

2010/11



**Lamp
Specialists**

KANDOLite®

www.prosperitylamps.com

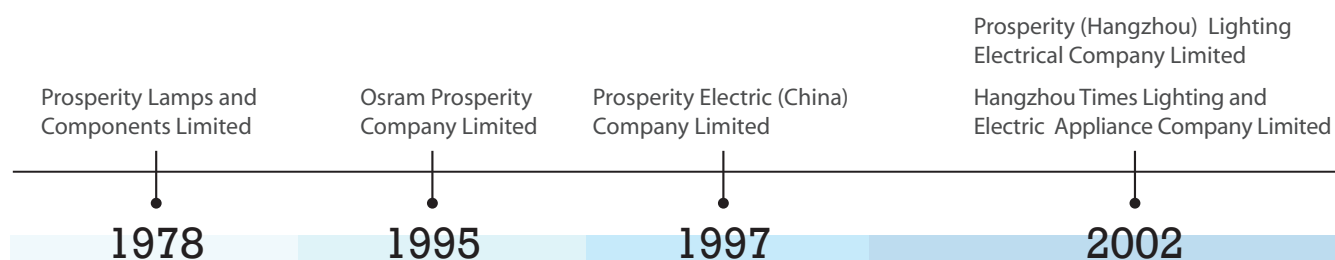


Hangzhou Factory



Langfang Factory

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Company Profile

Prosperity Lamps and Components Limited has a long committed involvement in Hong Kong's lighting industry. After more than three decades of full support from suppliers, customers and employees, the group has become one of the leading and professional suppliers of quality lamps, lighting fixtures, lamp components and lamp making machinery for the lighting industry.

China's rapid economic growth since the eighties called for foreign capital and technology to boost its illumination industry. In 1995, Prosperity and Osram set up a joint-venture company in Hong Kong – **Osram Prosperity Company Limited** to market lighting products made by Osram and Prosperity in Hong Kong and Macau.

To strengthen our position in China, in 1997 Prosperity established a wholly-owned factory in Langfang – **Prosperity Electric (China) Company Limited**. to manufacture lamps and lighting fixtures for both local and export markets.

Prosperity (Hangzhou) Lighting Electrical Company Limited

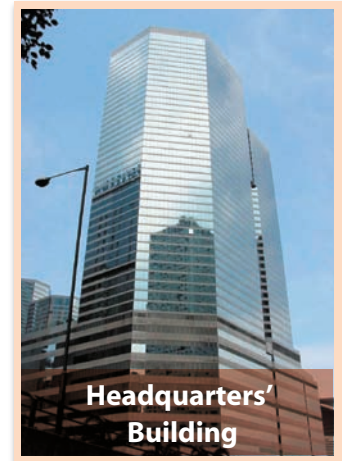
Hangzhou Times Lighting and Electric Appliance Company Limited

were established in 2002 after acquisition of the Hangzhou Lamp factory. The factories manufacture metal halide lamps, high pressure sodium lamps, fluorescent lamps and incandescent lamps.

In 2004, Prosperity and SiTECO GmbH (the former Siemens Lighting System Division) set up a joint-venture company - **SiTECO Prosperity Lighting (Langfang) Co., Ltd.** at Langfang to manufacture and market SiTECO brand lighting fixtures for the local and export markets.



Hong Kong (Headquarters)



Headquarters' Building

- ★ Production Factory
- Sales Office

SiTECO Prosperity Lighting
(Langfang) Co., Ltd.
Prosperity (Xinxiang)
Electrical Machinery Co., Ltd.

SiTECO Prosperity Lighting
(Hong Kong) Company Limited

Normalien Prosperity (Hangzhou)
Metal Die-Casting Co., Ltd.

2004

2005

2008

In the same year, **Prosperity (Xinxiang) Electrical Machinery Co., Ltd.** was established to manufacture machine and equipment for lamps.

In 2005, **SiTECO Prosperity Lighting (Hong Kong) Company Limited** was formed to handle sales of lighting fixture for project business of Hong Kong and Macau.

In 2008, Prosperity and Normalien S.P.A. Italy set up a joint-venture company - **Normalien Prosperity (Hangzhou) Metal Die-Casting Co., Ltd.** at Fuyang to manufacture aluminium die cast parts for lighting, automotive and furniture industries.

Besides the cities where there are manufacturing operations, Prosperity also set up sales offices in various major cities of China, namely , Beijing , Chengdu, Guangzhou, Guiyang, Shanghai, and Zhongshan. More offices are expected to be established in line with market requirements to penetrate the market in China.

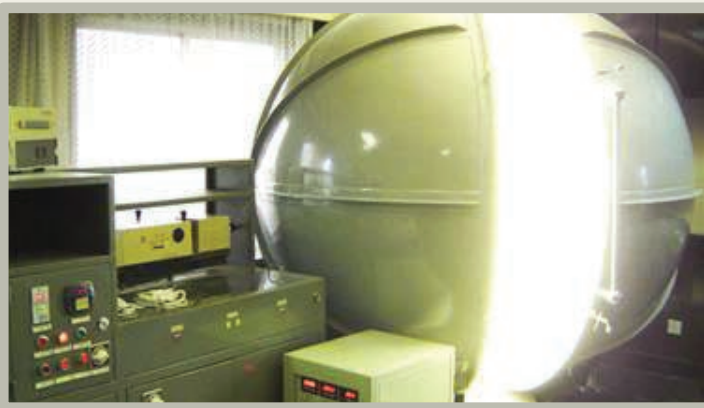
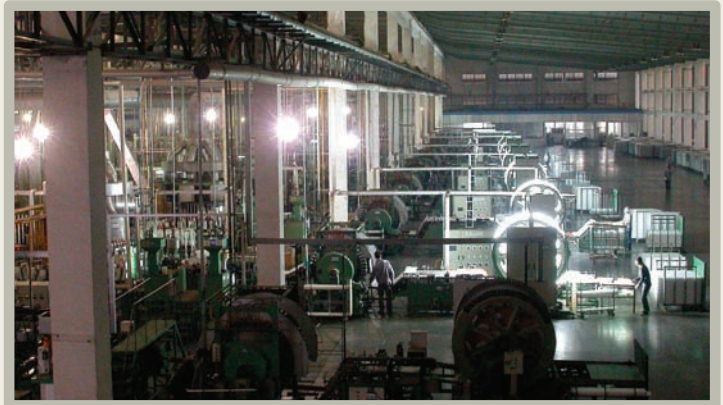
Prosperity is most willing to share their innovative expertise, quality products and industrial experience with its customers and partners. The rapid establishment of sales offices and manufacturing facilities demonstrated Prosperity's dedication to service both the domestic Chinese and the worldwide lighting markets.

Facilities In Line With ISO 9001 Quality Management



Automated production lines for incandescent bulbs

Automated production lines for T8 fluorescent lamps



Computerized testing and product research and development laboratory

Life test and quality control facilities



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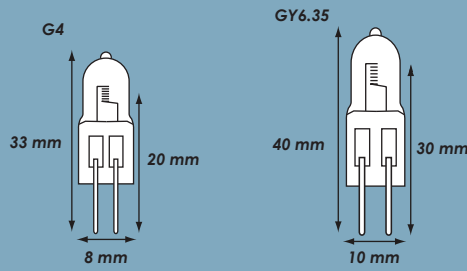
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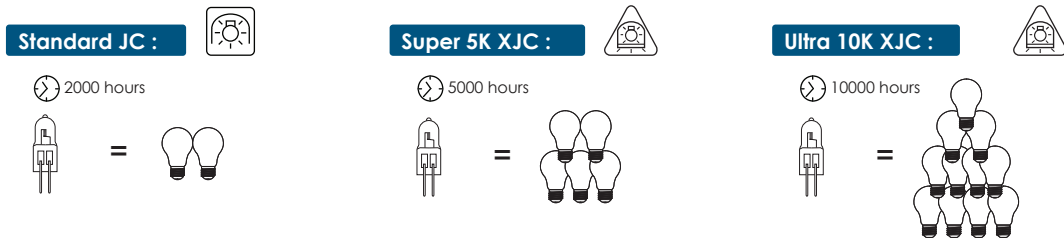
Low Voltage Halogen Lamps

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JC 2-pin Standard Low Voltage Halogen Lamps

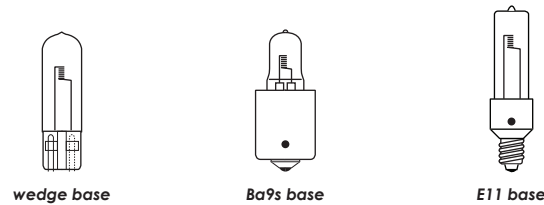


- Available in clear and frosted bulbs, axial or transversal filament
- Colour Temperature 2900K
- Xenon halogen technology applied to Super 5K and Ultra 10K versions
- Average Life :



Other options :

- Other wattages available, e.g. 12W, 15W, 25W
- Other voltages available, e.g. 6V, 14V, 24V and 28V
- Other base types available : wedge, Ba9s, Ba15s, Ba15d, E11, E14, etc

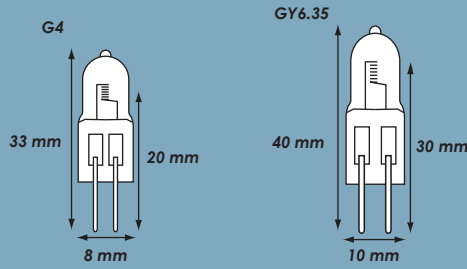


Lamp Code	Voltage (V)	Wattage (W)	Lumen (lm)						Base
			Standard		Super5K		Ultra10K		
JC 5W	12	5	60	B	-	-	-	-	G4
JC 10W	12	10	120	C	140	B	120	C	G4
JC 20W	12	20	300	C	350	B	300	C	G4
JC 20W	12	20	300	C	350	B	300	C	G6.35,GY6.35
JC 35W	12	35	600	C	700	C	600	C	G4
JC 35W	12	35	600	C	700	C	600	C	G6.35,GY6.35
JC 50W	12	50	900	C	1100	C	900	C	G6.35,GY6.35
JC 75W	12	75	1365	C	-	-	-	-	G6.35,GY6.35
JC 100W	12	100	2100	C	-	-	-	-	G6.35,GY6.35



GREEN HALOER JC

Energy Reduction Low Voltage Halogen Lamps



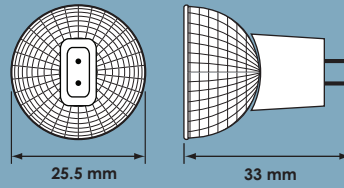
- **Saving 20% of power energy** with NO sacrifice of lighting quality
- Xenon Halogen technology to enhance light output performance
- Optimized design of filament structure provides excellent light distribution
- High colour temperature gives more crispy white light
- Lower heat generation resulting in reduced air conditioning and heat stress on ambience
- Average life 4000 hours
- **Comply to EU Ecodesign Requirements - Commission Regulation No. 244/2009**

Lamp Code	Voltage (V)	Wattage (W)	Base	Color Temp	Lumen (lm)	Energy 13
JC/ER 8W	12	8	G4	2800K	105	B
JC/ER 16W	12	16	G4 / GY6.35	2900K	300	B
JC/ER 28W	12	28	GY6.35	3000K	600	B
JC/ER 40W	12	40	GY6.35	3000K	860	B

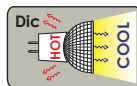
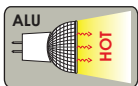
ER vs Traditional Lamps			
Energy Reduction ER series	Traditional Halogen JC 2-pins lamps	Save on Energy	Electrical billing * saving / year
8W	10W	20%	US\$ 2.63
16W	20W	20%	US\$ 5.26
28W	35W	20%	US\$ 9.20
40W	50W	20%	US\$ 13.14

* based on 24 hrs operation/day - US\$0.15/1 KWH

MR8 25mm diameter Halogen Reflector Lamps



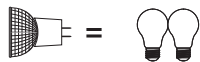
- The most compact display lamp in the market
- Available with open front or glass covered versions
- Colour temperature 3000K for dichroic reflector and 2900K for aluminium coated reflector
- Xenon halogen technology applied to Super 5K version, glass covered type only
- Average life 2000 hours for Standard version and 5000 hours for Super 5K version
- Reflector :



- Average life :

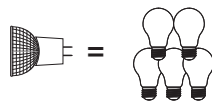
Standard MR8 :

⌚ 2000 hours



Super 5K MR8 :

⌚ 5000 hours

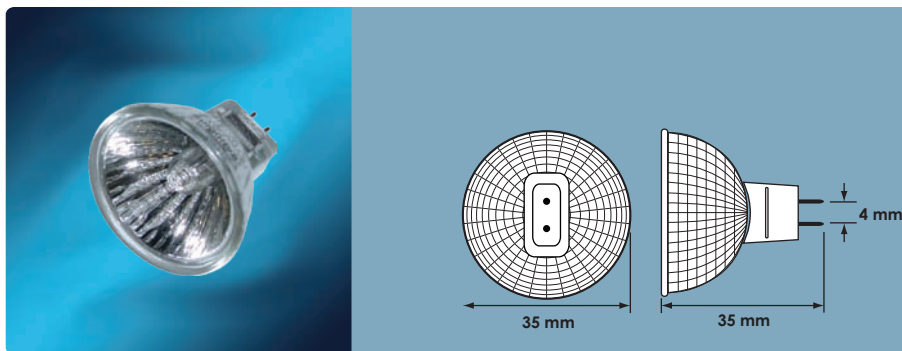


Other options :

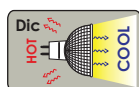
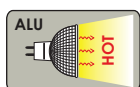
- Voltage variation : 6V, 14V, 24V
- High efficiency output (over 20lm/W) for photo-optics emergency lighting applications

Lamp Code	Voltage (V)	Wattage (W)	Beam Angle	Intensity (cd)		Base
				Standard	Super5K	
MR8 20W	12	20	10 -13°	1700	1700	GZ4
MR8 20W	12	20	23 -26°	800	800	GZ4
MR8 28W	12	28	10 -13°	1900	1900	GZ4
MR8 28W	12	28	23 -26°	1200	1200	GZ4
MR8 35W	12	35	10 -13°	2300	2300	GZ4
MR8 35W	12	35	23 -26°	1400	1400	GZ4

MR11 Standard 35mm diameter Halogen Reflector Lamps

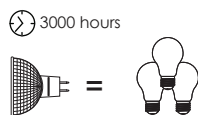


- Halogen reflector lamp for display lighting
- Colour temperature 3000K for dichroic reflector and 2900K for aluminium coated reflector
- Xenon halogen technology applied to Super 5K and Ultra 10K versions, glass covered type only
- Reflector :

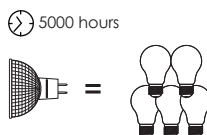


- Average life :

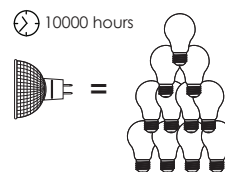
Standard MR11 :



Super 5K MR11 :



Ultra 10K MR11 :



Other options :

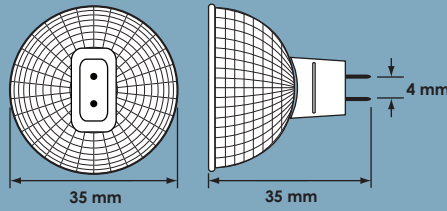
- Other wattages available, e.g. 5W, 10W, and 12W
- Other voltages available, e.g. 6V, 14V and 24V
- Other base types available, e.g. Ba15d
- High efficiency output (over 20lm/W) for photo-optics emergency lighting applications



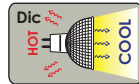
ANSI/UK Code	GC/UK Code	Voltage (V)	Wattage (W)	Approx Beam Angle	Intensity (cd)			Base
					Standard	Super5K	Ultra10K	
FTB M52	M252	12	20	10°	4100	5000	4100	GU4
FTC M51	M251	12	20	20°	1750	2200	1750	GU4
FTD M62	M262	12	20	30°	700	850	700	GU4
FTE M65	M265	12	35	10°	7000	8500	7000	GU4
FTF M66	M266	12	35	20°	3000	3600	3000	GU4
FTH M67	M267	12	35	30°	1500	1800	1500	GU4

GREEN HALOER MR11

Energy Reduction 35mm diameter Halogen Reflector Lamps



- **Saving 20% of power energy** with NO sacrifice of lighting quality
- Xenon Halogen technology to enhance light output performance
- Optimized design of filament structure provides excellent light distribution
- High colour temperature gives more crispy white light
- Lower heat generation resulting in reduced air conditioning and heat stress on ambience
- Average life 4000 hours
- Reflector :

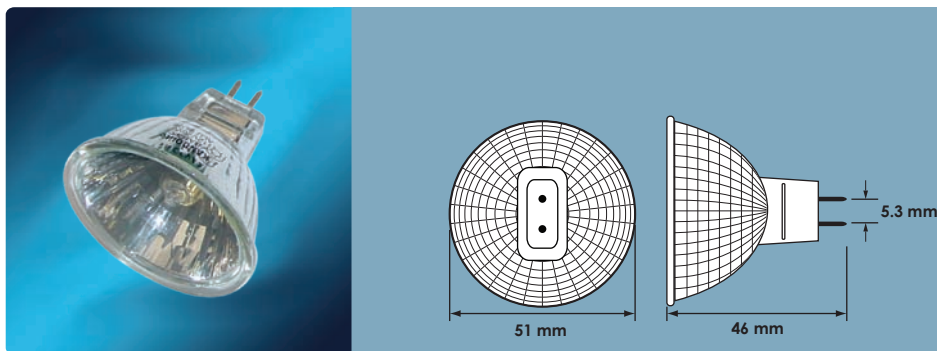


ANSI Code	Voltage (V)	Wattage (W)	Approx Beam Angle	Color Temp	Intensity (cd)	Base
FTB/ER	12	16	10°	2900K	4100	GU4
FTC/ER	12	16	20°	2900K	1750	GU4
FTD/ER	12	16	30°	2900K	700	GU4
FTE/ER	12	28	10°	3000K	7000	GU4
FTF/ER	12	28	20°	3000K	3000	GU4
FTH/ER	12	28	30°	3000K	1500	GU4

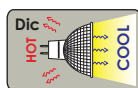
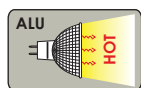
ER vs Traditional Lamps			
Energy Reduction ER series	Traditional Halogen MR11 lamps	Save on Energy	Electrical billing * saving / year
16W	20W	20%	US\$ 5.26
28W	35W	20%	US\$ 9.20

* based on 24 hrs operation/day - US\$0.15/1 KWH

MR16 Standard 51mm diameter Halogen Reflector Lamps

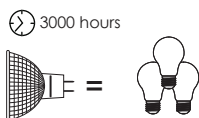


- Halogen reflector lamp for display lighting
- Colour temperature 3000K for dichroic reflector and 2900K for aluminium coated reflector
- Xenon halogen technology applied to Super 5K and Ultra 10K versions, glass covered type only
- Reflector :

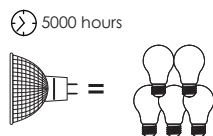


- Average life :

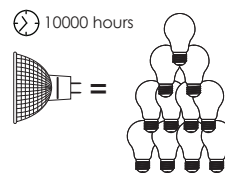
Standard MR16 :



Super 5K MR16 :

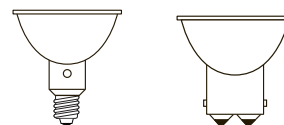


Ultra 10K MR16 :



Other options :

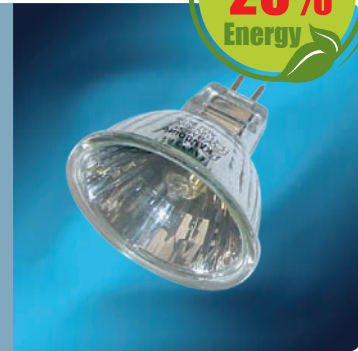
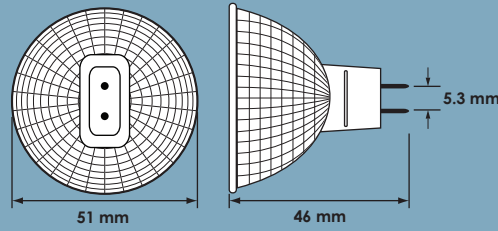
- Other wattages available, e.g. 10W, 42W and 65W
- Other voltages available, e.g. 6V, 14V, 24V and 28V
- Different reflector patterns available
- Other base types available, e.g. E11, Ba15d
- High efficiency output (over 20lm/W) for photo-optics emergency lighting applications



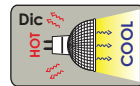
ANSI/UK Code	GC/UK Code	Voltage (V)	Wattage (W)	Beam Angle	Intensity (cd)			Base
					Standard	Super5K	Ultra10K	
ESX M68	M268	12	20	12°	4100	5000	4100	GU5.3
BBF M94	M294	12	20	24°	1500	2000	1500	GU5.3
BAB M69	M269	12	20	36°	700	900	700	GU5.3
FMT ---	---	12	35	12°	7000	9000	7000	GU5.3
FRA M70	M270	12	35	23°	3500	4400	3500	GU5.3
FMW M81	M281	12	35	36°	1250	1600	1250	GU5.3
EXT M49	M249	12	50	13°	10000	13000	10000	GU5.3
EXZ M50	M250	12	50	24°	4400	5600	4400	GU5.3
EXN M58	M258	12	50	38°	1700	2200	1700	GU5.3
FNV M80	M280	12	50	60°	1000	1300	1000	GU5.3
EYF M60	M260	12	75	14°	15000	-	15000	GU5.3
EYC M61	M261	12	75	38°	2950	-	2950	GU5.3

GREEN HALOER MR16

Energy Reduction 51mm diameter Halogen Reflector Lamps



- **Saving 20% of power energy** with NO sacrifice of lighting quality
- Xenon Halogen technology to enhance light output performance
- Optimized design of filament structure provides excellent light distribution
- High colour temperature gives more crispy white light
- Lower heat generation resulting in reduced air conditioning and heat stress on ambience
- Average life 4000 hours
- Reflector :

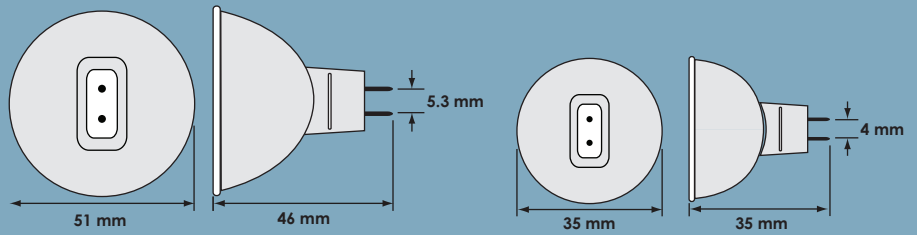


ANSI Code	Voltage (V)	Wattage (W)	Approx Beam Angle	Color Temp	Intensity (cd)	Base
ESX/ER	12	16	12°	2900K	5000	GU5.3
BAB/ER	12	16	36°	2900K	700	GU5.3
----	12	16	60°	2900K	300	GU5.3
FMT/ER	12	28	12°	3000K	10000	GU5.3
FMW/ER	12	28	36°	3000K	1300	GU5.3
----	12	28	60°	3000K	560	GU5.3
EXT/ER	12	40	12°	3050K	13000	GU5.3
EXZ/ER	12	40	24°	3050K	4000	GU5.3
EXN/ER	12	40	36°	3050K	1800	GU5.3
FNV/ER	12	40	60°	3050K	1000	GU5.3

ER vs Traditional Lamps			
Energy Reduction ER series	Traditional Halogen MR16 lamps	Save on Energy	Electrical billing * saving / year
16W	20W	20%	US\$ 5.26
28W	35W	20%	US\$ 9.20
40W	50W	20%	US\$ 13.14

* based on 24 hrs operation/day - US\$0.15/1 KWH

Constant CRI 6,000 hours MR11/16 lighting solution

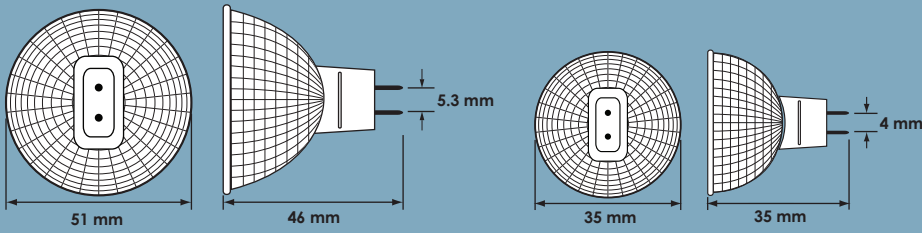


- ✦ Long service life 6000 hours
- ✦ Special durable coating inside and outside
- ✦ Cool beam Effect
- ✦ 30% brighter than standard lamps
- ✦ Constant colour and CRI throughout lamp life
- ✦ Energy / installation cost saving
- ✦ No back spill of light pollution
- ✦ Aesthetic glare free backside cosmetics

ANSI/UK Code	Voltage (V)	Wattage (W)	Beam Angle	Intensity (cd)	Base
Constant CRI - MR11					
FTB	12	20	10°	5000	GU4
FTC	12	20	20°	2200	GU4
FTD	12	20	30°	850	GU4
FTE	12	35	10°	8500	GU4
FTF	12	35	20°	3600	GU4
FTH	12	35	30°	1800	GU4
Constant CRI - MR16					
ESX	12	20	12°	5000	GU5.3
BBF	12	20	24°	2000	GU5.3
BAB	12	20	36°	900	GU5.3
FMT	12	35	12°	9000	GU5.3
FRA	12	35	23°	4400	GU5.3
FMW	12	35	36°	1600	GU5.3
EXT	12	50	13°	13000	GU5.3
EXZ	12	50	24°	5600	GU5.3
EXN	12	50	38°	2200	GU5.3
FNV	12	50	60°	1300	GU5.3
EYF	12	75	14°	19000	GU5.3
EYC	12	75	38°	3800	GU5.3

