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Plusrite® PRODUCT CATALOGUE 2014-2015

Plusrite®

LAMP & BALLAST PRODUCT CATALOGUE 2017-2018 (EUROPE)



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INTRODUCTION



China Headquarter



USA Headquarter
Ontario, CA



Plusrite Electric (China) Co., Ltd was founded in May 1986 in Changzhou, China, with the vision of becoming a recognized leader throughout the world in the manufacturing of high-quality lighting products. With our emphasis on continual innovation and new product development, excellence in manufacturing and customer driven service, today Plusrite Electric has grown into a global leader in the manufacturing and distribution of HID, LED technologies, tungsten halogens, T5 and spiral fluorescent lamps, and numerous other specialty lighting products.

Additionally, Plusrite Electric is committed to environmental issues and has created a high standard known as Green Plus, a designation that indicates either energy savings and/or a positive environmental impact over standard lamps. Many of the products manufactured by Plusrite Electric have already received the Green Plus designation, and many more are being added on an ongoing basis.

Plusrite Electric has received numerous awards for their outstanding products and innovative designs, as well as having received the ISO 9001 Quality System Certification and the ISO 14001 Environmental Management System Certification.

With factories, distribution warehouses and sales offices located throughout Asia, North America and expansion planned into South America and Europe, Plusrite Electric products are being manufactured to accommodate a rapidly expanding global marketplace. Currently there are more than 1000 different lighting products being sold in over 50 countries and regions throughout the world.

With the introduction of Plusrite Electric's signature brand, Plusrite, and the addition of their premier LED product line, LEDirect, electrical wholesalers and lighting specialty companies throughout North America are turning to Plusrite Electric for a unique combination of reliable, low-cost, high-quality and high-margin lighting products.

As the Plusrite and LEDirect brands are quickly becoming the brand of choice throughout the world, Plusrite electric is proud to offer their mission statement to you, our customers:
It is our mission to utilize teamwork and innovation to integrate the finest raw materials, production techniques that exceed world standards and the highest level of quality throughout our organization in order to provide every customer with the best products and service possible.

HISTORY

In 1986



Plusrite before: Falida Special Lighting Factory was founded in 1986. Is the first generation of lighting factory for halogen lamps

In 1998



FANLIGHT COPORATION INC was set up in U.S.A.

In 2001



Introduced HPS arc tubes and assembling line

In 2006



The 20YEARS FOUNDING ANNINVERSARY was held successfully in Great Hall of the People Beijing

In 2007



Plusrite Mexico Office was set up

In 2011



Plusrite Special Lighting was established for digital Cinema Projectors

In 2014



Plusrite UK office was esablished

In 1994



Imported the metal halide arc tubes manufacturing line

In 1998



Company name changed to Changzhou Plus Lighting Co Ltd

In 2003



Get project for Tian'anmen Square and Military Commission Hall , Pudong Airport

In 2010



Ballast manufacturing line was set up which manufacturing meganetic ballast for both American standard and European standard

In 2013



Foshan NaturalLED Electric Co.,Ltd was setp up for LED lamps and fixtures

In 2014



New workshops for Flon Group

Enterprise Certificate

KS Certified
ISO9001:2000
ISO14001:2004
3C Certified
CE Certified
RoHS Compliant
SGS Qualified
TCLP
UL Certified
ENERGY STAR PARTNER



HONORS & CERTIFICATES

Accreditation & Honors

Plusrite HID patent:
0340096, 0175471, 0346244, 0362762, 0155291,
0182434, 0473590, 0388726, 0353156, 0241657

China AAA Enterprise, certification no:
320400400000155

CIES
(China Illuminating Engineering Society) Member

Jiang Su Technology & Innovation Enterprise:
Certification no: GF201232000558



Plusrite®



Quality

ERP System ensures operational efficiency and productivity of business processes

Advanced testing equipment and QC procedure

100% pre shipment inspection

Automatic production equipments ensure consistent product quality

Innovative technologies support Green Environmentally friendly products

Dedicated specialists ensure the qualities and speed of services

QUALITY & SERVICE



Service

Exceptional customer service ensures 100% customer satisfaction

Worldwide distribution network provides local services to meet our customer's unique demands

Our extensive inventory and manufacturing capability enables us to fulfill all customer's lighting needs

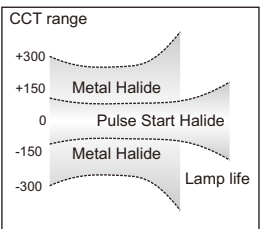
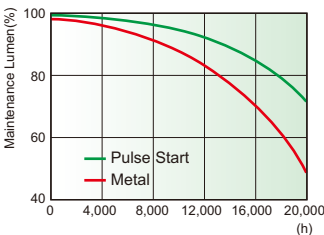
Pulse Start Metal Halide

Pulse Start Oval Arc Tube Metal Halide Arc Tube



* Oval Arc tube design provides enhanced color consistency.

* Increase 20% efficiency, 30% longer life, save



HPS- High Pressure Sodium

High Efficacy - 100lm/watt

Long life - over 24,000 hrs.+

TCLP Compliant -Low Mercury



Base

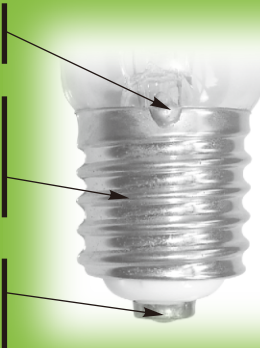
Traditional Base

New Base Design

The lamp holder contains toxic leaded

Welding of lamp holder and fixture often contains solder paste that contains harmful chemical substances

The process of welding the sole of the lamp contains leaded solder that is



Usage of double layer lamp holder

Mechanical double layer base not only secures, fixes in place and

The lamp head uses environmental friendly copper welding design to

Lead Poisoning

Lead interferes with a variety of body processes and is toxic to many organs and tissues including the heart, bones, intestines, kidneys, and reproductive systems. It also interferes with the development of the nervous

LED Retrofit

Low Power Consumption

Long life - up to 40,000 hours

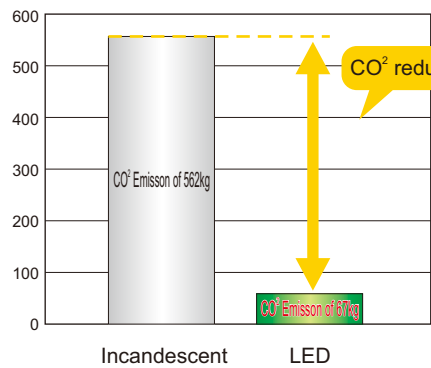
High Lumen Output

High Power Factor

RoHS Compliant

Made with non-toxic materials

Recyclable



In compared to incandescent bulbs, CO² emission are reduced by 88%. Saving as much as 45 trees annually on earth.



LONG LIFE

Longer lasting
life to **40** times

ENERGY

Saves
Energy **88%**

ENVIRONMENTAL

non-pollution
to the environment

LED Light Emmitting Comparison

Name	Energy Output (W)	Lumens output (lm/W)	Quick Start	Heat	Life(h)	Stability
Incandescent	15-200	15	Yes	High	2,000	Low
CFL	3-150	65	No	Low	10,000	Low
LED	3-20	70	Yes	Low	40,000	High

High Intensity Discharge Lamps



Contents

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		40	Ballasts
			Ignitor & Capacitor

how to read a table

Watts Energy consumption during proper operation.		Case Qty. Number of product units packed in a case.		LCL Maximum light center length in millimeters.		Average Life An average rating, in hours, indicating when 50% of a large group of lamps, operated at nominal lamp voltage and current, have failed.		CRI An international system used to rate a lamp's ability to render object colors.								
Base The type of base.		Case		Dimensions		Lumens		Burning		Color		Fittable Electrical Box				
Watts	Bulb	Base	Description	Qty.	Finish	MOL (mm)	LCL (mm)	Initial (lm)	Position	Avg.Life (Hours)	Temp (K)	CRI	Ballast	Ignitor	Capacitor (μ f)	Manufacture Production Code
Ceramic Metal Halide Lamps - G12 Base																
35	T	G12	CMP35/U/830	10	Clear	90	56	3400	Universal	10000	3000	80	PLUS-MH-35	CD-7a	CAP-6	C00351261303
			CMP35/U/942	10	Clear	90	56	3150	Universal	12000	4200	90	PLUS-MH-35	CD-7a	CAP-6	C00351261403
70	T	G12	CMP70/U/830	10	Clear	90	56	7000	Universal	15000	3000	80	PLUS-MH-70	CD-7a	CAP-12	C00701261303
			CMP70/U/942	10	Clear	90	56	6500	Universal	15000	4200	90	PLUS-MH-70	CD-7a	CAP-12	C00701261403
150	T	G12	CMP150/U/830	10	Clear	96	56	14000	Universal	12000	3000	80	PLUS-MH-150	CD-7a	CAP-18	C01501261303
			CMP150/U/942	10	Clear	96	56	13500	Universal	12000	4200	90	PLUS-MH-150	CD-7a	CAP-18	C01501261403
Bulbs Code for size and shape. Illustrations can be found on the bottom of each page and the beginning of each chapter.		Description The lamp's identification code.		Finish Bulb's surface finish type.		MOL Maximum overall length in millimeters.		Initial Lumens Average light output after the initial 100 hours of operation.		Color Temp. Light temperature measured in Kelvin. The higher the temperature, the cooler the appearance of the light, and vice versa.		Manufacture Production Code Production code during the manufacturing process.				

HIGH INTENSITY DISCHARGE LAMPS

The catalog format and related terminology will assist the reader by providing brief description toward understanding of information in this section. The lamp identification is simplified by listing all the lamp families in ascending wattage and followed by alphabetical bulb designation. Tests conducted under controlled conditions on AC circuits with auxiliary equipment provides performance rating. Typical service conditions may cause the variation of lamp performance against rated values. Ratings and specifications are subject to change without any further notice.

ARC LENGTH

The dimension of the arc discharge measured from one electrode tip to the other is called Arc length. It is useful for optical design of reflectors and effects fixture efficiency as well.

AVERAGE LIFE (HOURS)

Average life is defined as the total operation hours at which 50% of any group of lamps is still under operation (There are exceptions for most High Pressure Sodium and Mercury Vapor lamps, which 65% of the lamps are operating at the end of the life). The average life of a lamp is based upon vertical operation of representative lamps operated under controlled conditions of at least 10 hours per start (Except MH1500 which based on 5 hours per start).

Following list shows the reduced lamp life caused by lamp operating cycles less than 10 hours per start.

- 5hours/start ----- Approximately 75% of rating
- 2.5hours/start ----- Approximately 55% of rating
- 1.25hour/start ----- Approximately 40% of rating

Line voltage, and all the variations regarding lamp operation conditions such as bulb base or base temperatures could have an affect on lamp life. Regular operation lamp with off time less than 15 minutes will shorten lamp life.

BASE

E27 - E27 bases are used on lamps in E17 bulbs and are limited to 200W maximum.

E40 - All E40 bases are embossed with letters and numbers representing months and years. The date of installation can be recorded by marking the letter of the current month and the number that coincides with the last digit of the current year.

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

BULB

Glass enclosure contains chemical elements as lighting source. Each bulb description consists of both a letter to indicate bulb shape and number to show the maximum bulb diameter in 1/8 inches increments. For instance, BT37 bulb indicates a blown shape with tubular top, 37/8 of an inch or 4 5/8 inches in diameter. Plusrite HID bulbs are made of glass designed to resist thermal shock in normal applications. They must be shielded from direct contact with liquids (such as rain) during operation to avoid bulb breakage.

LIGHT CENTER LENGTH (LCL)

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

MAXIMUM OVERALL LENGTH (MOL)

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

WARM UP TIME

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

WATTS

A unit of electrical power which equal to 1 joule per second. Lamps are rated in watts to indicate power consumption.

COLOR RENDERING INDEX (CRI)

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

Applications	CRI Range	Color Rendering Properties
Art Galleries	90-100	Excellent
Banks	70-80	Good
Car Dealerships	70-80	Good
Classrooms	70-80	Good
Grocery Stores	70-90	Good - Very Good
Hospitals	70-90	Good - Very Good
Manufacturing Areas	70-80	Good
Offices	70-80	Good
Parking Lot Lighting	<60-70	Poor
Printing Companies	90-100	Excellent
Restaurants	80-90	Good - Very Good
Retail Stores	80-100	Very Good - Excellent
Roadway Lighting	<60-70	Poor
Security Lighting	70-80	Good
Sporting Arenas	70-80	Good
Warehouses	<60-70	Poor

CORRELATED COLOR TEMPERATURE (CCT)

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

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

Color Temperature	Common Color Description	Typical Applications
2700K - 3400K	Warm; Warm White	Specialty Retailers, Restaurants, Hotel Lobbies, Residential
3500K	Neutral; Neutral White	Grocery Stores & Produce Markets, Retail Stores, Bank Lobbies
4100K	Cool; Cool White	Offices, Manufacturing, Schools, Hospitals
5000K - 6500K	Daylight; Daylight Plus; Full Spectrum	Printers, Paint Studios, Art Galleries, Car Dealerships

HOT RESTRIKE

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

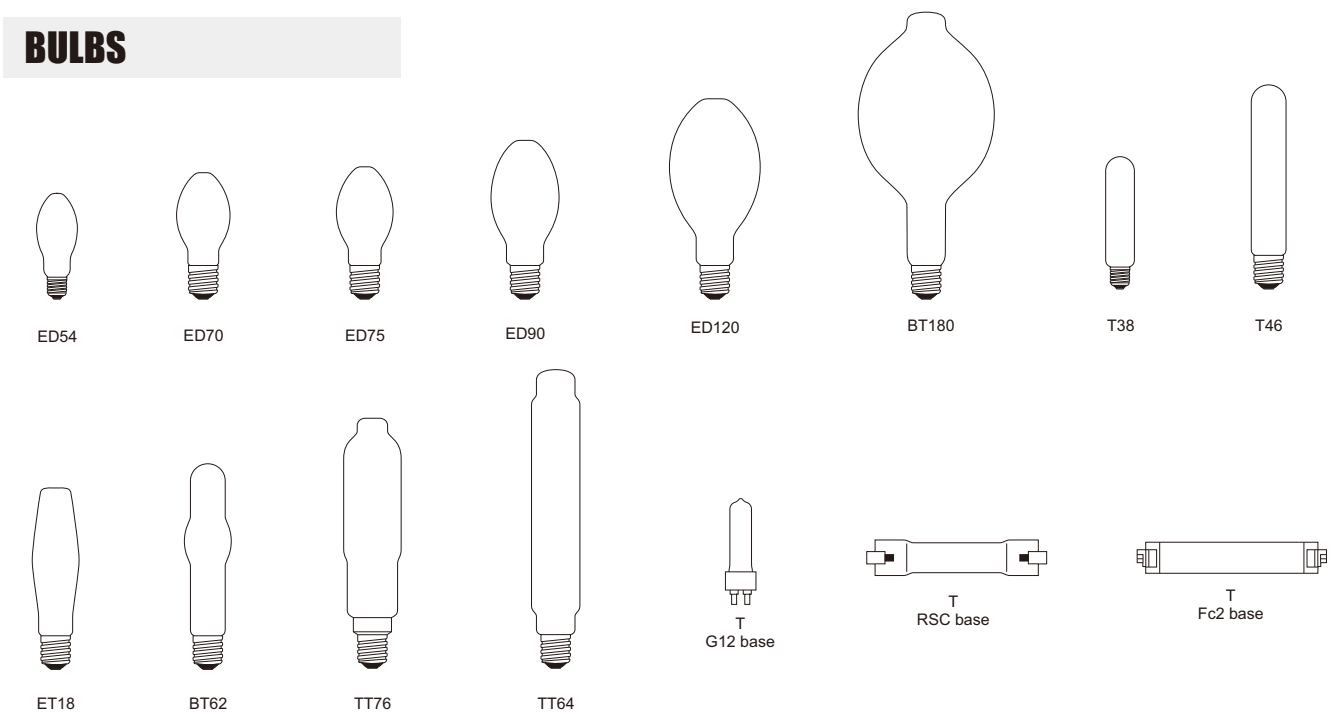
LUMENS (lm)

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

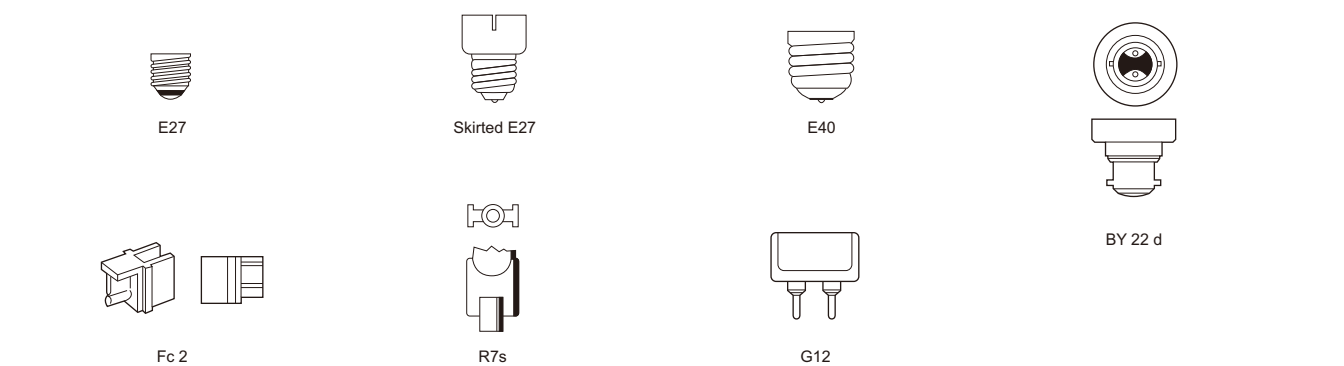
LUMEN DEPRECIATION

The decrease in lumen output of a light source over time. Every lamp type has a unique lumen depreciation curve (sometimes called a lumen maintenance curve) depicting the pattern of

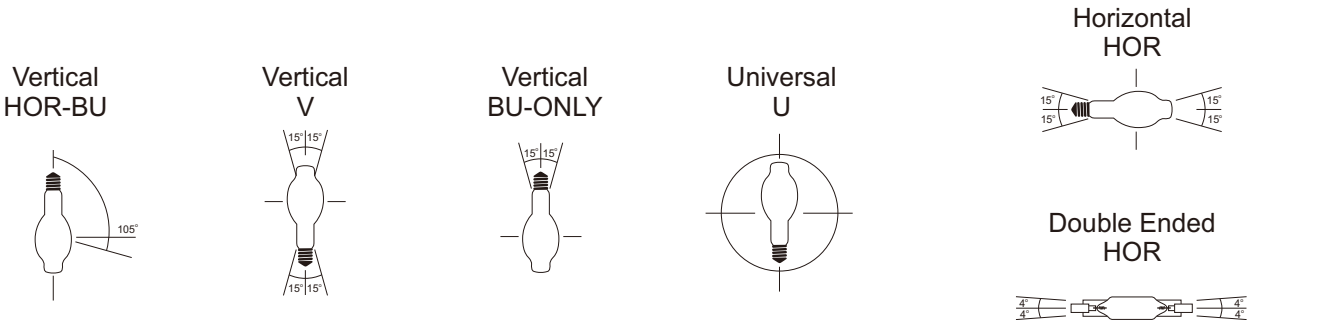
BULBS



BASES



OPERATING POSITIONS

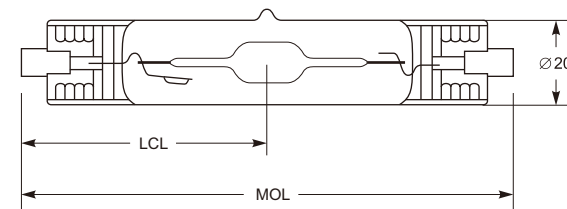


CERAMIC METAL HALIDE LAMPS

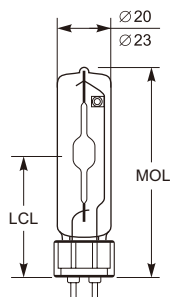
- Ceramic-tube-made arc tubes with high pure quality
- High CRI • Constant CCT(±200K)
- High lumen efficacy • Long life hours

Watts	Bulb	Base	Description	Case Qty.	Finish	Dimensions		Lumens Initial (lm)	Burning Position	Avg.Life (Hours)	Color			Manufacture Production Code
						MOL (mm)	LCL (mm)				Temp (K)	CRI	Ballast	
Ceramic Metal Halide Lamps - G12 Base														
35	T	G12	CMP35/U/830	10	Clear	90	56	3400	Universal	10000	3000	80	EB35W	C00351261303
			CMP35/U/942	10	Clear	90	56	3150	Universal	12000	4200	90	EB35W	C00351261403
70	T	G12	CMP70/U/830	10	Clear	90	56	7000	Universal	15000	3000	80	EB70W	C00701261303
			CMP70/U/942	10	Clear	90	56	6500	Universal	15000	4200	90	EB70W	C00701261403
150	T	G12	CMP150/U/830	10	Clear	96	56	14000	Universal	12000	3000	80	EB150W	C01501261303
			CMP150/U/942	10	Clear	96	56	13500	Universal	12000	4200	90	EB150W	C01501261403
Ceramic Metal Halide Lamps - R7s Base														
70	TD	R7s	CMP70/HOR/830	10	Clear	117.6	57	6500	Horizontal	15000	3000	80	EB70W	C00707571303
			CMP70/HOR/942	10	Clear	117.6	57	6000	Horizontal	15000	4200	90	EB70W	C00707571403
150	TD	R7s	CMP150/HOR/830	10	Clear	136	66	13500	Horizontal	15000	3000	80	EB150W	C01507571303
			CMP150/HOR/942	10	Clear	136	66	13000	Horizontal	15000	4200	90	EB150W	C01507571403

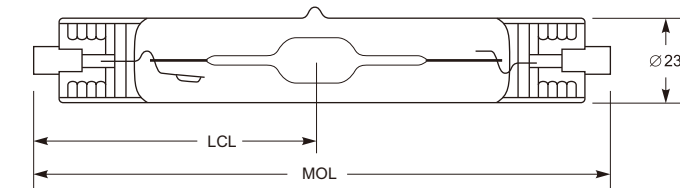
All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws
See page 25/26/27 for safety handling and warning purposes



T6 R7s Base
70W



G12 Base



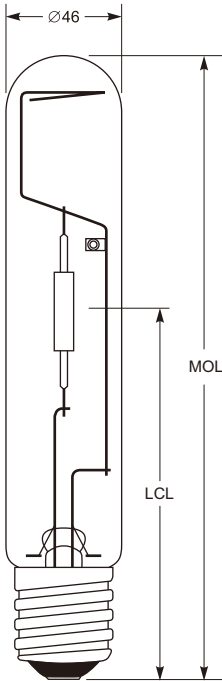
T7 R7s Base
150W

CERAMIC METAL HALIDE LAMPS

- Ceramic-tube-made arc tubes with high pure quality
- CCT: 2800K, Warm white color provides wonderful visual experience different from high pressure sodium lamps
- High lumen efficacy • Long life hours • Suitable for street lighting

Watts	Bulb	Base	Description	Case		Dimensions		Lumens	Burning	Color				
				Qty.	Finish	MOL (mm)	LCL (mm)	Initial (lm)	Position	Avg.Life (Hours)	Temp (K)	CRI	Ballast	Manufacture Production Code
Ceramic Metal Halide Lamps - E40 Base, Enclosed Rated, Clear														
90	T46	E40	CRL90/T46/2800K/E40	25	Clear	211	132	10450	Horizontal	24000	2800	60	EB 90W	C00909161303
140	T46	E40	CRL140/T46/2800K/E40	25	Clear	257	158	16500	Horizontal	24000	2800	60	EB 140W	C01409161303

All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws
See page 25/26/27 for safety handling and warning purposes



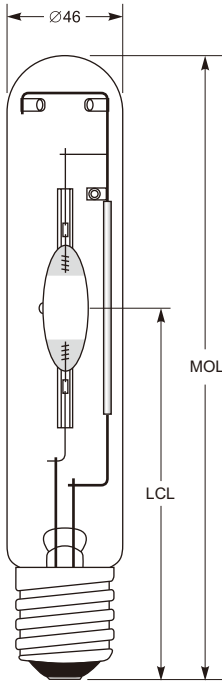
T46
E40 Base

POWERSTRIKE™ METAL HALIDE LAMPS

- Pulse Start technology • White light
- Good and stable color rendering as lamps age • Faster hot re-strike
- Excellent lumen maintenance • Enclosed fixture only

Watts	Bulb	Base	Description	Case	Dimensions	Lumens	Burning	Color			Fittable Electrical Box						
				Qty.	Finish	MOL	LCL	Initial	Position	Avg.Life	Temp	CRI	Ballast	Ignitor	Capacitor	Manufacture	
						(mm)	(mm)	(lm)		(Hours)	(K)				(μ f)	Production Code	
Powerstrike™ Metal Halide Lamps - E40 Base, Enclosed Rated, Clear																	
200	T46	E40	MS200/H75/PS/4K	25	Clear	255	149	19000	Horizontal	15000	4200	60	PLUS-MH-200	CD-7	CAP-15	S02009161403	
250	T46	E40	MS250/H75/PS/4K	25	Clear	255	149	22000	Horizontal	15000	4200	60	PLUS-MH-250	CD-7	CAP-25	S02509161403	
320	T46	E40	MS320/H75/PS/4K	25	Clear	286	170	30000	Horizontal	20000	4200	60	PLUS-MH-320	CD-7	CAP-28	S03209161403	
350	T46	E40	MS350/H75/PS/4K	25	Clear	286	170	33000	Horizontal	20000	4200	60	PLUS-MH-350	CD-7	CAP-30	S03509161403	
400	T46	E40	MS400/H75/PS/4K	25	Clear	286	170	40000	Horizontal	20000	4200	60	PLUS-MH-400	CD-7	CAP-32	S04009161403	

All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws
See page 25/26/27 for safety handling and warning purposes



T46
E40 Base

HIGH INTENSITY DISCHARGE LAMPS

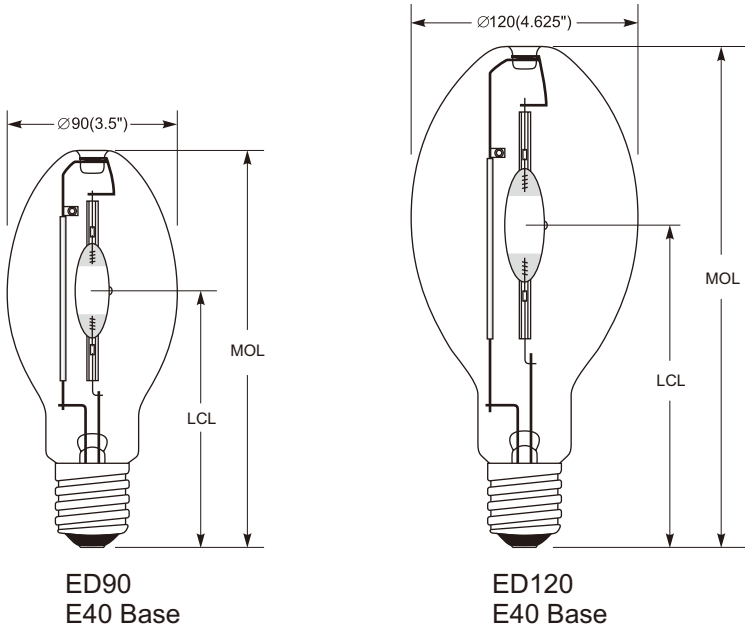
HIGH INTENSITY DISCHARGE LAMPS

POWERSTRIKE™ METAL HALIDE LAMPS

- Pulse Start technology • White light
- Good and stable color rendering as lamps age • Faster hot re-strike
- Excellent lumen maintenance • Enclosed fixture only

Watts	Bulb	Base	Description	Qty.	Case	Dimensions		Lumens	Burning	Color			Fittable Electrical Box				
					Finish	MOL	LCL	Initial	Position	Avg.Life	Temp	CRI	Ballast	Ignitor	Capacitor	Manufacture	
					(mm)	(mm)	(lm)	(Hours)	(K)				(μ f)	Production Code			
Powerstrike™ Metal Halide Lamps - E40 Base, Enclosed Rated, Clear																	
200	ED90	E40	MS200/U/PS/4K	12	Clear	228	146	21000	Universal	15000	4200	60	PLUS-MH-200	CD-7	CAP-15	S02009181403	
250	ED90	E40	MS250/U/PS/4K	12	Clear	228	146	25000	Universal	15000	4200	60	PLUS-MH-250	CD-7	CAP-25	S02509181403	
320	ED90	E40	MS320/U/PS/4K	12	Clear	228	146	32000	Universal	20000	4200	60	PLUS-MH-320	CD-7	CAP-28	S03209181403	
350	ED120	E40	MS350/U/PS/4K	12	Clear	292	181	37000	Universal	20000	4200	60	PLUS-MH-350	CD-7	CAP-30	S03509171403	
400	ED120	E40	MS400/U/PS/4K	12	Clear	292	181	44000	Universal	20000	4200	60	PLUS-MH-400	CD-7	CAP-32	S04009171403	
Powerstrike™ Metal Halide Lamps - E40 Base, Enclosed Rated, Coated																	
200	ED90	E40	MS200/C/U/PS/4K	12	Coated	228	146	20000	Universal	15000	3800	60	PLUS-MH-200	CD-7	CAP-15	S02009182403	
250	ED90	E40	MS250/C/U/PS/4K	12	Coated	228	146	23800	Universal	15000	3800	60	PLUS-MH-250	CD-7	CAP-25	S02509182403	
320	ED90	E40	MS320/C/U/PS/4K	12	Coated	228	146	31000	Universal	20000	3800	60	PLUS-MH-320	CD-7	CAP-28	S03209182403	
350	ED120	E40	MS350/C/U/PS/4K	12	Coated	292	181	35000	Universal	20000	3800	60	PLUS-MH-350	CD-7	CAP-30	S03509172403	
400	ED120	E40	MS400/C/U/PS/4K	12	Coated	292	181	42000	Universal	20000	3800	60	PLUS-MH-400	CD-7	CAP-32	S04009172403	

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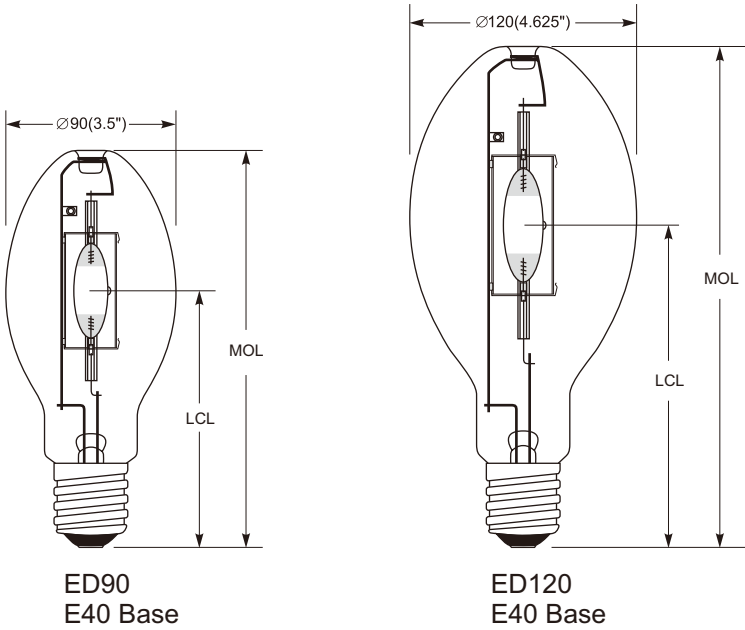


PROTECTED POWERSTRIKE™ METAL HALIDE LAMPS

- Pulse Start technology • White light
- Good and stable color rendering as lamps age • Faster hot re-strike
- Excellent lumen maintenance • Protected arc tube • UV-Block

Watts	Bulb	Base	Description	Case		Dimensions		Lumens	Burning	Color			Fittable Electrical Box			
				Qty.	Finish	MOL	LCL	Initial	Position	Avg.Life	Temp	CRI	Ballast	Ignitor	Capacitor	Manufacture
						(mm)	(mm)	(lm)		(Hours)	(K)				(μ f)	Production Code
Powerstrike™ Metal Halide Lamps - E40 Base, Open Rated, Clear																
200	ED90	E40	MP200/U/PS/4K	12	Clear	228	146	20000	Universal	15000	4200	60	PLUS-MH-200	CD-7	CAP-15	S02009381403
250	ED90	E40	MP250/U/PS/4K	12	Clear	228	146	23800	Universal	15000	4200	60	PLUS-MH-250	CD-7	CAP-25	S02509381403
320	ED90	E40	MP320/U/PS/4K	12	Clear	228	146	31000	Universal	20000	4200	60	PLUS-MH-320	CD-7	CAP-28	S03209381403
350	ED120	E40	MP350/U/PS/4K	12	Clear	292	181	35000	Universal	20000	4200	60	PLUS-MH-350	CD-7	CAP-30	S03509371403
400	ED120	E40	MP400/U/PS/4K	12	Clear	292	181	41000	Universal	20000	4200	60	PLUS-MH-400	CD-7	CAP-32	S04009371403
Powerstrike™ Metal Halide Lamps - E40 Base, Open Rated, Coated																
200	ED90	E40	MP200/C/U/PS/4K	12	Coated	228	146	19000	Universal	15000	3800	60	PLUS-MH-200	CD-7	CAP-15	S02009382403
250	ED90	E40	MP250/C/U/PS/4K	12	Coated	228	146	22600	Universal	15000	3800	60	PLUS-MH-250	CD-7	CAP-25	S02509382403
320	ED90	E40	MP320/C/U/PS/4K	12	Coated	228	146	29000	Universal	20000	3800	60	PLUS-MH-320	CD-7	CAP-28	S03209382403
350	ED120	E40	MP350/C/U/PS/4K	12	Coated	292	181	33000	Universal	20000	3800	60	PLUS-MH-350	CD-7	CAP-30	S03509372403
400	ED120	E40	MP400/C/U/PS/4K	12	Coated	292	181	39000	Universal	20000	3800	60	PLUS-MH-400	CD-7	CAP-32	S04009372403

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Manage in Accordance with Disposal Laws
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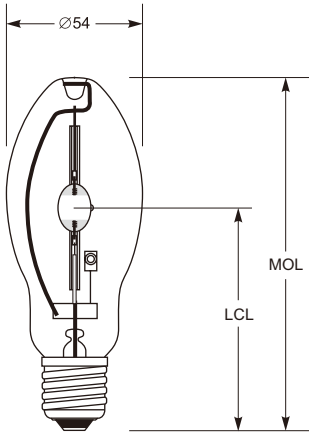


