage T8 830	ADV830	Warm	105	3000K	86	0.444	0.409
Advantage T8 835	ADV835	Neutral	105	3500K	86	0.410	0.395
Advantage T8 841	ADV841	Cool	105	4100K	86	0.382	0.385
Advantage T8 850	ADV850	Daylight	105	5000K	86	0.346	0.360

FLUORESCENT Residential Applications Light Source Color Chart

Fluorescent Color	Light Output Atmosphere	Light Output (%) In 4' Lamp	CCT	CRI	Lighted Appearance CIE Color Coordinates	
					X	Y
Homelight Cool White Plus®	Cool	105	4100K	62-70	0.382	0.385
Homelight Natural Sunshine®	Daylight	72	5000K	92	0.345	0.359
Homelight Soft White®	Warm	108	3000K	85	0.444	0.409

Correlated Color Temperature, CCT, describes the apparent color, or chromaticity, of a light source. Fluorescent light sources of 3000K, for example, Warm White or 3000K Ultralume, have a warm chromaticity, while 5000K lamps such as Colortone® 50 or 5000K Ultralume have a higher blue content and are considered to be cooler in color.

Color Rendering Index, CRI, is a relative value that indicates the color rendering quality of illumination provided by a light source. The higher the index number, the better the quality of illumination. While one lamp may have the same apparent color in CCT as another, its ability to render colors properly may be more or less than another light source. For example, Warm White 3000K 53 CRI lamps will not render colors of objects in an illuminated space as well as 3000K Ultralume 85 CRI lamps.

Both CCT and CRI should be cited together when properly describing light source color attributes.