Special Dichroic Reflector Lamps

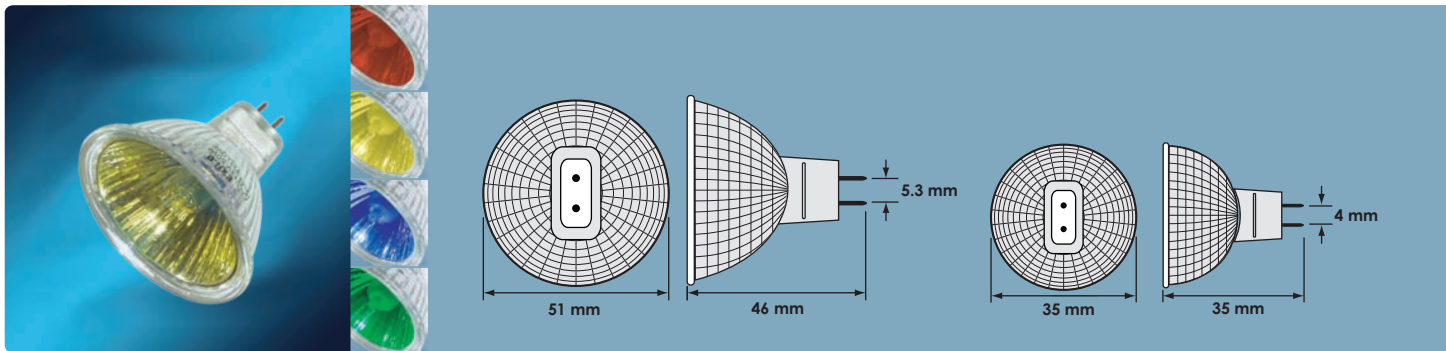
Neutral Daylight NDL colour with Décor Finish



- Long service life 5000 hours
- Colour temperature boosted by thin film coating on inside of reflector up to 4500K
- Satinized reflector back
- Cool beam effect
- Crisp cool neutral daylight output
- High colour temperature up to 4500K plus

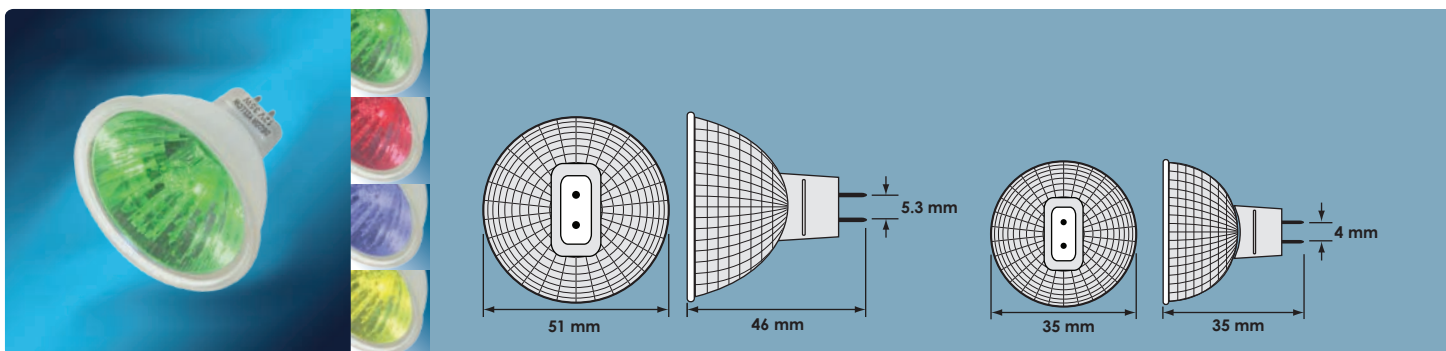
ANSI/UK Code	Voltage (V)	Wattage (W)	Beam Angle	Intensity (cd)	Base
Decor NDL - MR 11					
FTB	12	20	10°	3900	GU4
FTC	12	20	20°	1650	GU4
FTD	12	20	30°	650	GU4
FTE	12	35	10°	6650	GU4
FTF	12	35	20°	2850	GU4
FTH	12	35	30°	1400	GU4
Decor NDL - MR 16					
ESX	12	20	12°	3900	GU5.3
BBF	12	20	24°	1400	GU5.3
BAB	12	20	36°	650	GU5.3
FMT	12	35	12°	6650	GU5.3
FRA	12	35	23°	3300	GU5.3
FMW	12	35	36°	1200	GU5.3
EXT	12	50	16°	9500	GU5.3
EXZ	12	50	24°	4200	GU5.3
EXN	12	50	38°	1600	GU5.3
FNV	12	50	60°	950	GU5.3

Special MR16 and MR11 Reflector Lamps – Colour Lights



- The standard MR16 lamps are fitted with a front glass cover with special thin film coating that enables specific color transmission to the front thereby producing dramatic color effects
- Colour available : Red, Yellow, Blue and Green
- Available also in MR11 lamps
- Average Life 3000 hours

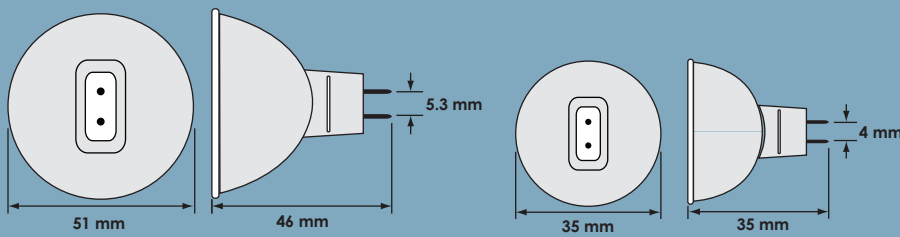
Special Dichroic Reflector Lamps – Décor Colours



- Opal glass reflector in White, Red, Yellow, Blue and Green dichroic coating
- Soft tone back color – the normally unwanted back light becomes a diffused coloration with a dramatic soft-tone effect
- Available in MR11 and MR16 lamps
- Average Life 3000 hours



Special MR16 Reflector Lamps – Fun Colours



- High temperature resistant paint applied to the back of reflector lamps provides colour stimulation to the interior design decor
- Available in MR11 and MR16 lamps
- Most standard paint colors available
- Average Life 3000 hours

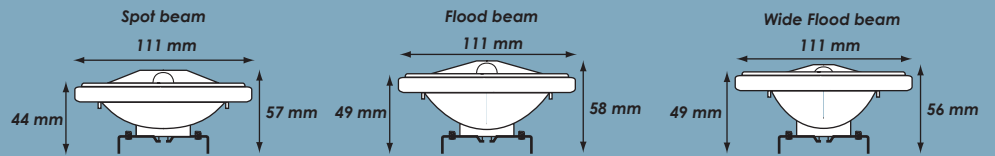
Dichroic reflector :



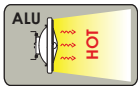
Aluminium coated reflector :



HaluR-Spot111 Standard Low voltage Halogen Spot Lights

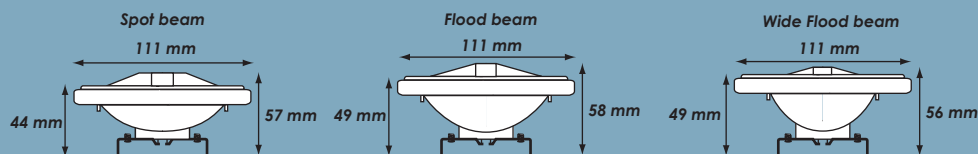


- ✦ Low voltage halogen point source lighting
- ✦ Intelligent spots – versatile shop-lighting, exhibition and art gallery display
- ✦ The front bridge cover allows glare-free comfortable light quality
- ✦ Aluminium reflector allows 100% light reflection with no color shift throughout life of lamp
- ✦ Average life 3000 hours
- ✦ Colour temperature 3000K
- ✦ Aluminium reflector :

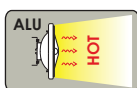


Lamp Code	Voltage (V)	Wattage (W)	Beam Angle	Intensity (cd)	Base
Spot111/35/SP	12	35	8°	12000	G53
Spot111/35/FL	12	35	24°	2500	G53
Spot111/50/SP	12	50	8°	20000	G53
Spot111/50/FL	12	50	24°	4000	G53
Spot111/50/WFL	12	50	45°	1200	G53
Spot111/75/SP	12	75	8°	30000	G53
Spot111/75/FL	12	75	24°	5300	G53
Spot111/75/WFL	12	75	45°	1900	G53
Spot111/100/SP	12	100	8°	48000	G53
Spot111/100/FL	12	100	24°	8500	G53
Spot111/100/WFL	12	100	45°	2800	G53

HaluR-Spot111 Super5K and Ultra10K



- Low voltage halogen point source lighting
- Intelligent spots – versatile shop-lighting, exhibition and art gallery display
- The front bridge cover allows glare-free comfortable light quality
- Ceramic cap allows better heat dissipation to provide an optimum operation condition
- Aluminium reflector allows 100% light reflection with no color shift throughout life of lamp
- Average life 5000/10000 hours
- Aluminium reflector :

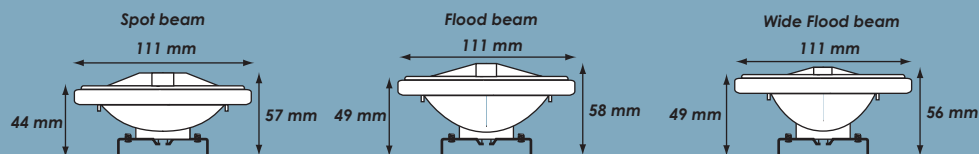


Lamp Code	Voltage (V)	Wattage (W)	Beam Angle	Intensity (cd)		Base
				Super5K	Ultra10K	
Spot111/35/SP	12	35	8°	14400	12000	G53
Spot111/35/FL	12	35	24°	3000	2500	G53
Spot111/50/SP	12	50	8°	24000	20000	G53
Spot111/50/FL	12	50	24°	4800	4000	G53
Spot111/50/WFL	12	50	45°	1450	1200	G53
Spot111/75/SP	12	75	8°	36000	30000	G53
Spot111/75/FL	12	75	24°	6350	5300	G53
Spot111/75/WFL	12	75	45°	2300	1900	G53
Spot111/100/SP	12	100	8°	57600	48000	G53
Spot111/100/FL	12	100	24°	10200	8500	G53
Spot111/100/WFL	12	100	45°	3350	2800	G53

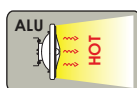


GREEN HALOER HaluR-Spot111

Energy Reduction Low Voltage Halogen Spot Lights



- ✦ Saving 20% of power energy with NO sacrifice of lighting quality
- ✦ Xenon Halogen technology to enhance light output performance
- ✦ Optimized design of filament structure provides excellent light distribution
- ✦ Ceramic cap allows better heat dissipation to provide an optimum operation condition
- ✦ Lower heat generation resulting in reduced air conditioning and heat stress on ambiance
- ✦ Average life 4000 hours
- ✦ Aluminium reflector :

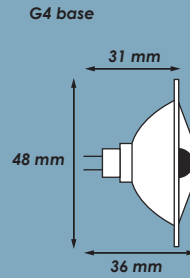


Lamp Code	Voltage (V)	Wattage (W)	Beam Angle	Intensity (cd)	Base
Spot111/ER/28/SP	12	28	8°	12000	G53
Spot111/ER/28/FL	12	28	24°	2500	G53
Spot111/ER/28/WFL	12	28	45°	1100	G53
Spot111/ER/40/SP	12	40	8°	20000	G53
Spot111/ER/40/FL	12	40	24°	4000	G53
Spot111/ER/40/WFL	12	40	45°	1200	G53
Spot111/ER/75/SP	12	75	8°	38000	G53
Spot111/ER/75/FL	12	75	24°	7500	G53
Spot111/ER/75/WFL	12	75	45°	2500	G53

ER vs Traditional Lamps			
Energy Reduction ER series	Traditional Halogen AR111 lamps	Save on Energy	Electrical billing * saving / year
28W	35W	20%	US\$ 9.20
40W	50W	20%	US\$ 13.14
75W	90W	20%	US\$ 19.71

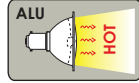
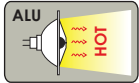
* based on 24 hrs operation/day - US\$0.15/1 KWH

AR48 48mm diameter Aluminium Reflector Lamps

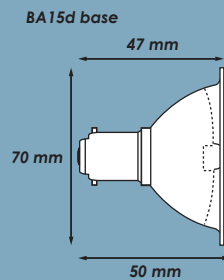


Lamp Code	Wattage (W)	Voltage (V)	Beam Angle	Intensity (cd)	Base
AR48/10W/SP	10	12	8°	1800	G4
AR48/20W/SP	20	12	8°	3600	G4
AR48/35W/SP	35	12	8°	6000	G4

- Low voltage halogen point source lighting
- Intelligent spots – versatile shop-lighting, exhibition and art gallery display
- Anti-glare shield features comfortable visual quality
- Energy saver: **KANDOLite** 35W lamps retrofit for other brand 50W lamps
- Average life 5000 hours
- Colour temperature 3000K
- Aluminium reflector :



AR70 70 mm diameter Aluminium Reflector Lamps



Lamp Code	Wattage (W)	Voltage (V)	Beam Angle	Intensity (cd)	Base
AR70/20W/SP	20	12	8°	5600	BA15d
AR70/20W/FL	20	12	24°	1500	BA15d
AR70/35W/SP	35	12	8°	12000	BA15d
AR70/35W/FL	35	12	24°	2400	BA15d
AR70/50W/SP	50	12	8°	19000	BA15d
AR70/50W/FL	50	12	24°	3400	BA15d



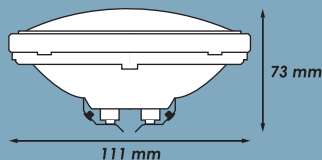
KANDOLite[®]
Brings you Light and Prosperity

PAR36 Sealed Beam Halogen Lamps

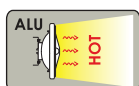
With screw terminals for 12V operation



PAR 36
screw terminal



- Transformer is required
- Shorter lamp length allows flexibility in design of display lighting fixtures
- Xenon-halogen lamp capsule gives high lumen output
- Front hard glass lens cuts UV radiation
- Super Spotlight for outdoor garden lighting
- Colour lens types offer various aesthetic effects available in 35W and 50W in VNSP, NSP, NFL and WFL beams
- Average life 5000 hours
- Aluminium reflector :



Lamp Code	Voltage (V)	Wattage (W)	Beam Angle	Intensity (cd)	Base
20PAR36/VNSP	12	20	5 - 7°	4200	Screw terminal
20PAR36/NSP	12	20	8 - 12°	1700	Screw terminal
#20PAR36/NFL	12	20	18 - 22°	900	Screw terminal
20PAR36/WFL	12	20	32 - 36°	450	Screw terminal
35PAR36/VNSP	12	35	5 - 7°	8500	Screw terminal
35PAR36/NSP	12	35	8 - 12°	3500	Screw terminal
#35PAR36/NFL	12	35	18 - 22°	2000	Screw terminal
35PAR36/WFL	12	35	32 - 36°	1000	Screw terminal
50PAR36/VNSP	12	50	5 - 7°	15000	Screw terminal
50PAR36/NSP	12	50	8 - 12°	6000	Screw terminal
#50PAR36/NFL	12	50	18 - 22°	3200	Screw terminal
50PAR36/WFL	12	50	32 - 36°	1600	Screw terminal

The Narrow Flood beam is unique in KANDOLite PAR36 series

Line Voltage Halogen Lamps

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Heater Lamps *Line Voltage Halogen Lamps*



Evolving from the halogen lamp technology, a vast variety of infrared heating lamps are now available for use in electrical appliances for consumer and industrial applications.

Working on most popular supply voltages, heater lamps of different wattages can be designed and manufactured to specific requirements. Apart from the traditional linear shape, the quartz glass can be processed to special shapes as required in the applications.

Heater lamps with bare or insulated lead-wires that can withstand high temperatures are available as well as a number of standard contacts for fitting into standard heater lamp sockets.

The halogen heater lamps can be used in any burning position. Lamps with special reflective coating for higher efficiency operation are available on request.

Product benefits –

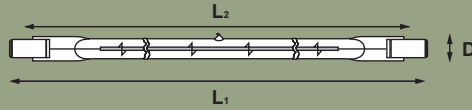
- Very compact heat source in small diameter
- Instant heat : full power within seconds after switching on
- High efficiency : more than 90% of energy being transformed into infrared heat
- Heat can be focused by reflectors
- Long life of up to 5000 hours
- Clean heat source with no pollution and no by-products
- Controllable from 0-100%

Product applications –

- Drying of paper, lacquer, paint, printing inks, etc.
- Heat sterilization
- Food heating and warm-keeping
- Plastic softening, melting and thermoforming
- Oxidation processes in semiconductor industry

Prosperity's heater lamps can be custom-made to meet a combination of specific voltage, wattage, length, colour temperature, shape, lead-wire and base requirements.

J Standard Double-Ended Linear Halogen Lamps



- In-line protection fuses are recommended for 220-240V circuits according to EN60357 (BS1075) for following wattages :

60W to 300W	- 2A
500W	- 4A
750W & 1000W	- 6.3A
1500W & 2000W	- 10A
- Average life 2000 hours
- Colour temperature 2900K
- Protective covers are required for lighting fixtures

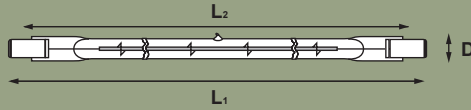
Lamp Code	Voltage (V)	Wattage (W)	Filament Support	Base	Diameter D (mm)	Length L ₁ (mm)	Length L ₂ (mm)	Lumen (lm)	Energy Efficiency Class
J-78/60W	120/130/230/240	60	Re-inforced	R7s	8	80	76±1.5	840	D
J-78/75W	120/130/230/240	75	Re-inforced	R7s	8	80	76±1.5	1050	D
J-78/100W	120/130/230/240	100	Re-inforced	R7s	8	80	76±1.5	1650	D
J-78/150W	120/130/230/240	150	Re-inforced	R7s	8	80	76±1.5	2600	D
J-78/200W	120/130/230/240	200	Re-inforced	R7s	8	80	76±1.5	3200	E
J-78/250W	120/130/230/240	250	Re-inforced	R7s	8	80	76±1.5	4000	E
J-118/100W	120/130/230/240	100	Re-inforced	R7s	8	118	114±1.5	1650	D
J-118/150W	120/130/230/240	150	Re-inforced	R7s	8	118	114±1.5	2600	D
J-118/200W	120/130/230/240	200	Standard	R7s	8	118	114±1.5	3200	E
J-118/300W	120/130/230/240	300	Standard	R7s	8	118	114±1.5	5000	E
J-118/500W	120/130/230/240	500	Standard	R7s	10	118	114±1.5	9500	D
J-189/750W	230/240	750	Standard	R7s	10	189	185±1.5	16500	*
J-189/1000W	230/240	1000	Standard	R7s	10	189	185±1.5	22000	*
J-254/1000W	230/240	1000	Standard	R7s	10	254	251±1.5	22000	*
J-254/1500W	230/240	1500	Standard	R7s	10	254	251±1.5	33000	*
J-333/2000W	230/240	2000	Standard	R7s	10	333	329±1.5	44000	*
J-333/2000W	230/240	2000	Standard	FA4	10	334	329±1.5	44000	*

* Lumen over 12000 is exempt from Ecodesign Requirements



GREEN HALOER J

Energy Reduction Double-Ended Linear Halogen Lamps



- **J/ER Saves 20% energy** in replacing traditional lamps
- Lower heat generation resulting in reduced air conditioning and heat stress on ambience
- Average life 2000 hours
- Colour temperature 2900K
- In-line protection fuses are recommended for 220-240V circuits according to EN60357 (BS1075) for following wattages : 60W to 400W - 2A
- Protective covers are required for lighting fixtures
- **Comply to EU Ecodesign Requirements - Commission Regulation No. 244/2009**

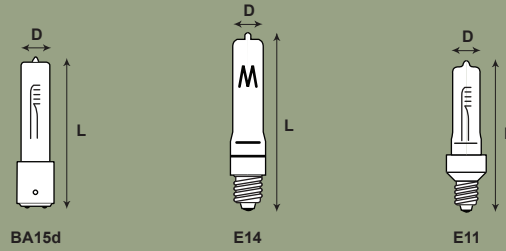


Lamp Code	Voltage (V)	Wattage (W)	Filament Support	Base	Diameter D (mm)	Length L ₁ (mm)	Length L ₂ (mm)	Lumen (lm)	Energy Efficiency Class
J-78/ER/48W	120/130/230/240	48	Re-inforced	R7s	8	80	74.9±1.6	750	C
J-78/ER/60W	120/130/230/240	60	Re-inforced	R7s	8	80	74.9±1.6	980	C
J-78/ER/80W	120/130/230/240	80	Re-inforced	R7s	8	80	74.9±1.6	1380	C
J-78/ER/120W	120/130/230/240	120	Re-inforced	R7s	8	80	74.9±1.6	2220	C
J-78/ER/160W	120/130/230/240	160	Re-inforced	R7s	8	80	74.9±1.6	3100	C
J-78/ER/200W	120/130/230/240	200	Re-inforced	R7s	10	80	74.9±1.6	3980	C
J-118/ER/80W	120/130/230/240	80	Re-inforced	R7s	8	118	114.2±1.6	1380	C
J-118/ER/120W	120/130/230/240	120	Re-inforced	R7s	8	118	114.2±1.6	2220	C
J-118/ER/160W	120/130/230/240	160	Re-inforced	R7s	8	118	114.2±1.6	3100	C
J-118/ER/200W	120/130/230/240	200	Re-inforced	R7s	10	118	114.2±1.6	3980	C
J-118/ER/230W	120/130/230/240	230	Re-inforced	R7s	10	118	114.2±1.6	4650	C
J-118/ER/400W	120/130/230/240	400	Re-inforced	R7s	10	118	114.2±1.6	8550	C

Energy Reduction ER series	Traditional Halogen J lamps	Save on Energy	Electrical billing * saving / year
48W	60W	20%	US\$ 15.77
60W	75W	20%	US\$ 19.71
80W	100W	20%	US\$ 26.28
120W	150W	20%	US\$ 39.42
160W	200W	20%	US\$ 52.56
200W	250W	20%	US\$ 65.70
230W	300W	20%	US\$ 91.98
400W	500W	20%	US\$ 131.4

* based on 24 hrs operation/day - US\$0.15/1 KWH

JD Standard Single-Ended Tungsten Halogen Lamps



- No transformer is required
- Available in clear and frosted bulbs
- Average life 2000 hours
- Colour temperature 2900K
- Conforms to EN60432-2/EN60357 requirements with integrated fuse
- Self-shielded feature allows free burning in open fixtures – conforms to EN60598 safety requirements



Lamp Code	Voltage (V)	Wattage (W)	Diameter D (mm)	BA15d L (mm)	E14 L (mm)	E11 L (mm)	Lumen (lm)	Energy Efficiency Class
JD 35W	120 – 130	35	11.5	48	62	56	380	E
JD 35W	230 – 240	35	11.5	64	62	58	380	E
JD 50W	120 – 130	50	11.5	48	62	56	600	E
JD 50W	230 – 240	50	11.5	64	62	58	600	E
JD 60W	120 – 130	60	11.5	48	62	56	800	D
JD 60W	230 – 240	60	11.5	64	62	58	800	D
JD 75W	120 – 130	75	11.5	53	67	62	1050	D
JD 75W	230 – 240	75	11.5	66	64	60	1050	D
JD 100W	120 – 130	100	11.5	56	70	65	1500	D
JD 100W	230 – 240	100	11.5	76	74	70	1500	D
JD 150W	120 – 130	150	14	58	72	67	2500	D
*JD 150W	230 – 240	150	14	76/90	74	70	2500	D
JD 200W	120 – 130	200	14	64	77	73	3350	D
JD 200W	230 – 240	200	14	90	74	70	3350	D
JD 250W	120 – 130	250	14	69	83	78	4250	D
JD 250W	230 – 240	250	14	90	74	70	4250	D
JD 300W	120 – 130	300	14	69	83	78	5100	E
JD 300W	230 – 240	300	14	90	74	70	5100	E
JD 500W	120 – 130	500	14	95	93	88	8500	E
JD 500W	230 – 240	500	14	95	93	88	8500	E

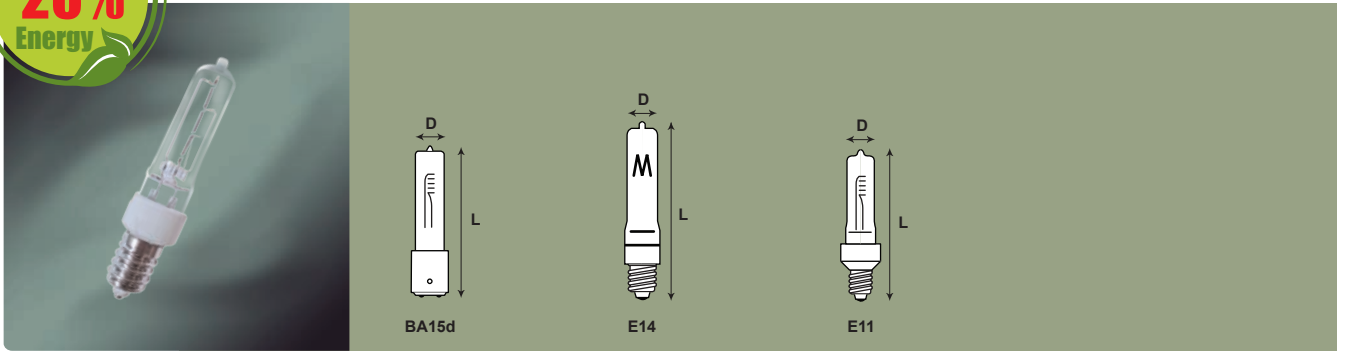
*220-230V 150W BA15d type available in both short (76mm) and long (90mm) versions

(Diameter tolerance of $\pm 0.5\text{mm}$, Length tolerance of $\pm 2\text{mm}$)



GREEN HALOER JD

Energy Reduction Single-Ended Tungsten Halogen Lamps



- Save 20% energy in replacing traditional lamps with NO sacrifice of lighting quality
- Lower heat generation resulting in reduced air conditioning and heat stress on ambience
- No transformer is required
- Available in Clear and Frost bulbs
- Average life 2000 hours
- Colour temperature 2900K
- Conforms to EN60432-2/EN60357 requirements with integrated fuse
- Self-shielded feature allows free burning in open fixtures – conforms to EN60598 safety requirements
- Comply to EU Ecodesign Requirements - Commission Regulation No. 244/2009