STANDARD METAL HALIDE LAMPS

- High efficacy
- Long life
- Full line, 50 - 1000 watts
- Enclosed fixture only

Watts	Bulb	Base	Description	Qty.	Finish	Case	Dimensions		Lumens	Burning		Color		Fittable Electrical Box		
						MOL (mm)	LCL (mm)	Initial (lm)	Position	Avg.Life (Hours)	Temp (K)	CRI	Ballast	Ignitor	Capacitor (μ f)	Manufacture Production Code
Metal Halide Lamps - Elliptical, E27 Base, Clear																
50	ED54	E27	MH50/ED54/U/4K	12	Clear	141	89	3400	Universal	10000	4200	65	PLUS-MH-50	CD-7	CAP-12	M00506171403
70	ED54	E27	MH70/ED54/U/3K	12	Clear	141	89	5500	Universal	10000	3200	65	PLUS-MH-70	CD-7	CAP-12	M00706171303
			MH70/ED54/U/4K	12	Clear	141	89	5600	Universal	10000	4200	65	PLUS-MH-70	CD-7	CAP-12	M00706171403
			MH70/ED54/U/DL	12	Clear	141	89	4200	Universal	10000	5600	65	PLUS-MH-70	CD-7	CAP-12	M00706171503
100	ED54	E27	MH100/ED54/U/3K	12	Clear	141	89	8000	Universal	10000	3200	65	PLUS-MH-100	CD-7	CAP-15	M01006171303
			MH100/ED54/U/4K	12	Clear	141	89	9000	Universal	10000	4200	65	PLUS-MH-100	CD-7	CAP-15	M01006171403
			MH100/ED54/U/DL	12	Clear	141	89	7500	Universal	10000	5600	65	PLUS-MH-100	CD-7	CAP-15	M01006171503
150	ED54	E27	MH150/ED54/U/3K	12	Clear	141	89	12500	Universal	10000	3200	65	PLUS-MH-150	CD-7	CAP-18	M01506171303
			MH150/ED54/U/4K	12	Clear	141	89	12500	Universal	10000	4200	65	PLUS-MH-150	CD-7	CAP-18	M01506171403
			MH150/ED54/U/DL	12	Clear	141	89	9500	Universal	10000	5600	70	PLUS-MH-150	CD-7	CAP-18	M01506171503
Metal Halide Lamps - Elliptical, E27 Base, Coated																
50	ED54	E27	MH50/ED54/C/U/4K	12	Coated	141	89	3200	Universal	10000	3800	70	PLUS-MH-50	CD-7	CAP-12	M00506172403
70	ED54	E27	MH70/ED54/C/U/3K	12	Coated	141	89	5200	Universal	10000	3200	65	PLUS-MH-70	CD-7	CAP-12	M00706172303
			MH70/ED54/C/U/4K	12	Coated	141	89	5300	Universal	10000	3800	65	PLUS-MH-70	CD-7	CAP-12	M00706172403
			MH70/ED54/C/U/5K	12	Coated	141	89	4200	Universal	10000	4900	65	PLUS-MH-70	CD-7	CAP-12	M00706172503
100	ED54	E27	MH100/ED54/C/U/3K	12	Coated	141	89	7500	Universal	10000	3200	65	PLUS-MH-100	CD-7	CAP-15	M01006172303
			MH100/ED54/C/U/4K	12	Coated	141	89	8500	Universal	10000	3800	65	PLUS-MH-100	CD-7	CAP-15	M01006172403
			MH100/ED54/C/U/5K	12	Coated	141	89	7000	Universal	10000	4800	70	PLUS-MH-100	CD-7	CAP-15	M01006172503
150	ED54	E27	MH150/ED54/C/U/3K	12	Coated	141	89	12000	Universal	10000	3200	65	PLUS-MH-150	CD-7	CAP-18	M01506172303
			MH150/ED54/C/U/4K	12	Coated	141	89	12000	Universal	10000	3800	65	PLUS-MH-150	CD-7	CAP-18	M01506172403
			MH150/ED54/C/U/5K	12	Coated	141	89	9000	Universal	10000	4800	70	PLUS-MH-150	CD-7	CAP-18	M01506172503

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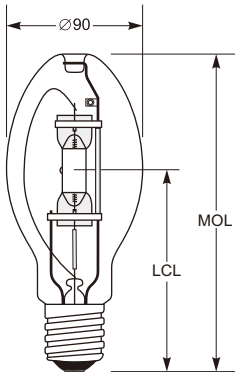
ED54
E27 Base

STANDARD METAL HALIDE LAMPS

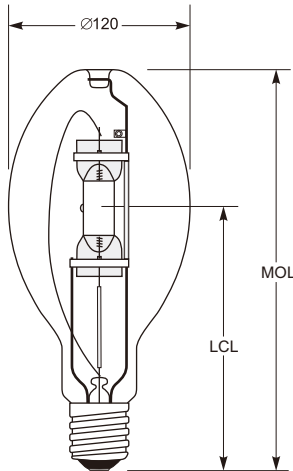
- High efficacy
- Long life
- Full line, 50 - 1000 watts
- Enclosed fixture only

Watts	Bulb	Base	Description	Qty.	Case	Dimensions		Lumens	Burning		Color		Fittable Electrical Box			
					Finish	MOL (mm)	LCL (mm)	Initial (lm)	Position	Avg.Life (Hours)	Temp (K)	CRI	Ballast	Ignitor	Capacitor (μ f)	Manufacture Production Code
Metal Halide Lamps - Elliptical, E40 Base, Clear																
150	ED90	E40	MH150/ED90/U/3K	12	Clear	228	146	12000	Universal	10000	3200	65	PLUS-MH-150	CD-7	CAP-18	M01509181303
			MH150/ED90/U/4K	12	Clear	228	146	12500	Universal	10000	4200	65	PLUS-MH-150	CD-7	CAP-18	M01509181403
250	ED90	E40	MH250/ED90/U/4K	12	Clear	228	146	21000	Universal	15000	4200	60	PLUS-MH-250	CD-7	CAP-25	M02509181403
			MH250/ED90/U/5K	12	Clear	228	146	19000	Universal	15000	5200	65	PLUS-MH-250	CD-7	CAP-25	M02509181503
			MH250/ED90/U/6K	12	Clear	228	146	18000	Universal	15000	6500	65	PLUS-MH-250	CD-7	CAP-25	M02509181603
400	ED120	E40	MH400/ED120/U/4K	12	Clear	292	181	36000	Universal	15000	4200	60	PLUS-MH-400	CD-7	CAP-32	M04009171403
			MH400/ED120/U/5K	12	Clear	292	181	32000	Universal	15000	5200	65	PLUS-MH-400	CD-7	CAP-32	M04009171503
			MH400/ED120/U/6K	12	Clear	292	181	28000	Universal	15000	6500	65	PLUS-MH-400	CD-7	CAP-32	M04009171603
1000	BT180	E40	MH1000/BT180/U/4K	6	Clear	382	240	100000	Universal	10000	4200	60	PLUS-MH-1000	CD-7G	CAP-85	M10009261403
Metal Halide Lamps - Elliptical, E40 Base, Coated																
250	ED90	E40	MH150/ED90/C/U/3K	12	Coated	228	146	10800	Universal	10000	3200	60	PLUS-MH-150	CD-7	CAP-18	M01509182303
			MH150/ED90/C/U/4K	12	Coated	228	146	10800	Universal	10000	3800	70	PLUS-MH-150	CD-7	CAP-18	M01509182403
			MH150/ED90/C/U/DL	12	Coated	228	146	9500	Universal	10000	DL	70	PLUS-MH-150	CD-7	CAP-18	M01509182503
250	ED90	E40	MH250/ED90/C/U/4K	12	Coated	228	146	19500	Universal	15000	3800	60	PLUS-MH-250	CD-7	CAP-25	M02509182403
			MH250/ED90/C/U/DL	12	Coated	228	146	18000	Universal	15000	DL	70	PLUS-MH-250	CD-7	CAP-25	M02509182503
400	ED120	E40	MH400/ED120/C/U/4K	12	Coated	292	181	34000	Universal	15000	3800	60	PLUS-MH-400	CD-7	CAP-32	M04009172403
			MH400/ED120/C/U/DL	12	Coated	292	181	28000	Universal	15000	DL	70	PLUS-MH-400	CD-7	CAP-32	M04009172503
1000	BT180	E40	MH1000/BT180/C/U/4K	6	Coated	382	240	99000	Universal	10000	3800	60	PLUS-MH-1000	CD-7G	CAP-85	M10009262403

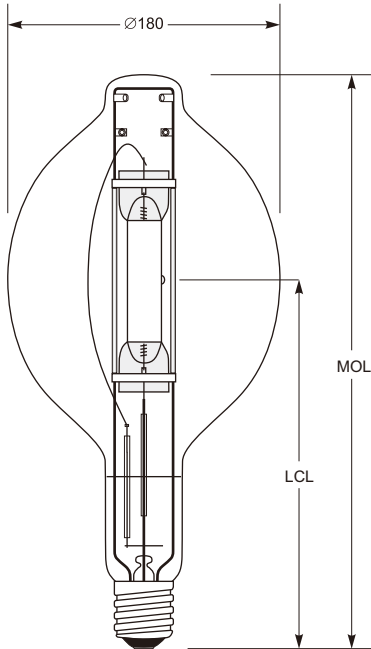
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ED90
E40 Base



ED120
E40 Base



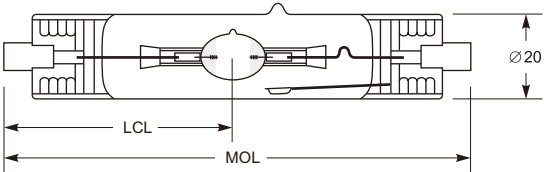
BT180
E40 Base

STANDARD METAL HALIDE LAMPS

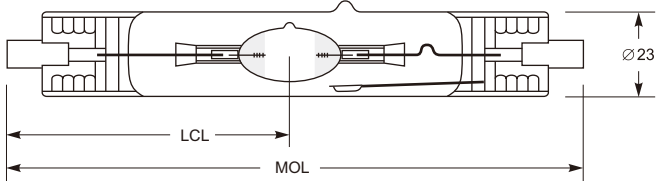
- High efficacy • Long life
- Full line, 70 - 2000 watts
- Enclosed fixture only

Watts	Bulb	Base	Description	Qty.	Case Finish	Dimensions		Lumens	Burning	Color			Fittable Electrical Box			
						MOL (mm)	LCL (mm)	Initial (lm)	Position	Avg.Life (Hours)	Temp (K)	CRI	Ballast	Ignitor	Capacitor (μ f)	Manufacture Production Code
Metal Halide Lamps - Tubular, Double-ended																
70	TD	R7s	MHDE70/UVS/3K	10	Clear	117.6	57	5500	Horizontal	6000	3200	65	PLUS-MH-70	CD-7	CAP-12	M00707570303
			MHDE70/UVS/4K	10	Clear	117.6	57	5500	Horizontal	6000	4200	60	PLUS-MH-70	CD-7	CAP-12	M00707570403
			MHDE70/UVS/DL	10	Clear	117.6	57	4600	Horizontal	6000	DL	70	PLUS-MH-70	CD-7	CAP-12	M00707570603
100	TD	R7s	MHDE100/UVS/3K	10	Clear	117.6	57	8500	Horizontal	8000	3200	65	PLUS-MH-100	CD-7	CAP-15	M01007570303
			MHDE100/UVS/4K	10	Clear	117.6	57	8500	Horizontal	8000	4200	60	PLUS-MH-100	CD-7	CAP-15	M01007570403
			MHDE100/UVS/DL	10	Clear	117.6	57	8000	Horizontal	8000	DL	70	PLUS-MH-100	CD-7	CAP-15	M01007570603
150	TD	R7s	MHDE150/UVS/3K	10	Clear	135.4	66	13500	Horizontal	10000	3200	65	PLUS-MH-150	CD-7	CAP-18	M01507570303
			MHDE150/UVS/4K	10	Clear	135.4	66	13500	Horizontal	10000	4200	60	PLUS-MH-150	CD-7	CAP-18	M01507570403
			MHDE150/UVS/5K	10	Clear	135.4	66	10000	Horizontal	10000	5200	70	PLUS-MH-150	CD-7	CAP-18	M01507570503
250	TD	Fc2	MHDE250/UVS/4K	10	Clear	163	81.5	18000	Horizontal	6000	4200	85	PLUS-MH-250	CD-7	CAP-25	M02507620403
			MHDE250/UVS/5K	10	Clear	163	81.5	18000	Horizontal	6000	5200	85	PLUS-MH-250	CD-7	CAP-25	M02507620503
Metal Halide Lamps - Tubular, G12 Base																
70	T	G12	MH70/G12/UVS/3K	10	Clear	90	56	5600	Universal	8000	3200	65	PLUS-MH-70	CD-7	CAP-12	M00701263103
			MH70/G12/UVS/4K	10	Clear	90	56	6000	Universal	8000	4200	65	PLUS-MH-70	CD-7	CAP-12	M00701264103
			MH70/G12/UVS/DL	10	Clear	90	56	4600	Universal	6000	5600	70	PLUS-MH-70	CD-7	CAP-12	M00701265103
100	T	G12	MH100/G12/UVS/3K	10	Clear	96	56	9000	Universal	8000	3200	65	PLUS-MH-100	CD-7	CAP-15	M01001263103
			MH100/G12/UVS/4K	10	Clear	96	56	9000	Universal	8000	4200	65	PLUS-MH-100	CD-7	CAP-15	M01001264103
150	T	G12	MH150/G12/UVS/3K	10	Clear	96	56	13500	Universal	8000	3200	65	PLUS-MH-150	CD-7	CAP-18	M01501263103
			MH150/G12/UVS/4K	10	Clear	96	56	13500	Universal	8000	4200	65	PLUS-MH-150	CD-7	CAP-18	M01501264103
			MH150/G12/UVS/DL	10	Clear	96	56	9200	Universal	6000	5600	70	PLUS-MH-150	CD-7	CAP-18	M01501265103

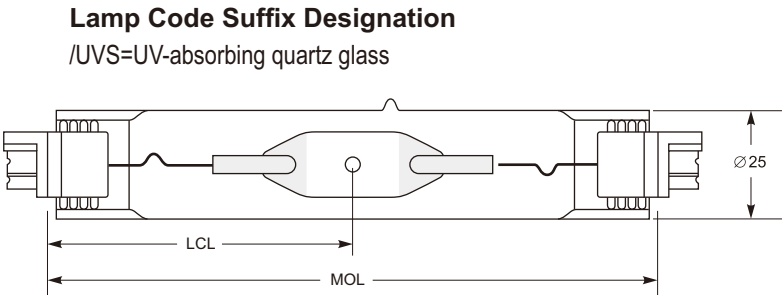
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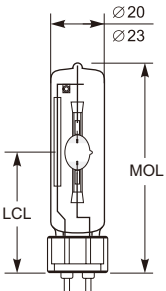
T6 R7s Base
70W



T7 R7s Base
150W



T9.5 Fc2 Base
250W



G12 Base

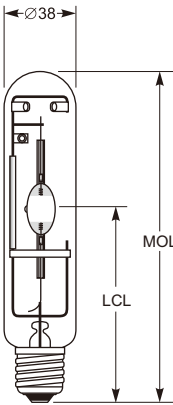
Lamp Code Suffix Designation
/UVS=UV-absorbing quartz glass

STANDARD METAL HALIDE LAMPS

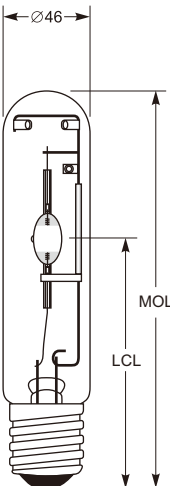
- High efficacy • Long life
- Full line, 70 - 2000 watts
- Enclosed fixture only

Watts	Bulb	Base	Description	Qty.	Case	Dimensions		Lumens	Burning	Color			Fittable Electrical Box			
					Finish	MOL (mm)	LCL (mm)	Initial (lm)	Position	Avg.Life (Hours)	Temp (K)	CRI	Ballast	Ignitor	Capacitor (μ f)	Manufacture Production Code
Metal Halide Lamps - Tubular																
70	T38	E27	MH70/T38/HOR/4K	40	Clear	156	102	5500	Horizontal	8000	4200	65	PLUS-MH-70	CD-7	CAP-12	M00706181403
			MH70/T38/HOR/DL	40	Clear	156	102	4500	Horizontal	8000	5600	70	PLUS-MH-70	CD-7	CAP-12	M00706181503
100	T38	E27	MH100/T38/HOR/4K	40	Clear	156	102	8500	Horizontal	8000	4200	65	PLUS-MH-100	CD-7	CAP-15	M01006181403
	T46	E40	MH100/T46/HOR/DL	25	Clear	210	128	8500	Horizontal	8000	5200	70	PLUS-MH-100	CD-7	CAP-15	M01009161503
150	T38	E27	MH150/T38/HOR/4K	40	Clear	156	102	12500	Horizontal	10000	4200	65	PLUS-MH-150	CD-7	CAP-18	M01506181403
			MH150/T38/HOR/DL	40	Clear	156	102	9000	Horizontal	8000	5200	70	PLUS-MH-150	CD-7	CAP-18	M01506181503
	T46	E40	MH150/T46/HOR/4K	25	Clear	211	128	12500	Horizontal	10000	4200	65	PLUS-MH-150	CD-7	CAP-18	M01509161403
	250	T46	E40	MH250/T46/HOR/4K	25	Clear	255	148	21000	Horizontal	15000	4200	65	PLUS-MH-250	CD-7	CAP-25
MH250/T46/HOR/5K				25	Clear	255	148	18000	Horizontal	15000	5200	70	PLUS-MH-250	CD-7	CAP-25	M02509161503
MH250/T46/HOR/6K				25	Clear	255	148	18000	Horizontal	15000	6500	70	PLUS-MH-250	CD-7	CAP-25	M02509161603
400	T46	E40	MH400/T46/HOR/4K	25	Clear	275	175	36000	Horizontal	15000	4200	65	PLUS-MH-400	CD-7	CAP-32	M04009161403
			MH400/T46/HOR/5K	25	Clear	275	175	32000	Horizontal	15000	5200	70	PLUS-MH-400	CD-7	CAP-32	M04009161503
			MH400/T46/HOR/6K	25	Clear	275	175	28000	Horizontal	15000	6500	70	PLUS-MH-400	CD-7	CAP-32	M04009161603
1000	TT64	E40	MH1000/TT64/HOR/NDL	12	Clear	382	240	90000	Horizontal	10000	4200	65	PLUS-MH-1000	CD-7G	CAP-85	M10009641403
			MH1000/TT64/HOR/DL	12	Clear	382	240	85000	Horizontal	10000	6500	65	PLUS-MH-1000	CD-7G	CAP-85	M10009641603
1000	TT76	E40	MH1000/TT76/HOR/NDL	12	Clear	340	220	90000	Horizontal	10000	4200	65	PLUS-MH-1000	CD-7G	CAP-85	M10009761403
			MH1000/TT76/HOR/DL	12	Clear	340	220	85000	Horizontal	10000	6500	65	PLUS-MH-1000	CD-7G	CAP-85	M10009761603

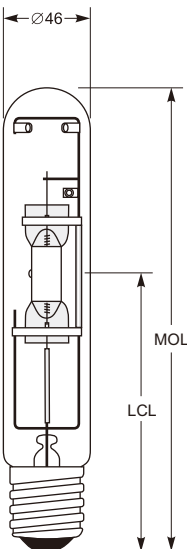
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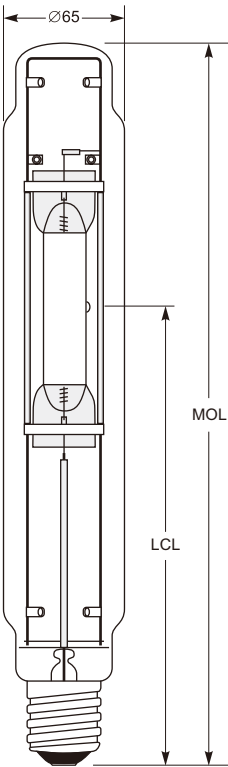
T38
E27 Base



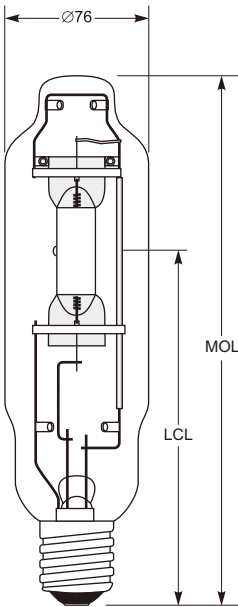
T46
E40 Base



T46
E40 Base



TT64
E40 Base



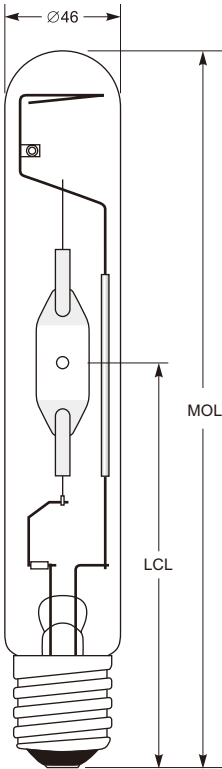
TT76
E40 Base

STANDARD METAL HALIDE LAMPS

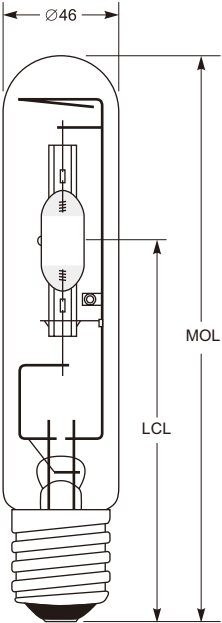
- High efficacy • Long life
- Full line, 70 - 2000 watts
- Enclosed fixture only

Watts	Bulb	Base	Description	Qty.	Case Finish	Dimensions		Lumens	Burning	Color			Fittable Electrical Box			
						MOL (mm)	LCL (mm)	Initial (lm)	Position	Avg.Life (Hours)	Temp (K)	CRI	Ballast	Ignitor	Capacitor (μ f)	Manufacture Production Code
Metal Halide Lamps - Tubular, E40 Base																
250	T46	E40	MH250/T46/SUPER/HPI	25	Clear	257	158	18000	Horizontal	15000	4200	60	PLUS-MH-250	CD-7	CAP-25	M02509161413
			MH250/T46/HQI/INDL	25	Clear	225	150	19000	Horizontal	15000	5200	80	PLUS-NS-250	CD-7	CAP-32	M02509161513
			MH250/T46/HQI/DL	25	Clear	225	150	18000	Horizontal	15000	6000	80	PLUS-MH-250	CD-7	CAP-25	M02509161613
400	T46	E40	MH400/T46/SUPER/HPI	25	Clear	285	175	32000	Horizontal	15000	5200	80	PLUS-MH-400	CD-7	CAP-32	M04009161513
	TO46	E40	MH400/TO46/HQI/INDL	25	Clear	285	175	28000	Horizontal	15000	5200	80	PLUS-NS-400	CD-7	CAP-50	M04009621513
			MH400/TO46/HQI/DL	25	Clear	285	175	32000	Horizontal	15000	6000	80	PLUS-MH-400	CD-7	CAP-32	M04009621613

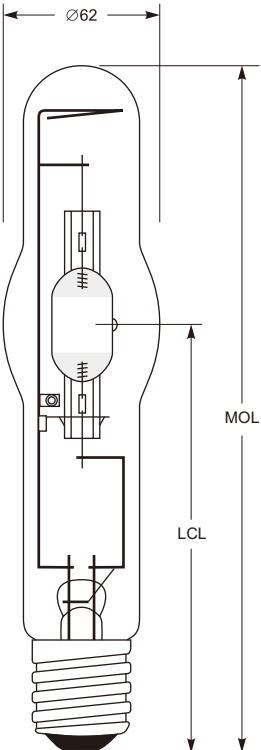
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T46
E40 Base



T46
E40 Base



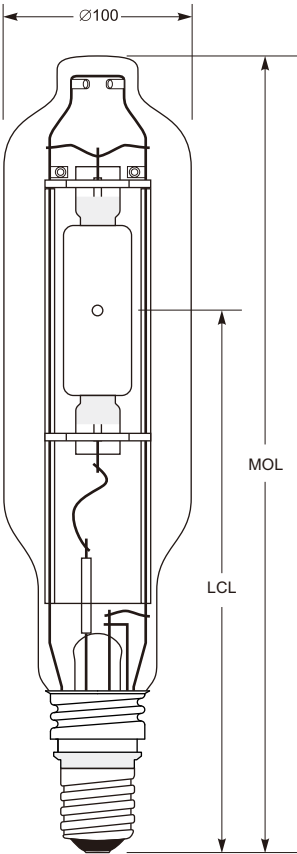
TO46
E40 Base

STANDARD METAL HALIDE LAMPS

- High efficacy • Long life
- Full line, 70 - 2000 watts
- Enclosed fixture only

Case					Dimensions		Lumens	Burning		Color			Fittable Electrical Box			
Watts	Bulb	Base	Description	Qty.	Finish	MOL (mm)	LCL (mm)	Initial (lm)	Position	Avg.Life (Hours)	Temp (K)	CRI	Ballast	Ignitor	Capacitor (μ f)	Manufacture Production Code
Metal Halide Lamps - Tubular																
2000	TT100	E40	MH2000/HPI/220V/NDL	12	Clear	430	290	189000	HOR± 75°	8000	NDL	60	PLUS-MH-2000/220V	CD-7G	/	M20009001403
			MH2000/HPI/380V/NDL	12	Clear	430	267	210000	HOR± 20°	8000	NDL	60	PLUS-MH-2000/380V	CDS-20	/	M20009001413
			MH2000/HQI/380V/NDL/SI	12	Clear	430	290	200000	HOR± 30°	8000	NDL	60	PLUS-MH-2000/380V	/	37 μ f	M20009001423

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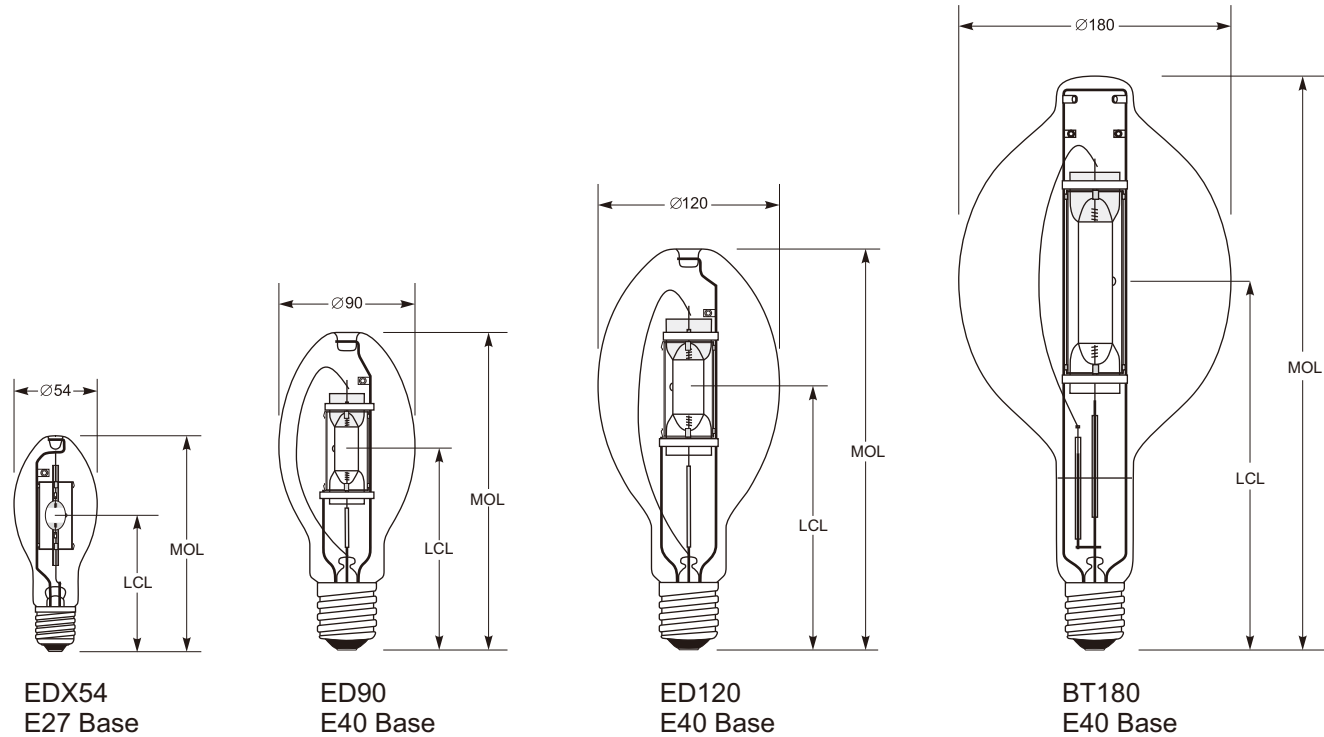
TT100
E40 Base

PROTECTED METAL HALIDE LAMPS

- Protected arc tube • UV-block
- High efficacy • Long life
- Suitable for open fixture

Watts	Bulb	Base	Description	Qty.	Case	Dimensions		Lumens	Burning	Color			Fittable Electrical Box			
					Finish	MOL (mm)	LCL (mm)	Initial (lm)	Position	Avg.Life (Hours)	Temp (K)	CRI	Ballast	Ignitor	Capacitor (μ f)	Manufacture Production Code
Protected Metal Halide Lamps - E27 Base																
70	EDX54	E27	MP70/EDX54/U/4K	12	Clear	141	89	5300	Universal	10000	4200	65	PLUS-MH-70	CD-7	CAP-12	M00706471403
			MP70/EDX54/C/U/4K	12	Coated	141	89	5000	Universal	10000	4000	65	PLUS-MH-70	CD-7	CAP-12	M00706472403
100	EDX54	E27	MP100/EDX54/U/4K	12	Clear	141	89	8500	Universal	10000	4200	65	PLUS-MH-100	CD-7	CAP-15	M01006471403
			MP100/EDX54/C/U/4K	12	Coated	141	89	8100	Universal	10000	4000	65	PLUS-MH-100	CD-7	CAP-15	M01006472403
150	EDX54	E27	MP150/EDX54/U/4K	12	Clear	141	89	12500	Universal	10000	4200	65	PLUS-MH-150	CD-7	CAP-18	M01506471403
			MP150/EDX54/C/U/4K	12	Coated	141	89	11800	Universal	10000	4000	65	PLUS-MH-150	CD-7	CAP-18	M01506472403
Protected Metal Halide Lamps - E40 Base																
150	ED90	E40	MP150/ED90/U/4K	12	Clear	228	146	12500	Base up	15000	4200	65	PLUS-MH-150	CD-7	CAP-18	M01509381403
250	ED90	E40	MP250/ED90/U/4K	12	Clear	228	146	20500	Base up	15000	4200	65	PLUS-MH-250	CD-7	CAP-25	M02509381403
			MP250/ED90/C/U/4K	12	Coated	228	146	19800	Base up	15000	3800	60	PLUS-MH-250	CD-7	CAP-25	M02509382403
400	ED120	E40	MP400/ED120/U/4K	12	Clear	292	181	36000	Base up	15000	4200	65	PLUS-MH-400	CD-7	CAP-32	M04009371403
			MP400/ED120/C/U/4K	12	Coated	292	181	34200	Base up	15000	3800	60	PLUS-MH-400	CD-7	CAP-32	M04009372403
1000	BT180	E40	MP1000/BT180/U/4K	6	Clear	391	241	100000	Base up	10000	4200	65	PLUS-MH-1000	CD-7G	CAP-85	M10009361403
			MP1000/BT180/C/U/4K	6	Coated	391	241	95000	Base up	10000	3800	60	PLUS-MH-1000	CD-7G	CAP-85	M10009462403

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Manage in Accordance with Disposal Laws
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COLOR METAL HALIDE LAMPS

- Consistent color, no color filler or gels required for fixture
- Available in three colors: red, green, blue
- Enclosed fixture only