HID Metal Halide Ordering Code Cross Reference Guide

Philips	GE	OSI	Venture	ANSI
<i>Metal Halide</i>	<i>Multi-Vapor</i>	<i>Metalarc</i>		
CDM35/T6/830	CMH39/T/U/830/G12	MC39T6/U/G12/830	N/C	M130/E
CDM35/TC/830	CMH39/TC/U/830/G8.5	N/C	N/C	M130/E
CDM35/PAR20/M/SP(10°)	CMH39/PAR20/830/SP10(10°)	MCP39PAR20/U/830/SP(10°)	N/C	M130/O
CDM35/PAR20/M/FL(30°)	CMH39/PAR20/830/FL25(25°)	MCP39PAR20/U/830/FL(30°)	N/C	M130/O
CDM35/PAR30L/M/SP(10°)	CMH39PAR30L/SP10(10°)	MCP39PAR30L/U/830/SP(10°)	N/C	M130/O
CDM35/PAR30L/M/FL(30°)	CMH39PAR30L/FL25(25°)	MCP39PAR30L/U/830/FL(30°)	N/C	M130/O
MHC50/U/M/3K	N/C	N/C	N/C	M148/M110/E
MHC50/C/U/M/3K	N/C	N/C	N/C	M148/M110/E
MHC50/U/M/4K	N/C	N/C	N/C	M148/M110/E
MHC50/C/U/M/4K	N/C	N/C	N/C	M148/M110/E
MHC50/U/MP/3K	N/C	N/C	N/C	M148/M110/O
MHC50/U/MP/4K	N/C	N/C	N/C	M148/M110/O
CDM70/T6/830	CMH70/T/U/830/G12	MC70T6/U/G12/830	N/C	M98/M139/E
CDM70/T6/942	CMH70/T/U/942/G12	N/C	N/C	M98/M139/E
CDM70/TD/830	CMH70/TD/830/RX7S	N/C	N/C	M85/M139/E
CDM70/TD/942	CMH70/TD/942/RX7S	N/C	N/C	M85/M139/E
CDM70/TC/830	CMH70/TC/U/830/G8.5	N/C	N/C	M139/E
MHN70/TD/840	ARC70/TD/942/R7S	N/C	N/C	M85/E
CDM70/PAR30L/M/SP(10°)	CMH70/U/PAR30L/15(15°)	MCP70PAR30L/U/830/SP(12°)		M98/M143/O
CDM70/PAR30L/M/FL(40°)	CMH70/U/PAR30L/40(40°)	MCP70PAR30L/U/830/FL(30°)		M98/M143/O
CDM70/PAR38/SP/3K(15°)	N/C	MCP70PAR38/U/830/SP(15°)	N/C	M98/M143/O
CDM70/PAR38/FL/3K(25°)	N/C	MCP70PAR38/U/830/FL(25°)	N/C	M98/M143/O
CDM70/PAR38/SP/4K(15°)	N/C	N/C	N/C	M98/M143/O
CDM70/PAR38/FL/4K(25°)	N/C	N/C	N/C	M98/M143/O
MHC70/U/M/3K	CMH70/U/830/MED	N/C	N/C	M98/M143/E
MHC70/C/U/M/3K	CMH70/C/U/830/MED	N/C	N/C	M98/M143/E
MHC70/U/M/4K	N/C	N/C	N/C	M98/M143/E
MHC70/C/U/M/4K	N/C	N/C	N/C	M98/M143/E
MHC70/U/MP/3K	CMH70/U/830/MED/O	MPD70/U/MED/830	N/C	M98/M143/O
MHC70/C/U/MP/3K	CMH70/C/U/830/MED/O	N/C	N/C	M98/M143/O
MHC70/U/MP/4K	N/C	N/C	N/C	M98/M143/O
MHC70/C/U/MP/4K	N/C	N/C	N/C	M98/M143/O
CDM100/PAR38/SP/3K(15°)	N/C	MCP100PAR38/U/830/SP(15°)	N/C	M90/M140/O
CDM100/PAR38/FL/3K(25°)	N/C	MCP100PAR38/U/830/FL(25°)	N/C	M90/M140/O
CDM100/PAR38/SP/4K(15°)	N/C	N/C	N/C	M90/M140/O
CDM100/PAR38/FL/4K(25°)	N/C	N/C	N/C	M90/M140/O
MHC100/U/M/3K	CMH100/U/830/MED	N/C	N/C	M90/M140/E
MHC100/C/U/M/3K	CMH100/C/U/830/MED	N/C	N/C	M90/M140/E
MHC100/U/M/4K	N/C	N/C	N/C	M90/M140/E
MHC100/C/U/M/4K	N/C	N/C	N/C	M90/M140/E
MHC100/U/MP/3K	CMH100/U/830/MED/O	MPD100/U/MED/830	N/C	M90/M140/O
MHC100/C/U/MP/3K	CMH100/C/U/830/MED/O	MCP100/U/MED/830	N/C	M90/M140/O
MHC100/U/MP/4K	N/C	MPD100/C/U/MED/830	N/C	M90/M140/O
MHC100/C/U/MP/4K	N/C	MPD100/U/MED/840	N/C	M90/M140/O
CDM150/T6/830	N/C	MC150T6/U/G12/830	N/C	M142/E
CDM150/T6/942	N/C	N/C	N/C	M142/E
CDM150/TD/830	N/C	N/C	N/C	M142/E
CDM150/TD/942	N/C	N/C	N/C	M142/E
MHN150/TD/840	ARC150/TD/742/R7S	N/C	N/C	M81/E
MH150/U/M	N/C	N/C	MH150W/U/EM	M107/E
MH150/C/U/M	N/C	N/C	MH150W/C/U/EM	M107/E
MHC150/U/M/3K	N/C	N/C	N/C	M102/M142/E
MHC150/C/U/M/3K	N/C	N/C	N/C	M102/M142/E
MHC150/U/M/4K	N/C	N/C	N/C	M102/M142/E
MHC150/C/U/M/4K	N/C	N/C	N/C	M102/M142/E
MHC150/U/MP/3K	N/C	MCP150/U/MED/830	N/C	M102/M142/O
MHC150/C/U/MP/3K	N/C	MCP150/C/U/MED/830	N/C	M102/M142/O
MHC150/U/MP/4K	N/C	N/C	N/C	M102/M142/O
MHC150/C/U/MP/4K	N/C	N/C	N/C	M102/M142/O
MS175/BU/PS	N/C	N/C	MS175W/BU/PS	M137/M152/E
MP175/BU	N/C	MP175/BU-ONLY	N/C	M57/O
MH175/RFL(65°)	MVR175/PAR38FL/1(50°)	N/C	N/C	M57/E
MH175/U/M	MVR175/U/MED	M175/U/MED	MH175W/U/MED	M57/E
MH175/C/U/M	MVR175/C/U/MED	M175/C/U/MED	MH175W/C/U/MED	M57/E
MH175/U	MVR175/U	N/C	MH175W/U	M57/E
MH175/C/U	MVR175/C/U	N/C	MH175W/C/U	M57/E
MH175/3K/BU	N/C	M175/3K/BU-ONLY	N/C	M57/E
MS175/BU	N/C	N/C	MS175W/BU	M57/E
MS250/BU/PS	N/C	MS250/PS/BU-ONLY	MH250W/HBU/PS	M138/M153/E
MP250/BU	N/C	MP250/BU-ONLY	N/C	M58/O
MH250/U	MVR250/U	M250/U	MH250W/U	M58/E
MH250/C/U	MVR250/C/U	M250/C/U	MH250W/C/U	M58/E
MH250/3K/BU	N/C	M250/3K/BU-ONLY	MS250W/BU/3K	M58/E
CDM250S50/V/O/4K	MVR250/C/VBU/R	N/C	MS250W/C/BU/LU	M168/O
MS320/U/PS	N/C	MS320/PS/BU-ONLY	N/C	M132/M154/E
MS320/C/U/PS	N/C	MS320/C/PS/BU-ONLY	N/C	M132/M154/E
MS320/U/PS	N/C	N/C	MH320W/U/ED28/PS	M132/M154/E
MS320/C/U/PS	N/C	N/C	MH320W/C/U/ED28/PS	M132/M154/E