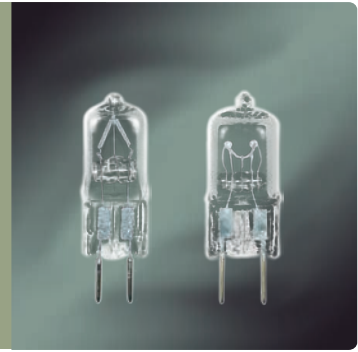
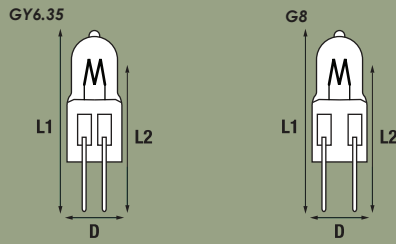
Lamp Code	Voltage (V)	Wattage (W)	B22/E27		BA15d/E14		E11		Lumen (lm)	Energy Efficiency Class
			D (mm)	L (mm)	D (mm)	L (mm)	D (mm)	L (mm)		
JD/ER/28W	120/130/230/240	28	29	65	17/19.5	63/61	18.5	58	370	C
JD/ER/40W	120/130/230/240	40	29	68	17/19.5	66/64	18.5	61	590	C
JD/ER/48W	120/130/230/240	48	29	68	17/19.5	66/64	18.5	61	740	C
JD/ER/60W	120/130/230/240	60	29	68	17/19.5	66/64	18.5	61	980	C
JD/ER/80W	120/130/230/240	80	29	68	17/19.5	66/64	18.5	61	1380	C
JD/ER/120W	120/130/230/240	120	29	87	17/19.5	85/83	18.5	80	2220	C
JD/ER/160W	120/130/230/240	160	29	87	17/19.5	85/83	18.5	80	3090	C
JD/ER/200W	120/130/230/240	200	29	97	17/19.5	95/93	18.5	90	3980	C
JD/ER/230W	120/130/230/240	230	29	97	17/19.5	95/93	18.5	90	4700	C
JD/ER/400W	120/130/230/240	400	29	102	17/19.5	100/98	18.5	95	8600	C

(Diameter tolerance of ±0.5mm, Length tolerance of ±2mm)

ER vs Traditional Lamps			
Energy Reduction ER series	Traditional Halogen JD lamps	Save on Energy	Electrical billing saving / year
28W	35W	20%	US\$ 9.20
40W	50W	20%	US\$ 13.14
48W	60W	20%	US\$ 15.77
60W	75W	20%	US\$ 19.71
80W	100W	20%	US\$ 26.28
120W	150W	20%	US\$ 39.42
160W	200W	20%	US\$ 52.56
200W	250W	20%	US\$ 65.70
230W	300W	20%	US\$ 91.98
400W	500W	20%	US\$ 131.4

* based on 24 hrs operation/day - US\$0.15/1 KWH

JCD Standard 2-Pin Line Voltage Halogen Lamps



- No transformer is required
- Available in clear and frosted bulbs
- Average life 2000 hours
- Colour temperature 3000K
- Other wattages available, e.g. 25W, 200W, 250W
- UV-STOP quartz capsule available on request

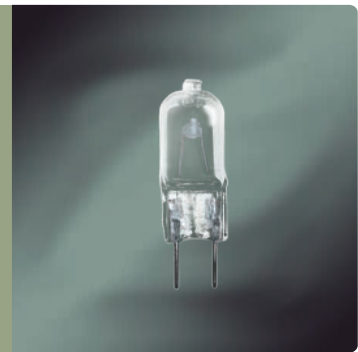
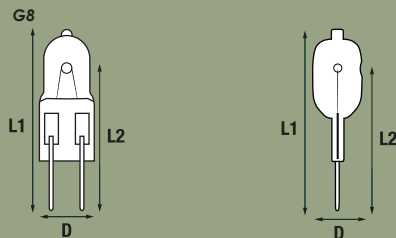


WARNING :

To avoid electrical hazards, appropriate warning should be displayed on fixture to alert user of high-volt JCD lamp replacement instead of low-volt JC lamp

Lamp Code	Voltage (V)	Wattage (W)	Base	Diameter D (mm)	Length L ₁ (mm)	Length L ₂ (mm)	Lumen (lm)	Energy Star
JCD 20W	120/130/230/240	20	G8, GY6.35	12	46	36	200	D
JCD 35W	120/130/230/240	35	G8, GY6.35	12	46	36	380	E
JCD 50W	120/130/230/240	50	G8, GY6.35	12	46	36	600	E
JCD 60W	120/130/230/240	60	G8, GY6.35	12	46	36	800	D
JCD 75W	120/130/230/240	75	G8, GY6.35	12	49	39	1050	D
JCD 100W	120/130/230/240	100	G8, GY6.35	15	60	45	1500	D
JCD 150W	120/130/230/240	150	G8, GY6.35	15	60	45	2500	D

JCD Super 5K 2-Pin Line Voltage Halogen Lamps

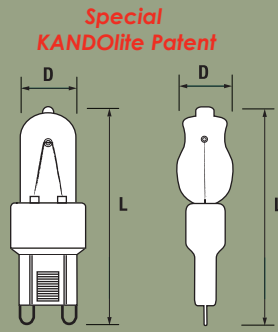


- Average life 5000 hours
- Colour temperature 3000K



Lamp Code	Voltage (V)	Wattage (W)	Base	Diameter D (mm)	Length L ₁ (mm)	Length L ₂ (mm)	Lumen (lm)	Energy Star
JCD/5K 20W	120/130	20	G8, GY6.35	12	46	36	180	E
JCD/5K 35W	120/130	35	G8, GY6.35	12	46	36	340	E

Ceramic G9 Standard Line Voltage Halogen Lamps



Lamp Code	Voltage (V)	Wattage (W)	Base	Bulb Dia. D (mm)	MOL L (mm)	Lumen (lm)	Energy Star
G9 25W	120 – 130 / 220 – 250	25	G9	13	56	255	D
G9 35W	120 – 130 / 220 – 250	35	G9	13	56	380	E
G9 40W	120 – 130 / 220 – 250	40	G9	13	56	480	D
G9 50W	120 – 130 / 220 – 250	50	G9	13	56	600	E
G9 60W	120 – 130 / 220 – 250	60	G9	13	58	800	D
G9 75W	120 – 130 / 220 – 250	75	G9	13	58	1050	D

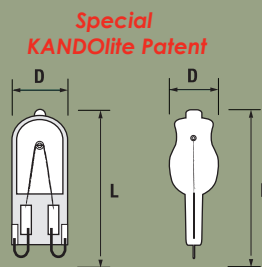
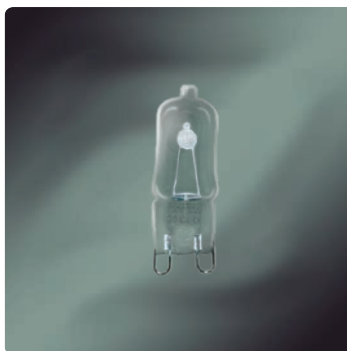
- Freely suspended filament, minimize deformation
- Built-in safety fuse action, no lamp explosion hazard
- Extended lamp life of 2000 hours
- Available in clear and frosted finish
- Conforms to EN60432-2/EN60357 requirements with double protection fuses
- Self-shielded feature allows free burning in open fixtures – conforms to EN60598 safety requirements
- UV-STOP Quartz capsule



Patent Alert :

Ceramic G9 connection with protective rights embodied under :
 Germany Utility Model Patent No. 20209078.7
 China Utility Model Patent No. 02238768.4

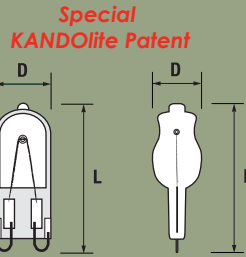
Glass pinch G9 Standard Line Voltage Halogen Lamps



Lamp Code	Voltage (V)	Wattage (W)	Base	Bulb Dia. D (mm)	MOL L (mm)	Lumen (lm)	Energy Star
G9-GP 25W	120 – 130 / 220 – 250	25	G9	13	42	255	D
G9-GP 35W	120 – 130 / 220 – 250	35	G9	13	42	380	E
G9-GP 40W	120 – 130 / 220 – 250	40	G9	13	42	480	D
G9-GP 50W	120 – 130 / 220 – 250	50	G9	13	42	600	E
G9-GP 60W	120 – 130 / 220 – 250	60	G9	13	42	800	D
G9-GP 75W	120 – 130 / 220 – 250	75	G9	13	42	1050	D

GREEN HALOER G9

Energy Reduction Line Voltage Halogen Lamps



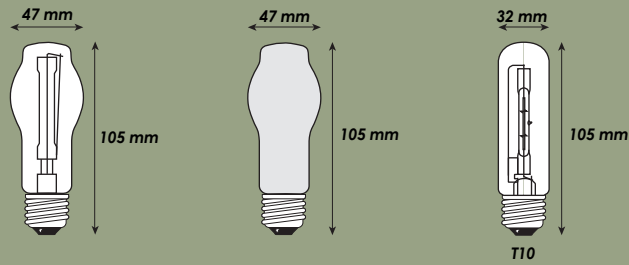
- **Saving 20% of energy** in replacing traditional lamps
- Xenon Halogen technology to enhance light output performance
- Optimized design of filament structure provides excellent light distribution
- High colour temperature gives more crispy white light
- Lower heat generation resulting in reduced air conditioning and heat stress on ambience
- Average life 2000 hours
- **Comply to EU Ecodesign Requirements - Commission Regulation No. 244/2009**

Lamp Code	Voltage (V)	Wattage (W)	Base	Bulb Dia. D (mm)	MOL L (mm)	Lumen (lm)	Energy Efficiency Class
G9/ER 20W	120/230/240	20	G9	14	44	235	C
G9/ER 33W	120/230/240	33	G9	14	44	460	C
G9/ER 48W	120/230/240	48	G9	14	44	740	C
G9/ER 60W	120/230/240	60	G9	14	44	980	C

ER vs Traditional Lamps			
Energy Reduction ER series	Traditional Halogen G9 lamps	Save on Energy	Electrical billing * saving / year
20W	25W	20%	US\$ 6.57
33W	40W	20%	US\$ 9.20
48W	60W	20%	US\$ 15.77
60W	75W	20%	US\$ 19.71

* based on 24 hrs operation/day - US\$0.15/1 KWH

JTT Standard Double Envelope Line Voltage Halogen Lamps

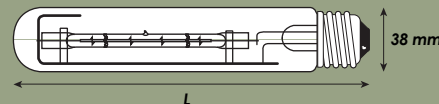


- Crisp white light with high efficiency
- Average life 2000 hours
- Conforms to EN60432-2/EN60357 requirements with integrated fuse.
- Self-shielded feature allows free burning in open fixtures – conforms to EN60598 safety requirements
- The hard glass envelope blocks harmful UV radiation



Lamp Code	Voltage (V)	Wattage (W)	Lumen (lm)		Base	
			Clear	Opal		
JTT 60W	120 – 130 / 230 – 240	60	780	E	700	E26, E27
JTT 75W	120 – 130 / 230 – 240	75	1050	D	950	E26, E27
JTT 100W	120 – 130 / 230 – 240	100	1500	D	1350	E26, E27
JTT 150W	120 – 130 / 230 – 240	150	2500	D	2250	E26, E27

JTT High Wattage Lamp with 38mm tubular outer envelope



- Crisp white light with high efficiency
- Use in area floodlights without need of control gear
- Conforms to EN60432-2/EN60357 requirements with integrated fuse.
- Self-shielded feature allows free burning in open fixtures – conforms to EN60598 safety requirements
- Average life 2000 hours
- 3200K colour temperature lamp available for photography with average life 300 hours

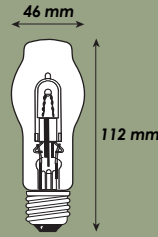


Lamp Code	Voltage (V)	Wattage (W)	Lumen (lm)	Base	Length L (mm)	Energy Star
JTT 500W	120 – 130 / 230 – 240	500	9500	E39/E40	215	D
JTT 1000W	120 – 130 / 230 – 240	1000	22000	E39/E40	255	*

* Lumen over 12000 is exempt from Ecodesign Requirements

GREEN HALOER JTT

Energy Reduction Double Envelope Line Voltage Halogen Lamps



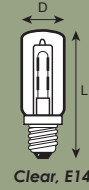
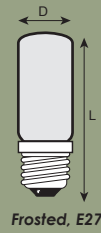
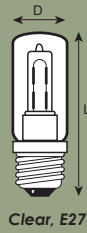
- **Saving 20% of energy** in replacing traditional lamps with NO sacrifice of lighting quality
- High colour temperature gives more crispy white light
- Lower heat generation resulting in reduced air conditioning and heat stress on ambience
- Average life 2000 hours
- **Comply to EU Ecodesign Requirements - Commission Regulation No. 244/2009**

Lamp Code	Voltage (V)	Wattage (W)	Base	Lumen (lm)	Energy Efficiency Class
JTT/ER 48W	120 – 130 / 230 – 240	48	E26, E27	740	C
JTT/ER 60W	120 – 130 / 230 – 240	60	E26, E27	980	C
JTT/ER 80W	120 – 130 / 230 – 240	80	E26, E27	1380	C
JTT/ER 120W	120 – 130 / 230 – 240	120	E26, E27	2220	C

ER vs Traditional Lamps			
Energy Reduction ER series	Traditional Halogen JTT lamps	Save on Energy	Electrical billing * saving / year
48W	60W	20%	US\$ 15.77
60W	75W	20%	US\$ 19.71
80W	100W	20%	US\$ 26.28
120W	150W	20%	US\$ 39.42

* based on 24 hrs operation/day - US\$0.15/1 KWH

JDD Standard Double Envelope Halogen Lamps

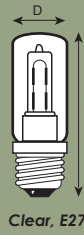


- ✦ Crisp white light with high efficiency
- ✦ Average life 2000 hours
- ✦ Conforms to EN60432-2/EN60357 requirements with integrated fuse
- ✦ Self-shielded feature allows free burning in open fixtures – conforms to EN60598 safety requirements
- ✦ The hard glass envelope blocks harmful UV radiation

Lamp Code	Voltage (V)	Wattage (W)	Lumen (lm)		Base	Diameter D (mm)	Length L (mm)	
			Clear	Frosted				
JDD 40W	230 – 240	40	460	E	430	E14	26	89
JDD 60W	230 – 240	60	780	E	750	E14	26	89
JDD 75W	120 – 240	75	1050	D	1000	E26, E27	32	105
JDD 100W	120 – 240	100	1500	D	1440	E26, E27	32	105
JDD 150W	120 – 240	150	2500	D	2400	E26, E27	32	105
JDD 200W	120 – 240	200	3200	E	3070	E26, E27	32	105
JDD 250W	120 – 240	250	4200	E	4050	E26, E27	32	105

GREEN HALOER JDD

Energy Reduction Double Envelope Halogen Lamps



Clear, E27



- **Save 20% energy** in replacing traditional lamps with NO sacrifice of lighting quality
- Lower heat generation resulting in reduced air conditioning and heat stress on ambiance
- High colour temperature gives more crispy white light
- Average life 2000 hours
- Conforms to EN60432-2/EN60357 requirements with integrated fuse
- Self-shielded feature allows free burning in open fixtures – conforms to EN60598 safety requirements
- **Comply to EU Ecodesign Requirements - Commission Regulation No. 244/2009**

Lamp Code	Voltage (V)	Wattage (W)	Base	Diameter D (mm)	Length L (mm)	Lumen (lm)	Energy Star
JDD/ER 33W	120/130/230/240	33	E14	26	89	460	C
JDD/ER 48W	120/130/230/240	48	E14	26	89	740	C
JDD/ER 60W	120/130/230/240	60	B22, E27	32	105	980	C
JDD/ER 80W	120/130/230/240	80	B22, E27	32	105	1380	C
JDD/ER 120W	120/130/230/240	120	B22, E27	32	105	2220	C
JDD/ER 160W	120/130/230/240	160	B22, E27	32	105	3090	C
JDD/ER 200W	120/130/230/240	200	B22, E27	32	105	3980	C

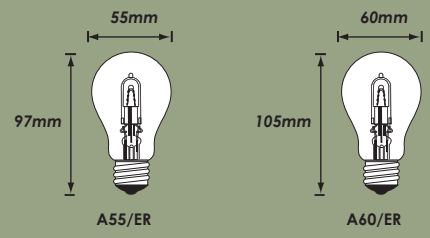
ER vs Traditional Lamps			
Energy Reduction ER series	Traditional Halogen JDD lamps	Save on Energy	Electrical billing * saving / year
33W	40W	20%	US\$ 9.20
48W	60W	20%	US\$ 15.77
60W	75W	20%	US\$ 19.71
80W	100W	20%	US\$ 26.28
120W	150W	20%	US\$ 39.42
160W	200W	20%	US\$ 52.56
200W	250W	20%	US\$ 65.70

* based on 24 hrs operation/day - US\$0.15/1 KWH



GREEN HALOER A55, A60

Energy Reduction Double Envelope Halogen GLS



Lamp Code	Voltage (V)	Wattage (W)	Base	Lumen (lm)	Energy Saving
A55/ER, A60/ER 18W	120/230/240	18	B22, E26, E27	205	C
A55/ER, A60/ER 28W	120/230/240	28	B22, E26, E27	370	C
A55/ER, A60/ER 42W	120/230/240	42	B22, E26, E27	630	C
A55/ER, A60/ER 52W	120/230/240	52	B22, E26, E27	815	C
A55/ER, A60/ER 70W	120/230/240	70	B22, E26, E27	1175	C
A55/ER, A60/ER 105W	120/230/240	105	B22, E26, E27	1900	C

- Save 30% energy in replacing Incandescent lamp bulbs
- 2,000 hours average lamp life is twice the life of ordinary light bulbs
- High efficiency JCD Halogen capsule in conventional bulb shell provides brilliant attractive Halogen light
- No blackening on bulb shell - constant brightness throughout lamp life
- UV-STOP Quartz capsule
- Comply to EU Ecodesign Requirements
- Commission Regulation No. 244/2009

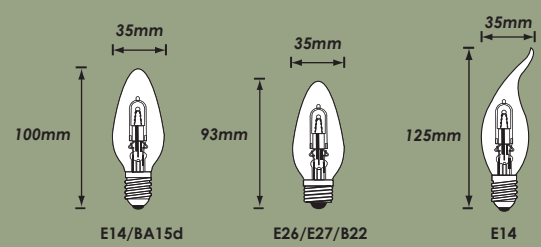
Energy Reduction ER series	Traditional GLS lamps	Save on Energy	Electrical billing * saving / year
18W	25W	30%	US\$ 9.20
28W	40W	30%	US\$ 15.77
42W	60W	30%	US\$ 23.65
52W	75W	30%	US\$ 30.22
70W	100W	30%	US\$ 39.42
105W	150W	30%	US\$ 59.13

* based on 24 hrs operation/day - US\$0.15/1 KWH



GREEN HALOER CANDLE

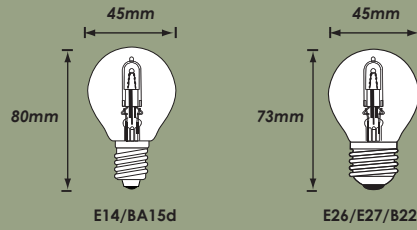
Energy Reduction Double Envelope Halogen GLS



Lamp Code	Voltage (V)	Wattage (W)	Base	Lumen (lm)	Energy Saving
CANDLE/ER 18W	120/230/240	18	E14, BA15d, B22, E26, E27	205	C
CANDLE/ER 28W	120/230/240	28	E14, BA15d, B22, E26, E27	370	C
CANDLE/ER 42W	120/230/240	42	E14, BA15d, B22, E26, E27	630	C

GREEN HALOER ROUND

Energy Reduction Double Envelope Halogen GLS



Lamp Code	Voltage (V)	Wattage (W)	Base	Lumen (lm)	Energy Star
ROUND/ER 18W	120/230/240	18	E14, BA15d, B22, E26, E27	205	C
ROUND/ER 28W	120/230/240	28	E14, BA15d, B22, E26, E27	370	C
ROUND/ER 42W	120/230/240	42	E14, BA15d, B22, E26, E27	630	C

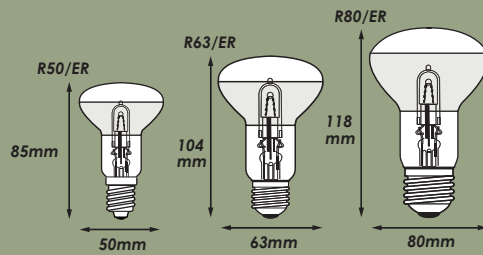
- **Save 30% energy** in replacing Incandescent lamp bulbs
- 2,000 hours average lamp life is twice the life of ordinary light bulbs
- High efficiency JCD Halogen capsule in conventional bulb shell provides brilliant attractive Halogen light
- No blackening on bulb shell - constant brightness throughout lamp life
- UV-STOP Quartz capsule
- **Comply to EU Ecodesign Requirements**
- Commission Regulation No. 244/2009

ER vs Traditional Lamps			
Energy Reduction ER series	Traditional GLS lamps	Save on Energy	Electrical billing * saving / year
18W	25W	30%	US\$ 9.20
28W	40W	30%	US\$ 15.77
42W	60W	30%	US\$ 23.65
52W	75W	30%	US\$ 30.22
70W	100W	30%	US\$ 39.42
105W	150W	30%	US\$ 59.13

* based on 24 hrs operation/day - US\$0.15/1 KWH

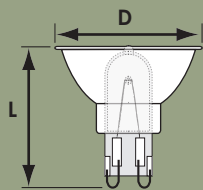
GREEN HALOER R50, R63, R80

Energy Reduction Double Envelope Halogen GLS



Lamp Code	Voltage (V)	Wattage (W)	Beam Angle	Base	Intensity (cd)
R50/ER 28W	120/230/240	28	40° ± 10%	E14	430
R63/ER 28W	120/230/240	28	40° ± 10%	E26, E27	430
R63/ER 42W	120/230/240	42	40° ± 10%	E26, E27	900
R80/ER 42W	120/230/240	42	40° ± 10%	E26, E27	900
R80/ER 52W	120/230/240	52	40° ± 10%	E26, E27	1050
R80/ER 70W	120/230/240	70	40° ± 10%	E26, E27	1300

AR41-G9 Line Voltage Reflector Lamps

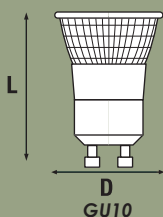


Lamp Code	Voltage (V)	Wattage (W)	Beam Angle	Intensity (cd)	Base	Diameter D (mm)	Length L (mm)
AR41-G9 25W	230	25	40°	300	G9	41	40
AR41-G9 40W	230	40	40°	500	G9	41	40

- Incredibly small dimensions for developing attractive and creative compact lighting solutions
- Equipped with a high-quality aluminium reflector with optimised faceting
- Freely suspended filament, minimize deformation
- UV-STOP Quartz capsule
- Conforms to EN60432-2 requirements with double protection fuses
- Self-shielded feature allows free burning in open fixtures - conforms to EN60598 safety requirements
- Average life 2000 hours
- Colour temperature approx. 2900K



MR11 JDR-C GU10/GZ10 Base - Line Voltage Reflector Lamps

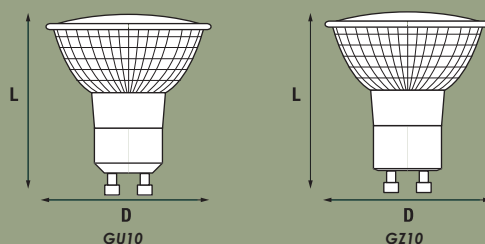


Lamp Code	Voltage (V)	Wattage (W)	Beam Angle	Intensity (cd)	Base	Diameter D (mm)	Length L (mm)
35mm diameter reflector							
MR11 JDR-R35	120 - 130 / 220 - 240	20	25°	250	GU10	35	50
MR11 JDR-R35	120 - 130 / 220 - 240	25	25°	300	GU10	35	50
MR11 JDR-R35	120 - 130 / 220 - 240	35	25°	450	GU10	35	50
MR11 JDR-R35	120 - 130 / 220 - 240	40	25°	500	GU10	35	50

- Conforms to EN60432-2/EN60357 requirements with double protection fuses.
- Self-shielded feature allows free burning in open fixtures – conforms to EN60598 safety requirements
- The hard glass front cover serves to block out harmful UV radiation
- Average life 2000 hours
- Colour temperature 3000K



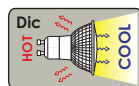
JDR-C Standard GU10/GZ10 Base - Line Voltage Reflector Lamps



- Conforms to EN60432-2/EN60357 requirements with double protection fuses.
- Self-shielded feature allows free burning in open fixtures – conforms to EN60598 safety requirements
- The hard glass front cover serves to block out harmful UV radiation
- Average life 2000 hours
- Colour temperature 3000K

Other options :

- Beam angle : Wide flood 50° with frosted lamp capsule
Super wide flood 70° with frosted glass cover

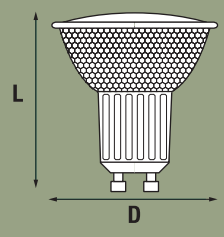


Lamp Code	Voltage (V)	Wattage (W)	Beam Angle	Intensity (cd)	Coating Type	Base	Diameter D (mm)	Length L (mm)
50mm diameter reflector								
JDR-R50	120 -130 / 230 - 240	20	30°	130	aluminium	GU10	50	53
JDR-R50	120 -130 / 230 - 240	25	30°	450	aluminium	GU10	50	53
JDR-R50	120 -130 / 230 - 240	35	30°	600	aluminium	GU10	50	53
JDR-R50	120 -130 / 230 - 240	35	30°	550	dichroic	GZ10	50	53
JDR-R50	120 -130 / 230 - 240	50	30°	950	aluminium	GU10	50	53
JDR-R50	120 -130 / 230 - 240	50	30°	900	dichroic	GZ10	50	53
JDR-R50	120 -130 / 230 - 240	50	50°	550	aluminium	GU10	50	53
JDR-R50	120 -130 / 230 - 240	50	50°	500	dichroic	GZ10	50	53
63mm diameter reflector								
JDR-R63	120 -130 / 230 - 240	75	30°	2400	aluminium	GU10	63	66
JDR-R63	120 -130 / 230 - 240	75	30°	2300	dichroic	GZ10	63	66
JDR-R63	120 -130 / 230 - 240	75	50°	1000	aluminium	GU10	63	66
JDR-R63	120 -130 / 230 - 240	75	50°	950	dichroic	GZ10	63	66

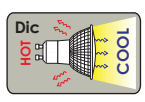
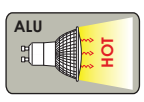


GREEN HALOER GU10

Energy Reduction GU10/GZ10 Base - Line Voltage Reflector Lamps



- **Save 20% energy** in replacing traditional lamps with NO sacrifice of lighting quality
- Optimized design of filament structure provides excellent light distribution
- Lower heat generation resulting in reduced air conditioning and heat stress on ambience
- Conforms to EN60432-2/EN60357 requirements with integrated fuse
- Self-shielded feature allows free burning in open fixtures – conforms to EN60598 safety requirements
- Average life 2000 hours
- Colour temperature 2900K