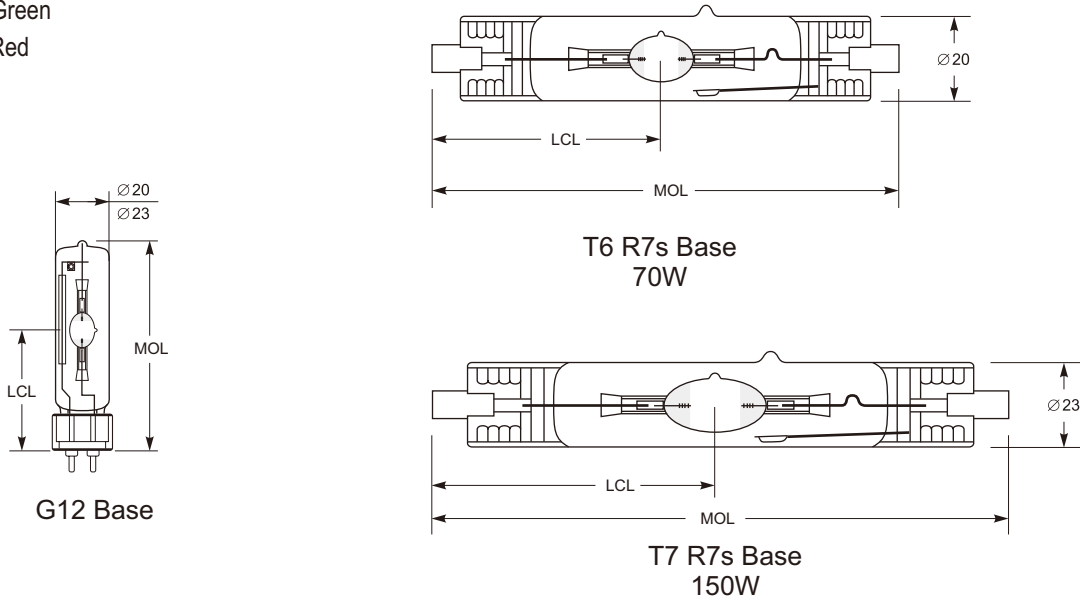
Watts	Bulb	Base	Description	Qty.	Case Finish	Dimensions		Dominant Wavelength (nm)	Burning Position	Avg.Life (Hours)	Color Temp (K)	Fittable Electrical Box			
						MOL (mm)	LCL (mm)					Ballast	Ignitor	Capacitor (μ f)	Manufacture Production Code
Color Metal Halide Lamps - Tubular, Double-ended															
70	TD	R7s	MHDE70/UVS/BDX	10	Clear	117.6	57	450	Horizontal	5000	BLUE	PLUS-MH-70	CD-7	CAP-12	Y00707571102
			MHDE70/UVS/GDX	10	Clear	117.6	57	535	Horizontal	5000	GREEN	PLUS-MH-70	CD-7	CAP-12	Y00707572102
			MHDE70/UVS/RDX	10	Clear	117.6	57	590	Horizontal	5000	RED	PLUS-MH-70	CD-7	CAP-12	Y00707573102
100	TD	R7s	MHDE100/UVS/BDX	10	Clear	117.6	57	450	Horizontal	5000	BLUE	PLUS-MH-100	CD-7	CAP-15	Y01007571102
			MHDE100/UVS/GDX	10	Clear	117.6	57	535	Horizontal	5000	GREEN	PLUS-MH-100	CD-7	CAP-15	Y01007572102
			MHDE100/UVS/RDX	10	Clear	117.6	57	590	Horizontal	5000	RED	PLUS-MH-100	CD-7	CAP-15	Y01007573102
150	TD	R7s	MHDE150/UVS/BDX	10	Clear	135.4	66	450	Horizontal	5000	BLUE	PLUS-MH-150	CD-7	CAP-18	Y01507571102
			MHDE150/UVS/GDX	10	Clear	135.4	66	535	Horizontal	5000	GREEN	PLUS-MH-150	CD-7	CAP-18	Y01507572102
			MHDE150/UVS/RDX	10	Clear	135.4	66	590	Horizontal	5000	RED	PLUS-MH-150	CD-7	CAP-18	Y01507573102
Color Metal Halide Lamps - Tubular, G12 Base															
70	T	G12	MH70/G12/UVS/BDX	10	Clear	90	56	450	Universal	5000	BLUE	PLUS-MH-70	CD-7	CAP-12	Y00701261103
			MH70/G12/UVS/GDX	10	Clear	90	56	535	Universal	5000	GREEN	PLUS-MH-70	CD-7	CAP-12	Y00701262103
			MH70/G12/UVS/RDX	10	Clear	90	56	590	Universal	5000	RED	PLUS-MH-70	CD-7	CAP-12	Y00701263103
100	T	G12	MH100/G12/UVS/BDX	10	Clear	96	56	450	Universal	5000	BLUE	PLUS-MH-100	CD-7	CAP-15	Y01001261103
			MH100/G12/UVS/GDX	10	Clear	96	56	535	Universal	5000	GREEN	PLUS-MH-100	CD-7	CAP-15	Y01001262103
			MH100/G12/UVS/RDX	10	Clear	96	56	590	Universal	5000	RED	PLUS-MH-100	CD-7	CAP-15	Y01001263103
150	T	G12	MH150/G12/UVS/BDX	10	Clear	96	56	450	Universal	5000	BLUE	PLUS-MH-150	CD-7	CAP-18	Y01501261103
			MH150/G12/UVS/GDX	10	Clear	96	56	535	Universal	5000	GREEN	PLUS-MH-150	CD-7	CAP-18	Y01501262103
			MH150/G12/UVS/RDX	10	Clear	96	56	590	Universal	5000	RED	PLUS-MH-150	CD-7	CAP-18	Y01501263103

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Annotation

- BDX=Blue
GDX=Green
RDX=Red



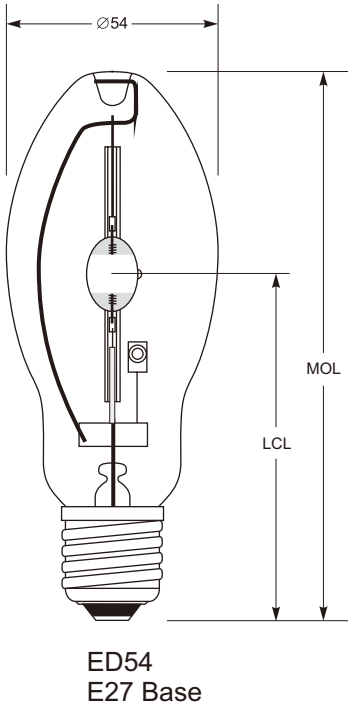
COLOR METAL HALIDE LAMPS

- Consistent color, no color filler or gels required for fixture
- Available in three colors: red, green, blue
- Enclosed fixture only

Watts	Bulb	Base	Description	Qty.	Case Finish	Dimensions		Dominant Wavelength (nm)	Burning Position	Avg.Life (Hours)	Color Temp (K)	Fittable Electrical Box			
						MOL (mm)	LCL (mm)					Ballast	Ignitor	Capacitor (μ f)	Manufacture Production Code
Color Metal Halide Lamps - E27 Base															
70	ED54	E27	MH70/ED54/U/BDX	12	Clear	141	89	450	Universal	5000	BLUE	PLUS-MH-70	CD-7	CAP-12	Y00706171103
			MH70/ED54/U/GDX	12	Clear	141	89	535	Universal	5000	GREEN	PLUS-MH-70	CD-7	CAP-12	Y00706172103
			MH70/ED54/U/RDX	12	Clear	141	89	590	Universal	5000	RED	PLUS-MH-70	CD-7	CAP-12	Y00706173103
100	ED54	E27	MH100/ED54/U/BDX	12	Clear	141	89	450	Universal	5000	BLUE	PLUS-MH-100	CD-7	CAP-15	Y01006171103
			MH100/ED54/U/GDX	12	Clear	141	89	535	Universal	5000	GREEN	PLUS-MH-100	CD-7	CAP-15	Y01006172103
			MH100/ED54/U/RDX	12	Clear	141	89	590	Universal	5000	RED	PLUS-MH-100	CD-7	CAP-15	Y01006173103
150	ED54	E27	MH150/ED54/U/BDX	12	Clear	141	89	450	Universal	5000	BLUE	PLUS-MH-150	CD-7	CAP-18	Y01506171103
			MH150/ED54/U/GDX	12	Clear	141	89	535	Universal	5000	GREEN	PLUS-MH-150	CD-7	CAP-18	Y01506172103
			MH150/ED54/U/RDX	12	Clear	141	89	590	Universal	5000	RED	PLUS-MH-150	CD-7	CAP-18	Y01506173103

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Manage in Accordance with Disposal Laws
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Annotation
BDX=Blue
GDX=Green
RDX=Red



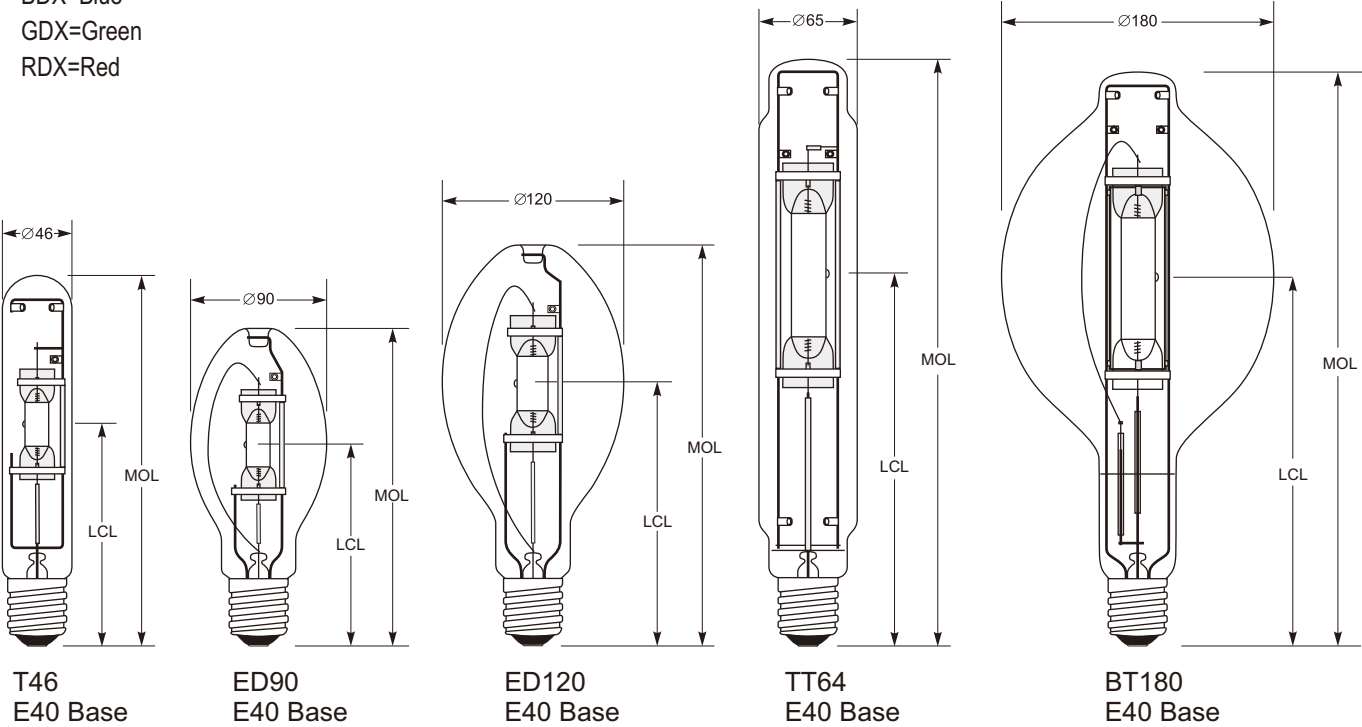
COLOR METAL HALIDE LAMPS

- Consistent color, no color filler or gels required for fixture
- Available in three colors: red, green, blue
- Enclosed fixture only

Watts	Bulb	Base	Description	Qty.	Case Finish	Dimensions		Dominant Wavelength (nm)	Burning Position	Avg.Life (Hours)	Color Temp (K)	Fittable Electrical Box			
						MOL (mm)	LCL (mm)					Ballast	Ignitor	Capacitor (μ f)	Manufacture Production Code
Color Metal Halide Lamps - E40 Base															
250	T46	E40	MH250/T46/HOR/BDX	25	Clear	255	148	450	Horizontal	5000	BLUE	PLUS-MH-250	CD-7	CAP-25	Y02509161103
			MH250/T46/HOR/GDX	25	Clear	255	148	535	Horizontal	5000	GREEN	PLUS-MH-250	CD-7	CAP-25	Y02509162103
			MH250/T46/HOR/RDX	25	Clear	255	148	590	Horizontal	5000	RED	PLUS-MH-250	CD-7	CAP-25	Y02509163103
	ED90	E40	MH250/ED90/U/BDX	12	Clear	228	146	450	Universal	5000	BLUE	PLUS-MH-250	CD-7	CAP-25	Y02509181103
			MH250/ED90/U/GDX	12	Clear	228	146	535	Universal	5000	GREEN	PLUS-MH-250	CD-7	CAP-25	Y02509182103
			MH250/ED90/U/RDX	12	Clear	228	146	590	Universal	5000	RED	PLUS-MH-250	CD-7	CAP-25	Y02509183103
400	T46	E40	MH400/T46/HOR/BDX	25	Clear	275	175	450	Horizontal	5000	BLUE	PLUS-MH-400	CD-7	CAP-32	Y04009161103
			MH400/T46/HOR/GDX	25	Clear	275	175	535	Horizontal	5000	GREEN	PLUS-MH-400	CD-7	CAP-32	Y04009162103
			MH400/T46/HOR/RDX	25	Clear	275	175	590	Horizontal	5000	RED	PLUS-MH-400	CD-7	CAP-32	Y04009163103
	ED120	E40	MH400/ED120/U/BDX	12	Clear	292	181	450	Universal	5000	BLUE	PLUS-MH-400	CD-7	CAP-32	Y04009171103
			MH400/ED120/U/GDX	12	Clear	292	181	535	Universal	5000	GREEN	PLUS-MH-400	CD-7	CAP-32	Y04009172103
			MH400/ED120/U/RDX	12	Clear	292	181	590	Universal	5000	RED	PLUS-MH-400	CD-7	CAP-32	Y04009173103
1000	TT64	E40	MH1000/TT64/HOR/BDX	12	Clear	382	240	450	Horizontal	5000	BLUE	PLUS-MH-1000	CD-7G	CAP-85	Y10009641103
			MH1000/TT64/HOR/GDX	12	Clear	382	240	535	Horizontal	5000	GREEN	PLUS-MH-1000	CD-7G	CAP-85	Y10009642103
			MH1000/TT64/HOR/RDX	12	Clear	382	240	590	Horizontal	5000	RED	PLUS-MH-1000	CD-7G	CAP-85	Y10009643103
	BT180	E40	MH1000/BT180/U/BDX	6	Clear	391	241	450	Universal	5000	BLUE	PLUS-MH-1000	CD-7G	CAP-85	Y10009261103
			MH1000/BT180/U/GDX	6	Clear	391	241	535	Universal	5000	GREEN	PLUS-MH-1000	CD-7G	CAP-85	Y10009262103
			MH1000/BT180/U/RDX	6	Clear	391	241	590	Universal	5000	RED	PLUS-MH-1000	CD-7G	CAP-85	Y10009263103

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Annotation
BDX=Blue
GDX=Green
RDX=Red

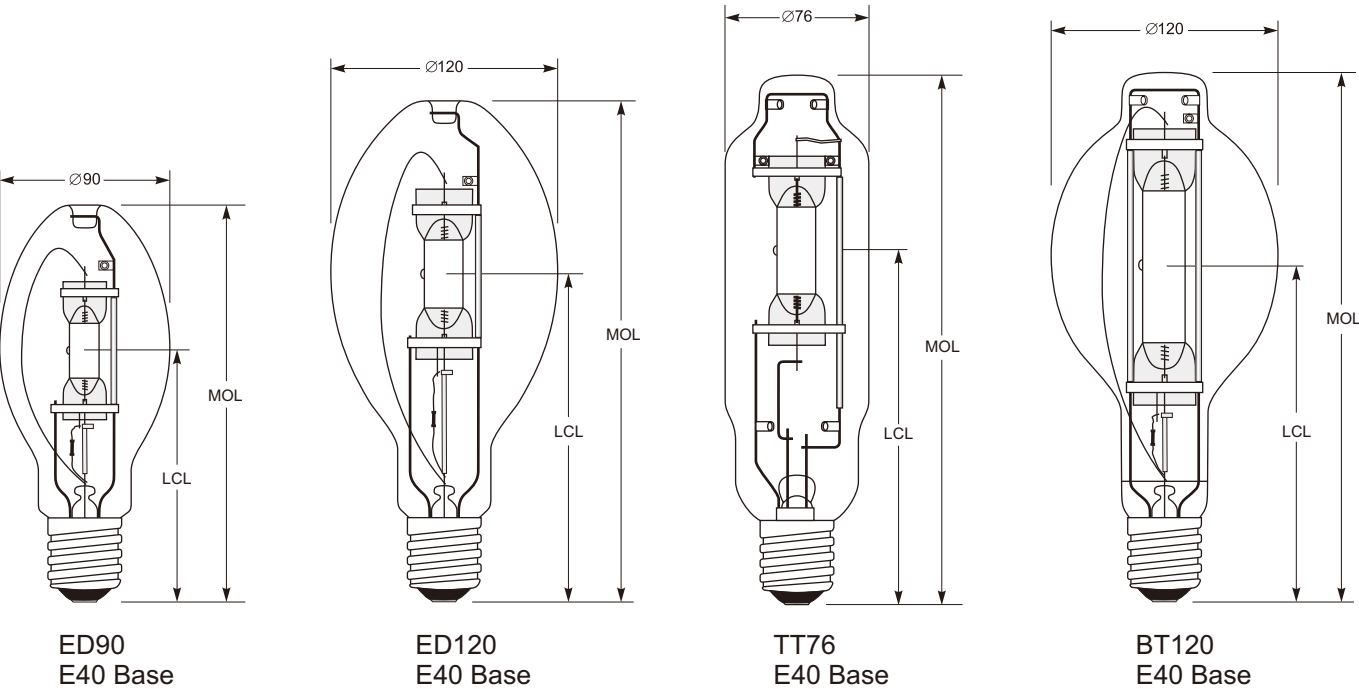


METAL HALIDE LAMPS FOR GREENHOUSE

- High efficacy
- Enclosed fixtures
- Long life

Watts	Bulb	Base	Description	Qty.	Case Finish	Dimensions		Lumens	Burning	Color			Fittable Electrical Box			
						MOL	LCL	Initial	Position	Avg.Life	Temp	CRI	Ballast	Ignitor	Capacitor	Manufacture
						(mm)	(mm)	(lm)		(Hours)	(K)				(μ f)	Production Code
Metal Halide Lamps for Greenhouse																
250	ED90	E40	MH250/E90/GRO	12	Clear	211	127	17400	Universal	10000	4200	65	M58	/	18 μ f	M02509181413
400	ED120	E40	MH400/E120/GRO	12	Clear	292	178	30600	Universal	10000	4200	65	M59	/	26 μ f	M04009171413
600	TT76	E40	MH600/TT76/GRO	12	Clear	340	220	51000	Horizontal	10000	4200	65	S106	CD-7G	59 μ f	M06009761413
1000	BT120	E40	MH1000/BT120/GRO	12	Clear	292	178	110000	Universal	10000	4200	65	M47	/	30 μ f	M10009271413

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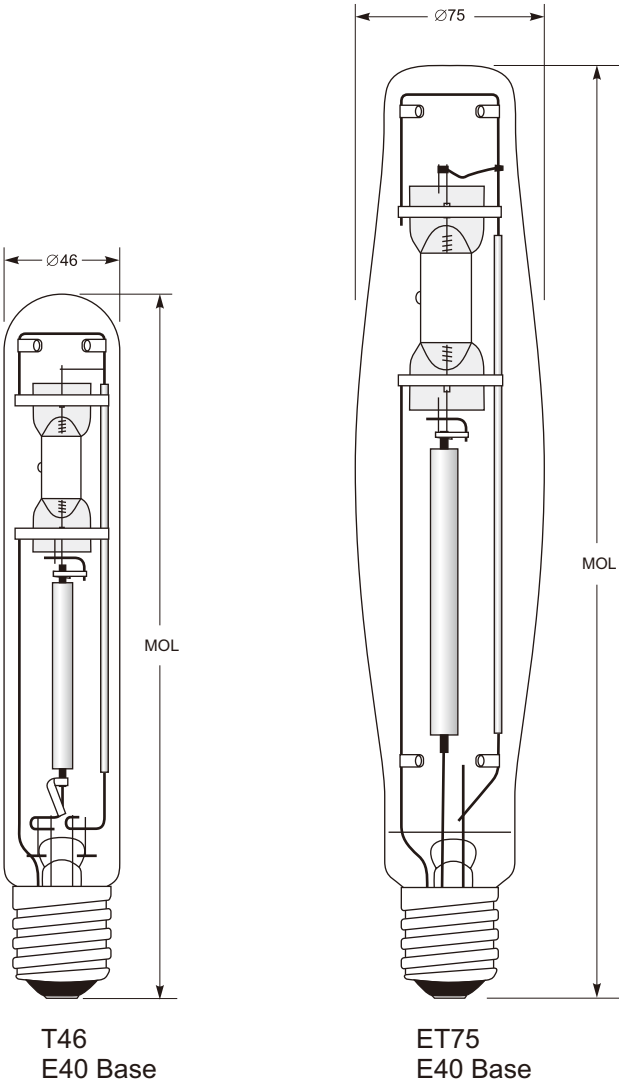


DUAL ARC TUBE FOR GREENHOUSE

- Dual arc tube, Long life 10,000 hours average
- High efficacy
- Enclosed fixtures

Watts	Bulb	Base	Description	Case	Dimensions	Lumens	Burning	Fittable Electrical Box					
				Qty.	Finish	MOL (mm)	Initial (lm)	Position	Avg.Life (Hours)	Ballast	Ignitor	Capacitor (μ f)	Manufacture Production Code
Dual Arc Tube for Greenhouse													
400	T46	E40	DUAL ARC400/T46	25	Clear	285	36000	Horizontal	10000	EB400W/ANSI S51	/	/	D04009161003
600	ET75	E40	DUAL ARC600/ET75	12	Clear	382	56000	Horizontal	10000	EB600W/ANSI S106	/	/	D06009151003
1000	ET75	E40	DUAL ARC1000/ET75	12	Clear	382	105000	Horizontal	10000	EB1000W/ANSI S52	/	/	D10009151003

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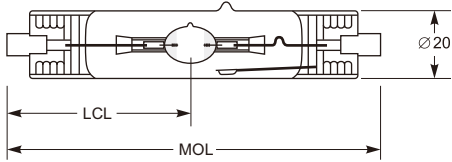


METAL HALIDE LAMPS FOR AQUARIUM

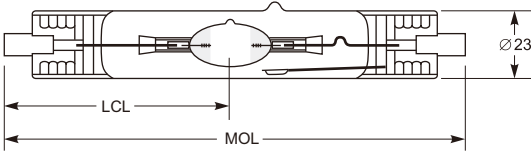
- Color temperature from 10,000K to 20,000K
- Enclosed fixture only

Watts	Bulb	Base	Description	Case		Dimensions		Lumens	Burning Position	Avg.Life (Hours)	Color		Fittable Electrical Box			Manufacture Production Code
				Qty.	Finish	MOL (mm)	LCL (mm)				Initial (lm)	Temp (K)	Ballast	Ignitor	Capacitor (μ f)	
Metal Halide Lamps for Aquarium - Tubular, Double-ended																
70	TD	R7s	MHDE70/R7s/10K	10	Clear	117.6	57	3100	Horizontal	6000	10000	PLUS-MH-70	CD-7	CAP-12	M00707571103	
			MHDE70/R7s/14K	10	Clear	117.6	57	2500	Horizontal	6000	14000	PLUS-MH-70	CD-7	CAP-12	M00707571143	
			MHDE70/R7s/20K	10	Clear	117.6	57	1700	Horizontal	6000	20000+	PLUS-MH-70	CD-7	CAP-12	M00707571203	
150	TD	R7s	MHDE150/R7s/10K	10	Clear	135.4	66	7000	Horizontal	6000	10000	PLUS-MH-150	CD-7	CAP-18	M01507571103	
			MHDE150/R7s/14K	10	Clear	135.4	66	6800	Horizontal	6000	14000	PLUS-MH-150	CD-7	CAP-18	M01507571143	
			MHDE150/R7s/20K	10	Clear	135.4	66	3000	Horizontal	6000	20000+	PLUS-MH-150	CD-7	CAP-18	M01507571203	
250	TD	Fc2	MHDE250/Fc2/10K	10	Clear	163	81.5	11000	Horizontal	6000	10000	PLUS-MH-250	CD-7	CAP-25	M02507621103	
			MHDE250/Fc2/14K	10	Clear	163	81.5	11000	Horizontal	6000	14000	PLUS-MH-250	CD-7	CAP-25	M02507621143	
			MHDE250/Fc2/20K	10	Clear	163	81.5	5000	Horizontal	6000	20000+	PLUS-MH-250	CD-7	CAP-25	M02507621203	

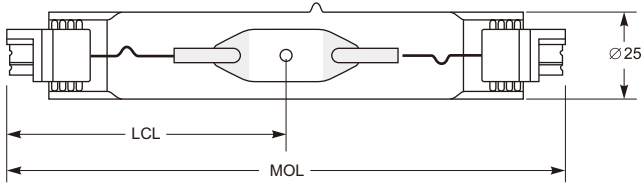
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T6 R7s Base
70W



T7 R7s Base
150W



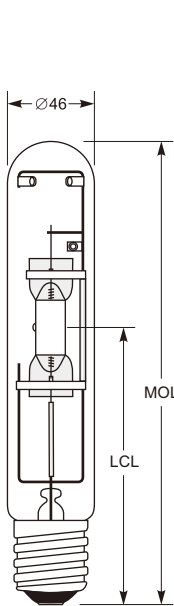
T9.5 Fc2 Base
250W

METAL HALIDE LAMPS FOR AQUARIUM

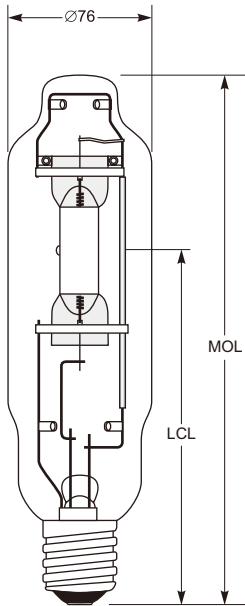
- Color temperature from 10,000K to 20,000K
- Enclosed fixture only

Watts	Bulb	Base	Description	Case		Dimensions		Lumens	Burning Position	Avg.Life (Hours)	Color		Fittable Electrical Box			Manufacture Production Code
				Qty.	Finish	MOL (mm)	LCL (mm)				Initial (lm)	Temp (K)	Ballast	Ignitor	Capacitor (μ f)	
Metal Halide Lamps for Aquarium - Tubular, E40 Base																
175	T46	E40	MH175/T46/U/10K	25	Clear	255	148	7500	Universal	6000	10000	PLUS-MH-175	CD-7	CAP-18	M01759161103	
			MH175/T46/U/14K	25	Clear	255	148	7500	Universal	6000	14000	PLUS-MH-175	CD-7	CAP-18	M01759161143	
			MH175/T46/U/20K	25	Clear	255	148	4300	Universal	6000	20000+	PLUS-MH-175	CD-7	CAP-18	M01759161203	
250	T46	E40	MH250/T46/U/10K	25	Clear	255	148	11000	Universal	8000	10000	PLUS-MH-250	CD-7	CAP-25	M02509161103	
			MH250/T46/U/14K	25	Clear	255	148	11000	Universal	8000	14000	PLUS-MH-250	CD-7	CAP-25	M02509161143	
			MH250/T46/U/20K	25	Clear	255	148	5000	Universal	8000	20000+	PLUS-MH-250	CD-7	CAP-25	M02509161203	
400	T46	E40	MH400/T46/U/10K	25	Clear	275	175	18500	Universal	8000	10000	PLUS-MH-400	CD-7	CAP-32	M04009161103	
			MH400/T46/U/14K	25	Clear	275	175	18500	Universal	8000	14000	PLUS-MH-400	CD-7	CAP-32	M04009161143	
			MH400/T46/U/20K	25	Clear	275	175	8000	Universal	8000	20000+	PLUS-MH-400	CD-7	CAP-32	M04009161203	
1000	TT76	E40	MH1000/TT76/HOR/10K	12	Clear	340	220	65000	Horizontal	3000	10000	PLUS-MH-1000	CD-7G	CAP-85	M10009761103	
			MH1000/TT76/HOR/14K	12	Clear	340	220	65000	Horizontal	3000	14000	PLUS-MH-1000	CD-7G	CAP-85	M10009761143	
			MH1000/TT76/HOR/20K	12	Clear	340	220	46000	Horizontal	3000	20000+	PLUS-MH-1000	CD-7G	CAP-85	M10009761203	

All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws
See page 25/26/27 for safety handling and warning purposes



T46
E40 Base



TT76
E40 Base

R

WARNING

Enclosed fixture rated METAL HALIDE LAMP

ULTRAVIOLET RADIATION EXPOSURE:

WARNING: This lamp can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if the outer envelope of the lamps 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 products conforms to the following federal regulations: U.S.A: 21 CFR 1040.30 and CANADA: SOR/80-381

- 1.Metal Halide lamps are constructed of an outer glass jacket and internal arc tube made of quartz. The arc tube operates under high pressure and temperatures as high as 1000°C (1832°F). The arc tube and outer jacket may unexpectedly rupture due to internal causes or external factors such as system malfunction or misapplication, creating a risk of personal injury, property damage, burns and fire. To reduce this risk the following instructions must be adhered to.

2.Do not operate lamps in excess of rated voltages of the ballast as this will increase lamp pressure and the possibility of shattering.

3.This lamp must be used only with proper circuit and auxiliary equipment and suitable ballast.

4.This lamp must be operated with a suitable fixture, ballast and igniter, which have an ANSI designation identical to the ANSI designation this catalog.

5.Do not use this lamp in a fixture designed for less than the rated lamp wattage.

6.Failure to comply may result in poor lamp performance and possible personal injury or property damages for which the manufacturer will not be held responsible.

7.Do not scratch glass of bulb or subject this lamp to undue pressure as either may cause lamp to break. Replace scratched, cracked, broken or damaged bulbs immediately.

8.The lamp should be screwed firmly, but not forcibly, into the socket to reduce the possibility of loosening due to vibration. Use of excessive force may result in lamp breakage.

9.Do not touch hot lamps with fingers, skin or any flammable material. Lamps may remain hot after being turned off.

10.This lamp must be shielded from direct contact with rain, sleet, snow and other liquids to reduce the possibility of breakage. This lamp may implode if broken. Use eye protection and gloves when handling this lamp.

11.The fixture for Metal Halide lamps must be enclosed. Enclosures must be made of suitable materials capable of withstanding the discharge of hot quartz, arc tube or glass particles up to 1000°C (1832°F). The manufacturer has identified only tempered glass as suitable lens or diffuser material. End users should contact the fixture manufacturer to determine if a particular enclosure is suitable.

12.In an continuously operating system (24 hours/day, 7 days/week), turn lamps off once per week for at least 1 hour. Failure to comply increases the risk of rupture.

13.When operating this lamp, the base temperature should not exceed 210°C (410°F) for Mogul base and 190°C (374°F) for Medium base, the outer envelope should not exceed 400°C (752°F). The recommended ambient temperature limit for this lamp is -40°C (-40°F) minimum; 40°C (104°F) maximum.

14.Do not use this lamp in a location subject to vibration or shock, unless an adequate vibration-proof fixture is used.

15.Do not use this lamp in a corrosive atmosphere unless an adequate corrosion resistant-fixture is used.

16.Replace lamp at or before the end of its rated life. Allowing lamps to burn until they fail may increase the risk of inner arc tube rupture.

17.Electrically insulate any metal support in contact with glass to reduce the possibility of decomposition of the glass.

18.Do not look directly at the lamp during operation to avoid eye inflammation from short wave ultraviolet radiation.

19.Do not paint the lamp to prevent its overheating or breakage.

20.Do not use this lamp in an ignitable atmosphere (for example gasoline, inflammable spray, thinner, lacquer, dust, etc.) to prevent a fire or explosion unless an adequate fixture is used.

21.Do not use this lamp in a powdery or dusty atmosphere in order to eliminate the overheating of the lamp unless an adequate fixture is used.

22.The radiation from this lamp may cause colored objects to fade unless an adequate fixture is used.

23.Follow all instructions in the manufacturer's catalog or on the individual box or instruction sheet.

R

WARNING

Open fixture rated METAL HALIDE LAMP

ULTRAVIOLET RADIATION EXPOSURE:

WARNING: This lamp can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if the outer envelope of the lamps 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 products conforms to the following federal regulations: U.S.A: 21 CFR 1040.30 and CANADA: SOR/80-381

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

2.Metal Halide lamps are constructed of an outer glass jacket and internal arc tube made of quartz. The arc tube operates under high pressure and temperatures as high as 1000°C (1832°F). The arc tube and outer jacket may unexpectedly rupture due to internal causes or external factors such as system malfunction or misapplication, creating a risk of personal injury, property damage, burns and fire. To reduce this risk the following instructions must be adhered to.

3.Do not operate lamps in excess of rated voltages of the ballast as this will increase lamp pressure and the possibility of shattering.

4.This lamp must be used only with proper circuit and auxiliary equipment and suitable ballast.

5.This lamp must be operated with a suitable fixture, ballast and igniter, which have an ANSI designation identical to the ANSI designation in this catalog.

6.Do not use this lamp in a fixture designed for less than the rated lamp wattage.

7.Failure to comply may result in poor lamp performance and possible personal injury or property damages for which the manufacturer will not be held responsible.

8.Do not scratch the glass of bulb or subject this lamp to undue pressure as either may cause the lamp to break. Replace scratched, cracked, broken or damaged bulbs immediately.

9.The lamp should be screwed firmly, but not forcibly, into the socket to reduce the possibility of loosening due to vibration. Use of excessive force may result in lamp breakage.

10.Do not touch hot lamps with fingers, skin or any flammable material. Lamps may remain hot after being turned off.

11.This lamp must be shielded from direct contact with rain, sleet, snow and other liquids to reduce the possibility of breakage. This lamp may implode if broken. Use eye protection and gloves when handling this lamp.

12.In an continuously operating system (24 hours/day, 7 days/week), turn lamps off once per week for at least 1 hour. Failure to comply increases the risk of rupture.

13.When operating this lamp, the base temperature should not exceed 210°C (410°F) for Mogul base and 190°C (374°F) for Medium base, the outer envelope should not exceed 400°C (752°F). The recommended ambient temperature limit for this lamp is -40°C (-40°F) minimum; 40°C (104°F) maximum.

14.Do not use this lamp in a location subject to vibration or shock, unless an adequate vibration-proof fixture is used.

15.Do not use this lamp in a corrosive atmosphere unless an adequate corrosion resistant-fixture is used.

16.Replace lamp at or before the end of its rated life. Allowing lamps to burn until they fail may increase the risk of inner arc tube rupture.

17.Electrically insulate any metal support in contact with glass to reduce the possibility of decomposition of the glass.

18.Do not look directly at the lamp during operation to avoid eye inflammation from short wave ultraviolet radiation.

19.Do not paint the lamp to prevent its overheating or breakage.

20.Do not use this lamp in an ignitable atmosphere (for example gasoline, inflammable spray, thinner, lacquer, dust, etc.) to prevent a fire or explosion unless an adequate fixture is used.

21.Do not use this lamp in a powdery or dusty atmosphere in order to eliminate the overheating of the lamp unless an adequate fixture is used.

22.The radiation from this lamp may cause colored objects to fade unless an adequate fixture is used.

23.Follow all instructions in the manufacturer's catalog or on the individual box or instruction sheet.