ADDITIONAL INFORMATION

Cross Reference Guide

HID Metal Halide Ordering Code Cross Reference Guide, continued

Philips	GE	OSI	Venture	ANSI
MP320/BU/PS	MPR320/VBU/XHO/PA	N/C	N/C	M132/M154/O
MP320/C/BU/PS	MPR320/CVBU/XHO/PA	N/C	N/C	M132/M154/O
MS350/BU/PS	N/C	N/C	N/C	M131/E
MS350/C/BU/PS	N/C	N/C	N/C	M131/E
MP350/BU/PS	N/C	N/C	MP350W/U/VS/PS	M131/O
MP350/C/BU/PS	N/C	N/C	MP350W/C/V/VS/PS	M131/O
MS360/BU/EVW	MVR360/VBU/WM/HO	MS360/SS/BU-HOR	MS360W/BU/EM	M59/M165/S
MS360/C/BU/EVW	MVR360/CVBU/WM/HO	MS360/C/SS/BU-HOR	MS360W/C/BU/EM	M59/M165/S
MP360/BU/EVW	MPR360/VBU/WM/O	MSP360/SS/BU-ONLY	N/C	M59/M165/O
MP360/C/BU/EVW	N/C	MSP360/C/SS/BU-ONLY	MPI360W/C/BU/EM	M59/M165/O
CDM400S51/N/O/4K	N/C	N/C	N/C	M169/O
MS400/BU/PS	N/C	MS400/PS/BU-ONLY	MS400W/BU/PS	M135/M155/S
MS400/C/BU/PS	N/C	MS400/C/PS/BU-ONLY	MS400W/C/BU/PS	M135/M155/S
MP400/BU	N/C	MP400/BU-ONLY	MPI400W/BU	M59/O
MP400/C/BU	N/C	MP400/C/BU-ONLY	MPI400W/C/BU	M59/O
MH400/U/ED28	MVR400/U/ED28	M400/U/BT-28	MH400W/U/ED28	M59/E
MS400/BU/ED28	MVR400/VBU/BT28	MS400/BU-ONLY/BT-28	MS400W/BU/ED28	M59/E
MS400/HOR	MVR400/HOR/MOG	MS400/HOR/BT-28	N/C	M59/E
MS400/C/HOR	MVR400/C/HOR/MOG	MS400/C/HOR/BT-28	N/C	M59/E
MH400/U	MVR400/U	M400/U	MH400W/U	M59/S
MH400/C/U	MVR400/C/U	M400/C/U	MH400W/C/U	M59/S
MH400/3K/U	MVR400/SP30/U	N/C	N/C	M59/S
MS400/BU	MVR400/VBU	MS400/BU-ONLY	MS400W/BU	M59/S
MS400/C/BU	MVR400/C/VBU	MS400/C/BU-ONLY	MS400W/C/BU	M59/S
MS400/3K/BU	N/C	MS400/3K/BU-ONLY	MS400W/BU/3K	M59/S
MP400/BU/PS	N/C	N/C	N/C	M135/M155/O
MP400/C/BU/PS	N/C	N/C	N/C	M135/M155/O
MHT400/U	MVT400/VBU	MT400/BU-ONLY	N/C	M59/S
MHT400/C/U	MVT400/C/VBU	MT400/C/BU-ONLY	N/C	M59/S
CDM400S51/N/O/4K	MVR400/CVBU/R	N/C	N/C	M169/O
MS1000/BU/BT37/PS	N/C	N/C	N/C	M141/E
MP1000/BU	N/C	N/C	N/C	M47/O
MH1000/U/BT37	N/C	M1000/U/BT-37	N/C	M47/E
MH1000/U	MVR1000/U	M1000/U	MH1000W/U	M47/S
MH1000/C/U	MVR1000/C/U	M1000/C/U	MH1000W/C/U	M47/S
MS1000/BU	MVR1000/VBU	MS1000/BU-ONLY	MS1000W/BU	M47/S
MS1000/BD	N/C	MS1000/BD-ONLY	MS1000W/BD	M47/S
MS1000/C/BU	MVR1000/C/VBU	MS1000/C/BU-ONLY	MS1000W/C/BU	M47/S
MHT1000/U	N/C	MT1000/BU-ONLY	N/C	M47/S
MH1500/U	MVR1500/HBU	M1500/BU-HOR	MH1500W/HBU	M48/E
MH1500/U	MVR1500/HBD	M1500/BD	MH1500W/HBD	M48/E
MHD1800W	N/C	N/C	N/C	N/A
MHD1800/HV	N/C	N/C	N/C	N/A