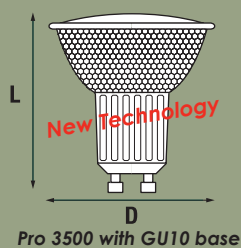


Lamp Code	Voltage (V)	Wattage (W)	Beam Angle	Intensity (cd)	Coating Type	Base	Diameter D (mm)	Length L (mm)
GU10/ER 28W	120 -130 / 230 - 240	28	30°	600	aluminium	GU10	50	53
GZ10/ER 28W	120 -130 / 230 - 240	28	30°	550	dichroic	GZ10	50	53
GU10/ER 40W	120 -130 / 230 - 240	40	30°	900	aluminium	GU10	50	53
GZ10/ER 40W	120 -130 / 230 - 240	40	30°	850	dichroic	GZ10	50	53

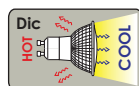
Energy Reduction ER series	Traditional Halogen GU10 lamps	Save on Energy	Electrical billing * saving / year
28W	35W	20%	US\$ 9.20
40W	50W	20%	US\$ 13.14

* based on 24 hrs operation/day - US\$0.15/1 KWH

JDR-C Pro3500 GU10/GZ10 Base - Line Voltage Reflector Lamps



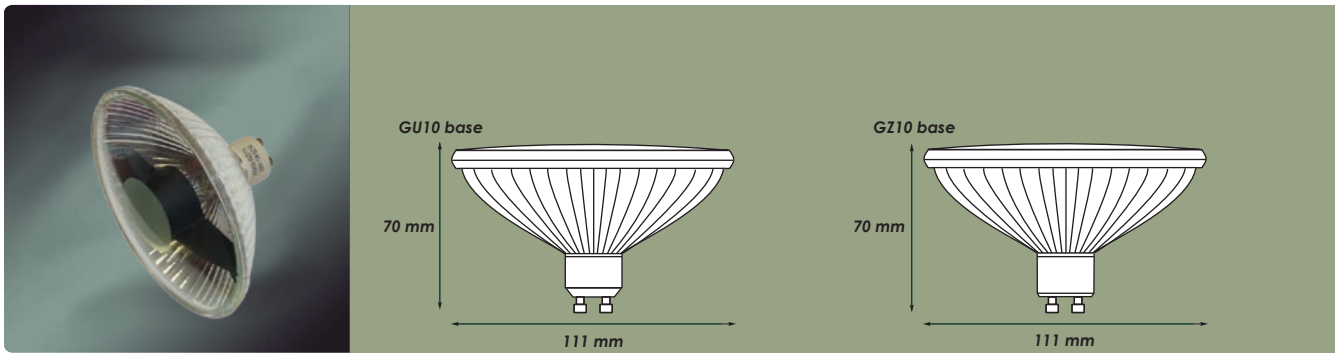
- Conforms to EN60432-2/EN60357 requirements with double protection fuses.
- Self-shielded feature allows free burning in open fixtures – conforms to EN60598 safety requirements
- The hard glass front cover serves to block out harmful UV radiation
- Extra long life 4000 hours
- Brightest GU10 Lamp in the industry



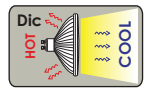
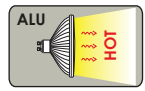
Lamp Code	Voltage (V)	Wattage (W)	Beam Angle	Intensity (cd)	Coating Type	Base	Diameter D (mm)	Length L (mm)
JDR-R50 Pro3500	120 -130 / 230 - 240	35	30°	900	aluminium	GU10	50	53
JDR-R50 Pro3500	120 -130 / 230 - 240	35	30°	850	dichroic	GZ10	50	53
JDR-R50 Pro3500	120 -130 / 230 - 240	50	30°	1400	aluminium	GU10	50	53
JDR-R50 Pro3500	120 -130 / 230 - 240	50	30°	1300	dichroic	GZ10	50	53

PAR36/ES111 Halogen PAR Lamps

With GU10/GZ10 Base (for direct mains voltage)

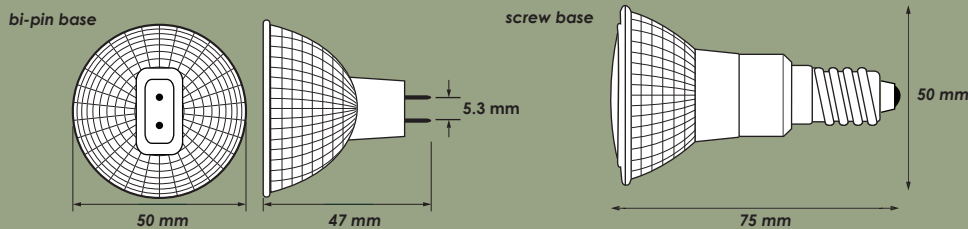


- No transformer is required - versus 12V AR111 lamps without the need of bulky transformers and tedious wiring
- Shorter lamp length allows better flexibility in the design of display lighting fixtures versus long-neck PAR30 and PAR38 lamps
- High comfort with anti-glare shield, reduce direct visual exposure
- Front hard glass lens cuts UV radiation
- Conforms to EN60432-2/EN60357 requirements with double protection fuse
- Self-shielded feature allows free burning in open fixtures – conforms to EN60598 safety requirements
- Average life 3000 hours
- Colour temperature 2900K for Aluminium version and 3000K for dichroic version



Lamp Code	Voltage (V)	Wattage (W)	Beam Angle	Intensity (cd)	Coating Type	Base
PAR36-ESD111-50W	120 – 130 / 230 – 240	50	24°	1900	dichroic	GZ10
PAR36-ESA111-50W	120 – 130 / 230 – 240	50	24°	2000	aluminium	GU10
PAR36-ESD111-75W	120 – 130 / 230 – 240	75	24°	2850	dichroic	GZ10
PAR36-ESA111-75W	120 – 130 / 230 – 240	75	24°	3000	aluminium	GU10
PAR36-ESD111-100W	120 – 130 / 230 – 240	100	24°	5000	dichroic	GZ10

JDR-C Standard Line Voltage Reflector Lamps with various bases

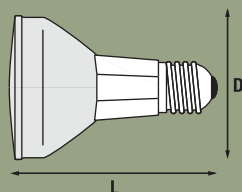


- Other wattages available, e.g. 20W, 25W
- Wide flood beam angle of 50 degree available with frosted capsule
- The hard glass front cover serves to block out harmful UV radiation
- Conforms to EN60432-2/EN60357 requirements with double protection fuses.
- Self-shielded feature allows free burning in open fixtures – conforms to EN60958 safety requirements
- Average life 2000 hours
- Colour temperature 3000K



Lamp Code	Voltage (V)	Wattage (W)	Beam Angle	Intensity (cd)		Base
				DIC. Reflector	ALU Reflector	
JDR-R50	120 – 130	35	30°	650	700	E11/E17/E26
JDR-R50	230 – 240	35	30°	650	700	E14/E27/B22
JDR-R50	120 – 130	50	30°	1050	1100	E11/E17/E26
JDR-R50	230 – 240	50	30°	1050	1100	E14/E27/B22
JDR-R50	120 – 130	75	30°	2300	-	E11/E17/E26
JDR-R50	230 – 240	75	30°	2300	-	E14/E27/B22

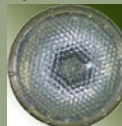
PAR16 Halogen PAR Lamps



Conventional Spot
Stippled lens



Conventional Flood
Beaded spread lens

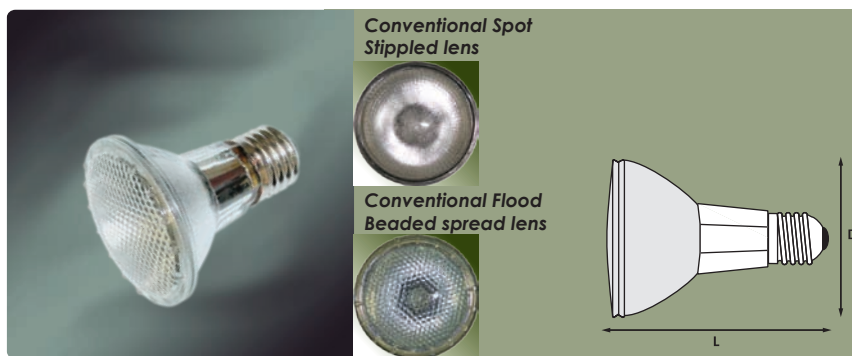


- PAR16 lamps of hard glass formation
- Lower wattages are available on request
- 230V and 240V lamps are available
- Colour temperature 2900K for aluminium version and 3000K for dichroic version
- Average Life 3000 hours

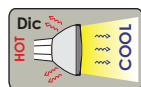
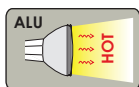


Lamp Code	Voltage (V)	Wattage (W)	Intensity (cd)		Base	Diameter D (mm)	Length L (mm)
			Spot	Flood			
PAR16/60W	120 / 130	60	5000	1300	E26	51	73
PAR16/75W	120 / 130	75	7500	1900	E26	51	73

PAR20 Standard Halogen PAR Lamps, Conventional-style



- Colour temperature 2900K for aluminium version and 3000K for dichroic version
- Average Life 3000 hours

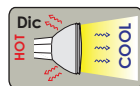


Lamp Code	Voltage (V)	Wattage (W)	Beam Spread	Intensity (cd)	Base	Diameter D (mm)	Length L (mm)
PAR20/35W	120 / 130	35	Spot	2000	E26	63	80
PAR20/35W	120 / 130	35	Flood	700	E26	63	80
PAR20/50W	120 / 130	50	Spot	3000	E26	63	80
PAR20/50W	120 / 130	50	Flood	1000	E26	63	80
PAR20/50W	230 / 240	50	Spot	3000	E27	63	82
PAR20/50W	230 / 240	50	Flood	1000	E27	63	82

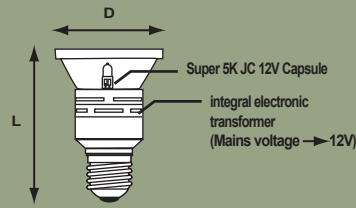
PAR20 Standard Halogen PAR lamps, Euro-style



- Colour temperature 2900K for aluminium version and 3000K for dichroic version
- Average Life 3000 hours



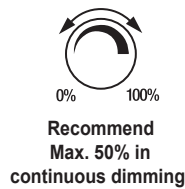
Lamp Code	Voltage (V)	Wattage (W)	Beam Spread	Intensity (cd)	Base	Diameter D (mm)	Length L (mm)
PAR20-Euro/35W	120/130	35	Spot	2000	E26	63	86
PAR20-Euro/35W	120/130	35	Flood	700	E26	63	86
PAR20-Euro/50W	120/130	50	Spot	3000	E26	63	86
PAR20-Euro/50W	120/130	50	Flood	1000	E26	63	86
PAR20-Euro/50W	230/240	50	Spot	3000	E27	63	86
PAR20-Euro/50W	230/240	50	Flood	1000	E27	63	86



- Huge power reduction 60% in using PAR/ER instead of traditional Halogen PAR lamps /Incandescent Reflector lamps with higher light intensity(cd)
- Optimized design of filament structure provides excellent light distribution
- Lower heat generation resulting in reduced air conditioning and heat stress on ambience
- Average life 5000 hours = twice the life time of standard Halogen (PAR20) or 5 times of incandescent reflector lamps (R63/R95)
- Colour temperature 3000K



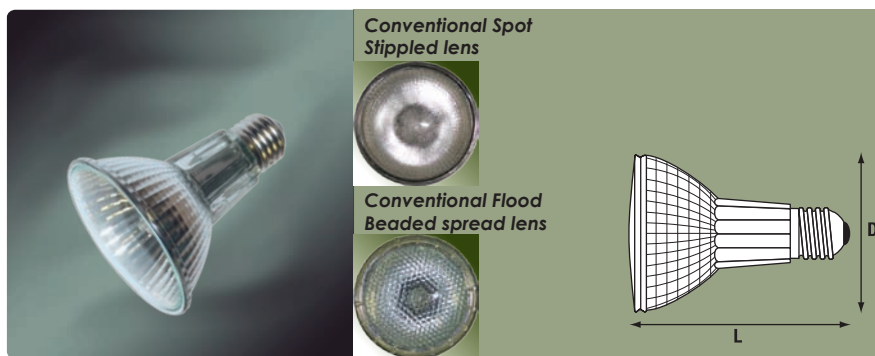
Lamp Code	Voltage (V)	Wattage (W)	Beam Angle	Intensity (cd)	Base	Diameter D (mm)	Length L (mm)
PAR20/ER 20W ALU SP	120/230/240	20	12°	3400	E27	63.5	91
PAR20/ER 20W ALU FL	120/230/240	20	24°	1000	E27	63.5	91



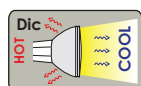
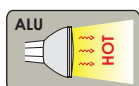
ER vs Traditional Lamps			
Energy Reduction ER series	Traditional Halogen PAR20	Save on Energy	Electrical billing * saving / year
20W	50W	60%	US\$ 39.42

* based on 24 hrs operation/day - US\$0.15/1 KWH

PAR25 Halogen PAR Lamps



- Colour temperature 2900K for aluminium version and 3000K for dichroic version
- Average Life 3000 hours

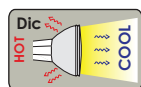
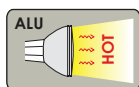


Lamp Code	Voltage (V)	Wattage (W)	Beam Spread		Base	Diameter D (mm)	Length L (mm)
			Spot	Flood			
PAR25/50W	230/240	50	Spot	4000	E27	80	103
PAR25/50W	230/240	50	Flood	1100	E27	80	103
PAR25/75W	230/240	75	Spot	5500	E27	80	103
PAR25/75W	230/240	75	Flood	1300	E27	80	103

PAR30 Standard Halogen PAR Lamps, Conventional Style

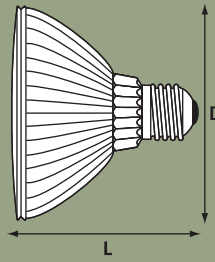
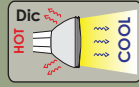
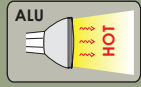


- Colour temperature 2900K for aluminium version and 3000K for dichroic version
- Average Life 3000 hours



Lamp Code	Voltage (V)	Wattage (W)	Intensity (cd)		Base	Diameter D (mm)	Length L (mm)
			Spot	Flood			
PAR30/50W	120/130	50	4000	1300	E26	95	90
PAR30/75W	120/130	75	6500	2000	E26	95	90
PAR30/75W	230/240	75	6500	2000	E27	95	92
PAR30/100W	230/240	100	9000	3000	E27	95	92

PAR30 Standard Halogen PAR Lamps, Euro-style



Euro-style Flood
Clear lens,
faceted reflector

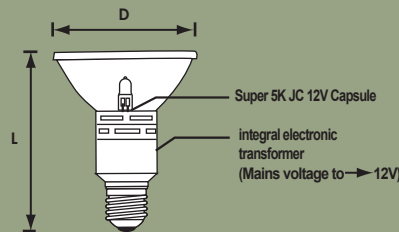


- Colour temperature 2900K for aluminium version and 3000K for dichroic version
- Average Life 3000 hours



Lamp Code	Voltage (V)	Wattage (W)	Intensity (cd)		Base	Diameter D (mm)	Length L (mm)
			Spot	Flood			
PAR30-Euro/50W	120 / 130	50	4000	1300	E26	95	90
PAR30-Euro/75W	120 / 130	75	6500	2000	E26	95	90
PAR30-Euro/75W	230 / 240	75	6500	2000	E27	95	92
PAR30-Euro/100W	230 / 240	100	9000	3000	E26	95	92

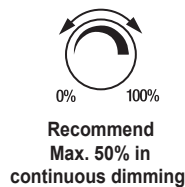
GREEN HALOER PAR30 Energy Reduction Halogen PAR Lamps



- Huge power reduction 50% in using PAR/ER instead of traditional Halogen PAR lamps /Incandescent Reflector lamps with higher light intensity(cd)
- Optimized design of filament structure provides excellent light distribution
- Lower heat generation resulting in reduced air conditioning and heat stress on ambience
- Average life 5000 hours = twice the life time of standard Halogen (PAR30) or 5 times of incandescent reflector lamps (R63/R95)
- Colour temperature 3000K



Lamp Code	Voltage (V)	Wattage (W)	Beam Angle	Intensity (cd)	Base	Diameter D (mm)	Length L (mm)
PAR30/ER 35W ALU SP	120/230/240	35	13°	6000	E27	95	119
PAR30/ER 35W ALU FL	120/230/240	35	30°	2000	E27	95	119



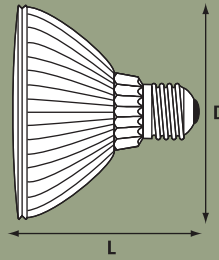
ER vs Traditional Lamps			
Energy Reduction ER series	Traditional Halogen PAR30	Save on Energy 50%	Electrical billing * saving / year US\$ 52.56
35W	75W		

* based on 24 hrs operation/day - US\$0.15/1 KWH

KANDOLite®
Brings you Light and Prosperity

PAR30 Anti-Glare Halogen PAR Lamps

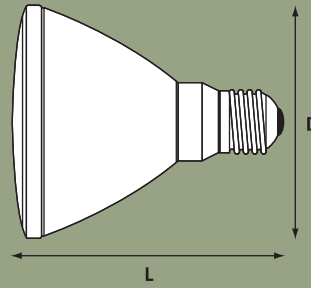
High visual comfort with anti-glare shield, reduce direct visual exposure



- Other wattages : 35W, 45W, 60W, 90W available on request
- Conforms to EN60432-2/EN60357 requirements with double protection fuse
- Self-shielded feature allows free burning in open fixtures – conforms to EN60598 safety requirements
- Front hard glass lens cuts UV radiation

Lamp Code	Voltage (V)	Wattage (W)	Intensity (cd)		Base	Diameter D (mm)	Length L (mm)
			Spot	Flood			
PAR30/50W/AG	120 / 130	50	3800	1250	E26	95	90
PAR30/75W/AG	120 / 130	75	6200	1900	E26	95	90
PAR30/75W/AG	230 / 240	75	6200	1900	E27	95	92
PAR30/100W/AG	230 / 240	100	8500	2800	E27	95	92

PAR38 Halogen PAR Lamps



- Average life 3000 hours
- Colour temperature 2900K for aluminium version and 3050K for dichroic version

European Specifications :



Lamp Code	Voltage (V)	Wattage (W)	Intensity (cd)		Base	Diameter D (mm)	Length L (mm)
			Spot	Flood			
PAR38/75W	230 – 240	75	12000	2800	E27	122	136
PAR38/100W	230 – 240	100	16900	3800	E27	122	136
PAR38/120W	230 – 240	120	18000	4000	E27	122	136

North American Specifications :

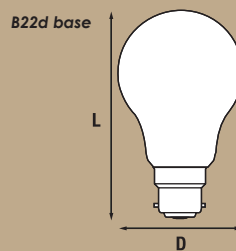
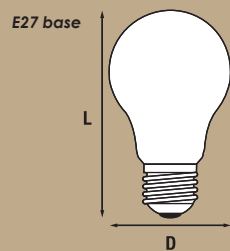
Lamp Code	Voltage (V)	Wattage (W)	Beam Spread	Intensity (cd)	Base	Diameter D (mm)	Length L (mm)
Q45PAR38/SP	120 – 130	45	Spot	6000	M.S. E26	122	134
Q45PAR38/FL	120 – 130	45	Flood	1350	M.S. E26	122	134
Q50PAR38/SP	120 – 130	50	Spot	6800	M.S. E26	122	134
Q50PAR38/FL	120 – 130	50	Flood	1500	M.S. E26	122	134
Q60PAR38/SP	120 – 130	60	Spot	8400	M.S. E26	122	134
Q60PAR38/FL	120 – 130	60	Flood	1900	M.S. E26	122	134
Q75PAR38/SP	120 – 130	75	Spot	10500	M.S. E26	122	134
Q75PAR38/FL	120 – 130	75	Flood	2400	M.S. E26	122	134
Q90PAR38/SP	120 – 130	90	Spot	13000	M.S. E26	122	134
Q90PAR38/FL	120 – 130	90	Flood	2900	M.S. E26	122	134
Q100PAR38/SP	120 – 130	100	Spot	15000	M.S. E26	122	134
Q100PAR38/FL	120 – 130	100	Flood	3400	M.S. E26	122	134
Q120PAR38/SP	120 – 130	120	Spot	18000	M.S. E26	122	134
Q120PAR38/FL	120 – 130	120	Flood	4000	M.S. E26	122	134
Q250PAR38/SP	120 – 130	250	Spot	40000	M.S. E26	122	134
Q250PAR38/FL	120 – 130	250	Flood	9000	M.S. E26	122	134



Incandescent Lamps

	GLS A-Bulbs Incandescent Bulbs	50
	Rough Service Bulbs Special Incandescent Bulbs	50
	Inside Coated Bulbs Colour Incandescent Bulbs	51
	Outside Coated Bulbs Colour Incandescent Bulbs	51
	Daylight Colour Bulbs Special Incandescent Bulbs	52
	Crown Silver Bulbs Special Incandescent Bulbs	52
	Party Life Special Incandescent Bulbs	53
	Bug Life Special Incandescent Bulbs	53
	Round Lamps Incandescent Bulbs	54
	Candle Lamps Incandescent Bulbs	54
	Reflector Lamps Incandescent Bulbs	55
	Mushroom Lamps Incandescent Bulbs	55
	PAR38 Lamps – Standard, Infra Red and Coloured Incandescent Bulbs	56
	Pygmy Lamps Incandescent Bulbs	56
	Decorative Globe Lamps Incandescent Bulbs	57

GLS A-Bulbs Incandescent Bulbs

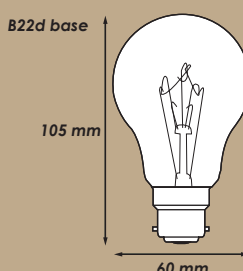
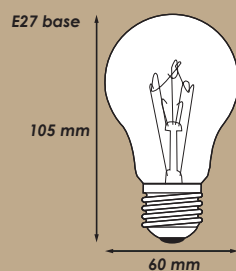


➤ Bulb finish : clear, frosted, softwhite/opal



Lamp Code	Voltage (V)	Wattage (W)	Base	Diameter D (mm)	Length L (mm)	Lumen (lm)	Energy Efficiency Class
GLS 25W	120 – 130 / 230 – 240	25	E26/E27/B22d	55/60	97/105	210	E
GLS 40W	120 – 130 / 230 – 240	40	E26/E27/B22d	55/60	97/105	415	E
GLS 60W	120 – 130 / 230 – 240	60	E26/E27/B22d	55/60	97/105	710	E
GLS 75W	120 – 130 / 230 – 240	75	E26/E27/B22d	55/60	97/105	930	E
GLS 100W	120 – 130 / 230 – 240	100	E26/E27/B22d	55/60	97/105	1340	E
GLS 150W	120 – 130 / 230 – 240	150	E26/E27/B22d	70/80	123/150	2000	E
GLS 200W	120 – 130 / 230 – 240	200	E26/E27/B22d	70/80	123/150	2800	E
GLS 300W	120 – 130 / 230 – 240	300	E39/E40	90	185	4500	E
GLS 500W	120 – 130 / 230 – 240	500	E39/E40	90	185	8000	E

Rough Service Bulbs Special Incandescent Bulbs

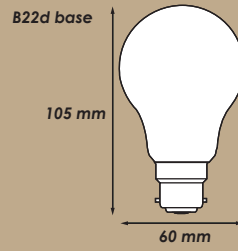
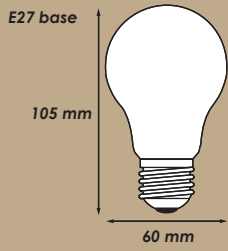


- Filament rests on seven or nine intermediate supports
- The reinforced construction filament is resistant to vibration and shock to a high degree
- Lamp offers excellent operational reliability and reduces maintenance costs considerably
- Bulb finish : clear, pearl, softwhite



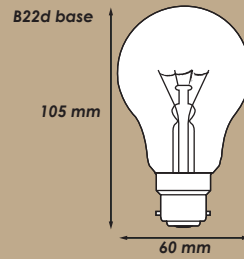
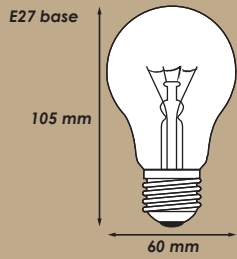
Lamp Code	Voltage (V)	Wattage (W)	Base	Finish Available
RS-A19(USA)	120/130	25,40,60,75,100	E26	Clear, Pearl, Softwhite
RS-A60(Europe)	120/230/240/250	25,40,60,75,100	E27/B22d	Clear, Pearl, Softwhite

Inside Coated Bulbs Colour Incandescent Bulbs



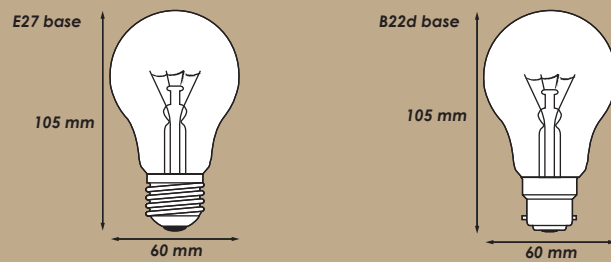
Lamp Code	Voltage (V)	Wattage (W)	Base	Colours Available
A19(USA)	120 – 130	25,40,60,75,100	E26	Red, Yellow, Blue, Green, Pink, Amber, Orange, Pastel Colors
A60(Europe)	220 – 250	25,40,60,75,100	E27/B22d	Red, Yellow, Blue, Green, Pink, Amber, Orange, Pastel Colors

Outside Coated Bulbs Colour Incandescent Bulbs



Lamp Code	Voltage (V)	Wattage (W)	Base	Colours Available
A19(USA)	120 – 130	15, 25, 40, 60	E26	Red, Yellow, Blue, Green
A60(Europe)	220 – 250	15, 25, 40, 60	E27/B22d	Red, Yellow, Blue, Green

Daylight Colour Bulbs Special Incandescent Bulbs

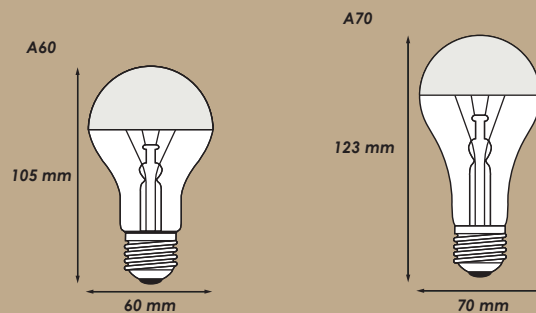


- Bulb made with pigmented blue glass to create cool effect versus normal warm incandescent output