R

WARNING

Open/Enclosed fixture rated METAL HALIDE LAMP

ULTRAVIOLET RADIATION EXPOSURE:

WARNING: This lamp can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if the outer envelope of the lamps 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 products conforms to the following federal regulations: U.S.A: 21 CFR 1040.30 and CANADA: SOR/80-381

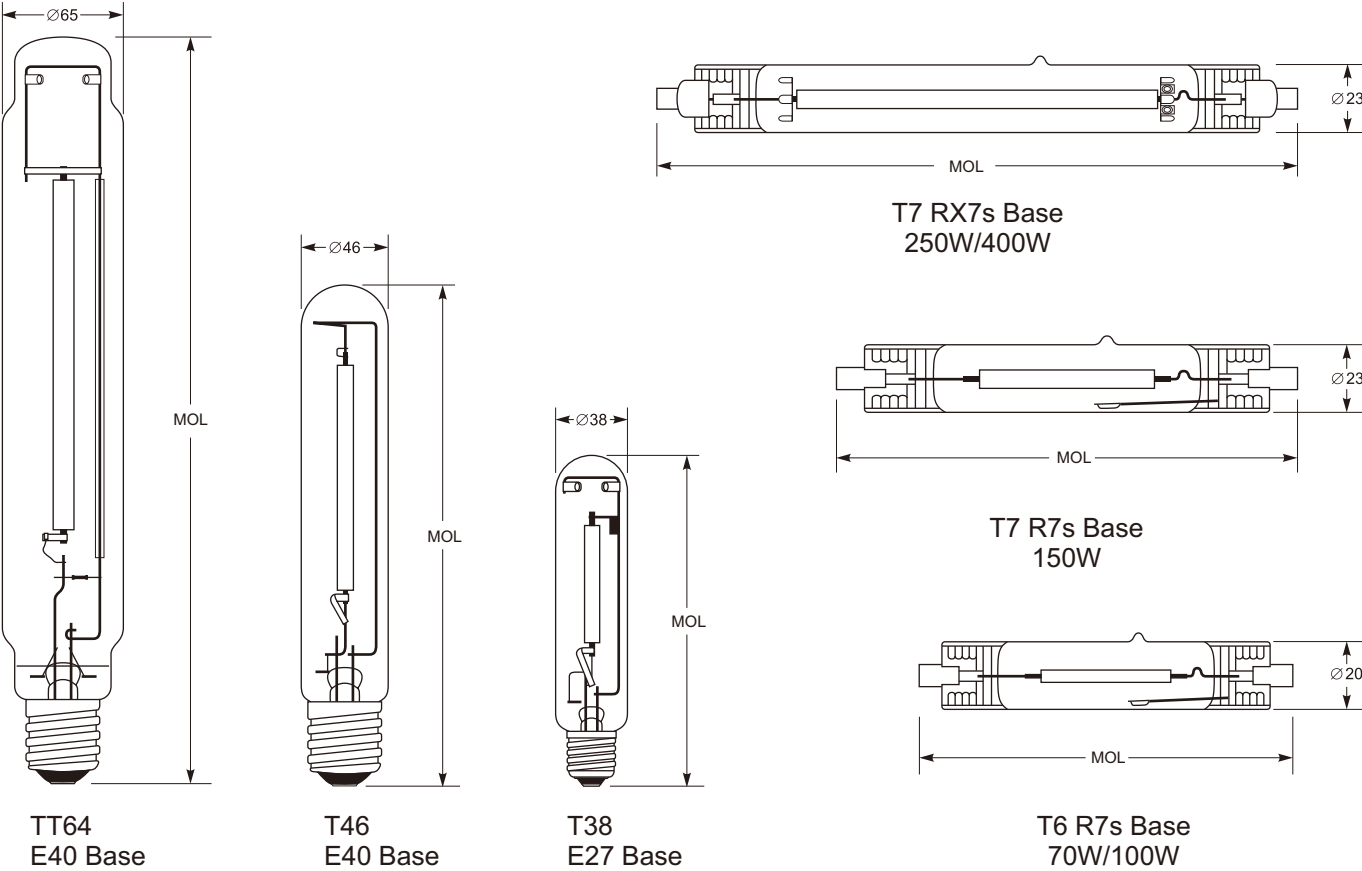
- 1.Only operate lamp in an enclosed fixture with a lens/diffuser material able to contain hot lamp fragments (up to 2012°F, 1100°C). If you are uncertain, contact your fixture manufacturer. When operated within 15° of vertical, this lamp may be operated in an open fixture PROVIDED THE INSTALLATION IS NOT NEAR PEOPLE OR FLAMMABLE OR COMBUSTIBLE MATERIAL.
- 2.Metal Halide lamps are constructed of an outer glass jacket and internal arc tube made of quartz. The arc tube operates under high pressure and temperatures as high as 1000°C (1832°F). The arc tube and outer jacket may unexpectedly rupture due to internal causes or external factors such as system malfunction or misapplication, creating a risk of personal injury, property damage, burns and fire. To reduce this risk the following instructions must be adhered to.
- 3.Do not operate lamps in excess of rated voltages of the ballast as this will increase lamp pressure and the possibility of shattering.
- 4.This lamp must be used only with proper circuit and auxiliary equipment and suitable ballast.
- 5.This lamp must be operated with a suitable fixture, ballast and igniter, which have an ANSI designation identical to the ANSI designation in this catalog.
- 6.Do not use this lamp in a fixture designed for less than the rated lamp wattage.
- 7.Failure to comply may result in poor lamp performance and possible personal injury or property damages for which the manufacturer will not be held responsible.
- 8.Do not scratch the glass of bulb or subject this lamp to undue pressure as either may cause the lamp to break. Replace scratched, cracked, broken or damaged bulbs immediately.
- 9.The lamp should be screwed firmly, but not forcibly, into the socket to reduce the possibility of loosening due to vibration. Use of excessive force may result in lamp breakage.
- 10.Do not touch hot lamps with fingers, skin or any flammable material. Lamps may remain hot after being turned off.
- 11.This lamp must be shielded from direct contact with rain, sleet, snow and other liquids to reduce the possibility of breakage. This lamp may implode if broken. Use eye protection and gloves when handling this lamp.
- 12.In an continuously operating system (24 hours/day, 7 days/week), turn lamps off once per week for at least 1 hour. Failure to comply increases the risk of rupture.
- 13.When operating this lamp, the base temperature should not exceed 210°C (410°F) for Mogul base and 190°C (374°F) for Medium base, the outer envelope should not exceed 400°C (752°F). The recommended ambient temperature limit for this lamp is -40°C (-40°F) minimum; 40°C (104°F) maximum.
- 14.Do not use this lamp in a location subject to vibration or shock, unless an adequate vibration-proof fixture is used.
- 15.Do not use this lamp in a corrosive atmosphere unless an adequate corrosion resistant-fixture is used.
- 16.Replace lamp at or before the end of its rated life. Allowing lamps to burn until they fail may increase the risk of inner arc tube rupture.
- 17.Electrically insulate any metal support in contact with glass to reduce the possibility of decomposition of the glass.
- 18.Do not look directly at the lamp during operation to avoid eye inflammation from short wave ultraviolet radiation.
- 19.Do not paint the lamp to prevent its overheating or breakage.
- 20.Do not use this lamp in an ignitable atmosphere (for example gasoline, inflammable spray, thinner, lacquer, dust, etc.) to prevent a fire or explosion unless an adequate fixture is used.
- 21.Do not use this lamp in a powdery or dusty atmosphere in order to eliminate the overheating of the lamp unless an adequate fixture is used.
- 22.The radiation from this lamp may cause colored objects to fade unless an adequate fixture is used.
- 23.Follow all instructions in the manufacturer's catalog or on the individual box or instruction sheet.

HIGH PRESSURE SODIUM LAMPS

- Universal burning position
- High efficacy/low operating cost
- Long life

Watts	Bulb	Base	Description	Qty.	Finish	Case	Dimensions		Lumens	Burning		Color		Fittable Electrical Box			
						MOL	Dia	Initial	Position	Avg.Life	Temp	CRI	Ballast	Ignitor	Capacitor	Manufacture	
(mm) (mm) (lm) (Hours) (K) (μ f) Production Code																	
Standard High Pressure Sodium Lamps - Tubular, Clear																	
50	T38	E27	NG50/T38	40	Clear	156	38	3600	Horizontal	24000	2000	22	PLUS-NS-50	CD-7a	CAP-12	L00506381203	
70	T38	E27	NG70/T38	40	Clear	156	38	6000	Horizontal	24000	2000	22	PLUS-NS-70	CD-7a	CAP-12	L00706381203	
100	T46	E40	NG100/T46	25	Clear	211	46	9000	Horizontal	24000	2000	22	PLUS-NS-100	CD-7a	CAP-15	L01009161203	
150	T46	E40	NG150/T46	25	Clear	211	46	15000	Horizontal	24000	2000	22	PLUS-NS-150	CD-7a	CAP-18	L01509161203	
250	T46	E40	NG250/T46	25	Clear	257	46	28000	Horizontal	24000	2000	22	PLUS-NS-250	CD-7a	CAP-32	L02509161203	
400	T46	E40	NG400/T46	25	Clear	283	46	48000	Horizontal	24000	2000	22	PLUS-NS-400	CD-7a	CAP-50	L04009161203	
1000	TT64	E40	NG1000/TT64	12	Clear	392	65	130000	Horizontal	24000	2000	22	PLUS-NS-1000	CD-3	CAP-100	L10009641203	
Standard High Pressure Sodium Lamps - Tubular, Double Ended																	
70	TD	R7s	NG70/DE	10	Clear	118	20	5000	Horizontal	24000+	2000	22	PLUS-NS-70	CD-7a	CAP-12	L00707571203	
100	TD	R7s	NG100/DE	10	Clear	118	20	8500	Horizontal	24000+	2000	22	PLUS-NS-100	CD-7a	CAP-15	L01007571203	
150	TD	R7s	NG150/DE	10	Clear	136	23	13000	Horizontal	24000+	2000	22	PLUS-NS-150	CD-7a	CAP-18	L01507571203	
250	TD	RX7s	NG250/DE	10	Clear	189	23	21000	Horizontal	24000+	2000	22	PLUS-NS-250	CD-7a	CAP-32	L02507571203	
400	TD	RX7s	NG400/DE	10	Clear	254	23	40000	Horizontal	24000+	2000	22	PLUS-NS-400	CD-7a	CAP-50	L04007571203	
1000	TD	RX7s	LU1000/TD/RX7s	10	Clear	334	23	135000	Horizontal	24000+	2000	22	S52	IGN104	26/525	L04007571203	
		K12X30S	LU1000/DE/HQ400V/EB	10	Clear	394	30	140000	Horizontal	24000+	2000	22	EB1000W/400V	/	/	L04007571203	

All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws
See page 34 for safety handling and warning purposes

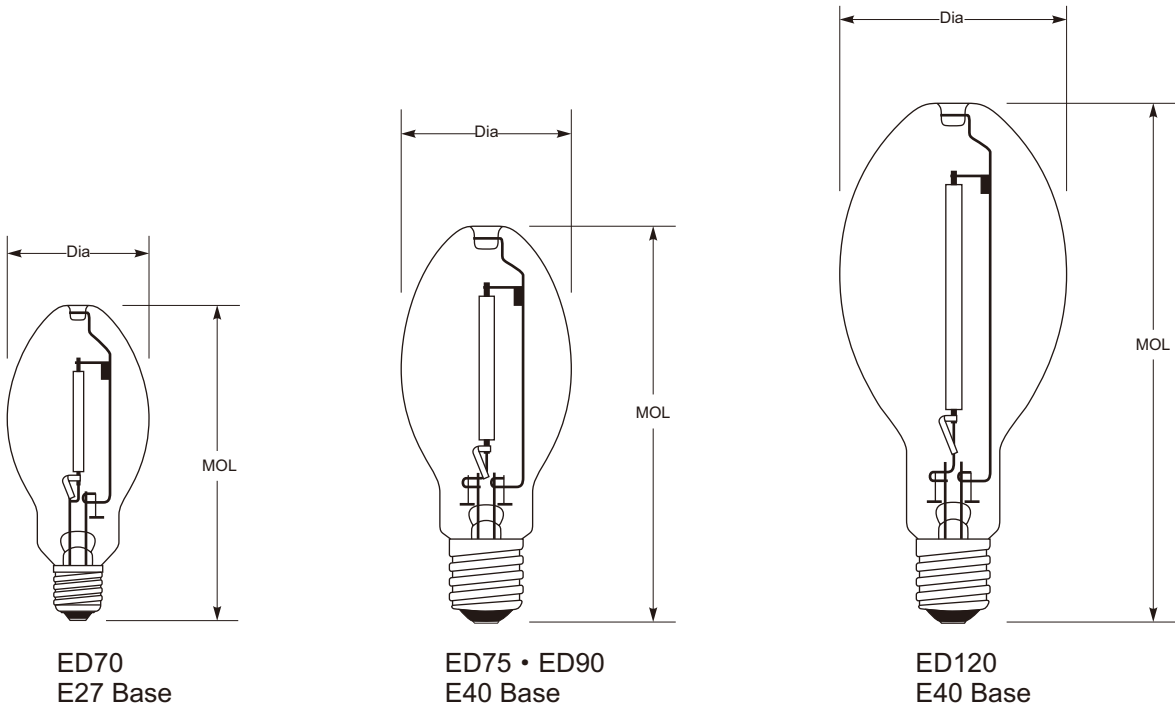


HIGH PRESSURE SODIUM LAMPS

- Universal burning position
- High efficacy/low operating cost
- Long life

Watts	Bulb	Base	Description	Qty.	Case	Dimensions		Lumens	Burning	Color			Fittable Electrical Box			
					Finish	MOL	Dia	Initial	Position	Avg.Life	Temp	CRI	Ballast	Ignitor	Capacitor	Manufacture
						(mm)	(mm)	(lm)		(Hours)	(K)				(μ f)	Production Code
Standard High Pressure Sodium Lamps - Elliptical, Clear																
50	ED70	E27	NG50/ED70	12	Clear	156	70	3700	Universal	24000	2000	25	PLUS-NS-50	CD-7	CAP-12	L00506131203
70	ED70	E27	NG70/ED70	12	Clear	156	70	5600	Universal	24000	2000	25	PLUS-NS-70	CD-7	CAP-12	L00706131203
100	ED75	E40	NG100/ED75	12	Clear	156	75	9000	Universal	24000	2000	25	PLUS-NS-100	CD-7	CAP-15	L01009131203
150	ED90	E40	NG150/ED90	12	Clear	227	90	15000	Universal	24000	2000	25	PLUS-NS-150	CD-7	CAP-18	L01509181203
250	ED90	E40	NG250/ED90	12	Clear	227	90	28000	Universal	24000	2000	25	PLUS-NS-250	CD-7	CAP-32	L02509181203
400	ED120	E40	NG400/ED120	12	Clear	292	120	48000	Universal	24000	2000	25	PLUS-NS-400	CD-7	CAP-50	L04009171203
Standard High Pressure Sodium Lamps - Elliptical, Coated																
50	ED70	E27	NG50/ED70/C	12	Coated	156	70	3500	Universal	24000	2000	25	PLUS-NS-50	CD-7	CAP-12	L00506132203
70	ED70	E27	NG70/ED70/C	12	Coated	156	70	5400	Universal	24000	2000	25	PLUS-NS-70	CD-7	CAP-12	L00706132203
100	ED75	E40	NG100/ED75/C	12	Coated	156	75	8100	Universal	24000	2000	25	PLUS-NS-100	CD-7	CAP-15	L01009132203
150	ED90	E40	NG150/ED90/C	12	Coated	227	90	14000	Universal	24000	2000	25	PLUS-NS-150	CD-7	CAP-18	L01509182203
250	ED90	E40	NG250/ED90/C	12	Coated	227	90	27000	Universal	24000	2000	25	PLUS-NS-250	CD-7	CAP-32	L02509182203
400	ED120	E40	NG400/ED120/C	12	Coated	292	120	46000	Universal	24000	2000	25	PLUS-NS-400	CD-7	CAP-50	L04009172203

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Manage in Accordance with Disposal Laws
See page 34 for safety handling and warning purposes

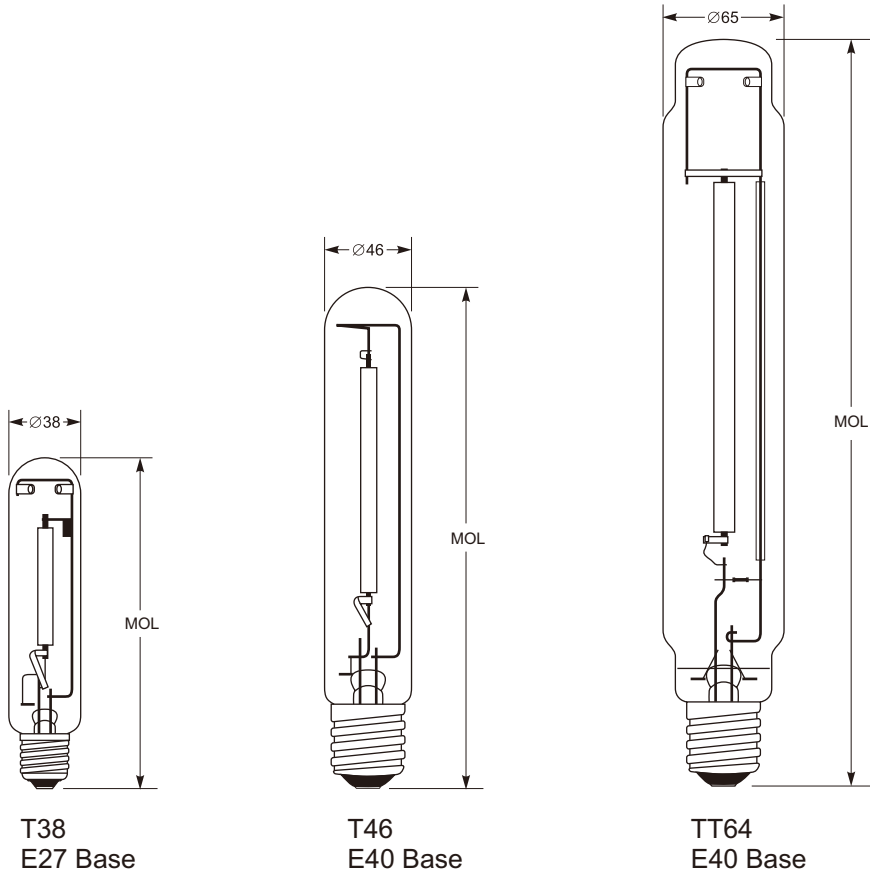


HIGH PRESSURE SODIUM LAMPS

- Universal burning position
- High efficacy/low operating cost
- Long life

Watts	Bulb	Base	Description	Case		Dimensions		Lumens	Burning	Color			Fittable Electrical Box			
				Qty.	Finish	MOL (mm)	Dia (mm)	Initial (lm)	Position	Avg.Life (Hours)	Temp (K)	CRI	Ballast	Ignitor	Capacitor (μ f)	Manufacture Production Code
High Pressure Sodium Lamps - High Lumen Output, Tubular, Clear																
70	T38	E27	NG70/T38/HO	40	Clear	156	38	6600	Universal	28000	2000	20	PLUS-NS-70	CD-7	CAP-12	L00706381213
100	T46	E40	NG100/T46/HO	25	Clear	210	46	10000	Universal	32000	2000	20	PLUS-NS-100	CD-7	CAP-15	L01009161213
150	T46	E40	NG150/T46/HO	25	Clear	210	46	16800	Universal	32000	2000	20	PLUS-NS-150	CD-7	CAP-18	L01509161213
250	T46	E40	NG250/T46/HO	25	Clear	257	46	32000	Universal	32000	2000	22	PLUS-NS-250	CD-7	CAP-32	L02509161213
400	T46	E40	NG400/T46/HO	25	Clear	283	46	56000	Universal	32000	2000	22	PLUS-NS-400	CD-7	CAP-50	L04009161213
600	T46	E40	NG600/T46/HO	25	Clear	292	46	85000	Universal	32000	2000	22	PLUS-NS-600	CD-7G	CAP-85	L06009161213
1000	TT64	E40	NG1000/TT64/HO	12	Clear	392	65	140000	Universal	28000	2000	22	PLUS-NS-1000	CD-7G	CAP-85	L10009641213

All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws
See page 34 for safety handling and warning purposes

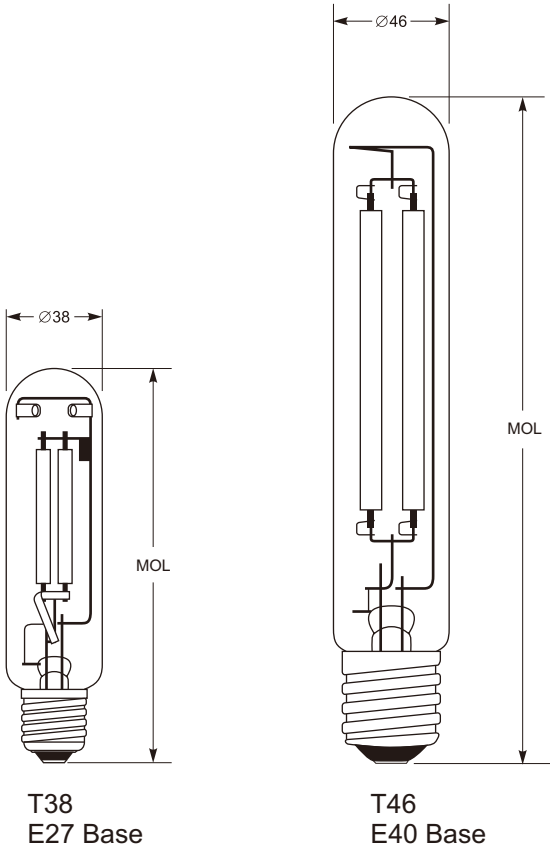


STANDBY HIGH PRESSURE SODIUM LAMPS

- Twin arc-tubes dedign • Universal burning position
- High efficacy
- Superior life hours

Watts	Bulb	Base	Description	Case		Dimensions		Lumens	Burning		Color		Fittable Electrical Box			
				Qty.	Finish	MOL	Dia		Position	Avg.Life	Temp	CRI	Ballast	Ignitor	Capacitor	Manufacture
						(mm)	(mm)	(lm)		(Hours)	(K)				(μ f)	Production Code
Standby High Pressure Sodium Lamps - Tubular, Clear																
70	T38	E27	NG70/T38/SBY	40	Clear	156	38	6000	Horizontal	40000	2000	22	PLUS-NS-70	CD-7	CAP-12	L00706381223
100	T46	E40	NG100/T46/SBY	25	Clear	210	46	9000	Horizontal	40000	2000	22	PLUS-NS-100	CD-7	CAP-15	L01009161223
150	T46	E40	NG150/T46/SBY	25	Clear	210	46	15000	Horizontal	40000	2000	22	PLUS-NS-150	CD-7	CAP-18	L01509161223
250	T46	E40	NG250/T46/SBY	25	Clear	257	46	28000	Horizontal	40000	2000	22	PLUS-NS-250	CD-7	CAP-32	L02509161223
400	T46	E40	NG400/T46/SBY	25	Clear	283	46	48000	Horizontal	40000	2000	22	PLUS-NS-400	CD-7	CAP-50	L04009161223
Standby High Pressure Sodium Lamps - High Lumen Output, Tubular, Clear																
70	T38	E27	NG70/T38/SBY/HO	40	Clear	156	38	6600	Horizontal	50000	2000	22	PLUS-NS-70	CD-7	CAP-12	L00706381233
100	T46	E40	NG100/T46/SBY/HO	25	Clear	210	46	10000	Horizontal	50000	2000	22	PLUS-NS-100	CD-7	CAP-15	L01009161233
150	T46	E40	NG150/T46/SBY/HO	25	Clear	210	46	16800	Horizontal	50000	2000	22	PLUS-NS-150	CD-7	CAP-18	L01509161233
250	T46	E40	NG250/T46/SBY/HO	25	Clear	257	46	32000	Horizontal	50000	2000	22	PLUS-NS-250	CD-7	CAP-32	L02509161233
400	T46	E40	NG400/T46/SBY/HO	25	Clear	283	46	56000	Horizontal	50000	2000	22	PLUS-NS-400	CD-7	CAP-50	L04009161233

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Manage in Accordance with Disposal Laws
See page 34 for safety handling and warning purposes

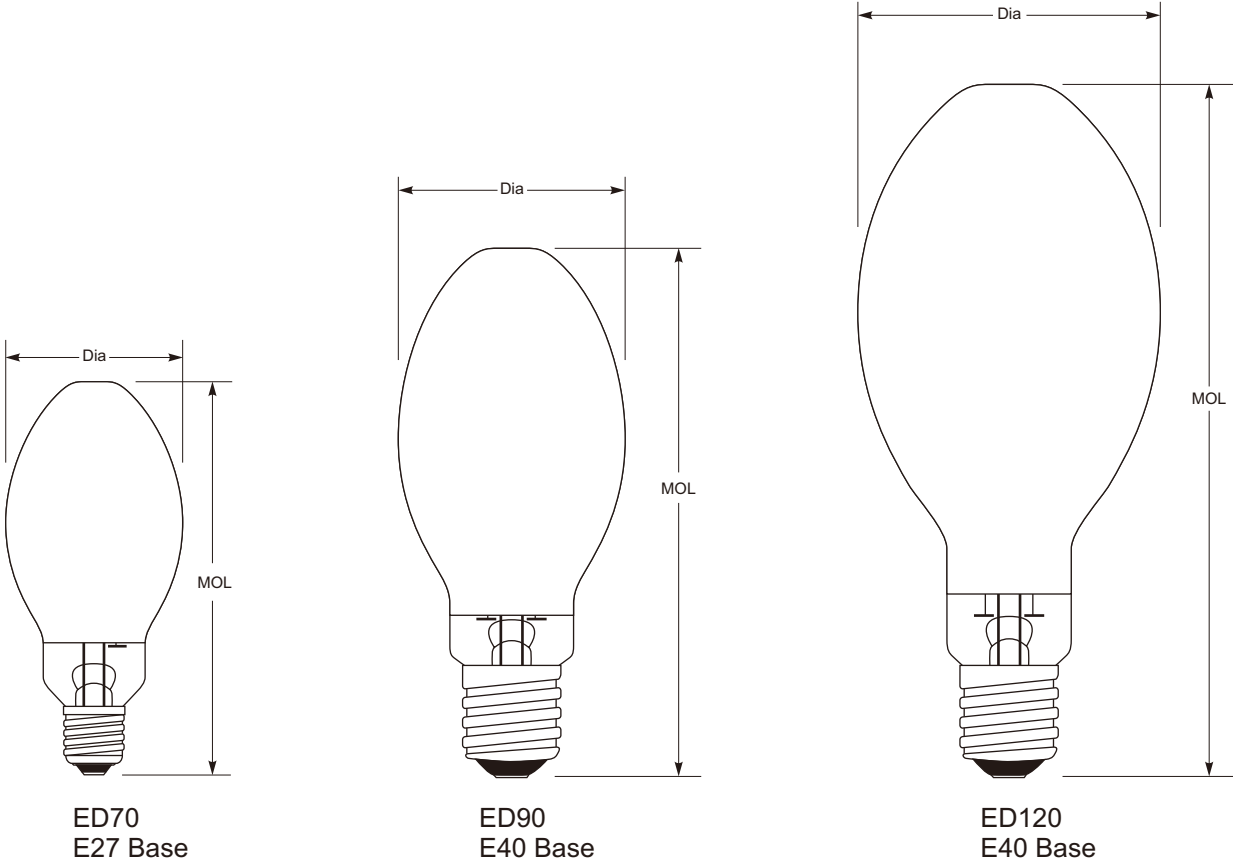


SELF-IGNITOED HIGH PRESSURE SODIUM LAMPS

- Ignitor inside • Work with MV ballasts
- Long life
- Universal burning position

Watts	Bulb	Base	Description	Case		Dimensions		Lumens	Burning		Color		Fittable Electrical Box			
				Qty.	Finish	MOL	Dia		Position	Avg.Life	Temp	CRI	Ballast	Ignitor	Capacitor	Manufacture
						(mm)	(mm)	(lm)		(Hours)	(K)				(μ f)	Production Code
High Pressure Sodium Lamps - Elliptical, Coated, with internal igniter																
70	ED70	E27	NG70/ED70/C/SI	12	Coated	156	70	5000	Universal	18000	2000	20	H43	/	/	L00706132213
110	ED70	E27	NG110/ED70/C/SI	12	Coated	156	70	8000	Universal	12000	2000	20	H39	/	/	L01106132213
215	ED90	E40	NG215/ED90/C/SI	12	Coated	227	90	18000	Universal	24000	2000	25	H37	/	/	L02159182213
360	ED120	E40	NG360/ED120/C/SI	12	Coated	292	120	34000	Universal	24000	2000	25	H33	/	/	L03609172213

All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws
See page 34 for safety handling and warning purposes



HIGH INTENSITY DISCHARGE LAMPS

HIGH INTENSITY DISCHARGE LAMPS

HIGH PRESSURE SODIUM LAMPS FOR GREENHOUSE

- High efficacy
- Enclosed fixtures
- Long life - 24,000+hours

Watts	Bulb	Base	Description	Qty.	Case	Dimensions		Lumens	Burning	Color			Fittable Electrical Box			
					Finish	MOL	Dia	Initial	Position	Avg.Life	Temp	CRI	Ballast	Ignitor	Capacitor	Manufacture
					(mm)	(mm)	(lm)	(Hours)	(K)					(μ f)	Production Code	
High Pressure Sodium Lamps for Greenhouse																
250	T46	E40	NG250/T46/GRO	25	Clear	257	46	32000	Horizontal	32000	2000	22	PLUS-NS-250	CD-7	CAP-32	L02509161233
400	T46	E40	NG400/T46/GRO	25	Clear	283	46	56000	Horizontal	32000	2000	22	PLUS-NS-400	CD-7	CAP-50	L04009161233
600	T46	E40	NG600/T46/GRO	25	Clear	290	46	85000	Horizontal	32000	2000	22	PLUS-NS-600	CD-7G	CAP-85	L06009161233

All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws
See page 34 for safety handling and warning purposes



T46
E40 Base

R

⚠ WARNING

ULTRAVIOLET RADIATION EXPOSURE:

WARNING: This lamp can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if the outer envelope of the lamps 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 products conforms to the following federal regulations: U.S.A: 21 CFR 1040.30 and CANADA: SOR/80-381

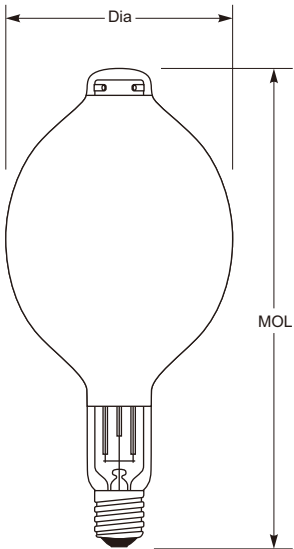
- 1.This lamp is intended for use in open fixtures since it contains a special shield which was designed to contain a ruptured arc tube and thereby minimize the resultant risks of personal injury, property damage, burns and fire. In applications where an additional measure of safety is desired, an enclosed fixture may be used with a lens/diffuser material able to contain hot lamp fragments (up to 2192°F, 1200°C for a ceramic arc tube and 2012°F, 1100°C for quartz). If you are uncertain, contact your fixture manufacturer.
- 2.Metal Halide lamps are constructed of an outer glass jacket and internal arc tube made of quartz. The arc tube operates under high pressure and temperatures as high as 1000°C (1832°F). The arc tube and outer jacket may unexpectedly rupture due to internal causes or external factors such as system malfunction or misapplication, creating a risk of personal injury, property damage, burns and fire. To reduce this risk the following instructions must be adhered to.
- 3.Do not operate lamps in excess of rated voltages of the ballast as this will increase lamp pressure and the possibility of shattering.
- 4.This lamp must be used only with proper circuit and auxiliary equipment and suitable ballast.
- 5.This lamp must be operated with a suitable fixture, ballast and igniter, which have an ANSI designation identical to the ANSI designation in this catalog.
- 6.Do not use this lamp in a fixture designed for less than the rated lamp wattage.
- 7.Failure to comply may result in poor lamp performance and possible personal injury or property damages for which the manufacturer will not be held responsible.
- 8.Do not scratch the glass of bulb or subject this lamp to undue pressure as either may cause the lamp to break. Replace scratched, cracked, broken or damaged bulbs immediately.
- 9.The lamp should be screwed firmly, but not forcibly, into the socket to reduce the possibility of loosening due to vibration. Use of excessive force may result in lamp breakage.
- 10.Do not touch hot lamps with fingers, skin or any flammable material. Lamps may remain hot after being turned off.
- 11.This lamp must be shielded from direct contact with rain, sleet, snow and other liquids to reduce the possibility of breakage. This lamp may implode if broken. Use eye protection and gloves when handling this lamp.
- 12.In an continuously operating system (24 hours/day, 7 days/week), turn lamps off once per week for at least 1 hour. Failure to comply increases the risk of rupture.
- 13.When operating this lamp, the base temperature should not exceed 210°C (410°F) for Mogul base and 190°C (374°F) for Medium base, the outer envelope should not exceed 400°C (752°F). The recommended ambient temperature limit for this lamp is -40°C (-40°F) minimum; 40°C (104°F) maximum.
- 14.Do not use this lamp in a location subject to vibration or shock, unless an adequate vibration-proof fixture is used.
- 15.Do not use this lamp in a corrosive atmosphere unless an adequate corrosion resistant-fixture is used.
- 16.Replace lamp at or before the end of its rated life. Allowing lamps to burn until they fail may increase the risk of inner arc tube rupture.
- 17.Electrically insulate any metal support in contact with glass to reduce the possibility of decomposition of the glass.
- 18.Do not look directly at the lamp during operation to avoid eye inflammation from short wave ultraviolet radiation.
- 19.Do not paint the lamp to prevent its overheating or breakage.
- 20.Do not use this lamp in an ignitable atmosphere (for example gasoline, inflammable spray, thinner, lacquer, dust, etc.) to prevent a fire or explosion unless an adequate fixture is used.
- 21.Do not use this lamp in a powdery or dusty atmosphere in order to eliminate the overheating of the lamp unless an adequate fixture is used.
- 22.The radiation from this lamp may cause colored objects to fade unless an adequate fixture is used.
- 23.Follow all instructions in the manufacturer’s catalog or on the individual box or instruction sheet.