HID Ceramalux® High Pressure Sodium Ordering Code Cross Reference Guide

Philips	GE	OSI	ANSI
Ceramalux	Lucalox	Lumalux	
C35S76/M	LU35/MED	LU35/MED	S76
C35S76/D/M	LU35/D/MED	LU35/D/MED	S76
C50S68/M	LU50/MED	LU50/MED	S68
C50S68/D/M	LU50/D/MED	LU50/D/MED	S68
C50S68/ALTO	N/C LU50	LU50/ECO	S68
C50S68/D/ALTO	N/C	N/C	S68
C70S62/M	LU70/MED	LU70/MED	S62
C70S62/D/M	LU70/D/MED	LU70/D/MED	S62
C70S62/ALTO	N/C LU70	LU70/ECO	S62
C70S62/D/ALTO	N/C LU70/D	N/C LU70/D	S62
C70S62/RFL	N/C	N/C	S62
C100S54/M	LU100/MED	LU100/MED	S54
C100S54/D/M	LU100/D/MED	LU100/D/MED	S54
C100S54/ALTO	N/C LU100	LU100/ECO	S54
C100S54/D/ALTO	N/C LU100/D	N/C LU100/D	S54
C150S55/M	LU150/MED	LU150/55/MED	S55
C150S55/D/M	LU150/D/MED	LU150/55/D/MED	S55
C150S55/ALTO	N/C LU150	LU150/55/ECO	S55
C150S55/D/ALTO	N/C LU150/D	N/C LU150/55/D	S55
C150S56/ALTO	N/C LU150/100 (ED28)	N/C LU150/100	S56
C200S66/ALTO	N/C LU200	LU200/ECO	S66
C225S50/EVW	N/C	N/C	S50
C250S50/ALTO	N/C	LU250/ECO	S50
C250S50/D/ALTO	N/C	N/C	S50VC-250
C250S50/S N/C	LU250/S	N/C	S50
C310S67	LU310	N/C LU310/ECO	S67
C360S51/EVW	N/C	N/C	S51
C400S51/ALTO	N/C	LU400/ECO	S51
C400S51/D/ALTO	N/C	N/C	S51VWB-400
C600S106	LU600/T	LU600/SUPER	S106
C1000S52/ED37	N/C	N/C	S52
C1000S52/ALTO	LU1000/ECO	N/C LU1000	S52