Lamp Code	Voltage (V)	Wattage (W)	Base	Finish Available
Daylight-A19(USA)	120/130	40, 60, 75,100	E26	Daylight colour
Daylight-A60(Europe)	120/230/240/250	40, 60, 75,100	E27/B22d	Daylight colour

Crown Silver Bulbs Special Incandescent Bulbs

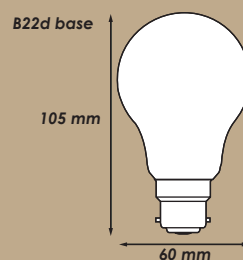
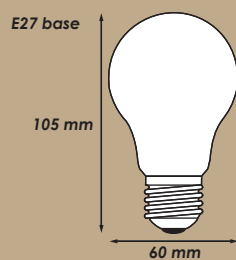


- The crown reflector eliminates direct glare and improves luminaire optical control



Lamp Code	Voltage (V)	Wattage (W)	Base	Finish Available
A19(USA)	120 – 130	40, 60	E26	Clear, Pearl
A21(USA)	120 – 130	75, 100	E26	Clear, Pearl
A60(Europe)	220/240/250	40, 60	E27/B22d	Clear, Pearl
A70(Europe)	220/240/250	75, 100	E27/B22d	Clear, Pearl

Party Lite Special Incandescent Bulbs

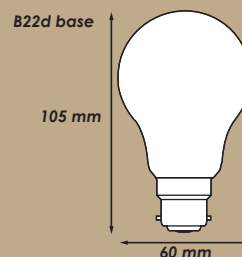
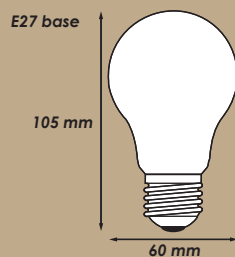


- simulates the black light ambiance of discotheques and nightclubs
- enhances party atmosphere
- no harmful UV light is emitted
- adapts to any standard household electrical socket



Lamp Code	Voltage (V)	Wattage (W)	Base	Colours Available
A19 Party Lite (USA)	120/130	40, 60	E26	Black
A60 Party Lite (Europe)	120/230/240	40, 60	E27/B22d	Black

Bug Lite Special Incandescent Bulbs

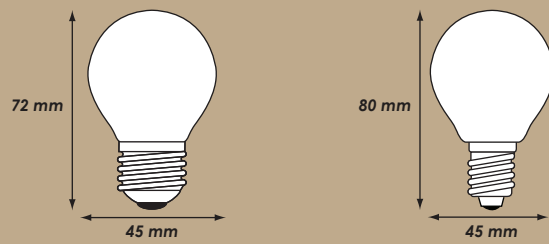


- special inside coating
- repels insects by emitting a golden light
- adapts to any standard household electrical socket



Lamp Code	Voltage (V)	Wattage (W)	Base	Colours Available
A19 Bug Lite (USA)	120/130	25, 40, 60, 75, 100	E26	Yellow
A60 Bug Lite (Europe)	120/230/240	25, 40, 60, 75, 100	E27/B22d	Yellow

Round Lamps Incandescent Bulbs



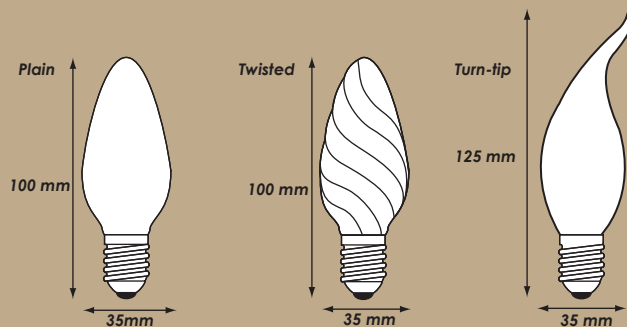
→ Bulb finish : clear, frosted, opal



Lamp Code	Voltage (V)	Wattage (W)	Base	Lumen (lm)	Energy Efficiency Class
Round 25W	120 – 130 / 230 – 240	25	E14, B15d, E26, E27, B22d	210	E
Round 40W	120 – 130 / 230 – 240	40	E14, B15d, E26, E27, B22d	400	E
Round 60W	120 – 130 / 230 – 240	60	E14, B15d, E26, E27, B22d	660	E
Oven Lamp 300°C Round bulb					
Oven-round 40W	120 – 130 / 230 – 240	40	E14, B15d, E26, E27, B22d	390	*

* Special lamp which is exempt from Ecodesign Requirements

Candle Lamps Incandescent Bulbs

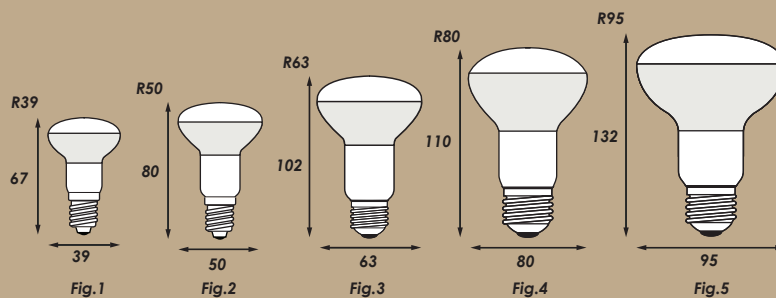


→ Bulb finish : clear, frosted



Lamp Code	Voltage (V)	Wattage (W)	Base	Lumen (lm)	Energy Efficiency Class
Candle 25W	120 – 130 / 230 – 240	25	E14, B15d, E26, E27, B22d	210	E
Candle 40W	120 – 130 / 230 – 240	40	E14, B15d, E26, E27, B22d	400	E
Candle 60W	120 – 130 / 230 – 240	60	E14, B15d, E26, E27, B22d	660	E

Reflector Lamps Incandescent Bulbs

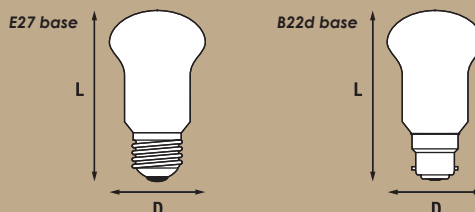


➤ Colour bulbs (Red, Blue, Green and Amber) available for R50, R63, and R80 (below 60W)



Lamp Code	Voltage (V)	Wattage (W)	Beam Angle	Intensity (cd)	Base	Fig.
R39 30W	110 – 130 / 220 – 240	30	40° ± 10%	180	E14	1
R50 25W	110 – 130 / 220 – 240	25	40° ± 10%	210	E14	2
R50 40W	110 – 130 / 220 – 240	40	40° ± 10%	410	E14	2
R63 40W	110 – 130 / 220 – 240	40	40° ± 10%	430	E26, E27	3
R63 60W	110 – 130 / 220 – 240	60	40° ± 10%	765	E26, E27	3
R80 60W	110 – 130 / 220 – 240	60	40° ± 10%	460	E26, E27	4
R80 75W	110 – 130 / 220 – 240	75	40° ± 10%	660	E26, E27	4
R80 100W	110 – 130 / 220 – 240	100	40° ± 10%	900	E26, E27	4
R95 75W	110 – 130 / 220 – 240	75	40° ± 10%	1000	E26, E27	5
R95 100W	110 – 130 / 220 – 240	100	40° ± 10%	1350	E26, E27	5
R95 150W	110 – 130 / 220 – 240	150	40° ± 10%	2250	E26, E27	5

Mushroom Lamps Incandescent Bulbs

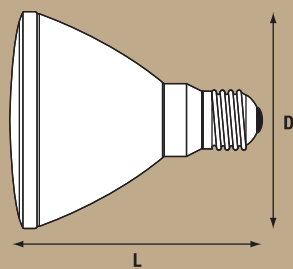


➤ Bulb finish : opal white



Lamp Code	Voltage (V)	Wattage (W)	Lumen (lm)	Base	Diameter D (mm)	Length L (mm)
Mushroom25	120 – 130 / 230 – 240	25	170	E26, E27, B22d	50	88
Mushroom40	120 – 130 / 230 – 240	40	340	E26, E27, B22d	50	88
Mushroom60	120 – 130 / 230 – 240	60	570	E26, E27, B22d	50	88
Mushroom75	120 – 130 / 230 – 240	75	750	E26, E27, B22d	60	96
Mushroom100	120 – 130 / 230 – 240	100	1100	E26, E27, B22d	60	96

PAR38 Incandescent PAR Lamps - Standard, Infra Red and Coloured

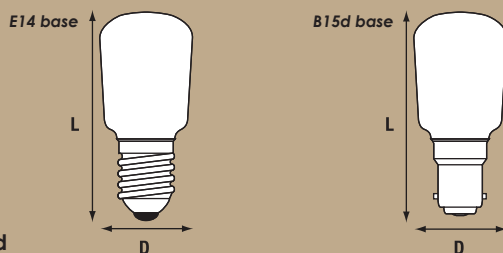


Clear or Red finish available for Infra-red PAR38



Lamp Code	Voltage (V)	Wattage (W)	Beam Angle	Intensity (cd)	Base	Diameter D (mm)	Length L (mm)
PAR38/60W	120 – 130 / 230 – 240	60	Spot	3400	M.S. E26	122	134
PAR38/60W	120 – 130 / 230 – 240	60	Flood	1200	E27	122	136
PAR38/80W	120 – 130 / 230 – 240	80	Spot	5400	M.S. E26	122	134
PAR38/80W	120 – 130 / 230 – 240	80	Flood	1800	E27	122	136
PAR38/120W	120 – 130 / 230 – 240	120	Spot	9300	M.S. E26	122	134
PAR38/120W	120 – 130 / 230 – 240	120	Flood	3100	E27	122	136
PAR38/IR	120 – 130 / 230 – 240	100	Flood	Infra Red	M.S. E26	122	134
PAR38/IR	120 – 130 / 230 – 240	150/175	Flood	Infra Red	E27	122	134
PAR38/Colour	120 – 130 / 230 – 240	60/80	Spot	Red, Amber, Blue, Green	M.S. E26	122	134
PAR38/Colour	120 – 130 / 230 – 240	60/80	Flood	Red, Amber, Blue, Green	E27	122	136

Pygmy Lamps Incandescent Bulbs



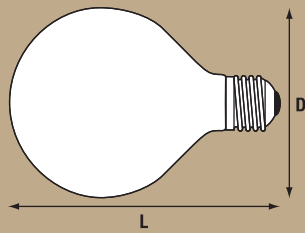
Bulb finish – clear or frosted

- 10W lamp available on request
- Oven lamps are designed for use at 300° C



Lamp Code	Voltage (V)	Wattage (W)	Lumen (lm)	Base	Diameter D (mm)	Length L (mm)
Pygmy T22-15W	120 – 130 / 230 – 240	15	90	E14, B15d	22	50
Pygmy T22-25W	120 – 130 / 230 – 240	25	180	E14, B15d	22	50
Pygmy ST26-15W	120 – 130 / 230 – 240	15	90	E14, B15d	26	57
Pygmy ST26-25W	120 – 130 / 230 – 240	25	180	E14, B15d	26	57
Oven Lamps 300°C						
Oven T22-15W	120 – 130 / 230 – 240	15	90	E14, B15d	22	49
Oven T22-25W	120 – 130 / 230 – 240	25	180	E14, B15d	22	49

Decorative Globe Lamps Incandescent Bulbs



✦ Bulb finish : clear, softwhite/opal



European System

Lamp Code	Voltage (V)	Wattage (W)	Base	Diameter D (mm)	Length L (mm)	Lumen (lm)	Energy Efficiency Class
G60	230 – 240	25	E14	60	93	200	F
G60	230 – 240	40	E14	60	93	350	F
G80	230 – 240	40	E27	80	119	350	F
G80	230 – 240	60	E27	80	119	600	F
G80	230 – 240	100	E27	80	119	1200	F
G95	230 – 240	40	E27	95	140	350	F
G95	230 – 240	60	E27	95	140	600	F
G95	230 – 240	100	E27	95	140	1200	F
G95	230 – 240	150	E27	95	140	1800	F
G120	230 – 240	40	E27	120	170	350	F
G120	230 – 240	60	E27	120	170	600	F
G120	230 – 240	100	E27	120	170	1200	F
G120	230 – 240	150	E27	120	170	1800	F

North American System

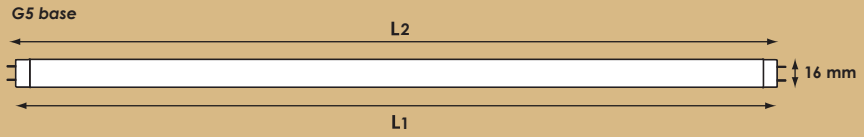
Lamp Code	Voltage (V)	Wattage (W)	Lumen (lm)	Base	Diameter D (inch)	Length L (inch)
G16.5	110 – 130	25	200	E12	2.06	3.00
G16.5	110 – 130	40	350	E12	2.06	3.00
G16.5	110 – 130	60	600	E12	2.06	3.00
G25	110 – 130	25	200	E26	3.13	4.50
G25	110 – 130	40	350	E26	3.13	4.50
G25	110 – 130	60	600	E26	3.13	4.50
G30	110 – 130	40	350	E26	3.75	5.00
G30	110 – 130	60	600	E26	3.75	5.00
G40	110 – 130	40	350	E26	5.00	6.93
G40	110 – 130	60	600	E26	5.00	6.93
G40	110 – 130	75	750	E26	5.00	6.93
G40	110 – 130	100	1200	E26	5.00	6.93
G40	110 – 130	150	1800	E26	5.00	6.93



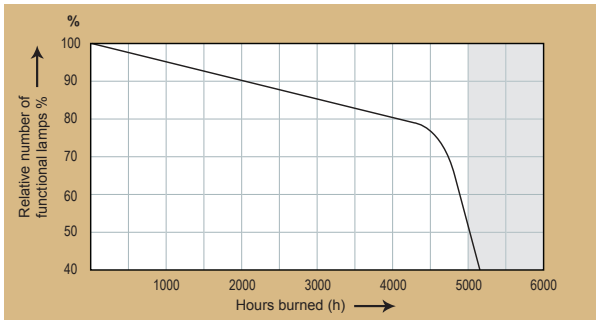
Fluorescent Lamps

	T5(16mm) Tubular Fluorescent Lamps Standard Phosphors.....	59
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T5(16mm) Tubular Fluorescent Lamps Standard phosphors



- Standard fluorescent colours:
- | | | |
|------|------------|-------|
| WW = | Warm White | 2900K |
| W = | White | 3500K |
| CW = | Cool White | 4100K |
| D = | Daylight | 6500K |

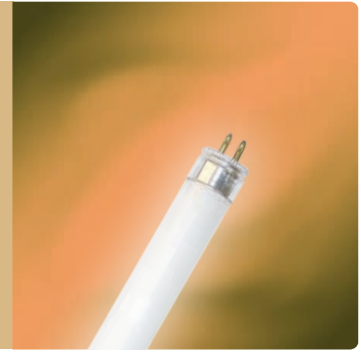
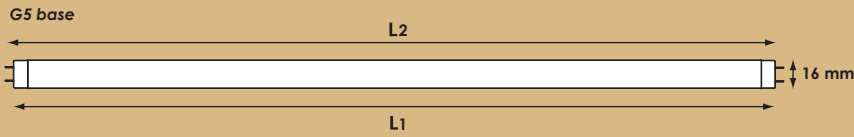


Typical mortality curve T5 4W/6W/8W/13W

Lamp Code	Wattage (W)	Colour Appearance	CRI (Ra)	Length L ₁ (mm)	Length L ₂ (mm)	Lumen (lm)	Energy Efficiency Class
F4T5/WW	4	Warm White	60-69, 2B	136	150	130	B
F4T5/W	4	White	60-69, 2B	136	150	130	B
F4T5/CW	4	Cool White	60-69, 2B	136	150	130	B
F4T5/D	4	Daylight	60-69, 2B	136	150	110	B
F6T5/WW	6	Warm White	60-69, 2B	212	226	260	B
F6T5/W	6	White	60-69, 2B	212	226	260	B
F6T5/CW	6	Cool White	60-69, 2B	212	226	260	B
F6T5/D	6	Daylight	60-69, 2B	212	226	220	B
F8T5/WW	8	Warm White	60-69, 2B	288	302	380	B
F8T5/W	8	White	60-69, 2B	288	302	380	B
F8T5/CW	8	Cool White	60-69, 2B	288	302	380	B
F8T5/D	8	Daylight	60-69, 2B	288	302	330	B
F13T5/WW	13	Warm White	60-69, 2B	517	531	800	B
F13T5/W	13	White	60-69, 2B	517	531	800	B
F13T5/CW	13	Cool White	60-69, 2B	517	531	800	B
F13T5/D	13	Daylight	60-69, 2B	517	531	680	B

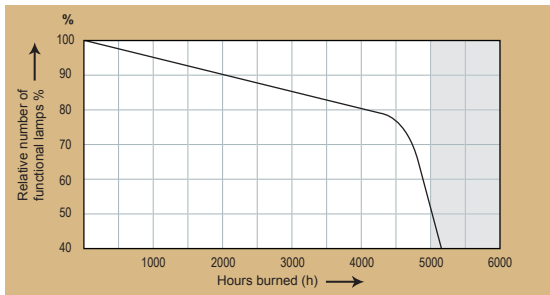
* Lamp power of T5 ≤ 13W is exempt from Ecodesign Requirements - Commission Regulation No. 245/2009

T5(16mm) Tubular Fluorescent Lamps Premium Tri-phosphors



- ➔ Deluxe fluorescent colours:

827 =	Incand. Warm White	2700K
830 =	Warm White	3000K
835 =	White	3500K
840 =	Cool White	4200K
865 =	Daylight	6500K
- ➔ Coated with high efficiency tri-phosphors
- ➔ High color rendering group – 1B, Ra 80-89

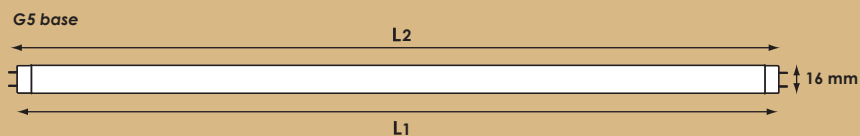


Typical mortality curve T5 4W/6W/8W/13W

Lamp Code	Wattage (W)	Colour Appearance	CRI (Ra)	Length L ₁ (mm)	Length L ₂ (mm)	Lumen (lm)	Energy Efficiency Class
F4T5/827	4	Incand. Warm White	80-89, 1B	136	150	160	B
F4T5/830	4	Warm White	80-89, 1B	136	150	160	B
F4T5/835	4	White	80-89, 1B	136	150	160	B
F4T5/840	4	Cool White	80-89, 1B	136	150	160	B
F4T5/865	4	Daylight	80-89, 1B	136	150	150	B
F6T5/827	6	Incand. Warm White	80-89, 1B	212	226	320	B
F6T5/830	6	Warm White	80-89, 1B	212	226	320	B
F6T5/835	6	White	80-89, 1B	212	226	320	B
F6T5/840	6	Cool White	80-89, 1B	212	226	320	B
F6T5/865	6	Daylight	80-89, 1B	212	226	290	B
F8T5/827	8	Incand. Warm White	80-89, 1B	288	302	480	B
F8T5/830	8	Warm White	80-89, 1B	288	302	480	B
F8T5/835	8	White	80-89, 1B	288	302	480	B
F8T5/840	8	Cool White	80-89, 1B	288	302	480	B
F8T5/865	8	Daylight	80-89, 1B	288	302	440	B
F13T5/827	13	Incand. Warm White	80-89, 1B	517	531	980	A
F13T5/830	13	Warm White	80-89, 1B	517	531	980	A
F13T5/835	13	White	80-89, 1B	517	531	980	A
F13T5/840	13	Cool White	80-89, 1B	517	531	980	A
F13T5/865	13	Daylight	80-89, 1B	517	531	950	A

* Lamp power of T5 ≤ 13W is exempt from Ecodesign Requirements - Commission Regulation No. 245/2009

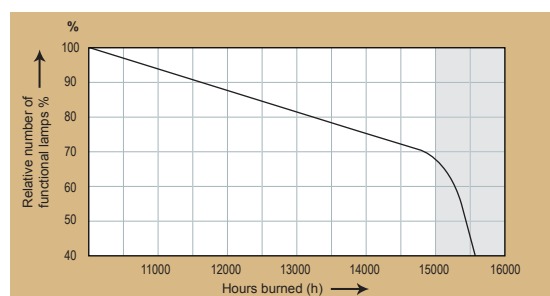
T5(16mm) Tubular Fluorescent Lamps High Efficacy



↘	Deluxe fluorescent colours:	827 =	Incand. Warm White	2700K
		830 =	Warm White	3000K
		835 =	White	3500K
		840 =	Cool White	4200K
		865 =	Daylight	6500K



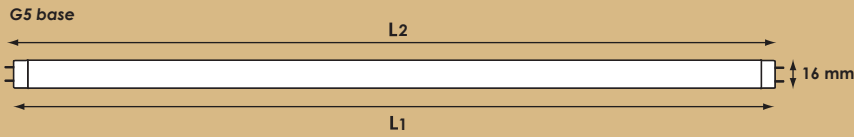
- ↘ Coated with high efficiency tri-phosphors
- ↘ High colour rendering group – 1B, Ra 80-89
- ↘ Very high luminous efficacy of up to 94 LPW
- ↘ Maximum luminous flux at around 35°C operation temperature
- ↘ Design for use on electronic control gear with up to 20% increase in efficiency compared to T8 lamps
- ↘ Higher luminaire efficiency as a result of small tube size offering better optical control
- ↘ Allow very slim luminaire design
- ↘ **Comply to EU Ecodesign Requirements**
- Commission Regulation No. 245/2009



Typical mortality curve T5 14W/21W/28W/35W

Lamp Code	Wattage (W)	Colour Appearance	CRI (Ra)	Length L ₁ (mm)	Length L ₂ (mm)	Lumen (lm)	Energy Efficiency Class
F14T5/827	14	Incand. Warm White	80-89, 1B	549	563	1205	A
F14T5/830	14	Warm White	80-89, 1B	549	563	1205	A
F14T5/835	14	White	80-89, 1B	549	563	1205	A
F14T5/840	14	Cool White	80-89, 1B	549	563	1205	A
F14T5/865	14	Daylight	80-89, 1B	549	563	1100	A
F21T5/827	21	Incand. Warm White	80-89, 1B	849	863	1900	A
F21T5/830	21	Warm White	80-89, 1B	849	863	1900	A
F21T5/835	21	White	80-89, 1B	849	863	1900	A
F21T5/840	21	Cool White	80-89, 1B	849	863	1900	A
F21T5/865	21	Daylight	80-89, 1B	849	863	1750	A
F28T5/827	28	Incand. Warm White	80-89, 1B	1149	1163	2605	A
F28T5/830	28	Warm White	80-89, 1B	1149	1163	2605	A
F28T5/835	28	White	80-89, 1B	1149	1163	2605	A
F28T5/840	28	Cool White	80-89, 1B	1149	1163	2605	A
F28T5/865	28	Daylight	80-89, 1B	1149	1163	2400	A
F35T5/827	35	Incand. Warm White	80-89, 1B	1449	1463	3300	A
F35T5/830	35	Warm White	80-89, 1B	1449	1463	3300	A
F35T5/835	35	White	80-89, 1B	1449	1463	3300	A
F35T5/840	35	Cool White	80-89, 1B	1449	1463	3300	A
F35T5/865	35	Daylight	80-89, 1B	1449	1463	3050	A

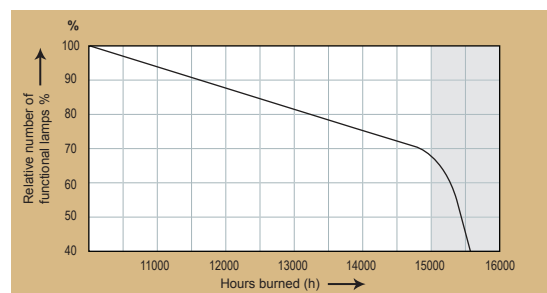
T5(16mm) Tubular Fluorescent Lamps HO High Output



- ↪ Deluxe fluorescent colours: 827 = Incand. Warm White 2700K
- 830 = Warm White 3000K
- 835 = White 3500K
- 840 = Cool White 4200K
- 865 = Daylight 6500K



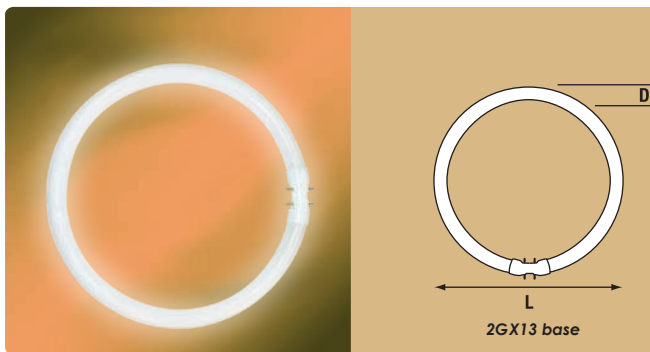
- ↪ Coated with high efficiency tri-phosphors
- ↪ High colour rendering group – 1B, Ra 80-89
- ↪ Maximum luminous flux at around 35°C operation temperature
- ↪ Design for use on ECG gear with up to 20% increase in efficiency compared to T8 lamps
- ↪ Higher luminaire efficiency as a result of small tube size offering better optical control
- ↪ Allow very slim luminaire design
- ↪ **Comply to EU Ecodesign Requirements**
- Commission Regulation No. 245/2009