MERCURY LAMPS

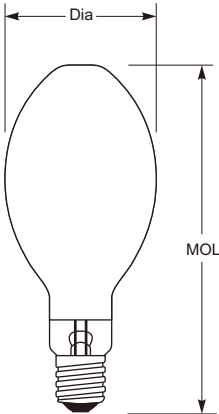
- Long life
- High efficacy/low operating cost

Watts	Bulb	Base	Description	Case Qty.	Finish	Dimensions		Lumens	Avg.Life	Color		Manufacture
						MOL (mm)	Dia (mm)	(lm)	(Hours)	Temp (K)	CRI	Production Code
Mercury Vapor Lamps												
50	ED54	E27	MV50/ED54/DX	12	Deluxe Coated	130	54	1800	6000	4200	40	V00506174303
80	ED70	E27	MV80/ED70/DX	12	Deluxe Coated	156	70	3800	8000	4200	40	V00806134303
		B22d-3	MV80/ED70/B22d-3/DX	12	Deluxe Coated	156	70	3800	8000	4200	40	V00802134303
125	ED75	E27	MV125/ED75/DX	12	Deluxe Coated	170	75	6300	8000	4200	40	V01256174303
		B22d-3	MV125/ED75/B22d-3/DX	12	Deluxe Coated	170	75	6300	8000	4200	40	V01252174303
250	ED90	E40	MV250/ED90/DX	12	Deluxe Coated	227	90	13000	12000	4200	40	V02509184303
400	ED120	E40	MV400/ED120/DX	12	Deluxe Coated	292	120	22500	12000	4200	40	V04009174303
1000	BT180	E40	MV1000/BT180/DX	6	Deluxe Coated	390	180	56000	12000	4200	40	V10009264303

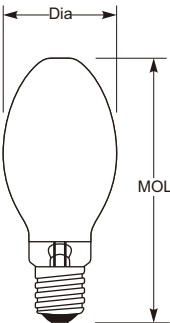
All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws
See page 37 for safety handling and warning purposes



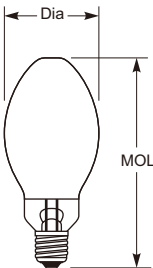
BT180
E40 Base



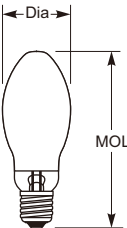
ED120
E40 Base



ED90
E40 Base



ED70 • ED75
E27 Base



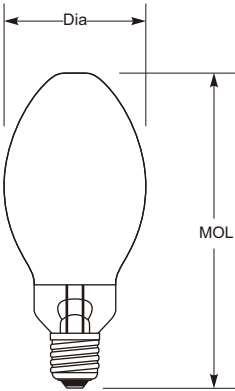
ED55
E27 Base

SELF-BALLASTED MERCURY LAMPS

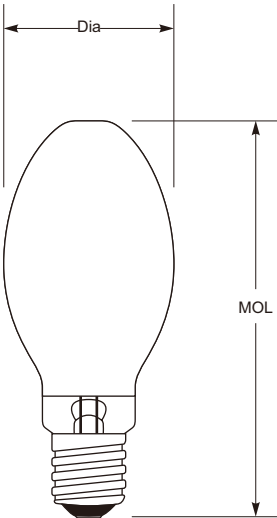
- Retrofit incandescent sockets
- Long life
- High efficacy

Watts	Bulb	Base	Description	Case Qty.	Finish	Dimensions		Lumens	Avg.Life	Color		Manufacture
						MOL (mm)	Dia (mm)	(lm)	(Hours)	Temp (K)	CRI	Production Code
Mercury - Tungsten Blended Lamps												
160	ED75	E27	MBV160/230-240V	12	Deluxe Coated	170	75	3100	6000	4200	52	V01606174413
			MBV160/240-250V	12	Deluxe Coated	170	75	3100	6000	4200	52	V01606174423
250	ED90	E40	MBV250/230-240V	12	Deluxe Coated	227	90	5600	6000	4200	52	V02509184413
			MBV250/240-250V	12	Deluxe Coated	227	90	5600	6000	4200	52	V02509184423
500	ED120	E40	MBV500/230-240V	12	Deluxe Coated	292	120	14000	6000	4200	52	V05009174413

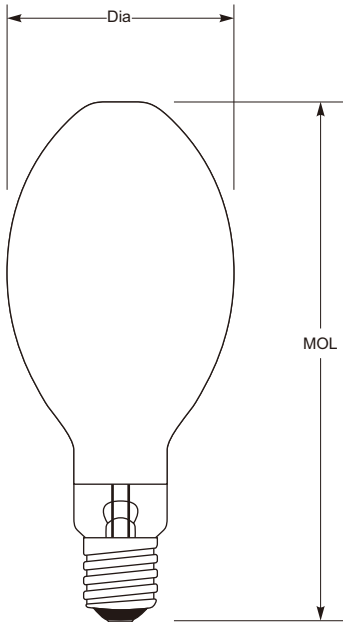
All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws
See page 37 for safety handling and warning purposes



ED75
E27 Base



ED90
E40 Base



ED120
E40 Base

R

WARNING

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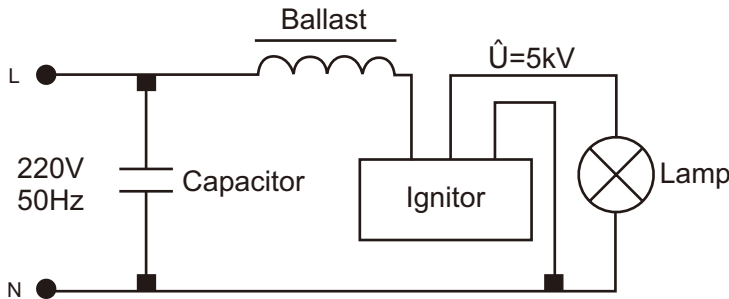
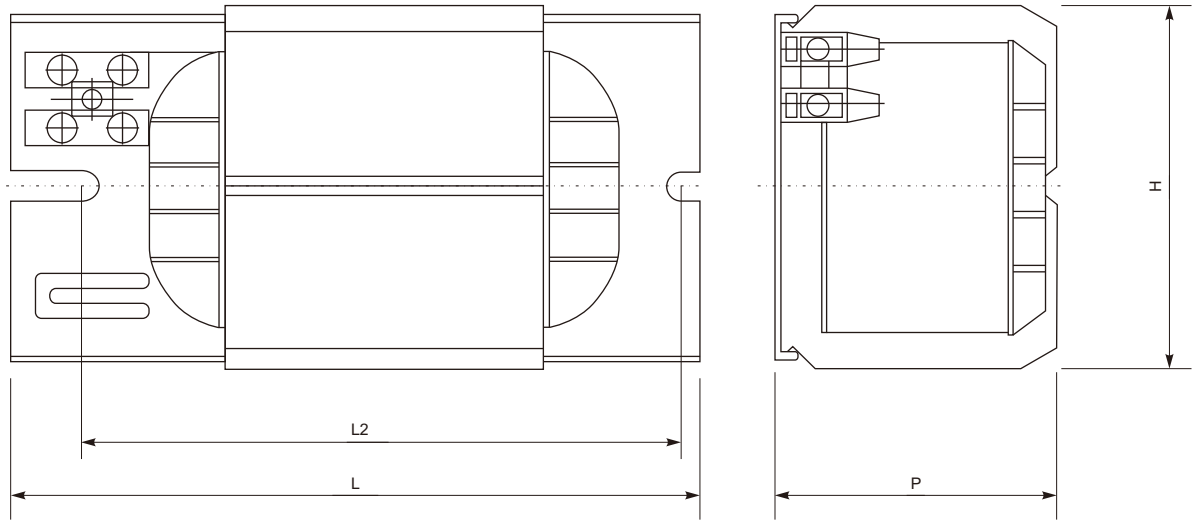
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BALLAST FOR METAL HALIDE & MERCURY VAPOR

- Nominal voltage: 220V-240V
- Nominal frequency: 50Hz
- TW: 130°C

Watts	Voltage	Description	Case Qty.	Current (A)	Power factor (λ)	L (mm)	L2 (mm)	H (mm)	P (mm)	Weight (kg)	Temp. Rise (△t)	Parallel Capacitor μ F ±10% 250V
50	220V-240V	BAJL50	1	0.61	0.44	120	95	60	52	0.90	60	8
175	220V-240V	BAJL175	1	1.50	0.55	120	95	75	65	1.75	70	12
250	220V-240V	BAJL250	1	2.15/2.13	0.55	120	95	75	65	2.00	70	18
400	220V-240V	BAJL400	1	3.40/3.25	0.56	150	125	75	65	2.90	70	28
1000	220V-240V	BAJL1000	1	8.30/7.50	0.61	205	183	112	95	8.00	80	55

All measurements are shown in millimeters unless noted

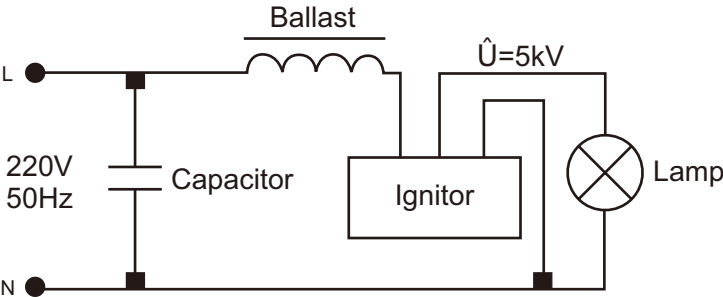
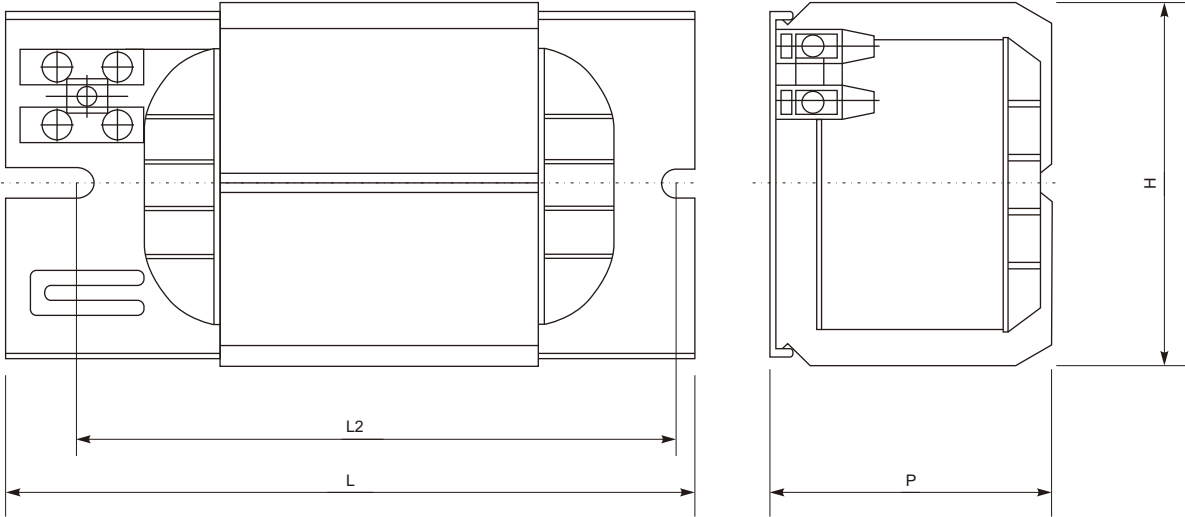


BALLAST FOR HIGH PRESSURE SODIUM & METAL HALIDE

- Nominal voltage: 220V-240V
- Nominal frequency: 50Hz
- TW: 130°C

Watts	Voltage	Description	Case Qty.	Current (A)	Power factor (λ)	Dimensions				Weight (kg)	Temp. Rise (Δt)	Parallel Capacitor μF ±10% 250V
						L (mm)	L2 (mm)	H (mm)	P (mm)			
50	220V-240V	BANG50	1	0.76	0.37	120	95	60	52	1.05	65	9
70	220V-240V	BANG70	1	0.98	0.38	120	95	60	52	1.10	70	12
100	220V-240V	BANG100	1	1.20	0.42	120	95	60	52	1.10	70	13
150	220V-240V	BANG150	1	1.80	0.40	120	95	75	65	1.75	70	18
250	220V-240V	BANG250	1	3.00	0.40	150	125	75	65	2.80	70	32
400	220V-240V	BANG400	1	4.60	0.42	160	135	96	82	4.40	75	50
600	220V-240V	BANG600	1	6.20	0.45	200	172	96	82	7.25	80	65
1000	220V-240V	BANG1000	1	10.30	0.44	240	217	112	95	11.60	75	100

All measurements are shown in millimeters unless noted

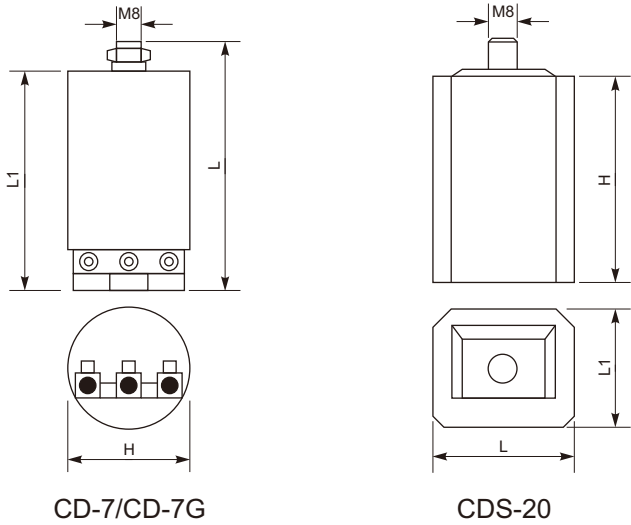


IGNITOR

- Nominal voltage: 220V-240V • Max lamp current: 5A
- Nominal frequency: 50Hz • Load capacity: 20pF-100pF
- Max casing temperature: ≤85°C

Lamp Watts	Voltage	Description	Case Qty.	Ignition Voltage (kV)	Max Current (A)	Dimensions		
						L (mm)	L1 (mm)	H (mm)
70-400	220V-240V	CD-7	100	3.5-5.0	5	91	81	35
1000	220V-240V	CD-7G	100	4.0-5.0	12	105	95	45
2000	380V	CDS-20	100	4.0-5.0	12	41	35	70

All measurements are shown in millimeters unless noted

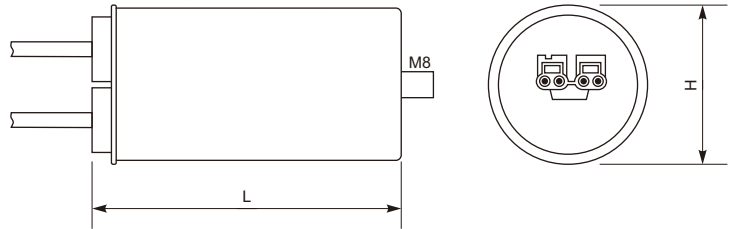


CAPACITOR

- Plastic casing • Max. permitted casing temperature: 95°C
- Small volume inner designed with the device of insurance flame-proof and discharging resistance
- Improve the power factor and lower the power consumption • Be suitable for lamps and lanterns and so on

Capacity (μF)	Voltage	For lamps	Case Qty.	Frequency (Hz)	Hull	Work Temp. (°C)	Dimensions	
							L (mm)	H (mm)
8	250V	HPS/MH50W	100	50/60	PL/AL	-25~105	60	34
12	250V	HPS/MH70W	100	50/60	PL/AL	-25~105	69	35
16	250V	HPS/MH150W	100	50/60	PL/AL	-25~105	68	35
25	250V	MH250W	100	50/60	PL/AL	-25~105	76	40
30	250V	HPS250W/MH400W	100	50/60	PL/AL	-25~105	76	42
50	250V	HPS400W/MH1000W	100	50/60	PL/AL	-25~105	98	45

All measurements are shown in millimeters unless noted



Halogen & Xenon Lamps



Contents

44	J Type	53	PAR 14/16/36
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48	MR11	57	Energy-saving Halogen Lamps
49	MR16		
50	MR16 X-Life™		
51	MR16 S-Life™		
52	JDR/JCDR (Line Voltage MR)		

how to read a table

Watts Energy consumption during proper operation.			Voltage The voltage for proper operation.			Beam Angle The total angle of the directed beam to where the intensity of the beam falls to 50% of the maximum value.			Color Temp. Light temperature measured in Kelvin. The higher the temperature, the cooler the appearance of the light, and vice versa.			
Base The type of base.			ANSI Code The standardization code for the class and electrical characteristics of lamps and ballast as well as fixture requirements.			Spread Type of lamp associated in relation to the beam angle.						
Watts	Bulb	Base	Description	Voltage (V)	ANSI	Case Qty.	CBCP (cd)	Beam Angle	Spread	Avg.Life (Hours)	Color Temp (K)	Manufacture Production Code
Standard MR16 Without Cover												
20	MR16	GU5.3	20MR16/SP	12	ESX	20	3500	12°	Spot	2000	2950	H02016612001
			20MR16/NFL	12	BBF	20	1200	24°	N.Flood	2000	2950	H02016624001
			20MR16/FL	12	BAB	20	600	36°	Flood	2000	2950	H02016636001
35	MR16	GU5.3	35MR16/SP	12	FMT	20	6000	12°	Spot	2000	2950	H03516612001
			35MR16/NFL	12	FMV	20	2300	24°	N.Flood	2000	2950	H03516624001
			35MR16/FL	12	FMW	20	1300	36°	Flood	2000	2950	H03516636001
50	MR16	GU5.3	50MR16/SP	12	EXT	20	11000	12°	Spot	2000	3000	H05016612001
			50MR16/NFL	12	EXZ	20	3600	24°	N.Flood	2000	3000	H05016624001
			50MR16/FL	12	EXN	20	2000	36°	Flood	2000	3000	H05016636001
Bulbs Code for size and shape. Illustrations can be found on the bottom of each page and the beginning of each chapter.			Description The lamp's identification code.			CBCP The intensity at the center or maximum intensity of the beam.			Average Life An average rating, in hours, indicating when 50% of a large group of lamps, operated at nominal lamp voltage and current, have failed.			Manufacture Production Code Production code during the manufacturing process.
Case Qty. Number of product units packed in a case.												

HALOGEN LAMPS

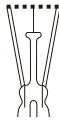
FILAMENTS



CC-8



CC-2V



CC-6



Axial (AX)



Tranverse (AR)



C-8 Double End

LAMPS



J Type



MR-11



MR-16



JC G4/G5.3/GY6.35



JCD G8S



JCD G8



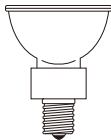
JCD G9



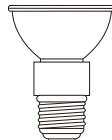
JD BA15d



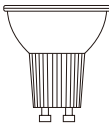
JD E11



JDR E14



JDR E26



JDR GU10



PAR14



PAR16



PAR20



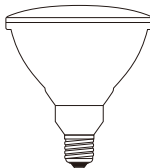
PAR30



PAR30
Long Neck



PAR36



PAR38

BASES



G4



G6.35



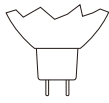
G8



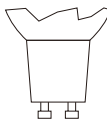
G9



GU4



GU5.3



GU10



RSC



E11



BA15d



E14



E26



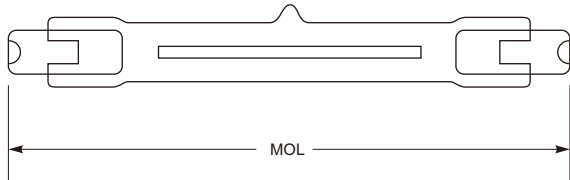
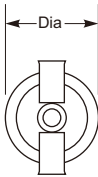
Screw Term

J TYPE SERIES

- Crisp white light
- Available up to 1,500 watts
- 120/130V operation

Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	Dimension		Approx Lumens (lm)	Avg.Life (Hours)	Manufacture Production Code
						MOL (in)	Dia (in)			
Double-Ended Linear Lamps										
100	T3	R7s	J230V-100	230	100	1400	78.3	8	1500	H01002300783
			J240V-100	240	100	1400	78.3	8	1500	H01002400783
150	T3	R7s	J230V-150 SHORT	230	100	2400	78.3	8	1500	H01502300783
			J240V-150 SHORT	240	100	2400	78.3	8	1500	H01502400783
			J230V-150 LONG	230	100	2400	117.6	8	1500	H01502301183
200	T4	R7s	J230V-200 SHORT	230	100	3400	78.3	10	1500	H02002300783
			J230V-200 LONG	230	100	3400	117.6	10	1500	H02002301183
			J240V-200 LONG	240	100	3400	117.6	10	1500	H02002401183
250	T4	R7s	J230V-250 SHORT	230	100	4500	78.3	10	1500	H02502300783
300	T3	R7s	J120V-300	120	100	5950	117.6	8	1500	H03001201183
			J230V-300	230	100	5950	117.6	8	1500	H03002301183
			J240V-300	240	100	5950	117.6	8	1500	H03002401183
500	T4	R7s	J120V-500	120	100	10500	117.6	10	1500	H05001201183
			J230V-500	230	100	10500	117.6	10	1500	H05002301183
			J240V-500	240	100	10500	117.6	10	1500	H05002401183
750	T4	R7s	J230V-750	230	50	16500	189.1	10	1500	H07502301893
			J240V-750	240	50	16500	189.1	10	1500	H07502401893
1000	T4	R7s	J120V-1000	120	50	21000	189.1	10	1500	H10001201893
			J230V-1000	230	50	21000	189.1	10	1500	H10002301893
			J240V-1000	240	50	21000	189.1	10	1500	H10002401893
			J240V-1000 LONG	240	50	21000	189.1	10	1500	H10002402543
1500	T4	R7s	J220V-1500	220	50	33000	254.1	10	1500	H15002202543
			J230V-1500	230	50	33000	254.1	10	1500	H15002302543
			J240V-1500	240	50	33000	254.1	10	1500	H15002402543
2000	T4	R7s	J230V-2000	230	50	44000	254.1	10	1500	H20002302543
			J240V-2000	240	50	44000	254.1	10	1500	H20002402543

All measurements are shown in millimeters unless noted



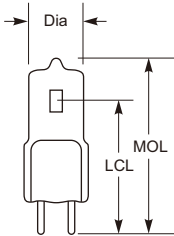
R7s Base

Bi-Pin JC SERIES (Low Voltage Capsule)

- Crisp white light
- Compact size
- Low voltage - 12V

Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	Dimension			Approx Lumens (lm)	Avg.Life (Hours)	Manufacture Production Code
						Dia (mm)	MOL (mm)	LCL (mm)			
Capsule Lamps -G4, G5.3, & G6.35											
20	T3	G4	JC20W/G4	12	100	8	33	22	350	2000	H02012242801
30	T3	G4	JC30W/G4	12	100	8	33	22	510	2000	H03012242801
35	T3	G5.3	JC35W/G5.3	12	100	10	44	27	595	2000	H03512252801
		G6.35	JC35W/G6.35	12	100	10	44	30	595	2000	H03512262801
50	T3	G5.3	JC50W/G5.3	12	100	10	44	27	900	2000	H05012252801
		G6.35	JC50W/G6.35	12	100	10	44	30	900	2000	H05012262801
75	T3	G5.3	JC75W/G5.3	12	100	10	44	27	1350	2000	H07512252801
		G6.35	JC75W/G6.35	12	100	10	44	30	1350	2000	H07512262801
100	T4	G5.3	JC100W/G5.3	12	100	11.5	44	30	2000	2000	H10012252801
		G6.35	JC100W/G6.35	12	100	11.5	44	30	2000	2000	H10012262801

All measurements are shown in millimeters unless noted



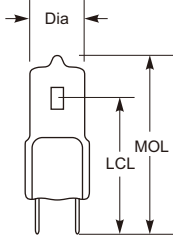
G4 • G5.3 • G6.35 Base

Bi-Pin JCD SERIES (Line-Voltage Capsule)

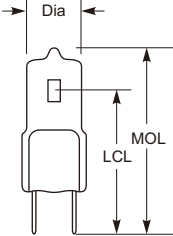
- Crisp white light
- 230V operation
- Available in short capsule

Watts	Bulb	Base	Description	Voltage (V)	Case	Dimension			Approx	Avg.Life (Hours)	Manufacture Production Code
					Qty.	Dia (mm)	MOL (mm)	LCL (mm)	Lumens (lm)		
Capsule Lamps - G8											
20	T4	G8	JCD20W/G8	230	100	13.5	44	30	330	2000	H02030282803
	T4 Short	G8S	JCD20W/G8S	230	100	13.5	33	22.5	330	2000	H02030282813
25	T4	G8	JCD25W/G8	230	100	13.5	44	30	420	2000	H02530282803
35	T4	G8	JCD35W/G8	230	100	13.5	44	30	650	2000	H03530282803
	T4 Short	G8S	JCD35W/G8S	230	100	13.5	44	22.5	650	2000	H03530282813
50	T4	G8	JCD50W/G8	230	100	13.5	44	30	950	2000	H05030282803
75	T4	G8	JCD75W/G8	230	100	13.5	44	30	1300	2000	H07530282803
100	T4	G8	JCD100W/G8	230	100	13.5	44	30	1900	2000	H10030282803
Capsule Lamps - G9											
20	T4	G9	JCD20W/G9	230	100	13.5	44	30	330	2000	H02030292803
25	T4	G9	JCD25W/G9	230	100	13.5	44	30	420	2000	H02530292803
35	T4	G9	JCD35W/G9	230	100	13.5	44	30	650	2000	H03530292803
40	T4	G9	JCD40W/G9	230	100	13.5	44	30	750	2000	H04030292803
50	T4	G9	JCD50W/G9	230	100	13.5	44	30	950	2000	H05030292803
60	T4	G9	JCD60W/G9	230	100	13.5	44	30	1080	2000	H06030292803
75	T4	G9	JCD75W/G9	230	100	13.5	44	30	1300	2000	H07530292803
100	T4	G9	JCD100W/G9	230	100	13.5	44	30	1900	2000	H10030292803

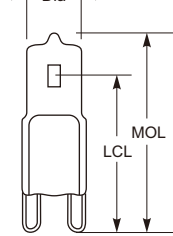
All measurements are shown in millimeters unless noted



G8S Base



G8 Base



G9 Base

TUNGSTEN HALOGEN LAMPS

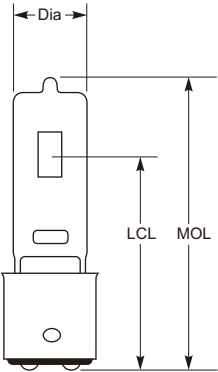
TUNGSTEN HALOGEN LAMPS

JD SERIES (Single-Ended Linear)

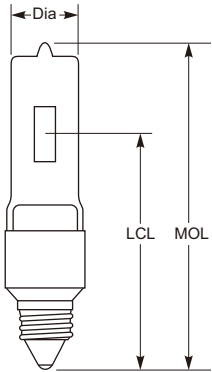
- Crisp white light
- 230/240V operation
- Single-ended

Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	Dimension			Approx Lumens (lm)	Avg.Life (Hours)	Color Temp (K)	Manufacture Production Code
						Dia (mm)	MOL (mm)	LCL (mm)				
Double Contact Bayonet Base-BA15d (D.C. Bay)												
35	T4	BA15d	JD35/BA15d	230V-240V	100	14	66	32	400	2000	2800	H03515053003
50	T4	BA15d	JD50/BA15d	230V-240V	100	14	66	32	550	2000	2800	H05015053003
75	T4	BA15d	JD75/BA15d	230V-240V	100	14	66	32	900	2000	2800	H07515053003
100	T4	BA15d	JD100/BA15d	230V-240V	100	14	66	35	1200	2000	2900	H10015053003
150	T4	BA15d	JD150/BA15d	230V-240V	100	14	66	35	2100	2000	2900	H15015053003
250	T4	BA15d	JD250/BA15d	230V-240V	100	14	66	35	4500	2000	2900	H25015053003
Mini Candelabra Base - E11(Mini-Can)												
35	T4	E11	JD35/E11	230V-240V	100	14	66	32	400	2000	2800	H03511053003
50	T4	E11	JD50/E11	230V-240V	100	14	66	32	550	2000	2800	H05011053003
75	T4	E11	JD75/E11	230V-240V	100	14	66	32	900	2000	2800	H07511053003
100	T4	E11	JD100/E11	230V-240V	100	14	66	35	1200	2000	2900	H10011053003
150	T4	E11	JD150/E11	230V-240V	100	14	66	35	2100	2000	2900	H15011053003
250	T4	E11	JD250/E11	230V-240V	100	14	66	35	4500	2000	2900	H25011053003
500	T4	E11	JD500/E11	230V-240V	100	14	66	35	9500	2000	2900	H50011053003

All measurements are shown in millimeters unless noted



BA15d Base



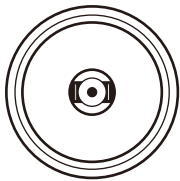
E11 Base

MR-11 SERIES

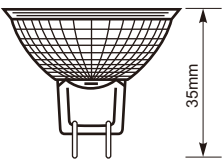
- Accurate beam control
- Crisp white light
- Available with/without cover
- Consistent light color and brightness

Watts	Bulb	Base	Description	Voltage (V)	ANSI	Case Qty.	CBCP (cd)	Beam Angle	Spread	Avg.Life (Hours)	Color Temp (K)	Manufacture Production Code
Standard MR11 Without Cover												
20	MR11	GU4	20MR11/NSP	12	FTB	20	3000	10°	N.Spot	2000	2925	H02011610001
			20MR11/SP	12	FTC	20	1500	20°	Spot	2000	2925	H02011620001
			20MR11/NFL	12	FTD	20	600	30°	N.Flood	2000	2925	H02011630001
35	MR11	GU4	35MR11/NSP	12	FTE	20	6000	10°	N.Spot	2000	2950	H03511610001
			35MR11/SP	12	FTF	20	2400	20°	Spot	2000	2950	H03511620001
			35MR11/NFL	12	FTH	20	1300	30°	N.Flood	2000	2950	H03511630001
Standard MR11 With Cover												
20	MR11	GU4	20MR11/NSP/C	12	FTB	20	3000	10°	N.Spot	2000	2925	H02011610101
			20MR11/SP/C	12	FTC	20	1500	20°	Spot	2000	2925	H02011620101
			20MR11/NFL/C	12	FTD	20	600	30°	N.Flood	2000	2925	H02011630101
35	MR11	GU4	35MR11/NSP/C	12	FTE	20	6000	10°	N.Spot	2000	2950	H03511610101
			35MR11/SP/C	12	FTF	20	2400	20°	Spot	2000	2950	H03511620101
			35MR11/NFL/C	12	FTH	20	1300	30°	N.Flood	2000	2950	H03511630101

All measurements are shown in millimeters unless noted



Max Ø=35mm



MR11/GU4



GU4

TUNGSTEN HALOGEN LAMPS

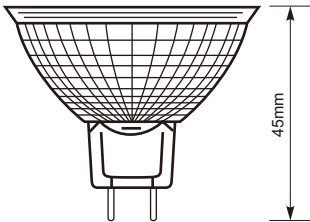
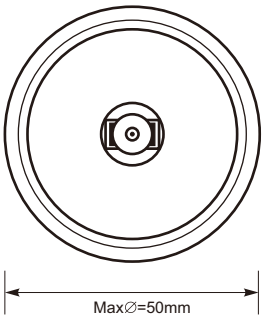
TUNGSTEN HALOGEN LAMPS

MR-16 SERIES

- Accurate beam control
- Available with/without cover
- Consistent light color and brightness

Watts	Bulb	Base	Description	Voltage (V)	ANSI	Case Qty.	CBCP (cd)	Beam Angle	Spread	Avg.Life (Hours)	Color Temp (K)	Manufacture Production Code
Standard MR16 Without Cover												
20	MR16	GU5.3	20MR16/SP	12	ESX	20	3500	12°	Spot	2000	2950	H02016612001
			20MR16/NFL	12	BBF	20	1200	24°	N.Flood	2000	2950	H02016624001
			20MR16/FL	12	BAB	20	600	36°	Flood	2000	2950	H02016636001
35	MR16	GU5.3	35MR16/SP	12	FMT	20	6000	12°	Spot	2000	2950	H03516612001
			35MR16/NFL	12	FMV	20	2300	24°	N.Flood	2000	2950	H03516624001
			35MR16/FL	12	FMW	20	1300	36°	Flood	2000	2950	H03516636001
50	MR16	GU5.3	50MR16/SP	12	EXT	20	11000	12°	Spot	2000	3000	H05016612001
			50MR16/NFL	12	EXZ	20	3600	24°	N.Flood	2000	3000	H05016624001
			50MR16/FL	12	EXN	20	2000	36°	Flood	2000	3000	H05016636001
			50MR16/WFL	12	FNV	20	850	60°	W.Flood	2000	3000	H05016660001
75	MR16	GU5.3	75MR16/SP	12	EYF	20	13000	12°	Spot	2000	3000	H07516612001
			75MR16/NFL	12	EYJ	20	4800	24°	N.Flood	2000	3000	H07516624001
			75MR16/FL	12	EYC	20	2700	36°	Flood	2000	3000	H07516636001
Standard MR16 With Cover												
20	MR16	GU5.3	20MR16/SP/C	12	ESX	20	3500	12°	Spot	2000	2950	H02016612101
			20MR16/NFL/C	12	BBF	20	1200	24°	N.Flood	2000	2950	H02016624101
			20MR16/FL/C	12	BAB	20	600	36°	Flood	2000	2950	H02016636101
35	MR16	GU5.3	35MR16/SP/C	12	FMT	20	6000	12°	Spot	2000	2950	H03516612101
			35MR16/NFL/C	12	FMV	20	2300	24°	N.Flood	2000	2950	H03516624101
			35MR16/FL/C	12	FMW	20	1300	36°	Flood	2000	2950	H03516636101
50	MR16	GU5.3	50MR16/SP/C	12	EXT	20	11000	12°	Spot	2000	3000	H05016612101
			50MR16/NFL/C	12	EXZ	20	3600	24°	N.Flood	2000	3000	H05016624101
			50MR16/FL/C	12	EXN	20	2000	36°	Flood	2000	3000	H05016636101
			50MR16/WFL/C	12	FNV	20	850	60°	W.Flood	2000	3000	H05016660101
75	MR16	GU5.3	75MR16/SP/C	12	EYF	20	13000	12°	Spot	2000	3000	H07516612101
			75MR16/NFL/C	12	EYJ	20	4800	24°	N.Flood	2000	3000	H07516624101
			75MR16/FL/C	12	EYC	20	2700	36°	Flood	2000	3000	H07516636101

All measurements are shown in millimeters unless noted



MR16/GU5.3



GU5.3



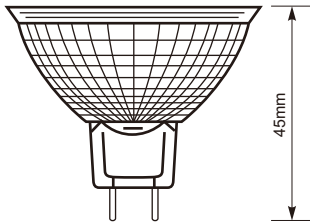
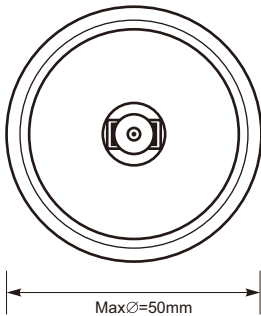
4000 Hrs

MR-16 X-Life™ SERIES

- Accurate beam control
- Available with/without cover
- Consistent light color and brightness
- Extra long life - 4,000 hours