HID Ceramalux® Comfort High Pressure Sodium Ordering Code Cross Reference Guide

Philips	GE	OSI	ANSI
<i>Ceramalux</i>	<i>Lucalox</i>	<i>Lumalux</i>	
C70S62/C/M	LU70/DX/MED	N/C	S62LG-70/C
C70S62/C/D/M	N/C	N/C	S62LH-70/C
C70S62/C	N/C	N/C	S62ME-70/C
C100S54/C/M	N/C	N/C	S54SG-100/C
C100S54/C	N/C	N/C	S54SB-100/C
C100S54/C/D	N/C	N/C	S54MC-100/C
C150S55/C/M	LU150/DX/MED	N/C	S55RN-150/C
C150S55/C/D/M	N/C	N/C	S55RP-150/C
C150S55/C	LU150/55/DX	N/C	S55SC-150/C
C250S50/C	LU250/DX	N/C	S50VA-250/C
C400S51/C	LU400/DX	N/C	S51WF-400/C

HID Ceramalux® RetroLux High Pressure Sodium Ordering Code Cross Reference Guide

Philips	GE	OSI	ANSI
<i>RetroLux</i>	<i>E-Z Lux</i>	<i>Unalux</i>	
C150S63/RetroLux	LUH150/EZ	ULX150	S63
C220S65/RetroLux	LUH215/EZ	ULX215	S65
C360S64/RetroLux	LUH360/EZ	ULX360	S64

HID Mercury Vapor Ordering Code Cross Reference Guide

Philips	GE	OSI	ANSI
H46DL-40-50/DX	HR40/50DX45-46	H45/46DL-40/50/DX	H45/46
H43AV-75/DX	HR75DX43	H43AV-75/DX	H43
H38MP-100/DX	HR100DX38/A23	H38AV-100/DX	H38
H38HT-100	HR100A38	H38HT-100	H38
H38JA-100/DX	HR100DX38	H38JA-100/DX	H38
H38JA-T100/DX	HT100DX38 N/C	H38JA-T100/DX	H38
H38BP-100/DX	HR100RDXFL38	H38BP-100/DX	H38
H44GS-100 N/C	HR100PSP44 N/C	H44GS-100	H44
H44GS-100/M N/C	N/C	H44GS-100/MDSK	H44
H39KB-175	HR175A39	H39KB-175	H39
H39KC-175/DX	HR175DX39	H39KC-175/DX	H39
H39KC-T175/DX	HT175DX39	H39KC-T175/DX	H39
H39BM-175	HR175RFL39	N/C	H39
H39BP-175/DX	HR175RDXFL39	H39BP-175/DX	H39
H37KB-250	HR250A37	H37KB-250	H37
H37KC-250/DX	HR250DX37	H37KC-250/DX	H37
H37KC-T250/DX	HT250DX37 N/C	H37KC-T250/DX	H37
H33CD-400	HR400A33	H33CD-400	H33
H33GL-400/DX	HR400DX33	H33GL-400/DX	H33
H33GL-T400/DX	HT400DX33	H33GL-T400/DX	H33
H33DN-400/DX	HR400RDX33	N/C	H33
H33FS-400/DX	HR400RDXFL33	N/C	H33
H35ND-700/DX	HR700DX35	N/C	H35
H34GW-1000/DX	HR1000DX34	H34GW-1000/DX	H34
H36GV-1000	HR1000A36	H36GV-1000	H36
H36GW-1000/DX	HR1000DX36	H36GW-1000/DX	H36
H36GW-T1000/DX	HT1000DX36 N/C	H36GW-T1000/DX	H36

ADDITIONAL INFORMATION

Philips Lighting Company Trademarks and Registered Trademarks

DuraMax

Halogená

Marathon

HOME LIGHT **Fluorescents**

Alto
Lamp Technology

Incandescent:

Bug-A-Way®
Colortone®
Director®
DuraMax®
Softone Pastels®
Surge Proof™

Halogen:

Halogená®
FadeBlock™

Compact Fluorescent:

Marathon®
PL-H™

Fluorescent:

Advantage™
ALTO®
Econ-o-watt®
Econo-G®
Hi-Vision®
SILHOUETTE™

HID:

Ceramalux®
HPS-Retro White™
Lifeguard®
MasterColor®
White SON®

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ADDITIONAL INFORMATION

Philips Lighting Company Office Locations

PHILIPS LIGHTING COMPANY HEADQUARTERS

<u>City</u>	<u>Address</u>	<u>Telephone No.</u>	<u>FAX No.</u>
SOMERSET, NJ	200 Franklin Square Drive, P.O. Box 6800, Somerset, NJ 08875-6800	(732) 563-3000	(732) 563-3641
MARKHAM, ON	281 Hillmount Road, Markham, ON, Canada L6C 2S3	(905) 201-4100	(905) 887-7938

SALES OFFICES—USA

<u>City</u>	<u>Address</u>	<u>Telephone No.</u>	<u>FAX No.</u>
ATLANTA, GA	975 Cobb Place Blvd, NW, Suite 215, Kennesaw, GA 30144-4802	(678) 581-1600	(678) 581-1658
BOSTON, MA	3 Charlesview Road, Unit D, Hopedale, MA 01747-1552	(508) 966-5011	(508) 966-5120
CHICAGO, IL	1300 Iroquois Drive, Suite 120, Naperville, IL 60563	(630) 778-6200	(630) 579-0869
LOS ANGELES, CA	14726 Ramona Avenue, Suite 410, Chino, CA 91710-5730	(909) 597-4000	(909) 597-8681

SALES OFFICES—Canada

ANCASTER, ON	.....	(905) 648-3756	(905) 648-5826
HALIFAX, NS	.....	(902) 455-9009	(902) 455-9009
QUÉBEC, PQ	.....	(418) 831-1710	(418) 836-3146
MONTREAL, PQ	.....	(514) 956-2109	(514) 956-2108
ST. CLET, PQ	.....	(450) 456-3265	(450) 456-3264
OTTAWA, ON	.....	(819) 775-3300	(819) 772-2200
TORONTO, ON	.....	(905) 201-4100	(905) 887-7938
WINNIPEG, MB	.....	(204) 669-3346	(204) 669-3350
EDMONTON, AB	.....	(780) 459-3353	(780) 459-3080
CALGARY, AB	.....	(403) 995-9557	(403) 995-9558
BURNABY, BC	.....	(604) 468-0517	(604) 468-0519
LONDON, ON	.....	(519) 433-7553	(519) 433-7637

EXPORT, BUSINESS GROUP—SALES OFFICES AND LAMP TECHNICAL INFORMATION, EXPORT SALES

<u>City</u>	<u>Address</u>	<u>Telephone No.</u>	<u>FAX No.</u>
SOMERSET, NJ	200 Franklin Square Drive, P.O. Box 6800, Somerset, NJ 08875-6800	(732) 563-3033	(732) 563-3155

CUSTOMER SERVICE/ORDER ENTRY LOCATIONS

<u>City</u>	<u>Address</u>	<u>Telephone No.</u>	<u>FAX No.</u>
SOMERSET, NJ	200 Franklin Square Drive, P.O. Box 6800, Somerset, NJ 08875-6800		
	Industrial Commercial	1 (800) 937-5483	1 (800) 635-3818
	Consumer	1 (800) 805-2517	1 (800) 808-4899
	OEM	1 (800) 832-2852	1 (800) 937-8989
	Special Lighting	1 (800) 437-2205	1 (800) 616-0435
MARKHAM, ON	TradeLink SM (www.tradelink.philips.com)	1 (800) 238-0483	
	281 Hillmount Road, Markham, ON, Canada L6C 2S3		
	Professional / Consumer / OEM	(905) 201-4100	(905) 887-9313
			1 (800) 668-9020
	TradeLink SM (www.tradelink.philips.com)	1 (800) 387-5393	
		1 (800) 668-9009	

CUSTOMER HOTLINE/TECHNICAL INFORMATION

		<u>End-users</u>	<u>Distributors</u>
SOMERSET, NJ	200 Franklin Square Drive, P.O. Box 6800, Somerset, NJ 08875-6800	1 (800) 555-0050	1 (800) 752-2852

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