Lamp Code	Wattage (W)	Colour Appearance	CRI (Ra)	Length L ₁ (mm)	Length L ₂ (mm)	Lumen (lm)	Energy Efficiency Class
FHO24T5/827	24	Incand. Warm White	80-89, 1B	549	563	1755	B
FHO24T5/830	24	Warm White	80-89, 1B	549	563	1755	B
FHO24T5/835	24	White	80-89, 1B	549	563	1755	B
FHO24T5/840	24	Cool White	80-89, 1B	549	563	1755	B
FHO24T5/865	24	Daylight	80-89, 1B	549	563	1600	B
FHO39T5/827	39	Incand. Warm White	80-89, 1B	849	863	3100	B
FHO39T5/830	39	Warm White	80-89, 1B	849	863	3100	B
FHO39T5/835	39	White	80-89, 1B	849	863	3100	B
FHO39T5/840	39	Cool White	80-89, 1B	849	863	3100	B
FHO39T5/865	39	Daylight	80-89, 1B	849	863	2850	B
FHO49T5/827	49	Incand. Warm White	80-89, 1B	1449	1463	4315	A
FHO49T5/830	49	Warm White	80-89, 1B	1449	1463	4315	A
FHO49T5/835	49	White	80-89, 1B	1449	1463	4315	A
FHO49T5/840	49	Cool White	80-89, 1B	1449	1463	4315	A
FHO49T5/865	49	Daylight	80-89, 1B	1449	1463	3950	B
FHO54T5/827	54	Incand. Warm White	80-89, 1B	1149	1163	4450	B
FHO54T5/830	54	Warm White	80-89, 1B	1149	1163	4450	B
FHO54T5/835	54	White	80-89, 1B	1149	1163	4450	B
FHO54T5/840	54	Cool White	80-89, 1B	1149	1163	4450	B
FHO54T5/865	54	Daylight	80-89, 1B	1149	1163	4050	B
FHO80T5/827	80	Incand. Warm White	80-89, 1B	1449	1463	6160	B
FHO80T5/830	80	Warm White	80-89, 1B	1449	1463	6160	B
FHO80T5/835	80	White	80-89, 1B	1449	1463	6160	B
FHO80T5/840	80	Cool White	80-89, 1B	1449	1463	6160	B
FHO80T5/865	80	Daylight	80-89, 1B	1449	1463	5700	B

T5(16mm) Circular Fluorescent Lamps

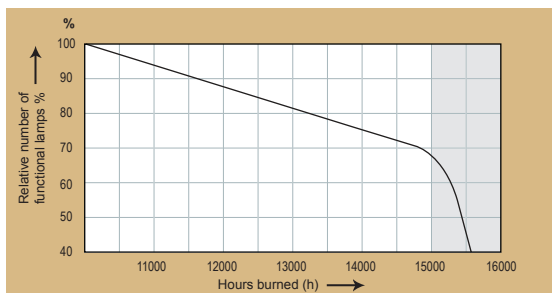
For Electronic Control Gear (ECG)



- | | | | |
|-----------------------|-------|--------------------|-------|
| Tri-Phosphor colours: | 827 = | Incand. Warm White | 2700K |
| | 830 = | Warm White | 3000K |
| | 840 = | Cool White | 4200K |
| | 865 = | Daylight | 6500K |



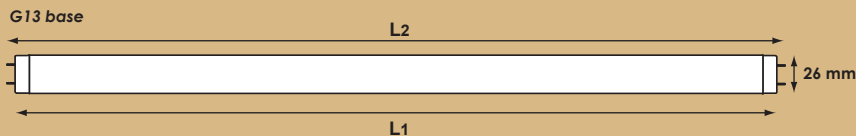
- Coated with high efficiency tri-phosphors with high CRI Ra 89-89
- G10q base for Asian markets available on request
- Comply to EU Ecodesign Requirements - Commission Regulation No. 245/2009**



Lamp Code	Wattage (W)	Colour Appearance	CRI (Ra)	Tube Diameter D (mm)	Lamp Diameter L (mm)	Lumen (lm)	Energy Efficiency Class
FC22T5/827	22	Incand. Warm White	80-89, 1B	16	225	1800	A
FC22T5/830	22	Warm White	80-89, 1B	16	225	1800	A
FC22T5/840	22	Cool White	80-89, 1B	16	225	1800	A
FC22T5/865	22	Daylight	80-89, 1B	16	225	1700	A
FC40T5/827	40	Incand. Warm White	80-89, 1B	16	300	3200	B
FC40T5/830	40	Warm White	80-89, 1B	16	300	3200	B
FC40T5/840	40	Cool White	80-89, 1B	16	300	3200	B
FC40T5/865	40	Daylight	80-89, 1B	16	300	3000	B
FC55T5/827	55	Incand. Warm White	80-89, 1B	16	300	4200	B
FC55T5/830	55	Warm White	80-89, 1B	16	300	4200	B
FC55T5/840	55	Cool White	80-89, 1B	16	300	4200	B
FC55T5/865	55	Daylight	80-89, 1B	16	300	3800	B

T8(26mm) Tubular Fluorescent Lamps

European System, Standard phosphors



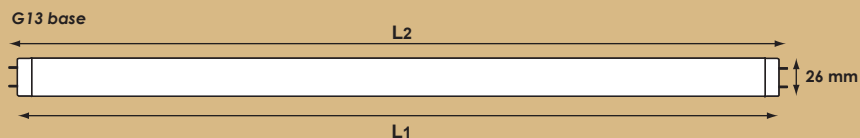
- Standard fluorescent colours:
- | | | |
|------|------------|-------|
| WW = | Warm White | 2900K |
| W = | White | 3500K |
| CW = | Cool White | 4100K |
| D = | Daylight | 6500K |



Lamp Code	Wattage (W)	Colour Appearance	CRI (Ra)	Length L ₁ (mm)	Length L ₂ (mm)	Lumen (lm)	Energy Star
F10T8/WW	10	Warm White	60-69, 2B	330	345	600	B
F10T8/W	10	White	60-69, 2B	330	345	600	B
F10T8/CW	10	Cool White	60-69, 2B	330	345	600	B
F10T8/D	10	Daylight	60-69, 2B	330	345	550	B
F15T8/WW	15	Warm White	60-69, 2B	438	451	900	B
F15T8/W	15	White	60-69, 2B	438	451	900	B
F15T8/CW	15	Cool White	60-69, 2B	438	451	900	B
F15T8/D	15	Daylight	60-69, 2B	438	451	850	B
F18T8/WW	18	Warm White	60-69, 2B	590	604	1200	B
F18T8/W	18	White	60-69, 2B	590	604	1200	B
F18T8/CW	18	Cool White	60-69, 2B	590	604	1200	B
F18T8/D	18	Daylight	60-69, 2B	590	604	1100	B
F30T8/WW	30	Warm White	60-69, 2B	895	909	2000	B
F30T8/W	30	White	60-69, 2B	895	909	2000	B
F30T8/CW	30	Cool White	60-69, 2B	895	909	2000	B
F30T8/D	30	Daylight	60-69, 2B	895	909	1850	B
F36T8/WW	36	Warm White	60-69, 2B	1200	1213	2800	B
F36T8/W	36	White	60-69, 2B	1200	1213	2800	B
F36T8/CW	36	Cool White	60-69, 2B	1200	1213	2800	B
F36T8/D	36	Daylight	60-69, 2B	1200	1213	2600	B
F58T8/WW	58	Warm White	60-69, 2B	1500	1513	4600	B
F58T8/W	58	White	60-69, 2B	1500	1513	4600	B
F58T8/CW	58	Cool White	60-69, 2B	1500	1513	4600	B
F58T8/D	58	Daylight	60-69, 2B	1500	1513	4300	B

T8(26mm) Tubular Fluorescent Lamps

European System, Premium Tri-phosphors



→ Tri-Phosphor colours:	827 =	Incand. Warm White	2700K
	830 =	Warm White	3000K
	835 =	White	3500K
	840 =	Cool White	4200K
	865 =	Daylight	6500K



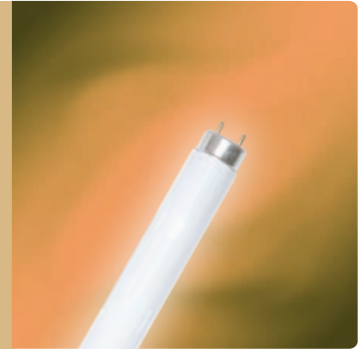
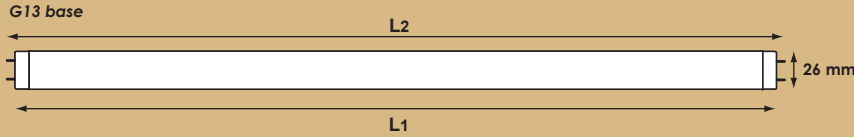
→ Coated with high efficiency tri-phosphors with high CRI Ra 80-89

→ Comply to EU Ecodesign Requirements - Commission Regulation No. 245/2009

Lamp Code	Wattage (W)	Colour Appearance	CRI (Ra)	Length L ₁ (mm)	Length L ₂ (mm)	Lumen (lm)	Energy i3
F10T8/827	10	Incand. Warm White	80-89, 1B	330	345	640	A
F10T8/830	10	Warm White	80-89, 1B	330	345	640	A
F10T8/835	10	White	80-89, 1B	330	345	640	A
F10T8/840	10	Cool White	80-89, 1B	330	345	640	A
F10T8/865	10	Daylight	80-89, 1B	330	345	590	B
F15T8/827	15	Incand. Warm White	80-89, 1B	438	451	960	B
F15T8/830	15	Warm White	80-89, 1B	438	451	960	B
F15T8/835	15	White	80-89, 1B	438	451	960	B
F15T8/840	15	Cool White	80-89, 1B	438	451	960	B
F15T8/865	15	Daylight	80-89, 1B	438	451	900	B
F18T8/827	18	Incand. Warm White	80-89, 1B	590	604	1350	A
F18T8/830	18	Warm White	80-89, 1B	590	604	1350	A
F18T8/835	18	White	80-89, 1B	590	604	1350	A
F18T8/840	18	Cool White	80-89, 1B	590	604	1350	A
F18T8/865	18	Daylight	80-89, 1B	590	604	1215	B
F30T8/827	30	Incand. Warm White	80-89, 1B	895	909	2400	A
F30T8/830	30	Warm White	80-89, 1B	895	909	2400	A
F30T8/835	30	White	80-89, 1B	895	909	2400	A
F30T8/840	30	Cool White	80-89, 1B	895	909	2400	A
F30T8/865	30	Daylight	80-89, 1B	895	909	2200	B
F36T8/827	36	Incand. Warm White	80-89, 1B	1200	1213	3350	A
F36T8/830	36	Warm White	80-89, 1B	1200	1213	3350	A
F36T8/835	36	White	80-89, 1B	1200	1213	3350	A
F36T8/840	36	Cool White	80-89, 1B	1200	1213	3350	A
F36T8/865	36	Daylight	80-89, 1B	1200	1213	3100	A
F58T8/827	58	Incand. Warm White	80-89, 1B	1500	1513	5220	A
F58T8/830	58	Warm White	80-89, 1B	1500	1513	5220	A
F58T8/835	58	White	80-89, 1B	1500	1513	5220	A
F58T8/840	58	Cool White	80-89, 1B	1500	1513	5220	A
F58T8/865	58	Daylight	80-89, 1B	1500	1513	4900	A

T8(26mm) Tubular Fluorescent Lamps

N. American System, Standard Phosphors



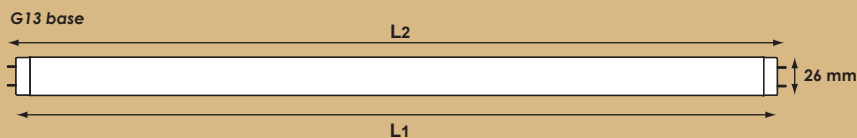
- Standard fluorescent colors :
- | | | |
|------------|---|-------|
| Warm White | = | 2900K |
| White | = | 3500K |
| Cool White | = | 4100K |
| Daylight | = | 6500K |



Lamp Code	Wattage (W)	Color Appearance	CRI (Ra)	Lumen (lm)	Length L ₁ (mm)	Length L ₂ (mm)
F10T8/WW	10	Warm White	70-79, 2A	600	330	345
F10T8/W	10	White	70-79, 2A	600	330	345
F10T8/CW	10	Cool White	70-79, 2A	600	330	345
F10T8/D	10	Daylight	70-79, 2A	550	330	345
F15T8/WW	15	Warm White	70-79, 2A	900	438	451
F15T8/W	15	White	70-79, 2A	900	438	451
F15T8/CW	15	Cool White	70-79, 2A	900	438	451
F15T8/D	15	Daylight	70-79, 2A	850	438	451
F17T8/WW	17	Warm White	70-79, 2A	1200	590	604
F17T8/W	17	White	70-79, 2A	1200	590	604
F17T8/CW	17	Cool White	70-89, 2A	1200	590	604
F17T8/D	17	Daylight	70-79, 2A	1100	590	604
F25T8/WW	25	Warm White	70-79, 2A	2000	895	909
F25T8/W	25	White	70-79, 2A	2000	895	909
F25T8/CW	25	Cool White	70-79, 2A	2000	895	909
F25T8/D	25	Daylight	70-79, 2A	1850	895	909
F32T8/WW	32	Warm White	70-79, 2A	2800	1200	1213
F32T8/W	32	White	70-79, 2A	2800	1200	1213
F32T8/CW	32	Cool White	70-79, 2A	2800	1200	1213
F32T8/D	32	Daylight	70-79, 2A	2600	1200	1213

T8(26mm) Tubular Fluorescent Lamps

N. American System, Premium Tri-phosphors



- ↘ Tri-Phosphor colors: 827 = Incand. Warm White 2700K
- 830 = Warm White 3000K
- 835 = White 3500K
- 840 = Cool White 4200K
- 865 = Daylight 6500K

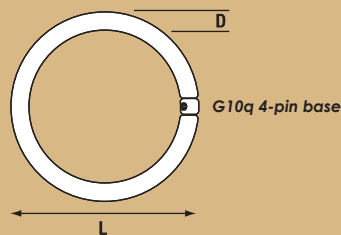


- ↘ Coated with high efficiency tri-phosphors with high CRI Ra 80-89

Lamp Code	Wattage (W)	Color Appearance	CRI (Ra)	Lumen (lm)	Length L ₁ (mm)	Length L ₂ (mm)
F10T8/827	10	Incand. Warm White	80-89, 1B	640	330	345
F10T8/830	10	Warm White	80-89, 1B	640	330	345
F10T8/835	10	White	80-89, 1B	640	330	345
F10T8/840	10	Cool White	80-89, 1B	640	330	345
F10T8/865	10	Daylight	80-89, 1B	590	330	345
F15T8/827	15	Incand. Warm White	80-89, 1B	960	438	451
F15T8/830	15	Warm White	80-89, 1B	960	438	451
F15T8/835	15	White	80-89, 1B	960	438	451
F15T8/840	15	Cool White	80-89, 1B	960	438	451
F15T8/865	15	Daylight	80-89, 1B	900	438	451
F17T8/827	17	Incand. Warm White	80-89, 1B	1300	590	604
F17T8/830	17	Warm White	80-89, 1B	1300	590	604
F17T8/835	17	White	80-89, 1B	1300	590	604
F17T8/840	17	Cool White	80-89, 1B	1300	590	604
F17T8/865	17	Daylight	80-89, 1B	1200	590	604
F25T8/827	25	Incand. Warm White	80-89, 1B	2100	895	909
F25T8/830	25	Warm White	80-89, 1B	2100	895	909
F25T8/835	25	White	80-89, 1B	2100	895	909
F25T8/840	25	Cool White	80-89, 1B	2100	895	909
F25T8/865	25	Daylight	80-89, 1B	1950	895	909
F32T8/827	32	Incand. Warm White	80-89, 1B	2900	1200	1213
F32T8/830	32	Warm White	80-89, 1B	2900	1200	1213
F32T8/835	32	White	80-89, 1B	2900	1200	1213
F32T8/840	32	Cool White	80-89, 1B	2900	1200	1213
F32T8/865	32	Daylight	80-89, 1B	2700	1200	1213

T9(30mm) Circular Fluorescent Lamps

For Conventional Control Gear with External Starter and ECG



Standard phosphors colours :

WW =	Warm White	2900K
CW =	Cool White	4200K
D =	Daylight	6500K



Tri-Phosphors colours :

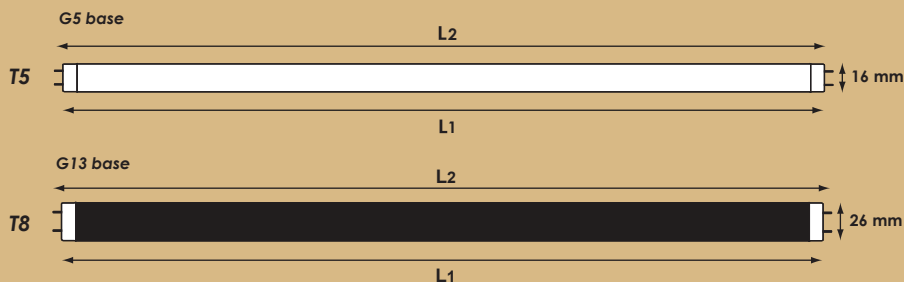
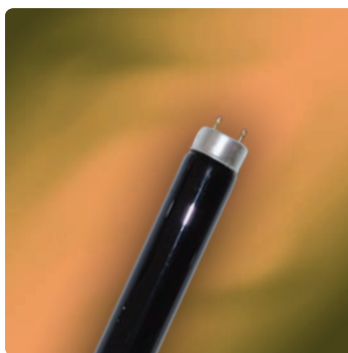
830 =	Warm White	3000K
840 =	Cool White	4200K
865 =	Daylight	6500K

Coated with high efficiency tri-phosphors with high CRI Ra 80-89

Comply to EU Ecodesign Requirements - Commission Regulation No. 245/2009

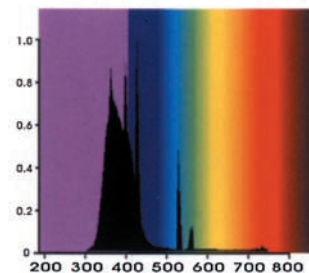
Lamp Code	Wattage (W)	Colour Appearance	CRI (Ra)	Tube Diameter D (mm)	Lamp Diameter L (mm)	Lumen (lm)	Energy Efficiency Class
Standard Phosphors							
FC22T9/WW	22	Warm White	60-69, 2B	30	216	1000	B
FC22T9/CW	22	Cool White	60-69, 2B	30	216	1000	B
FC22T9/D	22	Daylight	60-69, 2B	30	216	920	B
FC32T9/WW	32	Warm White	60-69, 2B	30	307	1900	B
FC32T9/CW	32	Cool White	60-69, 2B	30	307	1900	B
FC32T9/D	32	Daylight	60-69, 2B	30	307	1700	B
FC40T9/WW	40	Warm White	60-69, 2B	30	409	2700	B
FC40T9/CW	40	Cool White	60-69, 2B	30	409	2700	B
FC40T9/D	40	Daylight	60-69, 2B	30	409	2400	B
FC60T9/WW	60	Warm White	60-69, 2B	30	409	3600	B
FC60T9/CW	60	Cool White	60-69, 2B	30	409	3600	B
FC60T9/D	60	Daylight	60-69, 2B	30	409	3200	B
Premium Tri-phosphors							
FC22T9/830	22	Warm White	80-89, 1B	30	216	1200	B
FC22T9/840	22	Cool White	80-89, 1B	30	216	1200	B
FC22T9/865	22	Daylight	80-89, 1B	30	216	1100	B
FC32T9/830	32	Warm White	80-89, 1B	30	307	2300	B
FC32T9/840	32	Cool White	80-89, 1B	30	307	2300	B
FC32T9/865	32	Daylight	80-89, 1B	30	307	2050	B
FC40T9/830	40	Warm White	80-89, 1B	30	409	3200	B
FC40T9/840	40	Cool White	80-89, 1B	30	409	3200	B
FC40T9/865	40	Daylight	80-89, 1B	30	409	2800	B
FC60T9/830	60	Warm White	80-89, 1B	30	409	4300	B
FC60T9/840	60	Cool White	80-89, 1B	30	409	4300	B
FC60T9/865	60	Daylight	80-89, 1B	30	409	3800	B

Blacklight and Blacklight Blue Special Fluorescent Lamps



Blacklight :

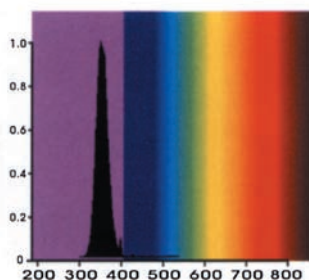
UV rays of 360nm attract insects into insect traps, for use in mineralogy, military, criminology, medical and pharmacy industries, photochemical reactions, jewelry and historical relics verification, etc.



Lamp Code	Wattage (W)	Colour	Base	Diameter D (mm)	Length L ₁ (mm)	Length L ₂ (mm)
F4T5/BL	4	Blacklight	G5	16	136	150
F6T5/BL	6	Blacklight	G5	16	212	226
F8T5/BL	8	Blacklight	G5	16	288	302
F13T5/BL	13	Blacklight	G5	16	517	531
F10T8/BL	10	Blacklight	G13	26	330	345
F15T8/BL	15	Blacklight	G13	26	438	451
F18T8/BL	18	Blacklight	G13	26	590	604
F30T8/BL	30	Blacklight	G13	26	895	909
F36T8/BL	36	Blacklight	G13	26	1200	1213

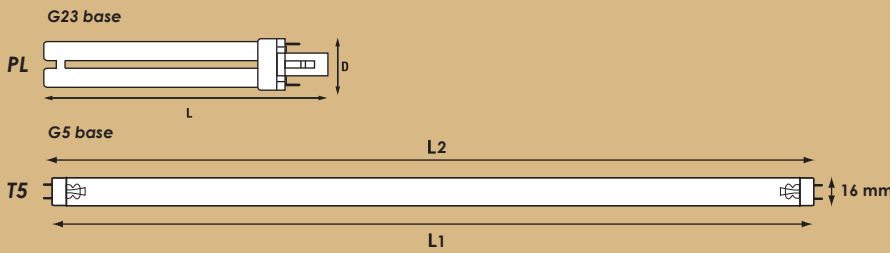
Blacklight Blue :

Lamps are made with Wood's glass and emit UV rays of 360nm mainly; suitable for use as counterfeit detector, special stage effect and applications similar to blacklight lamps.



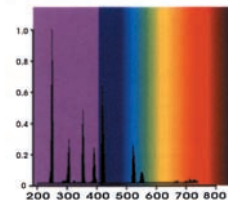
Lamp Code	Wattage (W)	Colour	Base	Diameter D (mm)	Length L ₁ (mm)	Length L ₂ (mm)
F4T5/BLB	4	Blacklight Blue	G5	16	136	150
F6T5/BLB	6	Blacklight Blue	G5	16	212	226
F8T5/BLB	8	Blacklight Blue	G5	16	288	302
F13T5/BLB	13	Blacklight Blue	G5	16	517	531
F10T8/BLB	10	Blacklight Blue	G13	26	330	345
F15T8/BLB	15	Blacklight Blue	G13	26	438	451
F18T8/BLB	18	Blacklight Blue	G13	26	590	604
F30T8/BLB	30	Blacklight Blue	G13	26	895	909
F36T8/BLB	36	Blacklight Blue	G13	26	1200	1213

Germicidal Lamps Special Fluorescent Lamps

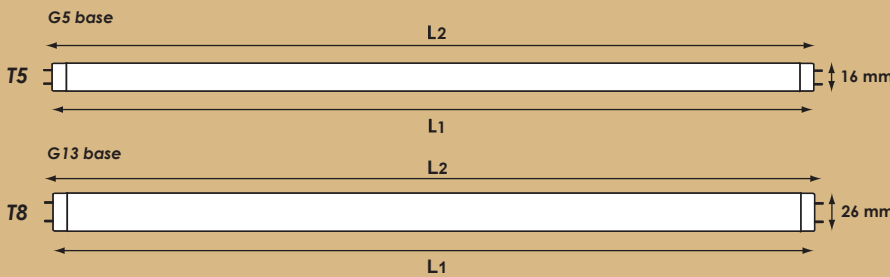


- T5 lamps – 4W, 6W, 8W
- T8 lamps – 10W, 15W, 18W, 30W, 36W
- PL lamps – 7W, 9W, 11W
- Lamp emits UV rays of 254nm and can kill most germs
- For use in sterilizers, air and water purifiers, etc

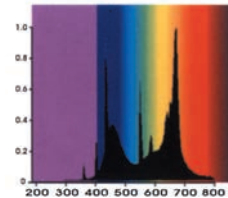
Warning : Avoid direct exposure of eyes and skin under germicidal lamps



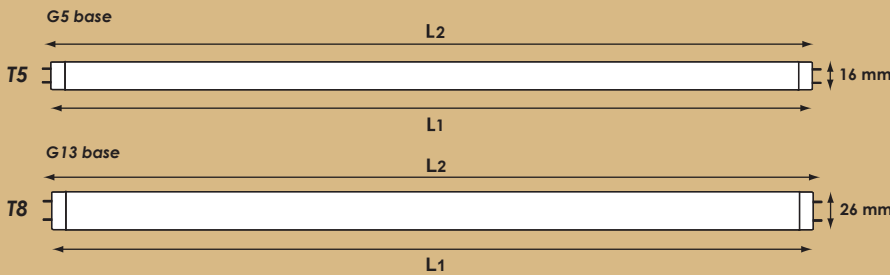
Plant Growth Lamps Special Fluorescent Lamps



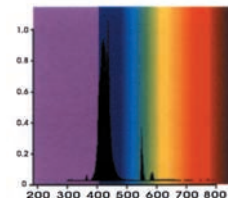
- T5 lamps – 8W
- T8 lamps – 10W, 15W, 18W, 30W, 36W
- Lamp reproduces natural light
- Lamp strengthens growth of aquatic, foliage plants and prevents fungi growth



Coral Blue Lamps Special Fluorescent Lamps



- T5 lamps – 8W
- T8 lamps – 10W, 15W, 18W, 30W, 36W
- Lamp produces lights that enhance the growth of coral
- For use in aquarium lighting



KANDOLite®
Brings you Light and Prosperity



Compact Fluorescent Lamps



Compact Fluorescent Lamps

with Integral Starter For Conventional Control Gear (CCG)72-73



Compact Fluorescent Lamps

For External Starters, Conventional and Electronic Control Gear (ECG) and Dimmer Systems74-75



Compact Fluorescent Lamps

FLAT Lamps for External Starters, Conventional and Electronic Control Gear76

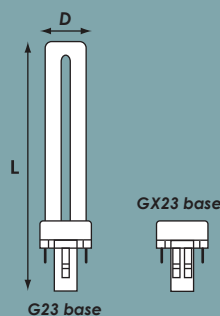


Compact Fluorescent Lamps

2D shape, Premium Tri-Phosphors77

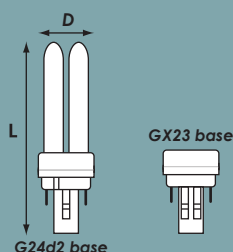
Compact Fluorescent Lamps

with Integral Starter For Conventional Control Gear (CCG)