Watts	Bulb	Base	Description	Voltage (V)	ANSI	Case Qty.	CBCP (cd)	Beam Angle	Spread	Avg.Life (Hours)	Color Temp (K)	Manufacture Production Code
Extra Long Life MR16 Without Cover												
20	MR16	GU5.3	20MR16X-LIFE/SP	12	ESX	20	3500	12°	Spot	4000	2950	H02016612201
			20MR16X-LIFE/NFL	12	BBF	20	870	24°	N.Flood	4000	2950	H02016624201
			20MR16X-LIFE/FL	12	BAB	20	510	36°	Flood	4000	2950	H02016636201
35	MR16	GU5.3	35MR16X-LIFE/SP	12	FMT	20	6000	12°	Spot	4000	2950	H03516612201
			35MR16X-LIFE/NFL	12	FMV	20	2000	24°	N.Flood	4000	2950	H03516624201
			35MR16X-LIFE/FL	12	FMW	20	1200	36°	Flood	4000	2950	H03516636201
50	MR16	GU5.3	50MR16X-LIFE/SP	12	EXT	20	11000	12°	Spot	4000	3000	H05016612201
			50MR16X-LIFE/NFL	12	EXZ	20	3000	24°	N.Flood	4000	3000	H05016624201
			50MR16X-LIFE/FL	12	EXN	20	1580	36°	Flood	4000	3000	H05016636201
			50MR16X-LIFE/WFL	12	FNV	20	750	60°	W.Flood	4000	3000	H05016660201
75	MR16	GU5.3	75MR16X-LIFE/SP	12	EYF	20	12000	12°	Spot	4000	3000	H07516612201
			75MR16X-LIFE/NFL	12	EYJ	20	4600	24°	N.Flood	4000	3000	H07516624201
			75MR16X-LIFE/FL	12	EYC	20	2200	36°	Flood	4000	3000	H07516636201
Extra Long Life MR16 With Cover												
20	MR16	GU5.3	20MR16X-LIFE/SP/C	12	ESX	20	3500	12°	Spot	4000	2950	H02016612301
			20MR16X-LIFE/NFL/C	12	BBF	20	870	24°	N.Flood	4000	2950	H02016624301
			20MR16X-LIFE/FL/C	12	BAB	20	510	36°	Flood	4000	2950	H02016636301
35	MR16	GU5.3	35MR16X-LIFE/SP/C	12	FMT	20	6000	12°	Spot	4000	2950	H03516612301
			35MR16X-LIFE/NFL/C	12	FMV	20	2000	24°	N.Flood	4000	2950	H03516624301
			35MR16X-LIFE/FL/C	12	FMW	20	1200	36°	Flood	4000	2950	H03516636301
50	MR16	GU5.3	50MR16X-LIFE/SP/C	12	EXT	20	11000	12°	Spot	4000	3000	H05016612301
			50MR16X-LIFE/NFL/C	12	EXZ	20	3000	24°	N.Flood	4000	3000	H05016624301
			50MR16X-LIFE/FL/C	12	EXN	20	1580	36°	Flood	4000	3000	H05016636301
			50MR16X-LIFE/WFL/C	12	FNV	20	750	60°	W.Flood	4000	3000	H05016660301
75	MR16	GU5.3	75MR16X-LIFE/SP/C	12	EYF	20	12000	12°	Spot	4000	3000	H07516612301
			75MR16X-LIFE/NFL/C	12	EYJ	20	4600	24°	N.Flood	4000	3000	H07516624301
			75MR16X-LIFE/FL/C	12	EYC	20	2200	36°	Flood	4000	3000	H07516636301

All measurements are shown in millimeters unless noted



MR16/GU5.3



GU5.3



MR-16 S-Life™ SERIES

- Accurate beam control

• Available with/without cover

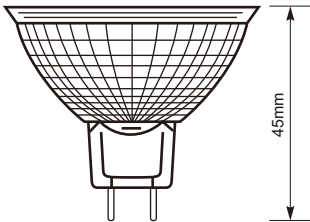
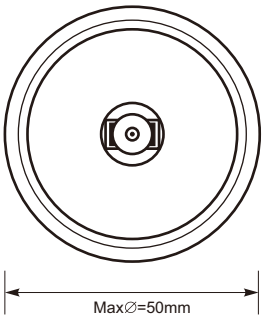
• Consistent light color and brightness
- Crisp white light

• Extra long life - 10,000 hours

10000 Hrs

Watts	Bulb	Base	Description	Voltage (V)	ANSI	Case Qty.	CBCP (cd)	Beam Angle	Spread	Avg.Life (Hours)	Color Temp (K)	Manufacture Production Code
Extra Long Life MR16 Without Cover												
20	MR16	GU5.3	20MR16S-LIFE/SP	12	ESX	20	2400	12°	Spot	10000	2850	H02016612401
			20MR16S-LIFE/NFL	12	BBF	20	1000	24°	N.Flood	10000	2850	H02016624401
			20MR16S-LIFE/FL	12	BAB	20	400	36°	Flood	10000	2850	H02016636401
35	MR16	GU5.3	35MR16S-LIFE/SP	12	FMT	20	3200	12°	Spot	10000	2850	H03516612401
			35MR16S-LIFE/NFL	12	FMV	20	1600	24°	N.Flood	10000	2850	H03516624401
			35MR16S-LIFE/FL	12	FMW	20	900	36°	Flood	10000	2850	H03516636401
50	MR16	GU5.3	50MR16S-LIFE/SP	12	EXT	20	5500	12°	Spot	10000	2850	H05016612401
			50MR16S-LIFE/NFL	12	EXZ	20	2500	24°	N.Flood	10000	2850	H05016624401
			50MR16S-LIFE/FL	12	EXN	20	1400	36°	Flood	10000	2850	H05016636401
			50MR16S-LIFE/WFL	12	FNV	20	700	60°	W.Flood	10000	2850	H05016660401
75	MR16	GU5.3	75MR16S-LIFE/SP	12	EYF	20	6000	12°	Spot	10000	2850	H07516612401
			75MR16S-LIFE/NFL	12	EYJ	20	2500	24°	N.Flood	10000	2850	H07516624401
			75MR16S-LIFE/FL	12	EYC	20	1400	36°	Flood	10000	2850	H07516636401
Extra Long Life MR16 With Cover												
20	MR16	GU5.3	20MR16S-LIFE/SP/C	12	ESX	20	2300	12°	Spot	10000	2850	H02016612501
			20MR16S-LIFE/NFL/C	12	BBF	20	900	24°	N.Flood	10000	2850	H02016624501
			20MR16S-LIFE/FL/C	12	BAB	20	360	36°	Flood	10000	2850	H02016636501
35	MR16	GU5.3	35MR16S-LIFE/SP/C	12	FMT	20	3000	12°	Spot	10000	2850	H03516612501
			35MR16S-LIFE/NFL/C	12	FMV	20	1200	24°	N.Flood	10000	2850	H03516624501
			35MR16S-LIFE/FL/C	12	FMW	20	900	36°	Flood	10000	2850	H03516636501
50	MR16	GU5.3	50MR16S-LIFE/SP/C	12	EXT	20	5000	12°	Spot	10000	2850	H05016612501
			50MR16S-LIFE/NFL/C	12	EXZ	20	2400	24°	N.Flood	10000	2850	H05016624501
			50MR16S-LIFE/FL/C	12	EXN	20	1300	36°	Flood	10000	2850	H05016636501
			50MR16S-LIFE/WFL/C	12	FNV	20	600	60°	W.Flood	10000	2850	H05016660501
75	MR16	GU5.3	75MR16S-LIFE/SP/C	12	EYF	20	5800	12°	Spot	10000	2850	H07516612501
			75MR16S-LIFE/NFL/C	12	EYJ	20	2400	24°	N.Flood	10000	2850	H07516624501
			75MR16S-LIFE/FL/C	12	EYC	20	1300	36°	Flood	10000	2850	H07516636501

All measurements are shown in millimeters unless noted



MR16/GU5.3



GU5.3

JDR & JCDR SERIES (Line Voltage MR)

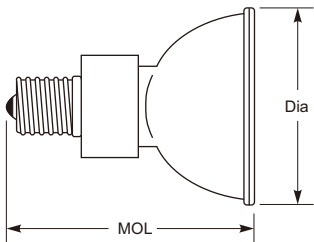
- Crisp white light

• Wide range of beam spread

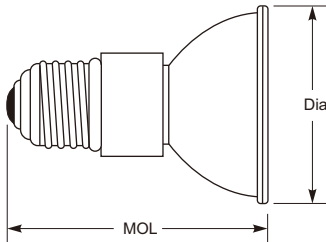
• Available with/without cover
- 120V operation

Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	Dimension Dia (mm)	MOL (mm)	Approx Lumens (lm)	CBCP (cd)	Beam Angle	Spread	Avg.Life (Hours)	Color Temp (K)	Manufacture Production Code
JDR Series - E14 & E27 Without Cover														
35	MR16	E14	JDR35/FL/E14	230V-240V	10	50	74	320	700	40°	Flood	2000	3000	H03514340303
		E27	JDR35/FL/E27	230V-240V	10	50	75	320	700	40°	Flood	2000	3000	H03527340303
50	MR16	E14	JDR50/FL/E14	230V-240V	10	50	74	590	1200	40°	Flood	2000	3000	H05014340303
		E27	JDR50/WFL/E27	230V-240V	10	50	75	590	1200	40°	W. Flood	2000	3000	H05027340303
75	MR16	E14	JDR75/FL/E14	230V-240V	10	50	74	990	1300	40°	Flood	2000	3000	H07514340303
		E27	JDR75/WFL/E27	230V-240V	10	50	75	990	1300	40°	W. Flood	2000	3000	H07527340303
JDR Series - GU10 With Cover														
35	MR16	GU10	JDR35/FL/GU10	230V-240V	20	50	52	320	1800	25°	Flood	2000	3000	H03510325303
			JDR35/WFL/GU10	230V-240V	20	50	52	320	1800	50°	W. Flood	2000	3000	H03510350303
50	MR16	GU10	JDR50/FL/GU10	230V-240V	20	50	52	590	1800	25°	Flood	2000	3000	H05010325303
			JDR50/WFL/GU10	230V-240V	20	50	52	590	1800	50°	W. Flood	2000	3000	H05010350303
75	MR16	GU10	JDR75/FL/GU10	230V-240V	20	64	62	990	1800	25°	Flood	2000	3000	H07510325303
			JDR75/WFL/GU10	230V-240V	20	64	62	990	1800	50°	W. Flood	2000	3000	H07510350303
JCDR Series - With Cover														
50	MR16	G5.3	JCDR50	230V-240V	20	51	45	980	1200	38°	Flood	2000	3000	H05054383003
75	MR16	G5.3	JCDR75	230V-240V	20	51	45	1500	1300	38°	Flood	2000	3000	H07554383003
100	MR16	G5.3	JCDR100	230V-240V	20	51	45	2000	2800	38°	Flood	2000	3000	H10054383003

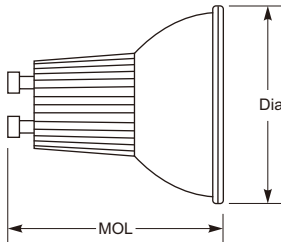
All measurements are shown in millimeters unless noted



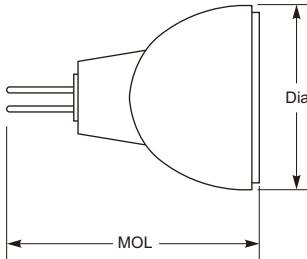
E14 Base



E27 Base



GU10 Base



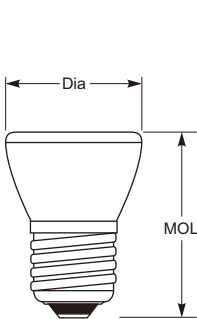
G5.3 Base

PAR14/16/36 SERIES

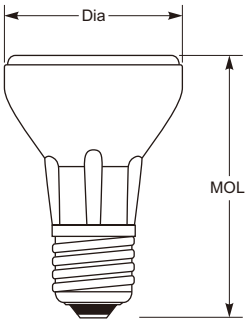
- Crisp white light
- Directional light source
- Long life
- PAR14 and PAR16 available in 230/240V

Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	Dimension MOL (mm)	Dia (mm)	Approx Lumens (lm)	Beam Angle	Spread	Avg.Life (Hours)	Manufacture Production Code
PAR14 Series - E27 Base												
35	PAR14	E27	35PAR14/230/FL	230	12	57	44	300	50°	Flood	2000	H35774503033
PAR16 Series - E27 Base												
60	PAR16	E27	60PAR16/230/NSP	230	12	73	51	650	10°	N. Spot	2000	H60771101033
			60PAR16/230/NFL	230	12	73	51	650	30°	N. Flood	2000	H60771303033
			60PAR16/240/NSP	240	12	73	51	500	10°	N. Spot	2000	H60771101043
			60PAR16/240/NFL	240	12	73	51	500	30°	N. Flood	2000	H60771303043
75	PAR16	E27	75PAR16/230/NSP	230	12	73	51	900	10°	N. Spot	2000	H75771101033
			75PAR16/230/NFL	230	12	73	51	900	30°	N. Flood	2000	H75771303033
			75PAR16/240/NSP	240	12	73	51	700	10°	N. Spot	2000	H75771101043
			75PAR16/240/NFL	240	12	73	51	700	30°	N. Flood	2000	H75771303043
PAR36 Series												
36	PAR36	E27	36PAR36/VNSP	12	12	70	114	500	5°	V.N. Spot	4000	H36773051011
			36PAR36/NSP	12	12	70	114	500	13°	N. Spot	4000	H36773132011
			36PAR36/WFL	12	12	70	114	500	32°	W. Flood	4000	H36773323011
50	PAR36	E27	50PAR36/VNSP	12	12	70	114	700	5°	V.N. Spot	4000	H50773051011
			50PAR36/NSP	12	12	70	114	700	13°	N. Spot	4000	H50773052011
			50PAR36/WFL	12	12	70	114	700	32°	W. Flood	4000	H50773053011

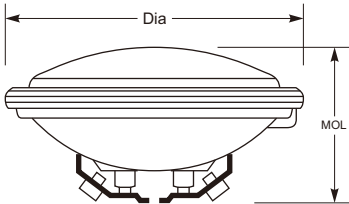
All measurements are shown in millimeters unless noted



PAR14
E27 Base



PAR16
E27 Base



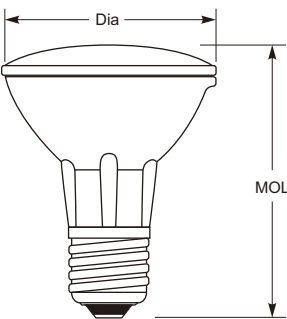
PAR36
Screw Terminal Base

PAR20 SERIES

- Crisp white light
- Directional light source
- Long life
- Available in 230/240V

Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	Dimension MOL (mm)	Dia (mm)	Approx Lumens (lm)	Beam Angle	Spread	Avg.Life (Hours)	Manufacture Production Code
PAR20 Series - E27 Base												
35	PAR20	E27	35PAR20/230/SP	230	30	84	63.5	380	12°	Spot	2500	H35772121033
			35PAR20/230/NFL	230	30	84	63.5	380	24°	N. Flood	2500	H35772242033
			35PAR20/230/FL	230	30	84	63.5	380	36°	Flood	2500	H35772363033
			35PAR20/240/SP	240	30	84	63.5	380	12°	Spot	2500	H35772121043
			35PAR20/240/NFL	240	30	84	63.5	380	24°	N. Flood	2500	H35772242043
			35PAR20/240/FL	240	30	84	63.5	380	36°	Flood	2500	H35772363043
50	PAR20	E27	50PAR20/230/SP	230	30	84	63.5	550	12°	Spot	2500	H50772121033
			50PAR20/230/NFL	230	30	84	63.5	550	24°	N. Flood	2500	H50772242033
			50PAR20/230/FL	230	30	84	63.5	550	36°	Flood	2500	H50772363033
			50PAR20/240/SP	240	30	84	63.5	550	12°	Spot	2500	H50772121043
			50PAR20/240/NFL	240	30	84	63.5	550	24°	N. Flood	2500	H50772242043
			50PAR20/240/FL	240	30	84	63.5	550	36°	Flood	2500	H50772363043

All measurements are shown in millimeters unless noted



PAR20
E27 Base

TUNGSTEN HALOGEN LAMPS

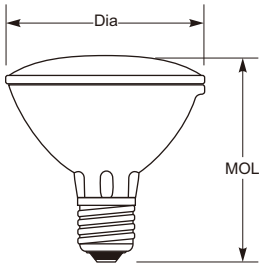
TUNGSTEN HALOGEN LAMPS

PAR30 SERIES

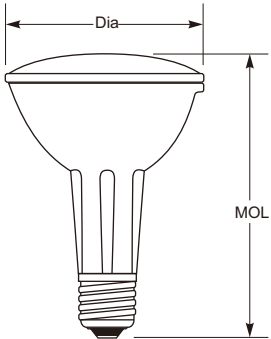
- Crisp white light
- Directional light source
- Long life
- Available in 230/240V

Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	Dimension MOL (mm)	Dimension Dia (mm)	Approx Lumens (lm)	Beam Angle	Spread	Avg.Life (Hours)	Manufacture Production Code
PAR30 Series - E27 Base												
50	PAR30	E27	50PAR30/230/SP	230	30	91.5	94	660	12°	Spot	2500	H05077312303
			50PAR30/230/NFL	230	30	91.5	94	660	24°	N. Flood	2500	H05077324303
			50PAR30/230/FL	230	30	91.5	94	660	36°	Flood	2500	H05077336303
			50PAR30/240/SP	240	30	91.5	94	660	12°	Spot	2500	H05077312403
			50PAR30/240/NFL	240	30	91.5	94	660	24°	N. Flood	2500	H05077324403
			50PAR30/240/FL	240	30	91.5	94	660	36°	Flood	2500	H05077336403
60	PAR30	E27	60PAR30/230/SP	230	30	91.5	94	860	12°	Spot	2500	H06077312303
			60PAR30/230/NFL	230	30	91.5	94	860	24°	N. Flood	2500	H06077324303
			60PAR30/230/FL	230	30	91.5	94	860	36°	Flood	2500	H06077336303
			60PAR30/240/SP	240	30	91.5	94	860	12°	Spot	2500	H06077312403
			60PAR30/240/NFL	240	30	91.5	94	860	24°	N. Flood	2500	H06077324403
			60PAR30/240/FL	240	30	91.5	94	860	36°	Flood	2500	H06077336403
75	PAR30	E27	75PAR30/230/SP	230	30	91.5	94	1000	12°	Spot	2500	H07577312303
			75PAR30/230/NFL	230	30	91.5	94	1000	24°	N. Flood	2500	H07577324303
			75PAR30/230/FL	230	30	91.5	94	1000	36°	Flood	2500	H07577336303
			75PAR30/240/SP	240	30	91.5	94	1000	12°	Spot	2500	H07577312403
			75PAR30/240/NFL	240	30	91.5	94	1000	24°	N. Flood	2500	H07577324403
			75PAR30/240/FL	240	30	91.5	94	1000	36°	Flood	2500	H07577336403
PAR30 Long Neck Series - E27 Base												
50	PAR30 LN	E27	50PAR30LN/230/SP	230	15	114.3	95	580	12°	Spot	2500	H05077312313
			50PAR30LN/230/NFL	230	15	114.3	95	580	24°	N. Flood	2500	H05077324313
			50PAR30LN/230/FL	230	15	114.3	95	580	36°	Flood	2500	H05077336313
			50PAR30LN/240/SP	240	15	114.3	95	580	12°	Spot	2500	H05077312413
			50PAR30LN/240/NFL	240	15	114.3	95	580	24°	N. Flood	2500	H05077324413
			50PAR30LN/240/FL	240	15	114.3	95	580	36°	Flood	2500	H05077336413
75	PAR30 LN	E27	75PAR30LN/230/SP	230	15	114.3	95	1000	12°	Spot	2500	H07577312313
			75PAR30LN/230/NFL	230	15	114.3	95	1000	24°	N. Flood	2500	H07577324313
			75PAR30LN/230/FL	230	15	114.3	95	1000	36°	Flood	2500	H07577336313
			75PAR30LN/240/SP	240	15	114.3	95	1000	12°	Spot	2500	H07577312413
			75PAR30LN/240/NFL	240	15	114.3	95	1000	24°	N. Flood	2500	H07577324413
			75PAR30LN/240/FL	240	15	114.3	95	1000	36°	Flood	2500	H07577336413

All measurements are shown in millimeters unless noted



PAR-30
E27 Base



PAR-30 Long Neck
E27 Base

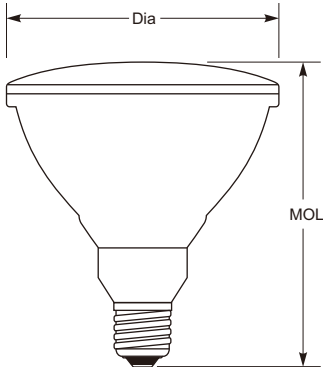


PAR38 SERIES

- Crisp white light
- Directional light source
- Long life
- Available in 230/240V

Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	Dimension MOL (mm)	Dimension Dia (mm)	Approx Lumens (lm)	Beam Angle	Spread	Avg.Life (Hours)	Manufacture Production Code
PAR38 Series - E27 Base												
45	PAR38	E27	45PAR38/230/SP	230	15	135	121	525	12°	Spot	2500	H04577812303
			45PAR38/230/FL	230	15	135	121	525	36°	Flood	2500	H04577836303
			45PAR38/230/WFL	230	15	135	121	525	50°	W. Flood	2500	H04577850303
			45PAR38/240/SP	240	15	135	121	525	12°	Spot	2500	H04577812403
			45PAR38/240/FL	240	15	135	121	525	36°	Flood	2500	H04577836403
			45PAR38/240/WFL	240	15	135	121	525	50°	W. Flood	2500	H04577850403
60	PAR38	E27	60PAR38/230/SP	230	15	135	121	525	12°	Spot	2500	H06077812303
			60PAR38/230/FL	230	15	135	121	525	36°	Flood	2500	H06077836303
			60PAR38/230/WFL	230	15	135	121	525	50°	W. Flood	2500	H06077850303
			60PAR38/240/SP	240	15	135	121	525	12°	Spot	2500	H06077812403
			60PAR38/240/FL	240	15	135	121	525	36°	Flood	2500	H06077836403
			60PAR38/240/WFL	240	15	135	121	525	50°	W. Flood	2500	H06077850403
75	PAR38	E27	75PAR38/230/SP	230	15	135	121	1040	12°	Spot	2500	H07577812303
			75PAR38/230/FL	230	15	135	121	1040	36°	Flood	2500	H07577836303
			75PAR38/230/WFL	230	15	135	121	1040	50°	W. Flood	2500	H07577850303
			75PAR38/240/SP	240	15	135	121	1040	12°	Spot	2500	H07577812403
			75PAR38/240/FL	240	15	135	121	1040	36°	Flood	2500	H07577836403
			75PAR38/240/WFL	240	15	135	121	1040	50°	W. Flood	2500	H07577850403
90	PAR38	E27	90PAR38/230/NSP	230	15	135	121	1280	8°	N. Spot	2500	H09077808303
			90PAR38/230/SP	230	15	135	121	1280	12°	Spot	2500	H09077812303
			90PAR38/230/FL	230	15	135	121	1280	36°	Flood	2500	H09077836303
			90PAR38/230/WFL	230	15	135	121	1280	50°	W. Flood	2500	H09077850303
			90PAR38/240/NSP	240	15	135	121	1280	8°	N. Spot	2500	H09077808403
			90PAR38/240/SP	240	15	135	121	1280	12°	Spot	2500	H09077812403
100	PAR38	E27	90PAR38/240/FL	240	15	135	121	1280	36°	Flood	2500	H09077836403
			90PAR38/240/WFL	240	15	135	121	1280	50°	W. Flood	2500	H09077850403
			100PAR38/230/FL	230	15	135	121	2070	36°	Flood	2500	H10077836303
			100PAR38/240/FL	240	15	135	121	2070	36°	Flood	2500	H10077836403

All measurements are shown in millimeters unless noted



PAR38
E27 Base

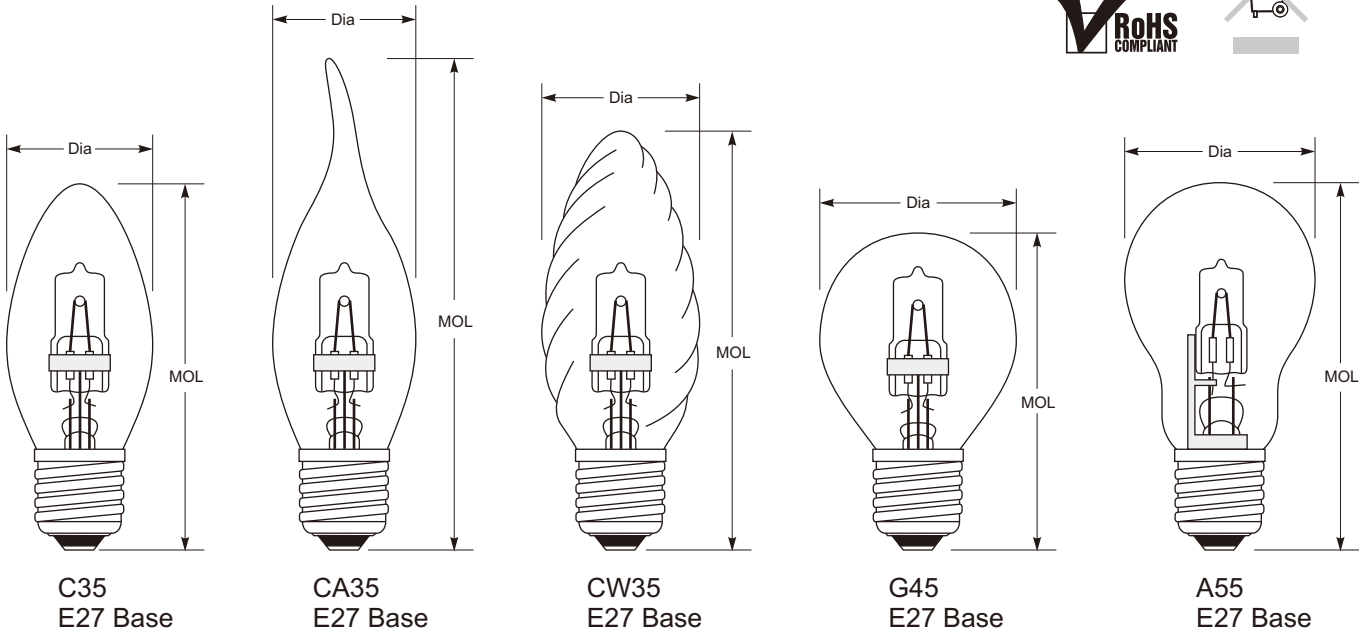


ENERGY-SAVING HALOGEN LAMPS

- Crisp white light
- Consistent light color and brightness
- Available in 220-240V

Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	Dimension MOL (mm)	Dimension Dia (mm)	Approx Lumens (lm)	Energy-class	Avg.Life (Hours)	Manufacture Production Code
C35 Series - E27 Base											
18	C35	E27	18C35/ESH/E27	220-240	30	80	45	205	C	2000	H05077312303
28	C35	E27	28C35/ESH/E27	220-240	30	80	45	370	C	2000	H05077324303
42	C35	E27	42C35/ESH/E27	220-240	30	80	45	630	C	2000	H05077336303
CA35 Series - E27 Base											
18	CA35	E27	18CA35/ESH/E27	220-240	30	121	35	205	C	2000	H05077312303
28	CA35	E27	28CA35/ESH/E27	220-240	30	121	35	370	C	2000	H05077324303
42	CA35	E27	42CA35/ESH/E27	220-240	30	121	35	630	C	2000	H05077336303
CW35 Series - E27 Base											
18	CW35	E27	18CW35/ESH/E27	220-240	30	121	35	205	C	2000	H05077312303
28	CW35	E27	28CW35/ESH/E27	220-240	30	121	35	370	C	2000	H05077324303
42	CW35	E27	42CW35/ESH/E27	220-240	30	121	35	630	C	2000	H05077336303
G45 Series - E27 Base											
18	G45	E27	18G45/ESH/E27	220-240	30	70	46	205	C	2000	H05077312303
28	G45	E27	28G45/ESH/E27	220-240	30	70	46	370	C	2000	H05077324303
42	G45	E27	42G45/ESH/E27	220-240	30	70	46	630	C	2000	H05077336303
52	G45	E27	52G45/ESH/E27	220-240	30	70	46	835	C	2000	H05077336303
70	G45	E27	70G45/ESH/E27	220-240	30	70	46	1172	C	2000	H05077336303
A55 Series - E27 Base											
18	A55	E27	18A55/ESH/E27	220-240	30	107	56	205	C	2000	H05077312303
28	A55	E27	28A55/ESH/E27	220-240	30	107	56	370	C	2000	H05077324303
42	A55	E27	42A55/ESH/E27	220-240	30	107	56	630	C	2000	H05077336303
52	A55	E27	52A55/ESH/E27	220-240	30	107	56	835	C	2000	H05077336303
70	A55	E27	70A55/ESH/E27	220-240	30	107	56	1172	C	2000	H05077336303

All measurements are shown in millimeters unless noted

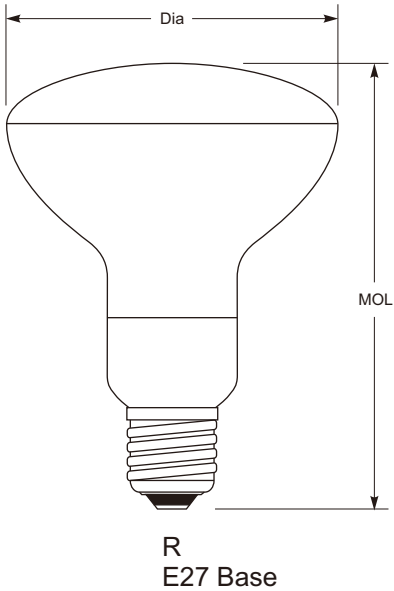


ENERGY-SAVING HALOGEN LAMPS

- Crisp white light
- Available in 220-240V

Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	Dimension MOL (mm)	Dimension Dia (mm)	Approx Lumens (lm)	Energy-class	Avg.Life (Hours)	Manufacture Production Code
R50 Series - E27 Base											
28	R50	E27	28R50/ESH/E27	220-240	30	87	51	370	C	2000	H05077324303
42	R50	E27	42R50/ESH/E27	220-240	30	87	51	630	C	2000	H05077336303
R63 Series - E27 Base											
28	R63	E27	28R63/ESH/E27	220-240	30	105	64	370	C	2000	H05077324303
42	R63	E27	42R63/ESH/E27	220-240	30	105	64	630	C	2000	H05077336303
R80 Series - E27 Base											
28	R80	E27	28R80/ESH/E27	220-240	30	116	80	370	C	2000	H05077312303
42	R80	E27	42R80/ESH/E27	220-240	30	116	80	630	C	2000	H05077324303
52	R80	E27	52R80/ESH/E27	220-240	30	116	80	835	C	2000	H05077336303
72	R80	E27	70R80/ESH/E27	220-240	30	116	80	1172	C	2000	H05077336303

All measurements are shown in millimeters unless noted

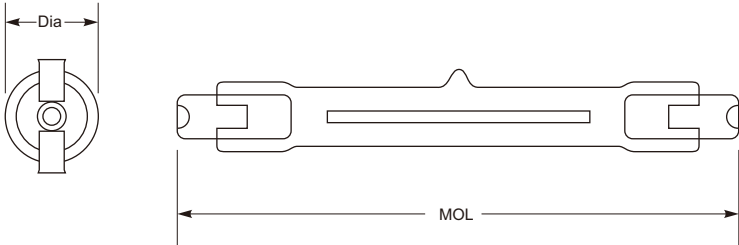


ENERGY-SAVING HALOGEN LAMPS

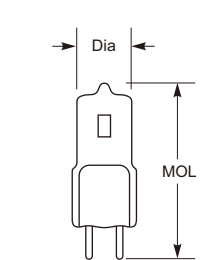
- Crisp white light
- Compact size
- Available in 220-240V

Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	Dimension MOL (mm)	Dimension Dia (mm)	Approx Lumens (lm)	Energy-class	Color Temp (K)	Avg.Life (Hours)	Manufacture Production Code
Double-Ended Linear Lamps												
80	T3	R7s	80J78/ESH/R7S	220-240	100	78	8	1000	C	2900	2000	H05077312303
120	T3	R7s	120J78/ESH/R7S	220-240	100	78	8	1500	C	2900	2000	H05077324303
	T4	R7s	120J118/ESH/R7S	220-240	100	118	10	2400	C	2900	2000	H05077324303
160	T4	R7s	160J118/ESH/R7S	220-240	100	118	10	3000	C	2900	2000	H05077336303
230	T4	R7s	230J118/ESH/R7S	220-240	100	118	10	4250	C	2900	2000	H05077336303
400	T4	R7s	400J118/ESH/R7S	220-240	100	118	10	10000	C	2900	2000	H05077312303
Capsule Lamps - G4, G6.35												
14	T3	G4	JC14W/ESH/220/G4	220-240	100	33	8	143	C	2850	2000	H05077336303
14	T3	G6.35	JC20W/ESH/220/GY6.35	220-240	100	44	10	235	C	3000	2000	H05077336303
18	T3	G6.35	JC35W/ESH/220/GY6.35	220-240	100	44	10	495	C	3000	2000	H05077312303
Capsule Lamps - G9												
18	T4	G9	JCD18W/ESH/G9	220-240	100	44	13.5	205	C	2900	2000	H05077336303
28	T4	G9	JCD28W/ESH/G9	220-240	100	44	13.5	370	C	2900	2000	H05077336303
33	T4	G9	JCD33W/ESH/G9	220-240	100	44	13.5	458	C	2950	2000	H05077312303
42	T4	G9	JCD42W/ESH/G9	220-240	100	44	13.5	630	C	3000	2000	H05077324303
52	T4	G9	JCD52W/ESH/G9	220-240	100	44	13.5	835	C	3000	2000	H05077336303
70	T4	G9	JCD70W/ESH/G9	220-240	100	44	13.5	1172	C	3000	2000	H05077336303

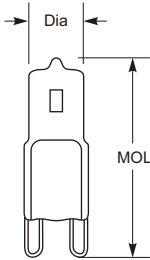
All measurements are shown in millimeters unless noted



R7s Base



G4 • G6.35 Base



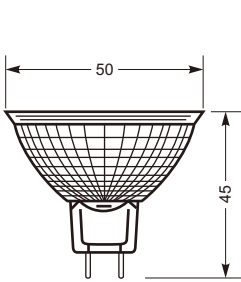
G9 Base

ENERGY-SAVING HALOGEN LAMPS

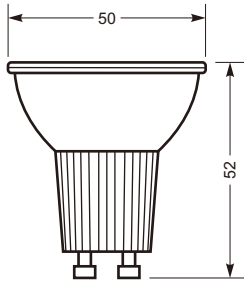
- Crisp white light
- Directional light source
- Long life
- Available in 220-240V

Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	CBCP (cd)	Beam Angle	Spread	Energy- class	Color Temp (K)	Avg.Life (Hours)	Manufacture Production Code
MR16 Series - GU5.3 Base												
14	MR16	GU5.3	14MR16/ESH/12/SP	12	20	3200	12°	Spot	C	2900	3000	H05077324303
			14MR16/ESH/12/NFL	12	20	970	24°	N.Flood	C	2900	3000	H05077336303
			14MR16/ESH/12/FL	12	20	520	36°	Flood	C	2900	3000	H05077336303
20	MR16	GU5.3	20MR16/ESH/12/SP	12	20	6200	12°	Spot	C	3000	3000	H05077324303
			20MR16/ESH/12/NFL	12	20	1920	24°	N.Flood	C	3000	3000	H05077336303
			20MR16/ESH/12/FL	12	20	940	36°	Flood	C	3000	3000	H05077336303
35	MR16	GU5.3	35MR16/ESH/12/SP	12	20	11500	12°	Spot	C	3100	3000	H05077324303
			35MR16/ESH/12/NFL	12	20	3560	24°	N.Flood	C	3100	3000	H05077336303
			35MR16/ESH/12/FL	12	20	1560	36°	Flood	C	3100	3000	H05077336303
			35MR16/ESH/12/WFL	12	20	950	60°	W.Flood	C	3100	3000	H05077336303
MR16 Series - GU10 Base												
18	MR16	GU10	18MR16/ESH/GU10/NFL	220-240	20	320	24°	N.Flood	C	2900	2000	H05077324303
			18MR16/ESH/GU10/FL	220-240	20	260	36°	Flood	C	2900	2000	H05077336303
28	MR16	GU10	28MR16/ESH/GU10/NFL	220-240	20	500	24°	N.Flood	C	2900	2000	H05077324303
			28MR16/ESH/GU10/FL	220-240	20	320	36°	Flood	C	2900	2000	H05077336303
42	MR16	GU10	42MR16/ESH/GU10/NFL	220-240	20	700	24°	N.Flood	C	3000	2000	H05077324303
			42MR16/ESH/GU10/FL	220-240	20	550	36°	Flood	C	3000	2000	H05077336303
AR111 Series - G53 Base												
28	AR111	G53	28AR111/ESH/12/G53/SP	12	20	11250	8°	Spot	C	3000	3000	H05077312303
			28AR111/ESH/12/G53/NFL	12	20	2250	24°	N.Flood	C	3000	3000	H05077324303
			28AR111/ESH/12/G53/FL	12	20	840	45°	Flood	C	3000	3000	H05077336303
40	AR111	G53	40AR111/ESH/12/G53/SP	12	20	18000	8°	Spot	C	3500	3000	H05077312303
			40AR111/ESH/12/G53/NFL	12	20	3600	24°	N.Flood	C	3500	3000	H05077324303
			40AR111/ESH/12/G53/FL	12	20	1350	45°	Flood	C	3500	3000	H05077336303
75	AR111	G53	75AR111/ESH/12/G53/SP	12	20	36000	8°	Spot	C	3100	3000	H05077312303
			75AR111/ESH/12/G53/NFL	12	20	7200	24°	N.Flood	C	3100	3000	H05077324303
			75AR111/ESH/12/G53/FL	12	20	2700	45°	Flood	C	3100	3000	H05077336303

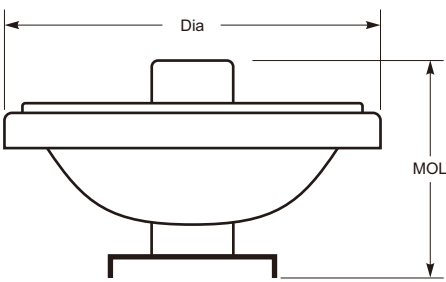
All measurements are shown in millimeters unless noted



GU5.3 Base



GU10 Base

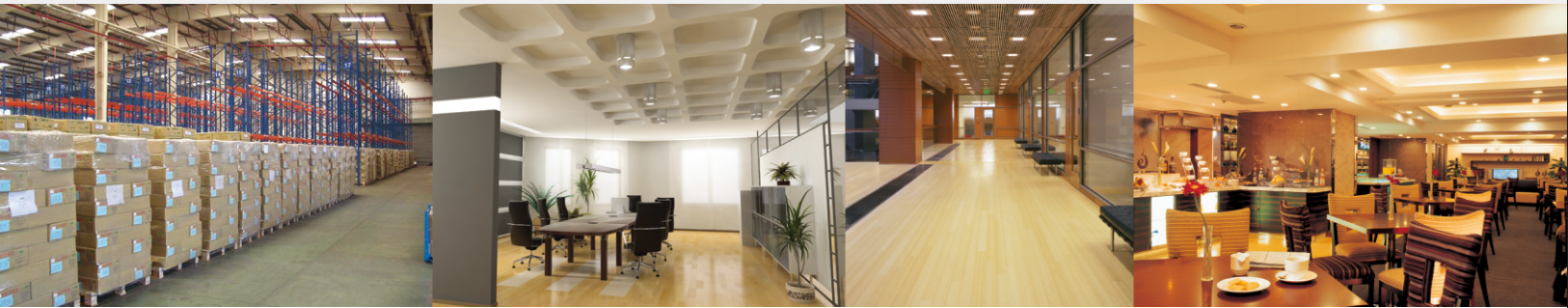


G53 Base

TUNGSTEN HALOGEN LAMPS

TUNGSTEN HALOGEN LAMPS

Fluorescent Lamps



Contents

64	Compact Fluorescent Lamps (Self-ballasted)
70	Compact Fluorescent Lamps - PL
76	Compact Fluorescent Lamps - FTL
77	Linear Fluorescent Lamps - T5

how to read a table

Watts

Energy consumption during proper operation.

Base

The type of base.

Voltage

The voltage for proper operation.

Average Life

An average rating, in hours, indicating when 50% of a large group of lamps, operated at nominal lamp voltage and current, have failed.

CRI

An international system used to rate a lamp's ability to render object colors.

MOL

Maximum overall length in millimeters.

Lumens

The lamp's average light output after the initial 100 hours of operation.

Color Temp.

Light temperature measured in Kelvin. The higher the temperature, the cooler the appearance of the light, and vice versa.

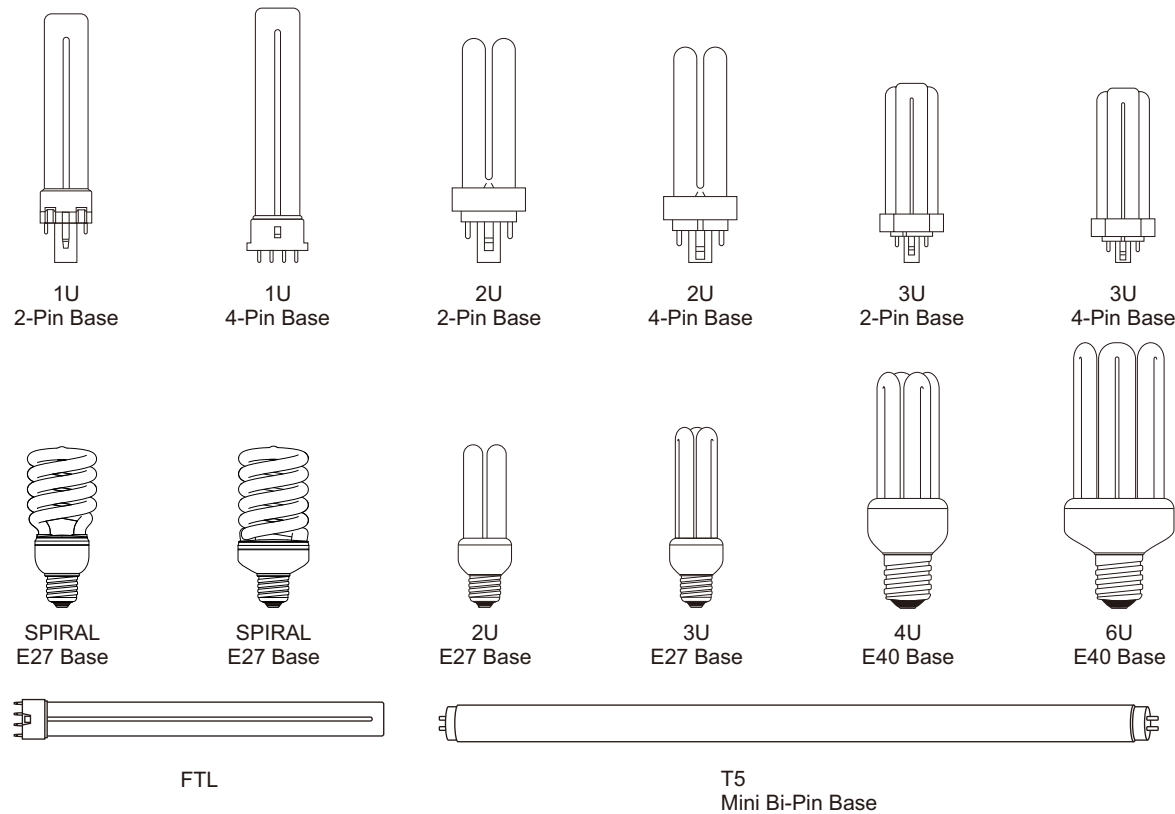
Manufacture Production Code

Production code during the manufacturing process.

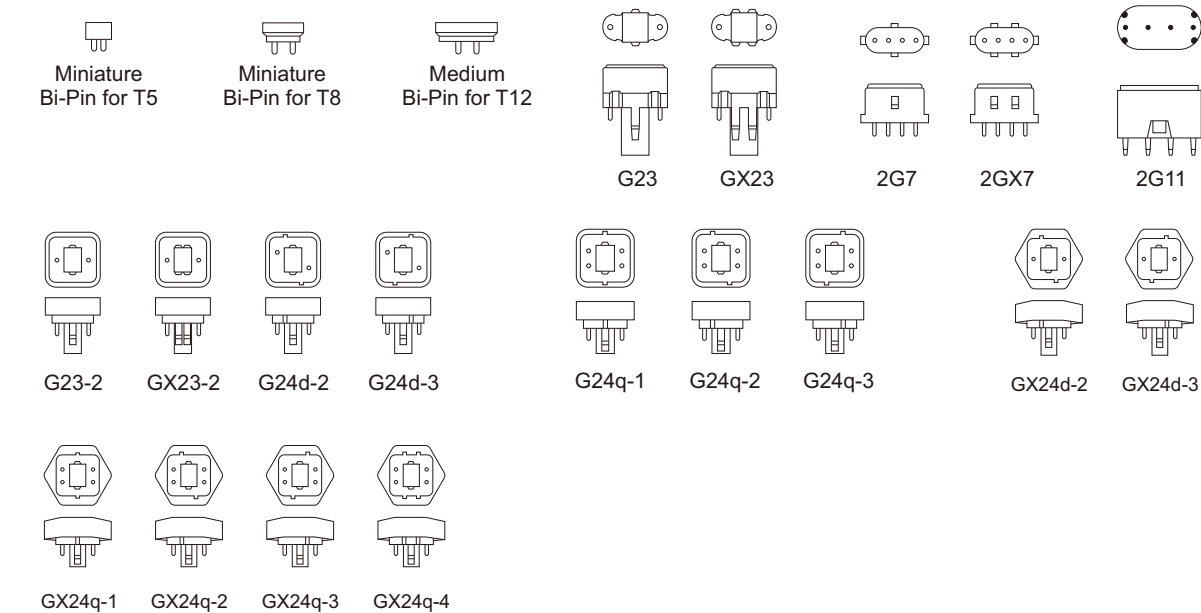
Watts	Bulb (mm)	Base	Description	Voltage (V)	Case Qty.	Dimensions MOL (mm)	Lumens (lm)	Avg. Life (Hours)	Color Temp (K)	CRI	Manufacture Production Code
Mini Half Spiral - 9mm											
3	9	E27	CFL3W/SP/827	220V/240V	25	87	195	10000	2700	82	F00327220927
			CFL3W/SP/841	220V/240V	25	87	195	10000	4100	82	F00327220941
			CFL3W/SP/865	220V/240V	25	87	186	10000	6500	82	F00327220965
5	9	E27	CFL5W/SP/827	220V/240V	25	93	325	10000	2700	82	F00527220927
			CFL5W/SP/841	220V/240V	25	93	325	10000	4100	82	F00527220941
			CFL5W/SP/865	220V/240V	25	93	310	10000	6500	82	F00527220965
7	9	E27	CFL7W/SP/827	220V/240V	25	99	455	10000	2700	82	F00727220927
			CFL7W/SP/841	220V/240V	25	99	455	10000	4100	82	F00727220941
			CFL7W/SP/865	220V/240V	25	99	434	10000	6500	82	F00727220965

FLUORESCENT LAMPS

BULBS



BASES

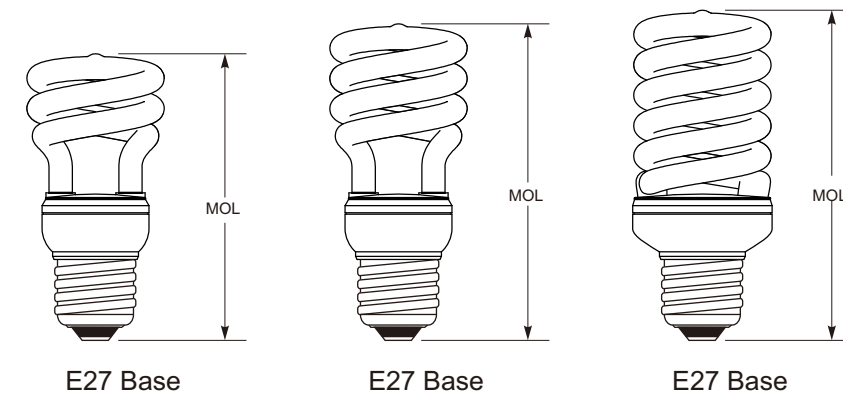


COMPACT FLUORESCENT LAMPS (SELF-BALLAST MINI Spiral)

High Luminous Efficacy
75% Lower Power Consumption over Incandescent Bulbs
Average life 10000hours

Watts	Bulb (mm)	Base	Description	Voltage (V)	Case Qty.	Dimensions		Lumens (lm)	Avg.Life (Hours)	Color		Manufacture Production Code
						MOL (mm)				Temp (K)	CRI	
Mini Half Spiral - 9mm												
3	9	E27	CFL3W/SP/827	220V/240V	25	87		195	10000	2700	82	F00327220927
			CFL3W/SP/841	220V/240V	25	87		195	10000	4100	82	F00327220941
			CFL3W/SP/865	220V/240V	25	87		186	10000	6500	82	F00327220965
5	9	E27	CFL5W/SP/827	220V/240V	25	93		325	10000	2700	82	F00527220927
			CFL5W/SP/841	220V/240V	25	93		325	10000	4100	82	F00527220941
			CFL5W/SP/865	220V/240V	25	93		310	10000	6500	82	F00527220965
7	9	E27	CFL7W/SP/827	220V/240V	25	99		455	10000	2700	82	F00727220927
			CFL7W/SP/841	220V/240V	25	99		455	10000	4100	82	F00727220941
			CFL7W/SP/865	220V/240V	25	99		434	10000	6500	82	F00727220965
9	9	E27	CFL9W/SP/827	220V/240V	25	105		585	10000	2700	82	F00927220927
			CFL9W/SP/841	220V/240V	25	105		585	10000	4100	82	F00927220941
			CFL9W/SP/865	220V/240V	25	105		558	10000	6500	82	F00927220965
11	9	E27	CFL11W/SP/827	220V/240V	25	111		700	10000	2700	82	F01127220927
			CFL11W/SP/841	220V/240V	25	111		700	10000	4100	82	F01127220941
			CFL11W/SP/865	220V/240V	25	111		660	10000	6500	82	F01127220965
Mini Half Spiral - 12mm												
15	12	E27	CFL15W/SP/827	220V/240V	25	116		1000	10000	2700	82	F01527221227
			CFL15W/SP/841	220V/240V	25	116		1000	10000	4100	82	F01527221241
			CFL15W/SP/865	220V/240V	25	116		945	10000	6500	82	F01527221265
18	12	E27	CFL18W/SP/827	220V/240V	25	124		1170	10000	2700	82	F01827221227
			CFL18W/SP/841	220V/240V	25	124		1170	10000	4100	82	F01827221241
			CFL18W/SP/865	220V/240V	25	124		1098	10000	6500	82	F01827221265
20	12	E27	CFL20W/SP/827	220V/240V	25	132		1300	10000	2700	82	F02027221227
			CFL20W/SP/841	220V/240V	25	132		1300	10000	4100	82	F02027221241
			CFL20W/SP/865	220V/240V	25	132		1220	10000	6500	82	F02027221265
23	12	E27	CFL23W/SP/827	220V/240V	25	140		1495	10000	2700	82	F02327221227
			CFL23W/SP/841	220V/240V	25	140		1495	10000	4100	82	F02327221241
			CFL23W/SP/865	220V/240V	25	140		1403	10000	6500	82	F02327221265

All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws

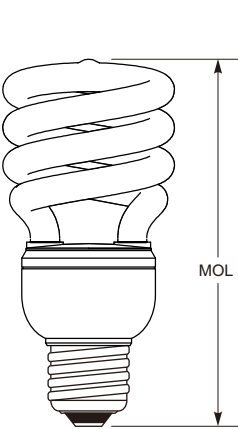


COMPACT FLUORESCENT LAMPS (Self-Ballast High power)

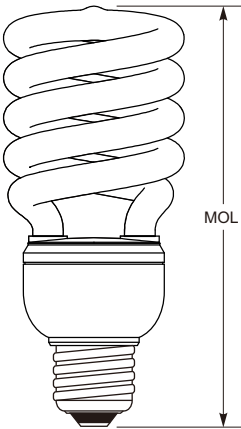
High Luminous Efficacy
75% Lower Power Consumption over Incandescent Bulbs
Average life 10000hours

Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	Dimensions		Avg.Life (Hours)	Color		Manufacture Production Code
						MOL (mm)	Lumens (lm)		Temp (K)	CRI	
High Power Spiral - 17mm											
45	17	E40	CFL45W/SP/827	220V/240V	12	205	2925	10000	2700	82	F04540221727
			CFL45W/SP/841	220V/240V	12	205	2925	10000	4100	82	F04540221741
			CFL45W/SP/865	220V/240V	12	205	2745	10000	6500	82	F04540221765
55	17	E40	CFL55W/SP/827	220V/240V	12	215	3575	10000	2700	82	F05540221727
			CFL55W/SP/841	220V/240V	12	215	3575	10000	4100	82	F05540221741
			CFL55W/SP/865	220V/240V	12	215	3355	10000	6500	82	F05540221765
65	17	E40	CFL65W/SP/827	220V/240V	12	225	4225	10000	2700	82	F06540221727
			CFL65W/SP/841	220V/240V	12	225	4225	10000	4100	82	F06540221741
			CFL65W/SP/865	220V/240V	12	225	3965	10000	6500	82	F06540221765
75	17	E40	CFL75W/SP/827	220V/240V	12	235	4875	10000	2700	82	F07540221727
			CFL75W/SP/841	220V/240V	12	235	4875	10000	4100	82	F07540221741
			CFL75W/SP/865	220V/240V	12	235	4575	10000	6500	82	F07540221765
85	17	E40	CFL85W/SP/827	220V/240V	12	245	5525	10000	2700	82	F08540221727
			CFL85W/SP/841	220V/240V	12	245	5525	10000	4100	82	F08540221741
			CFL85W/SP/865	220V/240V	12	245	5185	10000	6500	82	F08540221765

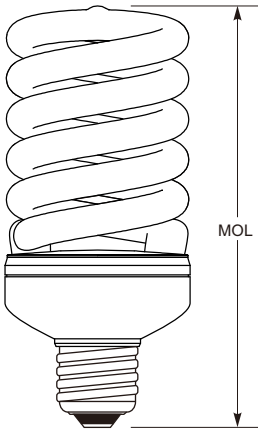
All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws



E27 Base



E27 Base



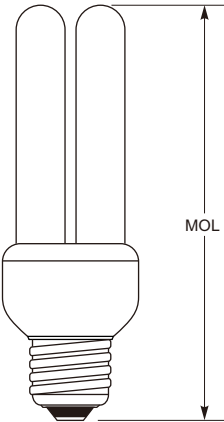
E27 Base

COMPACT FLUORESCENT LAMPS (SELF-BALLAST 2U)

High Luminous Efficacy
75% Lower Power Consumption over Incandescent Bulbs
Average life 10000hours

Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	Dimensions		Avg.Life (Hours)	Color		Manufacture Production Code
						MOL (mm)	Lumens (lm)		Temp (K)	CRI	
CFL2U - 9mm											
3	9	E27	CFL3W/2U/827	220V/240V	25	95	130	10000	2700	82	F00327240927
			CFL3W/2U/841	220V/240V	25	95	130	10000	4100	82	F00327240941
			CFL3W/2U/865	220V/240V	25	95	123	10000	6500	82	F00327240965
5	9	E27	CFL5W/2U/827	220V/240V	25	105	220	10000	2700	82	F00527240927
			CFL5W/2U/841	220V/240V	25	105	220	10000	4100	82	F00527240941
			CFL5W/2U/865	220V/240V	25	105	210	10000	6500	82	F00527240965
7	9	E27	CFL7W/2U/827	220V/240V	25	115	310	10000	2700	82	F00727240927
			CFL7W/2U/841	220V/240V	25	115	310	10000	4100	82	F00727240941
			CFL7W/2U/865	220V/240V	25	115	290	10000	6500	82	F00727240965
9	9	E27	CFL9W/2U/827	220V/240V	25	125	450	10000	2700	82	F00927240927
			CFL9W/2U/841	220V/240V	25	125	450	10000	4100	82	F00927240941
			CFL9W/2U/865	220V/240V	25	125	425	10000	6500	82	F00927240965
11	9	E27	CFL11W/2U/827	220V/240V	25	135	600	10000	2700	82	F01127240927
			CFL11W/2U/841	220V/240V	25	135	600	10000	4100	82	F01127240941
			CFL11W/2U/865	220V/240V	25	135	575	10000	6500	82	F01127240965
CFL2U - 12mm											
15	12	E27	CFL15W/2U/827	220V/240V	25	170	880	10000	2700	82	F01527241227
			CFL15W/2U/841	220V/240V	25	170	880	10000	4100	82	F01527241241
			CFL15W/2U/865	220V/240V	25	170	840	10000	6500	82	F01527241265

All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws



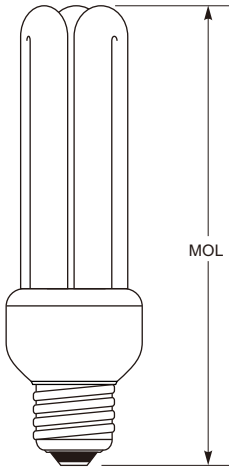
E27 Base

COMPACT FLUORESCENT LAMPS (SELF-BALLAST 3U)

High Luminous Efficacy
75% Lower Power Consumption over Incandescent Bulbs
Average life 10000hours

Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	Dimensions		Avg.Life (Hours)	Color		Manufacture Production Code
						MOL (mm)	Lumens (lm)		Temp (K)	CRI	
CFL3U - 9mm											
15	9	E27	CFL15W/3U/827	220V/240V	25	150	930	10000	2700	82	F01527340927
			CFL15W/3U/841	220V/240V	25	150	930	10000	4100	82	F01527340941
			CFL15W/3U/865	220V/240V	25	150	880	10000	6500	82	F01527340965
18	9	E27	CFL18W/3U/827	220V/240V	25	160	1100	10000	2700	82	F01827340927
			CFL18W/3U/841	220V/240V	25	160	1100	10000	4100	82	F01827340941
			CFL18W/3U/865	220V/240V	25	160	1070	10000	6500	82	F01827340965
CFL3U - 12mm											
20	12	E27	CFL20W/3U/827	220V/240V	25	160	1200	10000	2700	82	F02027341227
			CFL20W/3U/841	220V/240V	25	160	1200	10000	4100	82	F02027341241
			CFL20W/3U/865	220V/240V	25	160	1130	10000	6500	82	F02027341265
25	12	E27	CFL25W/3U/827	220V/240V	25	178	1650	10000	2700	82	F02527341227
			CFL25W/3U/841	220V/240V	25	178	1650	10000	4100	82	F02527341241
			CFL25W/3U/865	220V/240V	25	178	1560	10000	6500	82	F02527341265

All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws



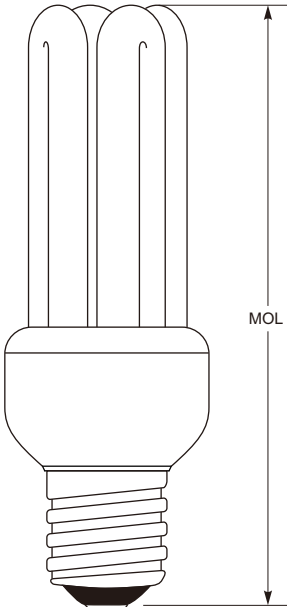
E27 Base

COMPACT FLUORESCENT LAMPS (SELF-BALLAST High power)

High Luminous Efficacy
75% Lower Power Consumption over Incandescent Bulbs
Average life 10000hours

Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	Dimensions		Avg.Life (Hours)	Color		Manufacture Production Code
						MOL (mm)	Lumens (lm)		Temp (K)	CRI	
High Power 4U - 14.5mm											
45	14.5	E40	CFL45W/4U/827	220V/240V	20	235	3150	10000	2700	82	F04540441527
			CFL45W/4U/841	220V/240V	20	235	3150	10000	4100	82	F04540441541
			CFL45W/4U/865	220V/240V	20	235	2430	10000	6500	82	F04540441565
55	14.5	E40	CFL55W/4U/827	220V/240V	20	255	3850	10000	2700	82	F05540441527
			CFL55W/4U/841	220V/240V	20	255	3850	10000	4100	82	F05540441541
			CFL55W/4U/865	220V/240V	20	255	3680	10000	6500	82	F05540441565
High Power 4U - 16mm											
65	16	E40	CFL65W/4U/827	220V/240V	20	265	4450	10000	2700	82	F06540441627
			CFL65W/4U/841	220V/240V	20	265	4450	10000	4100	82	F06540441641
			CFL65W/4U/865	220V/240V	20	265	4250	10000	6500	82	F06540441665
85	16	E40	CFL85W/4U/827	220V/240V	20	285	5950	10000	2700	82	F08540441627
			CFL85W/4U/841	220V/240V	20	285	5950	10000	4100	82	F08540441641
			CFL85W/4U/865	220V/240V	20	285	5650	10000	6500	82	F08540441665

All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws



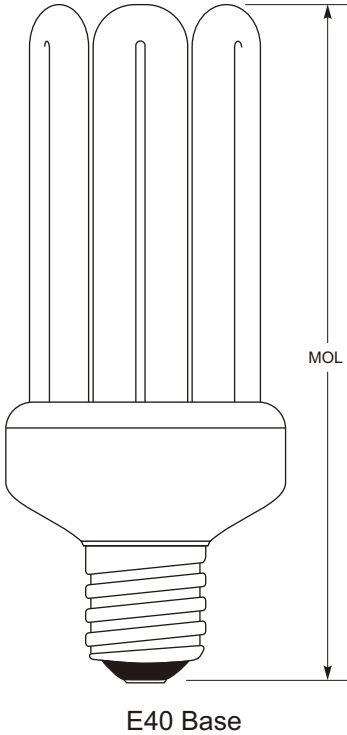
E40 Base

COMPACT FLUORESCENT LAMPS (SELF-BALLAST High power)

High Luminous Efficacy
75% Lower Power Consumption over Incandescent Bulbs
Average life 10000hours

Watts	Bulb	Base	Description	Voltage (V)	Case	Dimensions			Color		Manufacture Production Code
					Qty.	MOL (mm)	Lumens (lm)	Avg.Life (Hours)	Temp (K)	CRI	
High Power 6U - 16mm											
105	16	E40	CFL105W/6U/827	220V/240V	20	270	7875	10000	2700	82	F10540641627
			CFL105W/6U/841	220V/240V	20	270	7875	10000	4100	82	F10540641641
			CFL105W/6U/865	220V/240V	20	270	7450	10000	6500	82	F10540641665

All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws

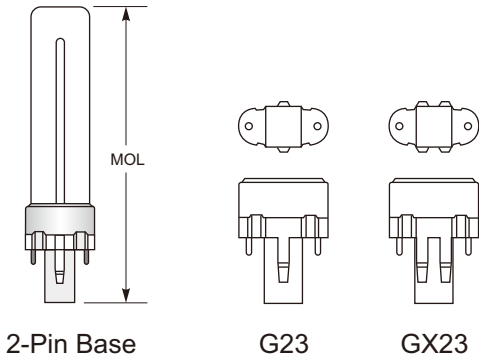


COMPACT FLUORESCENT LAMPS - PL

- High efficacy • Long life
- Wide variety of color temperature
- Dimmable with suitable electric ballasts

Watts	Bulb	Base	Description	Generic Designation	Case	Dimensions	Lumens			Color	
					Qty.	MOL (mm)	Initial (lm)	Mean (lm)	Avg.Life (Hours)	Temp (K)	Manufacture Production Code
Single Tube 2-Pin G23 Base											
5	T4	G23	PL5W/1U/2P/827	CFT5W/G23/827	50	110	250	210	10000	2700	F00511201201
			PL5W/1U/2P/835	CFT5W/G23/835	50	110	250	210	10000	3500	F00511201301
			PL5W/1U/2P/841	CFT5W/G23/841	50	110	250	210	10000	4100	F00511201401
			PL5W/1U/2P/865	CFT5W/G23/865	50	110	240	200	10000	6500	F00511201601
7	T4	G23	PL7W/1U/2P/827	CFT7W/G23/827	50	139	400	340	10000	2700	F00711201201
			PL7W/1U/2P/835	CFT7W/G23/835	50	139	400	340	10000	3500	F00711201301
			PL7W/1U/2P/841	CFT7W/G23/841	50	139	400	340	10000	4100	F00711201401
			PL7W/1U/2P/865	CFT7W/G23/865	50	139	380	320	10000	6500	F00711201601
9	T4	G23	PL9W/1U/2P/827	CFT9W/G23/827	50	170	600	510	10000	2700	F00911201201
			PL9W/1U/2P/835	CFT9W/G23/835	50	170	600	510	10000	3500	F00911201301
			PL9W/1U/2P/841	CFT9W/G23/841	50	170	600	510	10000	4100	F00911201401
			PL9W/1U/2P/865	CFT9W/G23/865	50	170	570	485	10000	6500	F00911201601
Single Tube 2-Pin GX23 Base											
13	T4	GX23	PL13W/1U/2P/827	CFT13W/GX23/827	50	182	800	720	10000	2700	F01311202201
			PL13W/1U/2P/835	CFT13W/GX23/835	50	182	800	720	10000	3500	F01311202301
			PL13W/1U/2P/841	CFT13W/GX23/841	50	182	800	720	10000	4100	F01311202401
			PL13W/1U/2P/865	CFT13W/GX23/865	50	182	760	680	10000	6500	F01311202601

All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws

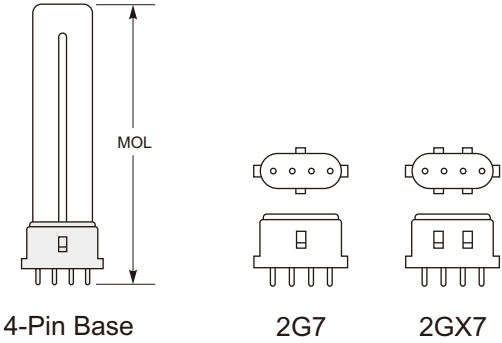


COMPACT FLUORESCENT LAMPS - PL

- High efficacy • Long life
- Wide variety of color temperature
- Dimmable with suitable electric ballasts

Watts	Bulb	Base	Description	Generic Designation	Case	Dimensions	Lumens			Color	
					Qty.	MOL (mm)	Initial (lm)	Mean (lm)	Avg.Life (Hours)	Temp (K)	Manufacture Production Code
Single Tube 4-Pin 2G7 Base for Electronic Ballasts-Dimmable											
5	T4	2G7	PL5W/1U/4P/827	CFT5W/2G7/827	50	87	250	210	10000	2700	F00521403201
			PL5W/1U/4P/835	CFT5W/2G7/835	50	87	250	210	10000	3500	F00521403301
			PL5W/1U/4P/841	CFT5W/2G7/841	50	87	250	210	10000	4100	F00521403401
7	T4	2G7	PL7W/1U/4P/827	CFT7W/2G7/827	50	116	400	340	10000	2700	F00721403201
			PL7W/1U/4P/835	CFT7W/2G7/835	50	116	400	340	10000	3500	F00721403301
			PL7W/1U/4P/841	CFT7W/2G7/841	50	116	400	340	10000	4100	F00721403401
9	T4	2G7	PL9W/1U/4P/827	CFT9W/2G7/827	50	146	600	510	10000	2700	F00921403201
			PL9W/1U/4P/835	CFT9W/2G7/835	50	146	600	510	10000	3500	F00921403301
			PL9W/1U/4P/841	CFT9W/2G7/841	50	146	600	510	10000	4100	F00921403401
Single Tube 4-Pin 2GX7 Base for Electronic Ballasts-Dimmable											
13	T4	2GX7	PL13W/1U/4P/827	CFT13W/2G7/827	50	162	800	720	10000	2700	F01321404201
			PL13W/1U/4P/830	CFT13W/2G7/830	50	162	800	720	10000	3000	F01321404001
			PL13W/1U/4P/835	CFT13W/2G7/835	50	162	800	720	10000	3500	F01321404301
			PL13W/1U/4P/841	CFT13W/2G7/841	50	162	800	720	10000	4100	F01321404401

All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws

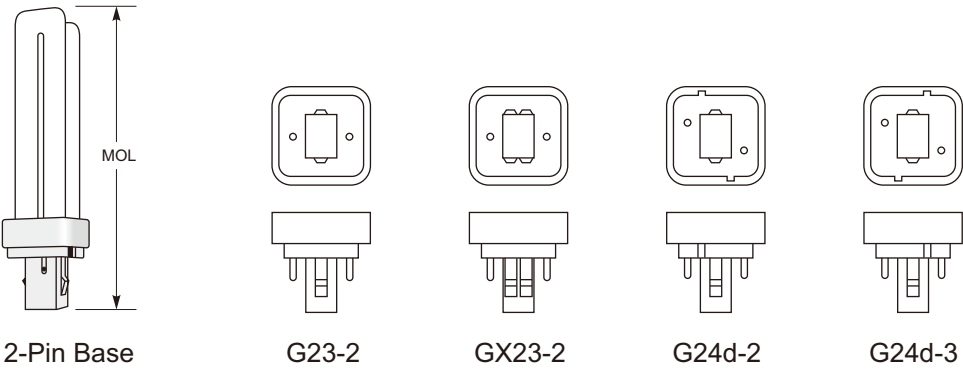


COMPACT FLUORESCENT LAMPS - PL

- High efficacy • Long life
- Wide variety of color temperature
- Dimmable with suitable electric ballasts