Lamp Code	Voltage (V)	Wattage (W)	CRI (Ra)	Base	Diameter D (mm)	Length L (mm)	Lumen	Energy Efficiency Class
FLS-5W	110-130 / 220-240	5	80-89, 1B	G23	32	108	250	B
FLS-7W	110-130 / 220-240	7	80-89, 1B	G23	32	137	400	B
FLS-9W	110-130 / 220-240	9	80-89, 1B	G23	32	167	605	A
FLS-11W	220 – 240	11	80-89, 1B	G23	32	237	905	A
North American System								
F13TT	110 – 130	13	80-89, 1B	GX23	32	185	905	

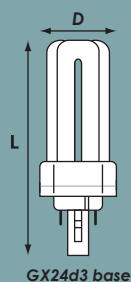
- Extremely slim with small dimensions
- 10 times the life and only 20% of power consumption of ordinary light bulbs
- Excellent colour rendition 80-89, 1B
- Colours available:
 - 827 = 2700K
 - 830 = 3000K
 - 835 = 3500K
 - 840 = 4200K
 - 865 = 6500K
- Comply to EU Ecodesign Requirements - Commission Regulation No. 245/2009



Lamp Code	Voltage (V)	Wattage (W)	CRI (Ra)	Base	Diameter D (mm)	Length L (mm)	Lumen	Energy Efficiency Class
FLD-10W	220 – 240	10	80-89, 1B	G24d1	41	110	600	B
FLD-13W	220 – 240	13	80-89, 1B	G24d1	41	138	900	A
FLD-18W	220 – 240	18	80-89, 1B	G24d2	41	153	1210	B
FLD-26W	220 – 240	26	80-89, 1B	G24d3	41	172	1800	B
North American System								
F9DTT	110 – 130	9	80-89, 1B	G23-2	41	109	600	
F13DTT	110 – 130	13	80-89, 1B	GX23-2	41	120	900	

Compact Fluorescent Lamps

with Integral Starter For Conventional Control Gear (CCG)



- Extremely slim with small dimensions
- 10 times the life and only 20% of power consumption of ordinary light bulbs
- Excellent colour rendition 80-89, 1B
- Colours available:

827	=	2700K
830	=	3000K
835	=	3500K
840	=	4200K
865	=	6500K
- Comply to EU Ecodesign Requirements - Commission Regulation No. 245/2009

Lamp Code	Voltage (V)	Wattage (W)	CRI (Ra)	Base	Diameter D (mm)	Length L (mm)	Lumen	Energy Efficiency Class
FLT-13W	220 – 240	13	80-89, 1B	GX24d1	49	113	900	A
FLT-18W	220 – 240	18	80-89, 1B	GX24d2	49	123	1210	B
FLT-26W	220 – 240	26	80-89, 1B	GX24d3	49	138	1800	B



Compact Fluorescent Lamps For External Starters, Conventional and Electronic Control Gear (ECG) and Dimmer Systems



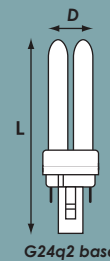
Lamp Code	Wattage (W)	CRI (Ra)	Base	Diameter D (mm)	Length (w/o pins) L (mm)	Lumen (lm)	Energy Efficiency Class
FLS/E-5W	5	80-89, 1B	2G7	37	85	250	B
FLS/E-7W	7	80-89, 1B	2G7	37	115	400	B
FLS/E-9W	9	80-89, 1B	2G7	37	145	605	A
FLS/E-11W	11	80-89, 1B	2G7	37	214	905	A

- ➔ Extremely slim with small dimensions
- ➔ 10 times the life and only 20% of power consumption of ordinary light bulbs
- ➔ Excellent color rendition
- ➔ Colours available:

827 =	2700K
830 =	3000K
835 =	3500K
840 =	4200K
865 =	6500K

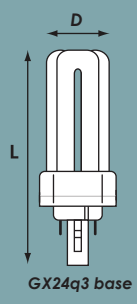


➔ Comply to EU Ecodesign Requirements - Commission Regulation No. 245/2009



Lamp Code	Wattage (W)	CRI (Ra)	Base	Diameter D (mm)	Length L (mm)	Lumen (lm)	Energy Efficiency Class
FLD/E-10W	10	80-89, 1B	G24q1	41	103	600	B
FLD/E-13W	13	80-89, 1B	G24q1	41	131	900	A
FLD/E-18W	18	80-89, 1B	G24q2	41	146	1210	B
FLD/E-26W	26	80-89, 1B	G24q3	41	165	1800	B

Compact Fluorescent Lamps For External Starters, Conventional and Electronic Control Gear (ECG) and Dimmer Systems



Lamp Code	Wattage (W)	CRI (Ra)	Base	Diameter D (mm)	Length L (mm)	Lumen (lm)	Energy Efficiency Class
FLT/E-13W	13	80-89, 1B	GX24q1	49	106	900	A
FLT/E-18W	18	80-89, 1B	GX24q2	49	116	1210	B
FLT/E-26W	26	80-89, 1B	GX24q3	49	131	1800	B
FLT/E-32W	32	80-89, 1B	GX24q3	49	147	2400	B
FLT/E-42W	42	80-89, 1B	GX24q4	49	168	3200	B

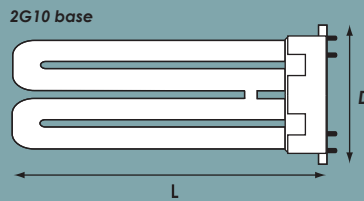
- ➔ Extremely slim with small dimensions
- ➔ Eight times the life and only 20% of power consumption of ordinary light bulbs
- ➔ Excellent color rendition
- ➔ Colours available:
 - 827 = 2700K
 - 830 = 3000K
 - 835 = 3500K
 - 840 = 4200K
 - 865 = 6500K
- ➔ Comply to EU Ecodesign Requirements - Commission Regulation No. 245/2009



Lamp Code	Wattage (W)	CRI (Ra)	Base	Diameter D (mm)	Length (w/o pins) L (mm)	Lumen (lm)	Energy Efficiency Class
FLL-18W	18	80-89, 1B	2G11	43	217	1210	B
FLL-24W	24	80-89, 1B	2G11	43	317	1800	B
FLL-36W	36	80-89, 1B	2G11	43	411	2920	A
FLL-L-34W	34	80-89, 1B	2G11	43	533	2790	A
FLL-L-36W	36	80-89, 1B	2G11	43	533	2920	A
FLL-40W*	40	80-89, 1B	2G11	43	533	3450	A
FLL-55W*	55	80-89, 1B	2G11	43	533	4800	A
North American Rapid Start ECG only					MOL (w/pins)		
FLL-18W/RS	18	80-89, 1B	2G11	43	10.5 in.	1210	
FLL-40W/RS	40	80-89, 1B	2G11	43	20.5 in.	3450	

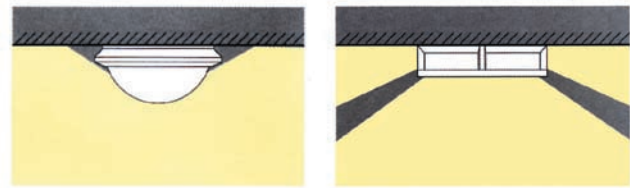
*for ECG operation only

Compact Fluorescent Lamps FLAT Lamps for External Starters, Conventional and Electronic Control Gear



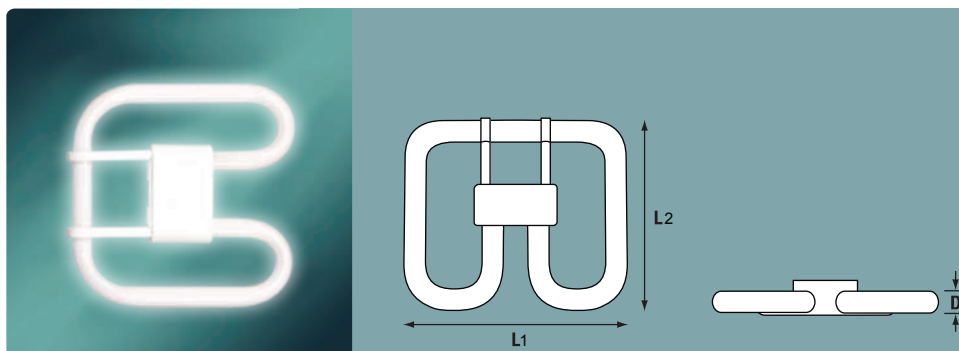
- ➔ Flat compact fluorescent lamps with high luminous efficacy
- ➔ Eight times the life and only 20% of power consumption of ordinary light bulbs
- ➔ Use with easily available conventional or electronic control gear common for T8 and FLL(2G11 base) lamps
- ➔ Two 18W lamps can be used in tandem with one 36W conventional ballast on 220-240V circuitry, savings on circuitry wiring costs
- ➔ Ideal for compact luminaires, especially for square modular, surface-mounted or recessed luminaires, low profile wall and ceiling luminaires, downlights and uplights.
- ➔ Excellent colour rendition
- ➔ Colours available:

827	=	2700K
830	=	3000K
840	=	4200K
865	=	6500K
- ➔ **Comply to EU Ecodesign Requirements**
- Commission Regulation No. 245/2009



Lamp Code	Wattage (W)	CRI (Ra)	Base	Diameter D (mm)	Length (w/o pins) L (mm)	Lumen (lm)	Energy Efficiency Class
FLF-18W/827	18	80-89, 1B	2G10	90	122	1100	B
FLF-18W/830	18	80-89, 1B	2G10	90	122	1100	B
FLF-18W/840	18	80-89, 1B	2G10	90	122	1100	B
FLF-18W/865	18	80-89, 1B	2G10	90	122	1000	B
FLF-24W/827	24	80-89, 1B	2G10	90	165	1705	B
FLF-24W/830	24	80-89, 1B	2G10	90	165	1705	B
FLF-24W/840	24	80-89, 1B	2G10	90	165	1705	B
FLF-24W/865	24	80-89, 1B	2G10	90	165	1535	B
FLF-36W/827	36	80-89, 1B	2G10	90	217	2810	B
FLF-36W/830	36	80-89, 1B	2G10	90	217	2810	B
FLF-36W/840	36	80-89, 1B	2G10	90	217	2810	B
FLF-36W/865	36	80-89, 1B	2G10	90	217	2530	B

Compact Fluorescent Lamps 2D shape



- Coated with high efficiency tri-phosphors with high CRI Ra 80-89
- Tri-Phosphor colours:




















827	=	Incand. Warm White	2700K
835	=	White	3500K
840	=	Cool White	4200K
860/865	=	Daylight	6000/6500K
- Comply to EU Ecodesign Requirements - Commission Regulation No. 245/2009

Lamp Code	Wattage (W)	Colour Appearance	CRI (Ra)	Length L ₁ (mm)	Length L ₂ (mm)	Tube Diameter D (mm)	Lumen (lm)	Energy Star
GR10q-4 (4-pin base) For ECG operation, with external starter if use with CCG								
F10/2D/827/4P	10	Incand. Warm White	80-89, 1B	92	95	14	650	A
F10/2D/835/4P	10	White	80-89, 1B	92	95	14	650	A
F10/2D/840/4P	10	Cool White	80-89, 1B	92	95	14	650	A
F16/2D/827/4P	16	Incand. Warm White	80-89, 1B	138	141	15	1056	B
F16/2D/835/4P	16	White	80-89, 1B	138	141	15	1056	B
F16/2D/840/4P	16	Cool White	80-89, 1B	138	141	15	1056	B
F21/2D/827/4P	21	Incand. Warm White	80-89, 1B	138	141	15	1350	B
F21/2D/835/4P	21	White	80-89, 1B	138	141	15	1350	B
F21/2D/840/4P	21	Cool White	80-89, 1B	138	141	15	1350	B
F28/2D/827/4P	28	Incand. Warm White	80-89, 1B	205	207	19	2050	B
F28/2D/835/4P	28	White	80-89, 1B	205	207	19	2050	B
F28/2D/840/4P	28	Cool White	80-89, 1B	205	207	19	2050	B
F38/2D/827/4P	38	Incand. Warm White	80-89, 1B	205	207	19	2850	B
F38/2D/835/4P	38	White	80-89, 1B	205	207	19	2850	B
F38/2D/840/4P	38	Cool White	80-89, 1B	205	207	19	2850	B
GRY10q-3 (4-pin base) For ECG operation, with external starter if use with CCG								
F55/2D/827/4P	55	Incand. Warm White	80-89, 1B	205	207	19	4000	B
F55/2D/835/4P	55	White	80-89, 1B	205	207	19	4000	B
F55/2D/840/4P	55	Cool White	80-89, 1B	205	207	19	4000	B
GR8q-2 (2-pin base), with integral starter for CCG								
F16/2D/827/2P	16	Incand. Warm White	80-89, 1B	138	141	15	1056	B
F16/2D/835/2P	16	White	80-89, 1B	138	141	15	1056	B
F16/2D/840/2P	16	Cool White	80-89, 1B	138	141	15	1056	B
F28/2D/827/2P	28	Incand. Warm White	80-89, 1B	205	207	19	2050	B
F28/2D/835/2P	28	White	80-89, 1B	205	207	19	2050	B
F28/2D/840/2P	28	Cool White	80-89, 1B	205	207	19	2050	B

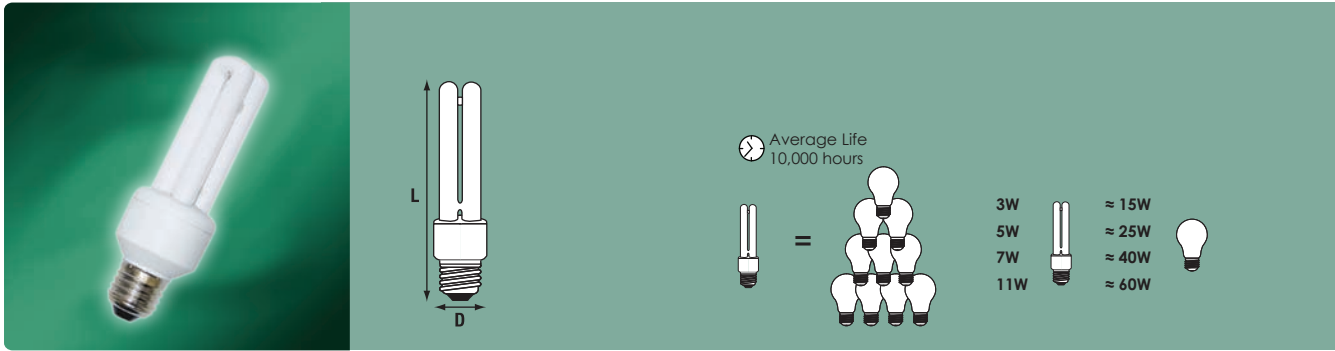


Electronic Energy Saving Lamps



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E2U Electronic Energy Saving Lamps

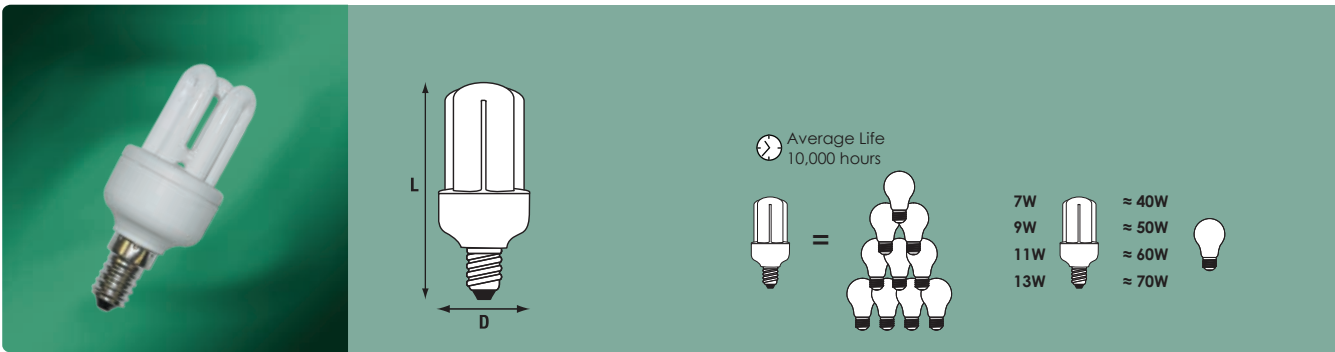


Lamp Code	Voltage (V)	Wattage (W)	Diameter D (mm)		Length L (mm)		Lumen (lm)	Energy Efficiency Class
			E14	B22/E27	E14	B22/E27		
E2UT3-3W	120 / 240	3	34	37	102	96	150	A
E2UT3-5W	120 / 240	5	34	37	112	106	230	A
E2UT3-7W	120 / 240	7	34	37	122	116	330	A
E2UT3-11W	120 / 240	11	34	38	141	141	540	A



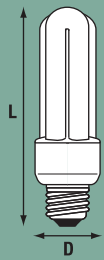
- High luminous efficacy, save 80% energy
- Average life 10000 hours
- Colour temperature 2700K, 3000K, 4000K and 6500K
- Flicker free rapid start up
- Radio-interference suppressed
- Colour Rendering Index (Ra) ≥ 82
- High power factor version available (λ) ≥ 0.95
- **Comply to EU Ecodesign Requirements - Commission Regulation No. 244/2009**

E3U T2 Super Slim Electronic Energy Saving Lamps

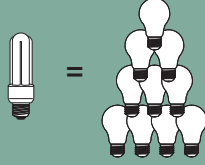


Lamp Code	Voltage (V)	Wattage (W)	Base	Diameter D (mm)	Length L (mm)	Lumen (lm)	Energy Efficiency Class
E3UT2-9W	120 / 240	9	E14, E27, B22	38	100	405	A
E3UT2-11W	120 / 240	11	E14, E27, B22	38	105	535	A
E3UT2-13W	120 / 240	13	E14, E27, B22	38	115	665	A

E3U Electronic Energy Saving Lamps



Average Life
10,000 hours



11W ≈ 60W
15W ≈ 75W
20W ≈ 100W
24W ≈ 120W



Lamp Code	Voltage (V)	Wattage (W)	Base	Diameter D (mm)	Length L (mm)	Lumen (lm)	Energy Efficiency Class
E3UT3-11W	120 / 240	11	E14, E27, B22	41	116	650	A
E3UT3-15W	120 / 240	15	E14, E27, B22	41	136	880	A
E3UT4-20W	120 / 240	20	E27, B22	48	164	1250	A
E3UT4-24W	120 / 240	24	E27, B22	48	174	1500	A

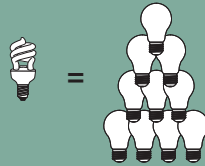


- High luminous efficacy, save 80% energy
- Average life 10000 hours
- Colour temperature 2700K, 3000K, 4000K and 6500K
- Flicker free rapid start up
- Radio-interference suppressed
- Colour Rendering Index (Ra) ≥ 82
- High power factor version available (λ) ≥ 0.95
- Comply to EU Ecodesign Requirements - Commission Regulation No. 244/2009

EU Half Spiral T2 Super Slim Electronic Energy Saving Lamps



Average Life
10,000 hours

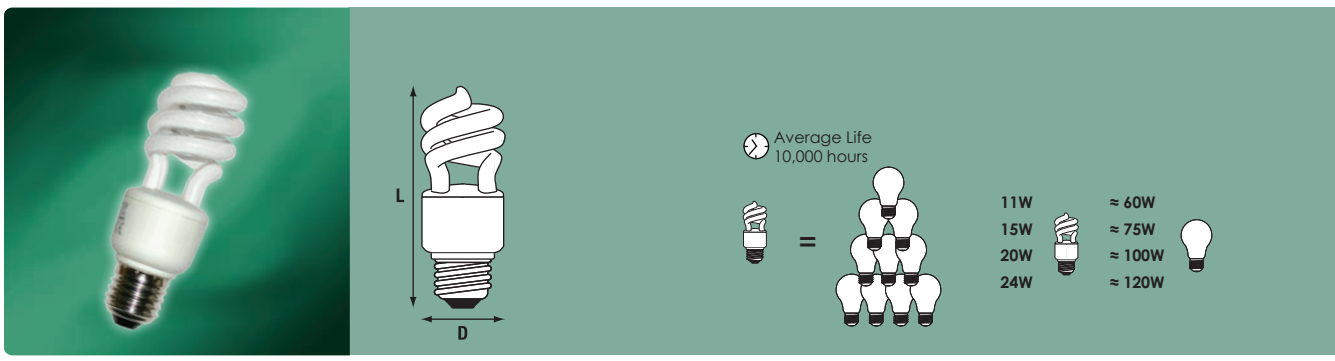


5W ≈ 25W
8W ≈ 40W
11W ≈ 60W
13W ≈ 70W
15W ≈ 75W
18W ≈ 90W
20W ≈ 100W
23W ≈ 115W



Lamp Code	Voltage (V)	Wattage (W)	Diameter D (mm)		Length L (mm)		Lumen (lm)	Energy Efficiency Class
			E14	B22/E27	E14	B22/E27		
EUHST2-5W	120 / 240	5	35	40	94	77	250	A
EUHST2-8W	120 / 240	8	35	46	103	85	450	A
EUHST2-11W	120 / 240	11	40	46	109	93	610	A
EUHST2-13W	120 / 240	13	-	46	-	101	700	A
EUHST2-15W	120 / 240	15	-	46	-	106	850	A
EUHST2-18W	120 / 240	18	-	46	-	110	1100	A
EUHST2-20W	120 / 240	20	-	56	-	113	1250	A
EUHST2-23W	120 / 240	23	-	56	-	118	1500	A

EU Half Spiral Electronic Energy Saving Lamps

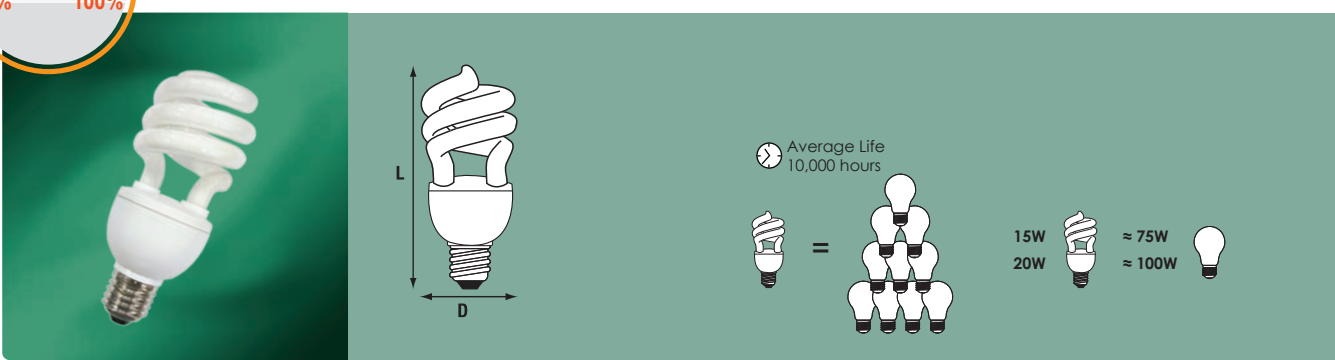


Lamp Code	Voltage (V)	Wattage (W)	Diameter D (mm)		Length L (mm)		Lumen (lm)	Energy Efficiency Class
			E14	B22/E27	E14	B22/E27		
EUHST3-11W	120 / 240	11	40	42	117	120	600	A
EUHST3-15W	120 / 240	15	52	52	129	129	820	A
EUHST3-20W	120 / 240	20	59	59	129	129	1155	A
EUHST3-24W	120 / 240	24	-	59	-	139	1450	A

- High luminous efficacy, save 80% energy
- Average life 10000 hours
- Colour temperature 2700K, 3000K, 4000K and 6500K
- Flicker free rapid start up
- Radio-interference suppressed
- Colour Rendering Index (Ra) ≥ 82
- High power factor version available (λ) ≥ 0.95
- **Comply to EU Ecodesign Requirements - Commission Regulation No. 244/2009**



Dimmable EU Half Spiral Electronic Energy Saving Lamps



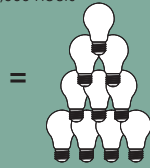
Lamp Code	Voltage (V)	Wattage (W)	Base	Diameter D (mm)	Length L (mm)	Lumen (lm)	Energy Efficiency Class
EUHST4-20WD	120 / 240	20	E27, B22	59	143	1200	A

- Provide atmospheric lighting replacing incandescent lamps with 80% energy saving
- Compatible with common dimmer switches and systems
- Smooth dimming with brightness range 10% to 100% without flickering

ESL GU24 Electronic Energy Saving Lamps



Average Life
10,000 hours



13W	≈ 60W
15W	≈ 75W
18W	≈ 100W
23W	≈ 100W
26W	≈ 150W

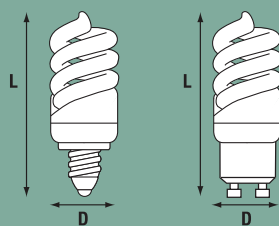


Lamp Code	Voltage (V)	Wattage (W)	Base	Diameter D (mm)	Length L (mm)	Lumen (lm)
ESL GU24 13W	120	13	GU24	52	115	620
ESL GU24 15W	120	15	GU24	52	121	850
ESL GU24 18W	120	18	GU24	52	121	1030
ESL GU24 23W	120	23	GU24	59	127	1320
ESL GU24 26W	120	26	GU24	59	132	1490

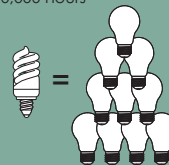


- High luminous efficacy, save 80% energy
- Average life 10000 hours
- Colour temperature 2700K, 3000K, 4000K and 6500K
- Flicker free rapid start up
- Radio-interference suppressed
- Colour Rendering Index (Ra) ≥ 82
- High power factor version available (λ) ≥ 0.95

EU Full Spiral T2 Super Slim Electronic Energy Saving Lamps



Average Life
10,000 hours

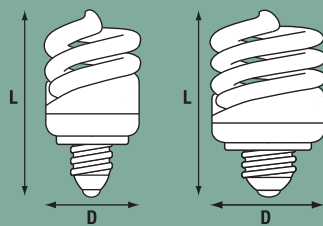


7W ≈ 40W
9W ≈ 50W
11W ≈ 60W

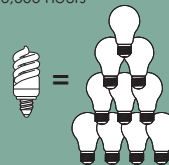
Lamp Code	Voltage (V)	Wattage (W)	Diameter D (mm)	Length L (mm)		Lumen (lm)	Energy Efficiency Class
				E14	GU10		
FUSILLI-7W	120/240	7	32	87		350	A
FUSILLI-9W	120/240	9	32	98		450	A
FUSILLI-11W	120/240	11	32	104		550	A