Watts	Bulb	Base	Description	Generic Designation	Case Qty.	Dimensions MOL (mm)	Lumens Initial (lm)	Mean (lm)	Avg.Life (Hours)	Color Temp (K)	Manufacture Production Code
Double Tube 2-Pin G23-2 Base											
9	T4	G23-2	PL9W/2U/2P/827	CFQ9W/G23/827	50	110	525	440	10000	2700	F00912205201
			PL9W/2U/2P/835	CFQ9W/G23/835	50	110	525	440	10000	3500	F00912205301
			PL9W/2U/2P/841	CFQ9W/G23/841	50	110	525	440	10000	4100	F00912205401
			PL9W/2U/2P/865	CFQ9W/G23/865	50	110	500	420	10000	6500	F00912205601
Double Tube 2-Pin GX23-2 Base											
13	T4	GX23-2	PL13W/2U/2P/827	CFQ13W/GX23/827	50	120	780	665	10000	2700	F01312206201
			PL13W/2U/2P/835	CFQ13W/GX23/835	50	120	780	665	10000	3500	F01312206301
			PL13W/2U/2P/841	CFQ13W/GX23/841	50	120	780	665	10000	4100	F01312206401
			PL13W/2U/2P/865	CFQ13W/GX23/865	50	120	740	650	10000	6500	F01312206601
Double Tube 2-Pin G24d-2 Base											
18	T4	G24d-2	PL18W/2U/2P/827	CFQ18W/G24d/827	50	154	1200	1080	10000	2700	F01812207201
			PL18W/2U/2P/835	CFQ18W/G24d/835	50	154	1200	1080	10000	3500	F01812207301
			PL18W/2U/2P/841	CFQ18W/G24d/841	50	154	1200	1080	10000	4100	F01812207401
			PL18W/2U/2P/865	CFQ18W/G24d/865	50	154	1140	1030	10000	6500	F01812207601
Double Tube 2-Pin G24d-3 Base											
26	T4	G24d-3	PL26W/2U/2P/827	CFQ26W/G24d/827	50	175	1800	1620	10000	2700	F02612208201
			PL26W/2U/2P/835	CFQ26W/G24d/835	50	175	1800	1620	10000	3500	F02612208301
			PL26W/2U/2P/841	CFQ26W/G24d/841	50	175	1800	1620	10000	4100	F02612208401
			PL26W/2U/2P/865	CFQ26W/G24d/865	50	175	1710	1540	10000	6500	F00612208601

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Manage in Accordance with Disposal Laws

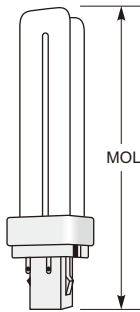


COMPACT FLUORESCENT LAMPS - PL

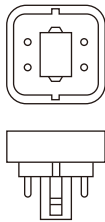
- High efficacy • Long life
- Wide variety of color temperature
- Dimmable with suitable electric ballasts

Watts	Bulb	Base	Description	Generic Designation	Case Qty.	Dimensions MOL (mm)	Lumens Initial (lm)	Mean (lm)	Avg.Life (Hours)	Color Temp (K)	Manufacture Production Code
Double Tube 4-Pin G24q-1 Base for Electronic Ballasts-Dimmable											
10	T4	G24q-1	PL10W/2U/4P/827	CFQ10W/G24q/827	50	105	600	540	10000	2700	F01022409201
			PL10W/2U/4P/835	CFQ10W/G24q/835	50	105	600	540	10000	3500	F01022409301
			PL10W/2U/4P/841	CFQ10W/G24q/841	50	105	600	540	10000	4100	F01022409401
13	T4	G24q-1	PL13W/2U/4P/827	CFQ13W/G24q/827	50	134	900	810	10000	2700	F01322409201
			PL13W/2U/4P/835	CFQ13W/G24q/835	50	134	900	810	10000	3500	F01322409301
			PL13W/2U/4P/841	CFQ13W/G24q/841	50	134	900	810	10000	4100	F01322409401
			PL13W/2U/4P/865	CFQ13W/G24q/865	50	134	860	770	10000	6500	F01322409601
Double Tube 4-Pin G24q-2 Base for Electronic Ballasts-Dimmable											
18	T4	G24q-2	PL18W/2U/4P/827	CFQ18W/G24q/827	50	149	1200	1080	10000	2700	F01822410201
			PL18W/2U/4P/835	CFQ18W/G24q/835	50	149	1200	1080	10000	3500	F01822410301
			PL18W/2U/4P/841	CFQ18W/G24q/841	50	149	1200	1080	10000	4100	F01822410401
Double Tube 4-Pin G24q-3 Base for Electronic Ballasts-Dimmable											
26	T4	G24q-2	PL26W/2U/4P/827	CFQ26W/G24q/827	50	167	1800	1620	10000	2700	F02622411201
			PL26W/2U/4P/835	CFQ26W/G24q/835	50	167	1800	1620	10000	3500	F02622411301
			PL26W/2U/4P/841	CFQ26W/G24q/841	50	167	1800	1620	10000	4100	F02622411401
			PL26W/2U/4P/865	CFQ26W/G24q/865	50	167	1710	1540	10000	6500	F02622411601

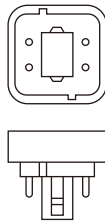
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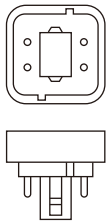
4-Pin Base



G24q-1



G24q-2



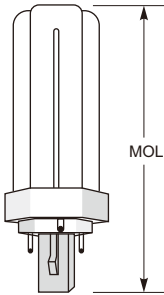
G24q-3

COMPACT FLUORESCENT LAMPS - PL

- High efficacy • Long life
- Wide variety of color temperature
- Dimmable with suitable electric ballasts

Watts	Bulb	Base	Description	Generic Designation	Case	Dimensions	Lumens			Color	Manufacture
					Qty.	MOL (mm)	Initial (lm)	Mean (lm)	Avg.Life (Hours)	Temp (K)	
Triple Tube 2-Pin GX24d-2 Base											
18	T4	GX24d-2	PL18W/3U/2P/827	CFTR18W/GX24d/827	50	123	1200	1080	10000	2700	F01813212201
			PL18W/3U/2P/835	CFTR18W/GX24d/835	50	123	1200	1080	10000	3500	F01813212301
			PL18W/3U/2P/841	CFTR18W/GX24d/841	50	123	1200	1080	10000	4100	F01813212401
Triple Tube 2-Pin GX24d-3 Base											
26	T4	GX24d-3	PL26W/3U/2P/827	CFTR26W/GX24d/827	50	139	1800	1620	10000	2700	F02613213201
			PL26W/3U/2P/835	CFTR26W/GX24d/835	50	139	1800	1620	10000	3500	F02613213301
			PL26W/3U/2P/841	CFTR26W/GX24d/841	50	139	1800	1620	10000	4100	F02613213401

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2-Pin Base



GX24d-2



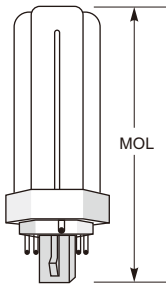
GX24d-3

COMPACT FLUORESCENT LAMPS - PL

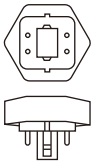
- High efficacy • Long life
- Wide variety of color temperature
- Dimmable with suitable electric ballasts

Watts	Bulb	Base	Description	Generic Designation	Case Qty.	Dimensions MOL (mm)	Lumens Initial (lm)	Mean (lm)	Avg.Life (Hours)	Color Temp (K)	Manufacture Production Code
Triple Tube 4-Pin GX24q-1 Base-for Electronic Ballasts-Dimmable											
13	T4	GX24q-1	PL13W/3U/4P/827	CFTR13W/GX24q/827	50	113	900	810	10000	2700	F01323414201
			PL13W/3U/4P/835	CFTR13W/GX24q/835	50	113	900	810	10000	3500	F01323414301
			PL13W/3U/4P/841	CFTR13W/GX24q/841	50	113	900	810	10000	4100	F01323414401
Triple Tube 4-Pin GX24q-2 Base-for Electronic Ballasts-Dimmable											
18	T4	GX24q-2	PL18W/3U/4P/827	CFTR18W/GX24q/827	50	118	1200	1080	10000	2700	F01823415201
			PL18W/3U/4P/830	CFTR18W/GX24q/830	50	118	1200	1080	10000	3000	F01823415001
			PL18W/3U/4P/835	CFTR18W/GX24q/835	50	118	1200	1080	10000	3500	F01823415301
			PL18W/3U/4P/841	CFTR18W/GX24q/841	50	118	1200	1080	10000	4100	F01823415401
			PL18W/3U/4P/865	CFTR18W/GX24q/865	50	118	1140	1025	10000	6500	F01823415601
Triple Tube 4-Pin GX24q-3 Base-for Electronic Ballasts-Dimmable											
26	T4	GX24q-3	PL26W/3U/4P/827	CFTR26W/GX24q/827	50	134	1800	1620	10000	2700	F02623416201
			PL26W/3U/4P/830	CFTR26W/GX24q/830	50	134	1800	1620	10000	3000	F02623416001
			PL26W/3U/4P/835	CFTR26W/GX24q/835	50	134	1800	1620	10000	3500	F02623416301
			PL26W/3U/4P/841	CFTR26W/GX24q/841	50	134	1800	1620	10000	4100	F02623416401
			PL26W/3U/4P/865	CFTR26W/GX24q/865	50	134	1710	1540	10000	6500	F02623416601
32	T4	GX24q-3	PL32W/3U/4P/827	CFTR32W/GX24q/827	50	149	2400	2160	10000	2700	F03223416201
			PL32W/3U/4P/830	CFTR32W/GX24q/830	50	149	2400	2160	10000	3000	F03223416001
			PL32W/3U/4P/835	CFTR32W/GX24q/835	50	149	2400	2160	10000	3500	F03223416301
			PL32W/3U/4P/841	CFTR32W/GX24q/841	50	149	2400	2160	10000	4100	F03223416401
			PL32W/3U/4P/865	CFTR32W/GX24q/865	50	149	2280	2052	10000	6500	F03223416601
Triple Tube 4-Pin GX24q-4 Base-for Electronic Ballasts-Dimmable											
42	T4	GX24q-4	PL42W/3U/4P/827	CFTR42W/GX24q/827	50	172	3200	2880	10000	2700	F04223417201
			PL42W/3U/4P/830	CFTR42W/GX24q/830	50	172	3200	2880	10000	3000	F04223417001
			PL42W/3U/4P/835	CFTR42W/GX24q/835	50	172	3200	2880	10000	3500	F04223417301
			PL42W/3U/4P/841	CFTR42W/GX24q/841	50	172	3200	2880	10000	4100	F04223417401
			PL42W/3U/4P/865	CFTR42W/GX24q/865	50	172	3040	2740	10000	6500	F04223417601
Triple Tube 4-Pin GX24q-5 Base-for Electronic Ballasts-Dimmable											
57	T4	GX24q-5	PL57W/3U/4P/827	CFTR57W/GX24q/827	50	197	4300	3700	10000	2700	F05723417201
			PL57W/3U/4P/830	CFTR57W/GX24q/830	50	197	4300	3700	10000	3000	F05723417001
			PL57W/3U/4P/835	CFTR57W/GX24q/835	50	197	4300	3700	10000	3500	F05723417301
			PL57W/3U/4P/841	CFTR57W/GX24q/841	50	197	4300	3700	10000	4100	F05723417401
			PL57W/3U/4P/865	CFTR57W/GX24q/865	50	197	4085	3600	10000	6500	F05723417601

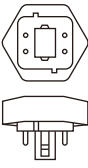
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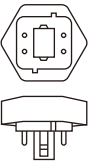
4-Pin Base



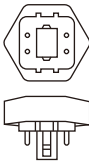
GX24q-1



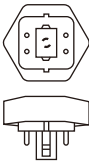
GX24q-2



GX24q-3



GX24q-4



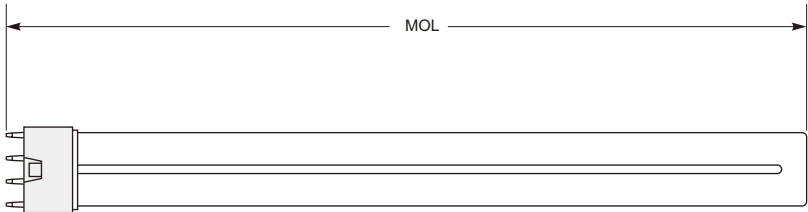
GX24q-5

COMPACT FLUORESCENT LAMPS - FTL

- High efficacy • Long life
- Wide variety of color temperature
- Dimmable with suitable electric ballasts

Watts	Bulb	Base	Description	Generic Designation	Case Qty.	Dimensions MOL (mm)	Lumens Initial (lm)	Mean (lm)	Avg.Life (Hours)	Color Temp (K)	CRI	Manufacture Production Code
Compact Fluorescent Lamps - FTL (2G11)												
18	FTL	2G11	FTL18/2G11/830	FT18W/2G11/830	50	225	1250	1075	12000	3000	82	F01821620301
			FTL18/2G11/830/L	FT18W/2G11/RS/830	50	262.5	1250	1075	20000	3000	82	F01821621301
			FTL18/2G11/835	FT18W/2G11/835	50	225	1250	1075	12000	3500	82	F01821620351
			FTL18/2G11/835/L	FT18W/2G11/RS/835	50	262.5	1250	1075	20000	3500	82	F01821621351
			FTL18/2G11/841	FT18W/2G11/841	50	225	1250	1075	12000	4100	82	F01821620411
			FTL18/2G11/841/L	FT18W/2G11/RS/841	50	262.5	1250	1075	20000	4100	82	F01821621411
24	FTL	2G11	FTL24/2G11/830	FT24W/2G11/830	50	322.5	1800	1548	12000	3000	82	F02421620301
			FTL24/2G11/835	FT24W/2G11/835	50	322.5	1800	1548	12000	3500	82	F02421620351
			FTL24/2G11/841	FT24W/2G11/841	50	322.5	1800	1548	12000	4100	82	F02421620411
36	FTL	2G11	FTL36/2G11/830	FT36W/2G11/830	50	415	2900	2494	12000	3000	82	F03621620301
			FTL36/2G11/835	FT36W/2G11/835	50	415	2900	2494	12000	3500	82	F03621620351
			FTL36/2G11/841	FT36W/2G11/841	50	415	2900	2494	12000	4100	82	F03621620411
40	FTL	2G11	FTL40/2G11/830	FT40W/2G11/830	50	565	3150	2709	20000	3000	82	F04021620301
			FTL40/2G11/835	FT40W/2G11/835	50	565	3150	2709	20000	3500	82	F04021620351
			FTL40/2G11/841	FT40W/2G11/841	50	565	3150	2709	20000	4100	82	F04021620411
			FTL40/2G11/850	FT40W/2G11/850	50	565	3150	2709	20000	5000	82	F04021620501
55	FTL	2G11	FTL55/2G11/830	FT55W/2G11/830	50	527.5	4800	4128	12000	3000	82	F05521620301
			FTL55/2G11/835	FT55W/2G11/835	50	527.5	4800	4128	12000	3500	82	F05521620351
			FTL55/2G11/841	FT55W/2G11/841	50	527.5	4800	4128	12000	4100	82	F05521620411
80	FTL	2G11	FTL80/2G11/830	FT80W/2G11/830	50	565	6000	5160	12000	3000	82	F08021620301
			FTL80/2G11/835	FT80W/2G11/835	50	565	6000	5160	12000	3500	82	F08021620351
			FTL80/2G11/841	FT80W/2G11/841	50	565	6000	5160	12000	4100	82	F08021620411

All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws



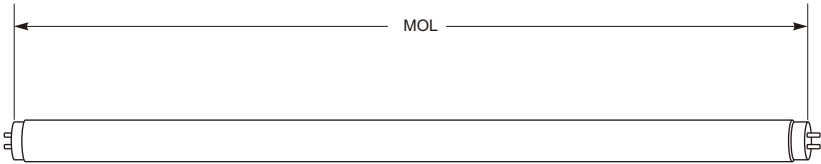
FTL
2G11 Base

LINEAR FLUORESCENT LAMPS - T5

- High efficacy
- Long life, up to 20,000 hours
- Less mercury contained
- High CRI

Watts	Bulb	Base	Description	Case Qty.	Dimensions MOL (mm)	Lumens (lm)	Avg.Life (Hours)	Color Temp (K)	CRI	Manufacture Production Code
Fluorescent Lamps - High Efficiency (T5)										
14	T5	Mini Bi-Pin	FL14/T5/830	50	549	1350	20000	3000	85	F01421518301
			FL14/T5/840	50	549	1350	20000	4000	85	F01421518401
			FL14/T5/860	50	549	1250	20000	6000	85	F01421518601
21	T5	Mini Bi-Pin	FL21/T5/830	50	848	2100	20000	3000	85	F02121518301
			FL21/T5/840	50	848	2100	20000	4000	85	F02121518401
			FL21/T5/860	50	848	1950	20000	6000	85	F02121518601
28	T5	Mini Bi-Pin	FL28/T5/830	50	1148	2900	20000	3000	85	F02821518301
			FL28/T5/840	50	1148	2900	20000	4000	85	F02821518401
			FL28/T5/860	50	1148	2700	20000	6000	85	F02821518601
35	T5	Mini Bi-Pin	FL35/T5/830	50	1450	3650	20000	3000	85	F03521518301
			FL35/T5/840	50	1450	3650	20000	4000	85	F03521518401
			FL35/T5/860	50	1450	3400	20000	6000	85	F03521518601

All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws



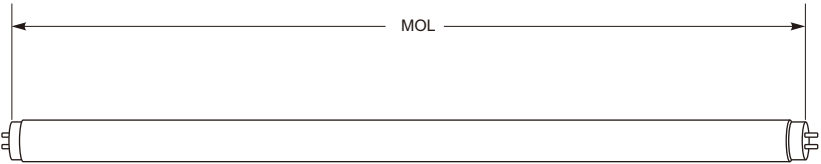
T5
Mini Bi-Pin Base

LINEAR FLUORESCENT LAMPS - T5

- High efficacy
- Long life, up to 20,000 hours
- Less mercury contained
- High CRI
- High output

Watts	Bulb	Base	Description	Case Qty.	Dimensions MOL (mm)	Lumens (lm)	Avg.Life (Hours)	Color Temp (K)	CRI	Manufacture Production Code
Fluorescent Lamps - High Output (T5)										
24	T5	Mini Bi-Pin	FL24/T5/830/HO	50	549	2000	20000	3000	85	F02421518301
			FL24/T5/840/HO	50	549	2000	20000	4000	85	F02421518401
			FL24/T5/860/HO	50	549	1850	20000	6000	85	F02421518601
39	T5	Mini Bi-Pin	FL39/T5/830/HO	50	848	3500	20000	3000	85	F03921518301
			FL39/T5/840/HO	50	848	3500	20000	4000	85	F03921518401
			FL39/T5/860/HO	50	848	3250	20000	6000	85	F03921518601
49	T5	Mini Bi-Pin	FL49/T5/830/HO	50	1450	4900	20000	3000	85	F03921518301
			FL49/T5/840/HO	50	1450	4900	20000	4000	85	F03921518401
			FL49/T5/860/HO	50	1450	4650	20000	6000	85	F03921518601
54	T5	Mini Bi-Pin	FL54/T5/830/HO	50	1148	5000	20000	3000	85	F05421518301
			FL54/T5/840/HO	50	1148	5000	20000	4000	85	F05421518401
			FL54/T5/860/HO	50	1148	4550	20000	6000	85	F05421518601
80	T5	Mini Bi-Pin	FL80/T5/830/HO	50	1450	7000	20000	3000	85	F08021518301
			FL80/T5/840/HO	50	1450	7000	20000	4000	85	F08021518401
			FL80/T5/860/HO	50	1450	6500	20000	6000	85	F08021518601

All measurements are shown in millimeters unless noted
Manage in Accordance with Disposal Laws



T5
Mini Bi-Pin Base

Germicidal Lamps



Contents

82	Germicidal Lamps - T5
83	Germicidal Lamps - T8, T10
84	Germicidal Lamps - PL

how to read a table

Watts
Energy consumption during proper operation.

Voltage
The voltage for proper operation.

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

Average Life
An average rating, in hours, indicating when 50% of a large group of lamps, operated at nominal lamp voltage and current, have failed.

Base
The type of base.

Case Qty.
Number of product units packed in a case.

Spectral Peak
The peak of the germicidal effectiveness curve, effectiveness for UV absorption by DNA

Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	Dimension MOL (mm) Dia (mm)	Current (A)	Spectral Peak (nm)	UV Output (W)	Avg.Life (Hours)	Manufacture Production Code
T5 - Miniature Bi-Pin G5 Base											
4	T5	G5	G4T5	29	50	135 15	0.170	253.70	0.80	6000	U04050502901
6	T5	G5	G6T5	42	50	211 15	0.160	253.70	1.80	8000	U06050504201
7	T5	G5	G7T5	30	50	165 15	0.230	253.70	1.60	8000	U07050503001
8	T5	G5	G8T5	57	50	287 15	0.145	253.70	2.20	8000	U08050505701
11	T5	G5	G11T5	37	50	211 15	0.330	253.70	2.20	8000	U11050503701
16	T5	G5	G16T5	50	50	287 15	0.350	253.70	3.20	8000	U16050505001
20	T5	G5	G20T5	62	50	400 15	0.400	253.70	5.50	8000	U20050506201

Bulbs
Code for size and shape. Illustrations can be found on the bottom of each page and the beginning of each chapter.

Description
The lamp's identification code.

MOL
Maximum overall length in millimeters.

Dia
Maximum overall diameter in millimeters.

UV Output
UV output intensity indicated in watt.

Manufacture Production Code
Production code during the manufacturing process.

GERMICIDAL LAMPS

Germicidal action

UV-action

Ultraviolet radiation in the 200-300 nanometer (nm) range is extremely effective in killing microorganisms such as airborne and surface bacteria, viruses, yeasts and molds.

Plusrite low-pressure, mercury-arc germicidal lamps are specially designed to produce the highest amounts of UV radiation - typically about 90% of the total rated energy is at 253.70nm. This radiation is very close to the peak of the germicidal effectiveness curve of 265nm, the most lethal wavelength to microorganisms. Our germicidal lamps are used extensively in air and water purification applications such as in the food and beverage industry, medical applications, and in HVAC systems (Heating, Ventilating, and Air Conditioning), pharmaceutical and semiconductor sterilization applications. In addition, they are used in drinking water, waste water and ground water remediation.

Ozone Action

Our "VH" germicidal lamps generate energy at 185nm in addition to the 253.70nm line. This UV emission produces abundant amounts of ozone in air. Ozone is an extremely active oxidizer. It destroys microorganisms on contact and acts as a deodorizer. One of its primary advantages is that it can be carried by air into places that the UV radiation cannot directly reach. We design and manufacture lamps to produce various amounts of ozone to meet specific application requirements. "VH" lamps are typically used in the treatment of air, pool and spa water, T.O.C. (Total Organic Compound) reduction, and HVAC.

Advantages of UV-Radiation

- Environmentally friendly, no dangerous chemicals to handle or store, no problems of overdosing.
- Low initial capital cost and reduced operating expenses when compared with other technologies such as chemical processing.
- Immediate treatment process, no need for holding tanks, long retention times.
- No chemicals added to water supply; no by-products.
- No change in taste, odor, pH, conductivity or the general chemistry of the water.
- Simplicity and ease of maintenance, periodic cleaning (if applicable) and annual lamp replacement.
- Highly compatible with other water and air treatment processes.

Quartz Germicidal Lamps

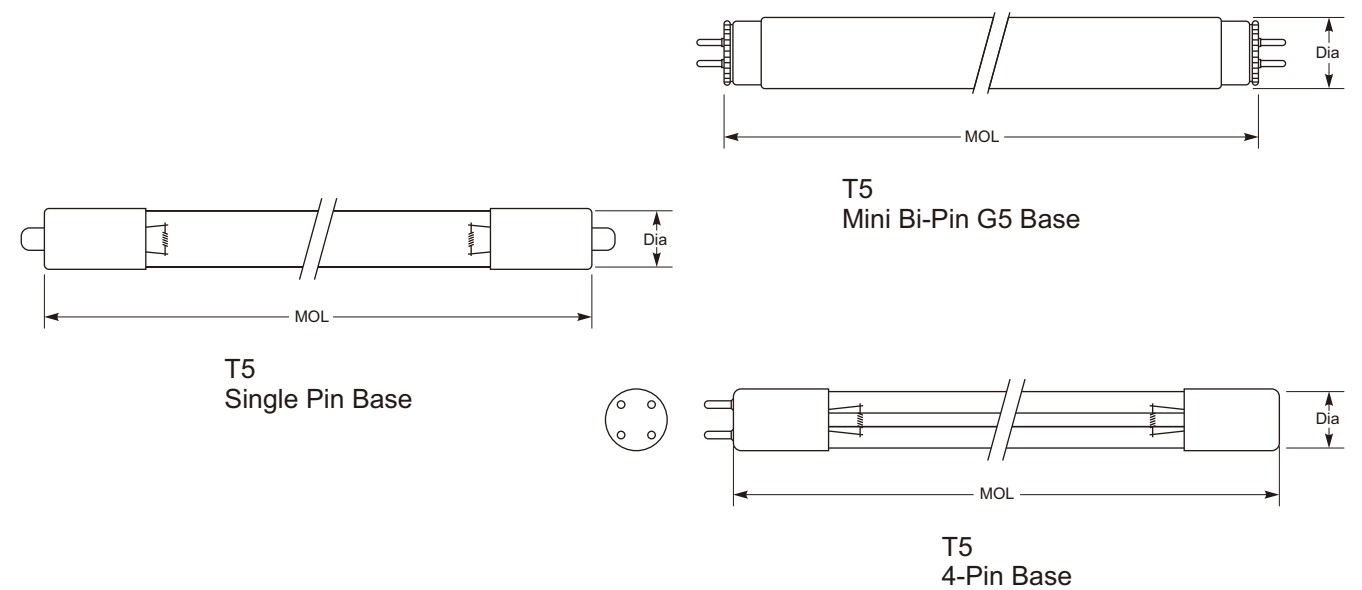
The type of fused quartz used to make the envelope or bulb of the germicidal lamp determines the emission of the wavelengths of UV energy that react with the oxygen in the air to produce ozone. The relative amount of ozone generating energy at 185nm is indicated by the letters "L" and "VH". "L" lamps are made with a specially doped fused quartz that prohibits the emission of the energy at 185nm. "VH" lamps are made with clear fused quartz which will transmit both the 254nm and 185nm energy. In applications where a moderate amount of ozone may be required, we can splice the two types of quartz together in a ratio to produce the desired amount of ozone*. *Ozone generation is the result of a complex reaction of the oxygen in the air to the presence of radiation at 185nm. Other factors influencing ozone production include: temperature, relative humidity, air flow, dew point, UV intensity, etc. The actual amount of ozone

GERMICIDAL LAMPS

Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	Dimension MOL (mm)	Dia (mm)	Current (A)	Spectral Peak (nm)	UV Output (W)	Avg.Life (Hours)	Manufacture Production Code
T5 - Miniature Bi-Pin G5 Base												
4	T5	G5	G4T5	29	50	135	15	0.170	253.70	0.80	6000	U04050502901
6	T5	G5	G6T5	42	50	211	15	0.160	253.70	1.80	8000	U06050504201
7	T5	G5	G7T5	30	50	165	15	0.230	253.70	1.60	8000	U07050503001
8	T5	G5	G8T5	57	50	287	15	0.145	253.70	2.20	8000	U08050505701
11	T5	G5	G11T5	37	50	211	15	0.330	253.70	2.20	8000	U11050503701
16	T5	G5	G16T5	50	50	287	15	0.350	253.70	3.20	8000	U16050505001
20	T5	G5	G20T5	62	50	400	15	0.400	253.70	5.50	8000	U20050506201
T5 - Single Pin												
10	T5	Single Pin	G10T5L	40	50	357	15	0.400	253.70	3.00	8000	U10050104001
14	T5	Single Pin	G14T5L	55	50	287	15	0.425	253.70	5.30	9000	U14050105501
22	T5	Single Pin	G22T5L	62	50	436	15	0.420	253.70	7.00	8000	U22050106201
36	T5	Single Pin	G36T5L	115	50	846	15	0.425	253.70	13.00	9000	U36050111501
64	T5	Single Pin	G64T5L	250	50	1554	15	0.425	253.70	127.00	9000	U64050125001
T5 - 4-Pin Base												
10	T5	4-Pin	G10T5L/4P	40	50	357	15	0.400	253.70	3.00	8000	U10050404001
14	T5	4-Pin	G14T5L/4P	55	50	287	15	0.425	253.70	5.30	9000	U14050405501
22	T5	4-Pin	G22T5L/4P	62	50	436	15	0.420	253.70	7.00	8000	U22050406201
36	T5	4-Pin	G36T5L/4P	115	50	846	15	0.425	253.70	13.00	9000	U36050411501
64	T5	4-Pin	G64T5L/4P	250	50	1154	15	0.425	253.70	127.00	9000	U64050425001

* Items only available for special orders

All measurements are shown in inches unless noted
Manage in Accordance with Disposal Laws
See page 89 for safety handling and warning purposes



WARNING

ULTRAVIOLET RADIATION EXPOSURE:

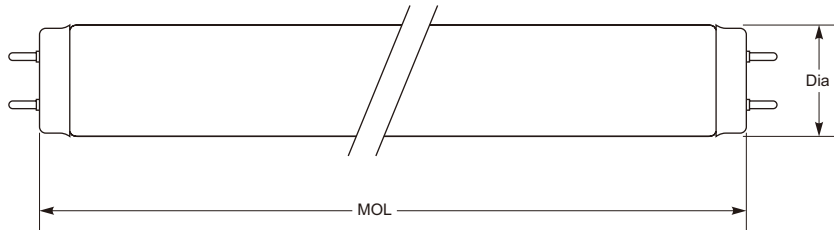
WARNING: This lamp can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if the outer envelope of the lamps is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Lamps that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

GERMICIDAL LAMPS

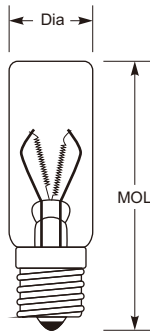
Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	Dimension		Current (A)	Spectral Peak (nm)	UV Output (W)	Avg.Life (Hours)	Manufacture Production Code
						MOL (mm)	Dia (mm)					
T8 - Medium Bi-Pin G13 Base												
10	T8	G13	G10T8	46	15	330	25	0.230	253.70	2.70	8000	U10081304601
15	T8	G13	G15T8	55	15	436	25	0.305	253.70	4.90	8000	U15081305501
25	T8	G13	G25T8	46	15	436	25	0.600	253.70	6.90	8000	U25081304601
30	T8	G13	G30T8	99	15	893	25	0.355	253.70	13.90	8000	U30081309901
55	T8	G13	G55T8	83	15	893	25	0.770	253.70	18.00	8000	U55081308301
T10 - G13 Base												
20	T10	G13	G20T10	58	15	589	33	0.360	253.70	7.50	8000	U20101305801
40	T10	G13	G40T10	106	15	1198	33	0.420	253.70	19.80	8000	U40101310601
E17 Base												
3		E17	GTL3	10.5	15	63	20	0.300	253.70	0.16	3000	U03031701001

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See page 89 for safety handling and warning purposes



T8 & T10
Med Bi-Pin G13 Base



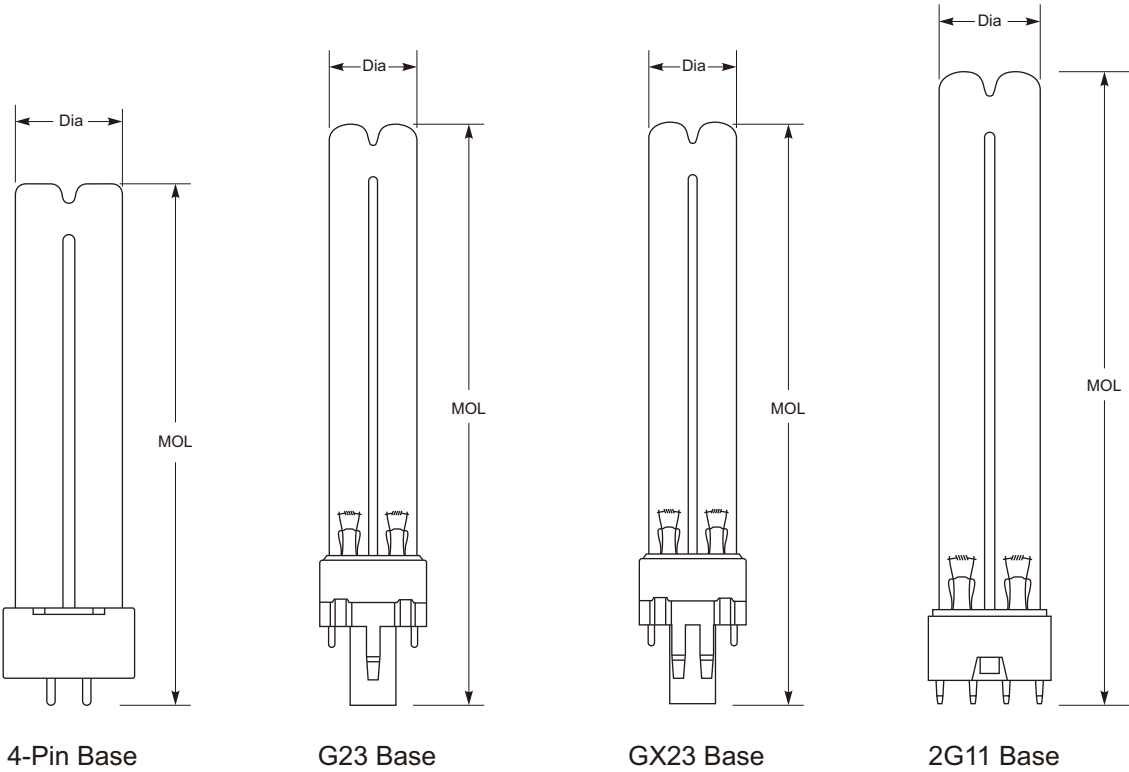
E17 Base

GERMICIDAL LAMPS

Watts	Bulb	Base	Description	Voltage (V)	Case Qty.	Dimension		Current (A)	Spectral Peak (nm)	UV Output (W)	Avg.Life (Hours)	Manufacture Production Code
						MOL (mm)	Dia (mm)					
H - Shaped 4-Pin Base												
6	PL	4-Pin	GUL6	42	15	35	17	0.160	253.70	1.60	3000	U06020404201
H - Shaped G23/GX23 Base												
5	PL	G23	GPX5	35	15	28	13	0.180	253.70	1.20	8000	U05022303501
7	PL	G23	GPX7	45	15	28	13	0.180	253.70	1.90	8000	U07022304501
9	PL	G23	GPX9	59	15	28	13	0.180	253.70	2.40	8000	U09022305901
11	PL	G23	GPX11	91	15	28	13	0.155	253.70	3.00	8000	U11022309101
13	PL	GX23	GPX13	59	15	28	13	0.285	253.70	3.60	8000	U13022305901
H - Shaped 2G11 Base												
18	PL	2G11	GPL18K	58	15	40	20	0.375	253.70	5.50	8000	U18021105801
36	PL	2G11	GPL36K	106	15	40	20	0.435	253.70	12.00	8000	U36021110601

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4-Pin Base

G23 Base

GX23 Base

2G11 Base