- High luminous efficacy, save 80% energy
- Average life 10000 hours
- Colour temperature 2700K, 3000K, 4000K and 6500K
- Flicker free rapid start up
- Radio-interference suppressed
- Colour Rendering Index (Ra) ≥ 82
- High power factor version available (λ) ≥ 0.95
- Comply to EU Ecodesign Requirements - Commission Regulation No. 244/2009



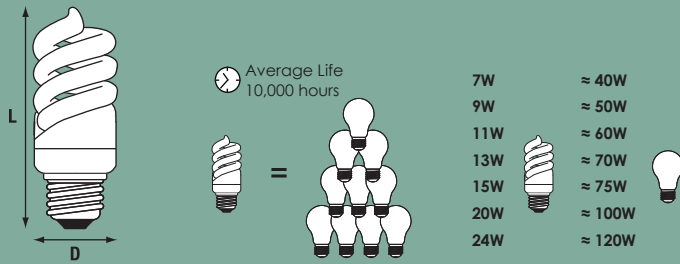
Average Life
10,000 hours



7W ≈ 40W
9W ≈ 50W
11W ≈ 60W
13W ≈ 70W
15W ≈ 75W
18W ≈ 90W
20W ≈ 100W
23W ≈ 115W

Lamp Code	Voltage (V)	Wattage (W)	Diameter D (mm)	Length L (mm)		Lumen (lm)	Energy Efficiency Class
				E14 / E27	(mm)		
EUST2-7W	120/240	7	40	78	---	380	A
EUST2-9W	120/240	9	40	83	---	480	A
EUST2-11W	120/240	11	40	90	---	580	A
EUST2-13W	120/240	13	42	102	98	700	A
EUST2-15W	120/240	15	42	107	103	850	A
EUST2-18W	120/240	18	60	---	90	1100	A
EUST2-20W	120/240	20	60	---	95	1250	A
EUST2-23W	120/240	23	60	---	100	1400	A

EU FULL Spiral Electronic Energy Saving Lamps

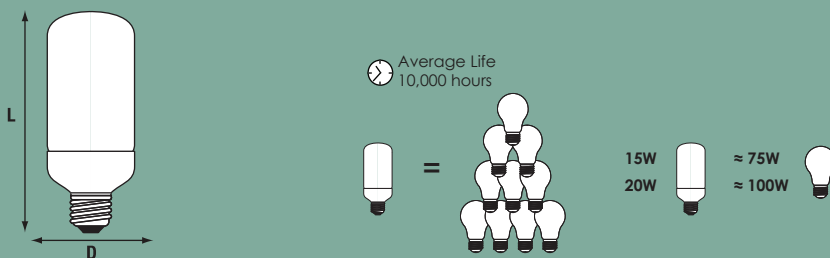


Lamp Code	Voltage (V)	Wattage (W)	Base	Diameter D (mm)	Length L (mm)	Lumen (lm)	Energy Efficiency Class
EUST3-7W	120 / 240	7	E14, E27, B22	38	95	380	A
EUST3-9W	120 / 240	9	E14, E27, B22	38	100	430	A
EUST3-11W	120 / 240	11	E14, E27, B22	38	109	600	A
EUST3-13W	120 / 240	13	E14, E27, B22	38	114	720	A
EUST3-15W	120 / 240	15	E27, B22	48	115	820	A
EUST4-20W	120 / 240	20	E27, B22	60	146	1155	A
EUST4-24W	120 / 240	24	E27, B22	60	155	1450	A



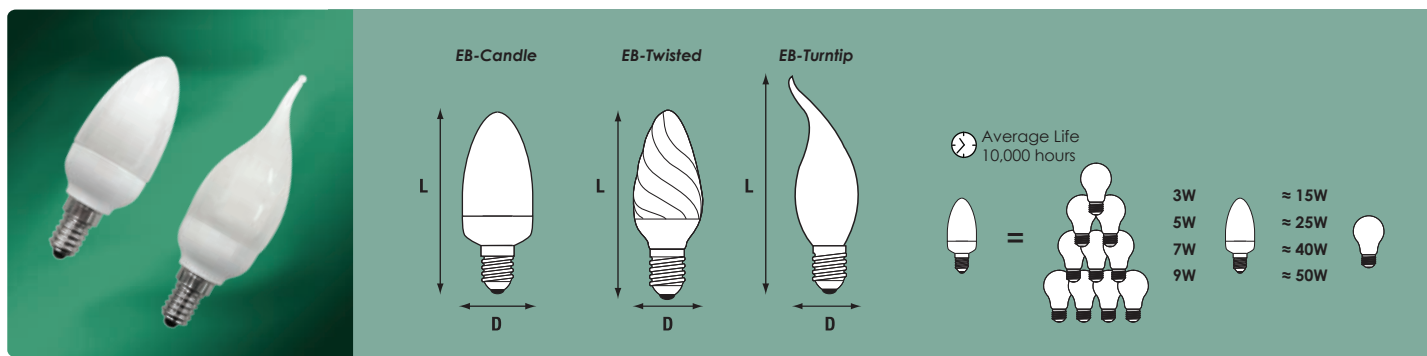
- High luminous efficacy, save 80% energy
- Average life 10000 hours
- Colour temperature 2700K, 3000K, 4000K and 6500K
- Flicker free rapid start up
- Radio-interference suppressed
- Colour Rendering Index (Ra) ≥ 82
- High power factor version available (λ) ≥ 0.95
- Comply to EU Ecodesign Requirements - Commission Regulation No. 244/2009

EB Capsule Electronic Energy Saving Lamps



Lamp Code	Voltage (V)	Wattage (W)	Base	Diameter D (mm)	Length L (mm)	Lumen (lm)	Energy Efficiency Class
EB-Capsule 15W	120 / 240	15	E27, B22	62	165	800	A
EB-Capsule 20W	120 / 240	20	E27, B22	62	165	1080	B

EB Candle Electronic Energy Saving Lamps

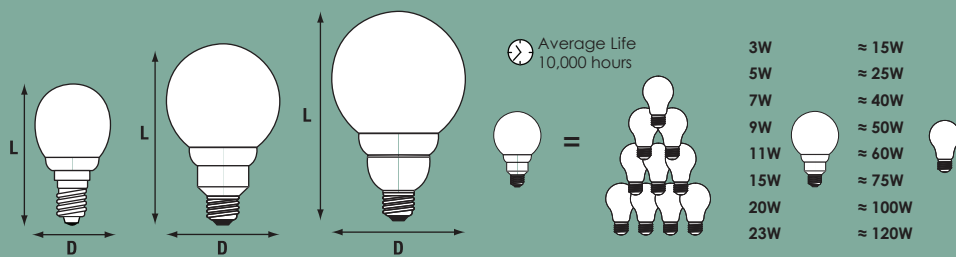


Lamp Code	Voltage (V)	Wattage (W)	Base	Diameter D (mm)	Length L (mm)	Lumen (lm)	Energy Efficiency Class
EB-Candle 3W	120 / 240	3	E14, E27, B22	37	102	120	A
EB-Candle 5W	120 / 240	5	E14, E27, B22	37	102	200	A
EB-Candle 7W	120 / 240	7	E14, E27, B22	37	102	290	A
EB-Candle 9W	120 / 240	9	E14, E27, B22	38	112	405	A
EB-Twisted 3W	120 / 240	3	E14, E27, B22	37	102	120	A
EB-Twisted 5W	120 / 240	5	E14, E27, B22	37	102	200	A
EB-Twisted 7W	120 / 240	7	E14, E27, B22	37	102	290	A
EB-Turntip 3W	120 / 240	3	E14, E27, B22	40	132	120	A
EB-Turntip 5W	120 / 240	5	E14, E27, B22	40	132	200	A
EB-Turntip 7W	120 / 240	7	E14, E27, B22	40	132	290	A



- ✦ High luminous efficacy, save 80% energy
- ✦ Average life 10000 hours
- ✦ Colour temperature 2700K, 3000K, 4000K and 6500K
- ✦ Flicker free rapid start up
- ✦ Radio-interference suppressed
- ✦ Colour Rendering Index (Ra) ≥ 82
- ✦ High power factor version available (λ) ≥ 0.95
- ✦ **Comply to EU Ecodesign Requirements - Commission Regulation No. 244/2009**

EG Globe Electronic Energy Saving Lamps

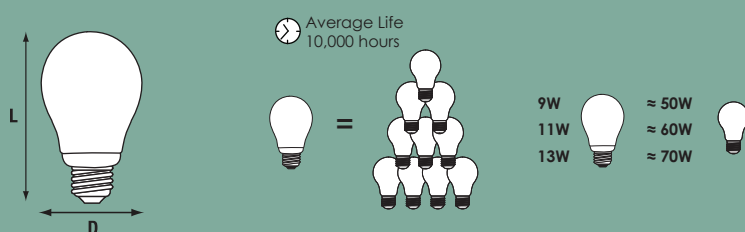


Lamp Code	Voltage (V)	Wattage (W)	Base	Diameter D (mm)	Length L (mm)	Lumen (lm)	Energy Class
EG45 3W	120 / 240	3	E14, E27, B22	45	88	120	A
EG45 5W	120 / 240	5	E14, E27, B22	45	88	200	A
EG45 7W	120 / 240	7	E14, E27, B22	45	88	290	A
EG55 9W	120 / 240	9	E14, E27, B22	55	95	440	A
EG60 11W	120 / 240	11	E14, E27, B22	60	103	550	A
EG95 15W	120 / 240	15	E27, B22	95	133	800	A
EG95 20W	120 / 240	20	E27, B22	95	133	1175	A
EG120 23W	120 / 240	23	E27, B22	120	162	1380	A

- High luminous efficacy, save 80% energy
- Average life 10000 hours
- Colour temperature 2700K, 3000K, 4000K and 6500K
- Flicker free rapid start up
- Radio-interference suppressed
- Colour Rendering Index (Ra) ≥ 82
- High power factor version available (λ) ≥ 0.95
- Comply to EU Ecodesign Requirements - Commission Regulation No. 244/2009

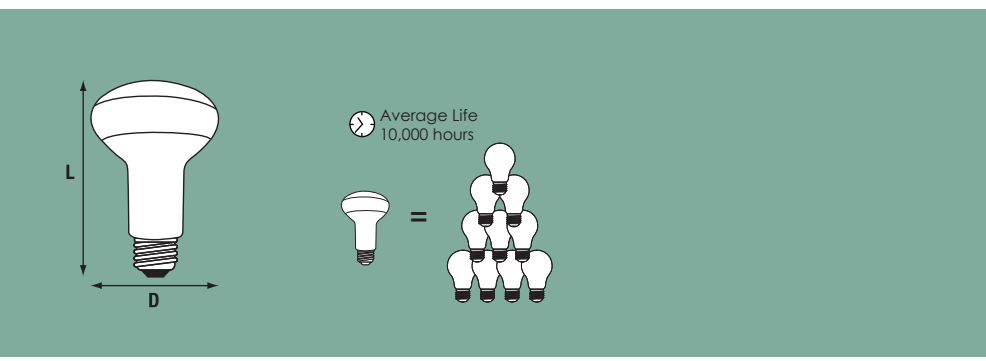


EB GLS Electronic Energy Saving Lamps



Lamp Code	Voltage (V)	Wattage (W)	Base	Diameter D (mm)	Length L (mm)	Lumen (lm)	Energy Class
EB-GLS 9W	120 / 240	9	E27, B22	60	110	410	A
EB-GLS 11W	120 / 240	11	E27, B22	60	110	560	A
EB-GLS 13W	120 / 240	13	E27, B22	60	110	670	A

EB Reflector Electronic Energy Saving Lamps

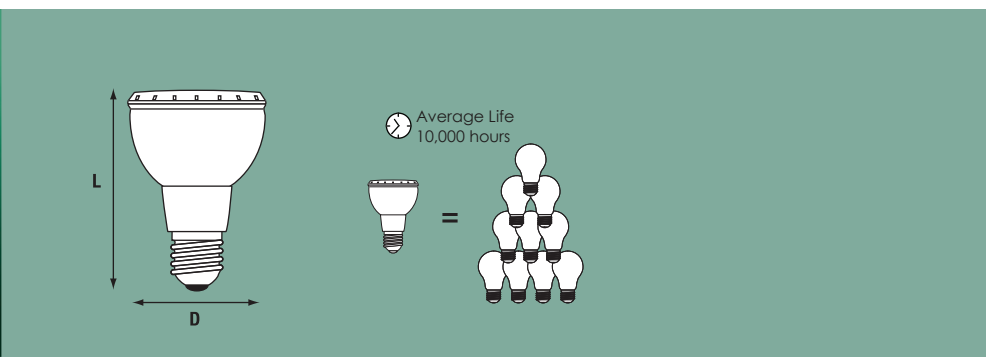


Lamp Code	Voltage (V)	Wattage (W)	Base	Diameter D (mm)	Length L (mm)	Intensity (cd)
EB-R50 6W	120 / 240	6	E14	50	86	80
EB-R63 9W	120 / 240	9	E27, B22	63	103	150
EB-R63 11W	120 / 240	11	E27, B22	63	103	180



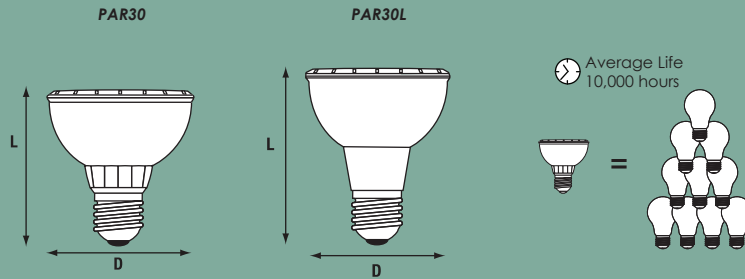
- Only 20% power consumption of Incandescent / Halogen Lamps
- Average life 10000 hours
- Colour temperature 2700K, 4000K and 6500K
- Flicker free rapid start up
- Radio-interference suppressed
- Temperature problem-free
- Easy retrofit Incandescent Reflector lamps / Halogen PAR Lamps

ESL PAR20 Electronic Reflector Energy Saving Lamps



Lamp Code	Voltage (V)	Wattage (W)	Base	Diameter D (mm)	Length L (mm)	Intensity (cd)
ESL PAR20 9W	120 / 240	9	E26, E27	65	97	130
ESL PAR20 11W	120 / 240	11	E26, E27	65	97	185

ESL PAR30 and PAR30L Electronic Reflector Energy Saving Lamps

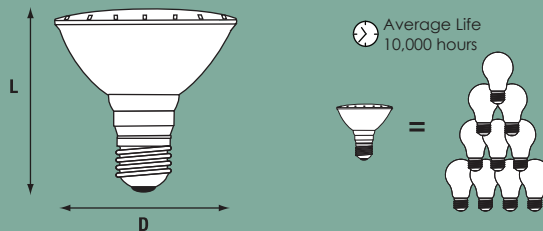


Lamp Code	Voltage (V)	Wattage (W)	Base	Diameter D (mm)	Length L (mm)	Intensity (cd)
ESL PAR30 11W	120 / 240	11	E26, E27	97	95	185
ESL PAR30 13W	120 / 240	13	E26, E27	97	95	210
ESL PAR30 15W	120 / 240	15	E26, E27	97	95	240
ESL PAR30L 13W	120 / 240	13	E26, E27	97	118	210
ESL PAR30L 15W	120 / 240	15	E26, E27	97	118	240



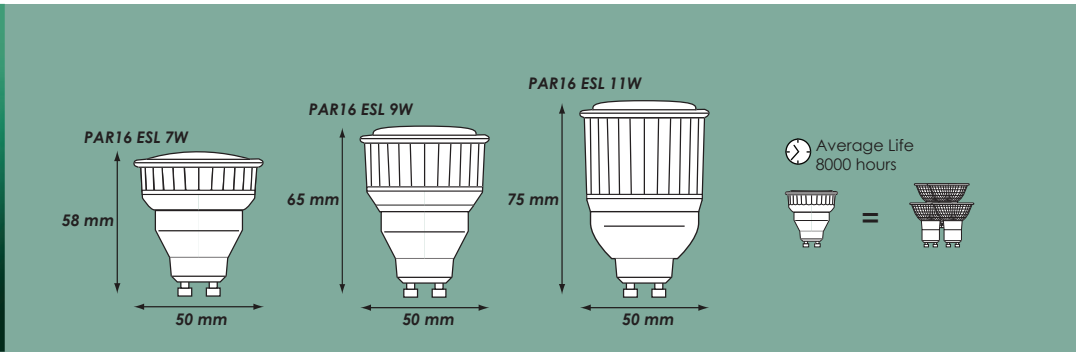
- Only 20% power consumption of Halogen Lamps
- Average life 10000 hours
- Colour temperature 2700K, 4000K and 6500K
- Flicker free rapid start up
- Radio-interference suppressed
- Temperature problem-free, heat release 30% less than Halogen PAR lamps
- Same size as Halogen PAR lamps for easy retrofit

ESL PAR38 Electronic Reflector Energy Saving Lamps



Lamp Code	Voltage (V)	Wattage (W)	Base	Diameter D (mm)	Length L (mm)	Intensity (cd)
ESL PAR38 20W	120 / 240	20	E26, E27	122	136	310
ESL PAR38 23W	120 / 240	23	E26, E27	122	136	380

PAR16 ESL/GU10 Electronic Reflector Energy Saving Lamps

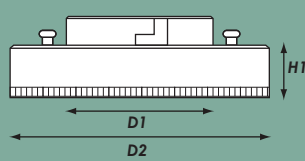


- Saves 80% power in replacing GU10 Halogen Lamp
- Give soft and well-proportional light
- Same size as GU10 halogen lamp
- Colour Temperature 2700K, 3000K, 4000K and 6500K
- Average life : 8000 hours

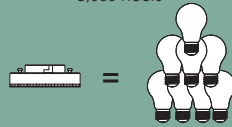
Lamp Code	Voltage (V)	Wattage (W)	Base	Beam Angle	Intensity (cd)
PAR16 ESL 7W/GU10	110 – 130 / 220 – 240	7	GU10	90°	62
PAR16 ESL 9W/GU10	110 – 130 / 220 – 240	9	GU10	90°	95
PAR16 ESL 11W/GU10	110 – 130 / 220 – 240	11	GU10	90°	136

MCF Mini Compact Fluorescent Lamps

GX53-1 base



Average Life
8,000 hours



- Compact in size
- Perfect ignition - with integral electronic ballast for immediate ignition
- With twist and lock lamp base for safe and easy installation
- Average life 8000 hours
- Colour temperature 2700K, 3000K, 4000K and 6500K
- Excellent colour rendition Ra 80-89, 1B
- **Comply to EU Ecodesign Requirements - Commission Regulation No. 244/2009**

Applications

- Kitchen Light
- Recess area
- Wardrobe Light
- Stair Light
- Ground Light
- Wall mount
- Furniture Light
- Cabinet Light

Lamp Code	Wattage (W)	CRI (Ra)	Base	Diameter (mm)		Height (mm)		Lumen (lm)	Energy Star
				D1	D2	H1	H2		
MCF 6W/GX53-1	6	80 – 89, 1B	GX53 – 1	42	75	16.7	26	220	B
MCF 9W/GX53-1	9	80 – 89, 1B	GX53 – 1	42	75	16.7	26	280	B

Available Voltage Range:

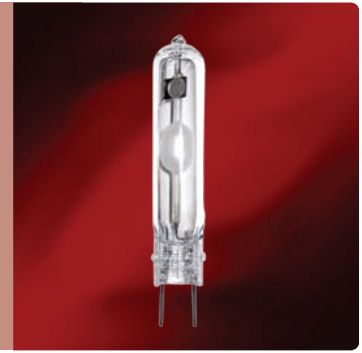
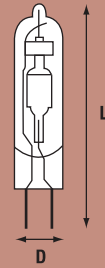
- 110 - 130V C-UL approval
- 220 - 240V Full CE certification available

High Intensity Discharge Lamps



	Bi-pin Ceramic Metal Halide Lamps G8.5 & G12	92
	Double-Ended Ceramic Metal Halide Lamps	93
	PAR Ceramic Metal Halide Lamps PAR20 & PAR30	94
	GX10 Single-Ended Metal Halide Lamps	95
	Single-Ended Metal Halide Lamps European System, For Enclosed Fixtures	96
	Special 'O' Rated Metal Halide Lamps European System, For Open Fixtures	97
	Single-Ended Metal Halide Lamps N. American System, For Enclosed Fixtures	98
	Special 'O' Rated Metal Halide Lamps N. American System, For Open Fixtures	99
	Double-Ended Metal Halide Lamps Ignitor Plus Start	100
	G12 Bi-pin Metal Halide Lamps Ignitor Plus Start	100
	Special Colour Metal Halide Lamps Creation of vivid and rich colour without the need of filters For applications with style and appeal	101
	Mercury Vapor Lamps European System	102
	Self-Ballasted Mercury Vapor Lamps European System	102
	Mercury Vapor Lamps N. American System	103
	High Pressure Sodium Lamps European System, Elliptical Bulb	104
	High Pressure Sodium Lamps European System, Tubular Bulb	105
	High Pressure Sodium Lamps N. American System	106

G8.5 Bi-pin Ceramic Metal Halide Lamps



Lamp Code	Description	Wattage (W)	Lumen (lm)	Base	Diameter D (mm)	Length L (mm)	CRI
MHC35/G8.5/WDL/830	MHC35W/G8.5/3K	35	3300	G8.5	14	85	80
MHC35/G8.5/NDL/942	MHC35W/G8.5/4K	35	3200	G8.5	14	85	90
MHC70/G8.5/WDL/830	MHC70W/G8.5/3K	70	6400	G8.5	14	85	80
MHC70/G8.5/NDL/942	MHC70W/G8.5/4K	70	6300	G8.5	14	85	90

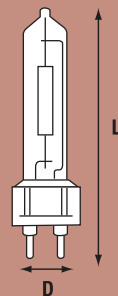
- Universal burning position
- Uniform distribution of light
- Excellent colour rendering
- High colour stability
- High luminous flux
- Long lamp life 10,000 hours

Applications

- Shop interiors
- Shopping arcade
- Hotel, Restaurant
- Museums, Exhibition



G12 Bi-pin Ceramic Metal Halide Lamps

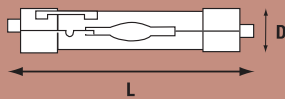


Lamp Code	Description	Wattage (W)	Lumen (lm)	Base	Diameter D (mm)	Length L (mm)	CRI
MHC35/G12/WDL/830	MHC35W/G12/3K	35	3300	G12	19	100	80
MHC35/G12/NDL/942	MHC35W/G12/4K	35	3100	G12	19	100	90
MHC70/G12/WDL/830	MHC70W/G12/3K	70	6500	G12	19	100	80
MHC70/G12/NDL/942	MHC70W/G12/4K	70	6300	G12	19	100	90
MHC150/G12/WDL/830	MHC150W/G12/3K	150	13500	G12	19	100	80
MHC150/G12/NDL/942	MHC150W/G12/4K	150	13000	G12	19	100	90



KANDOLite®
Brings you Light and Prosperity

Double-Ended Ceramic Metal Halide Lamps



Lamp Code	Description	Wattage (W)	Lumen (lm)	Base	Diameter D (mm)	Length L (mm)	CRI
MHC-DE 70/WDL/830	MHCDE70W/3K	70	6600	RX7s	22	118	80
MHC-DE 70/NDL/942	MHCDE70W/4K	70	6200	RX7s	22	118	90
MHC-DE 150/WDL/830	MHCDE150W/3K	150	13500	RX7s-24	25	135	80
MHC-DE 150/NDL/942	MHCDE150W/4K	150	14400	RX7s-24	25	135	90

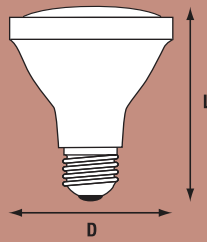
- ✦ Burning position: Horizontal +/- 45°
- ✦ Uniform distribution of light
- ✦ Excellent colour rendering
- ✦ High colour stability
- ✦ High luminous flux
- ✦ Long lamp life 10,000 hours



Applications

- ✦ Shop interiors
- ✦ Shopping arcade
- ✦ Hotel, Restaurant
- ✦ Museums, Exhibition

PAR20 Ceramic Metal Halide Lamps



Lamp Code	Description	Wattage (W)	Intensity (cd)	Base	Diameter D (mm)	Length L (mm)	CRI
MHC35/PAR20/WDL/830/SP	MHC35W/PA20/3K/SP	35	21500	E27	63	95	80
MHC35/PAR20/WDL/830/FL	MHC35W/PA20/3K/FL	35	6000	E27	63	95	80

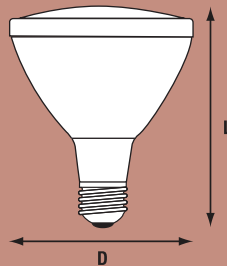


- Universal Burning position
- Uniform distribution of light
- Excellent colour rendering
- High colour stability
- High luminous flux
- Long lamp life 10,000 hours

Applications

- Shop interiors
- Shopping arcade
- Hotel, Restaurant
- Museums, Exhibition

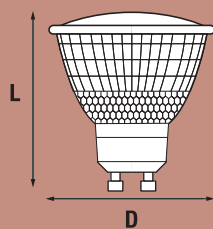
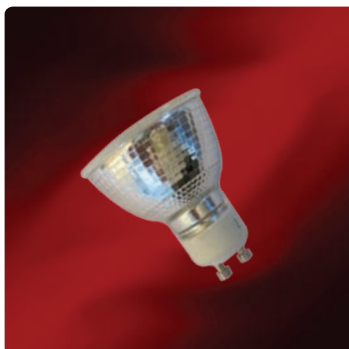
PAR30 Ceramic Metal Halide Lamps



Lamp Code	Description	Wattage (W)	Intensity (cd)	Base	Diameter D (mm)	Length L (mm)	CRI
MHC35/PAR30/WDL/830/SP	MHC35W/PAR30/3K/SP	35	42000	E27	95	120	80
MHC35/PAR30/WDL/830/FL	MHC35W/PAR30/3K/FL	35	8500	E27	95	120	80
MHC70/PAR30/WDL/830/SP	MHC70W/PAR30/3K/SP	70	65000	E27	95	120	80
MHC70/PAR30/WDL/830/FL	MHC70W/PAR30/3K/FL	70	10000	E27	95	120	80



GX10 Single-Ended Metal Halide Lamps



Quartz Arc-tube Technology

Lamp Code	Description	Wattage (W)	Intensity (cd)	Base	Diameter D (mm)	Length L (mm)	CRI
MH-GX10 35/WDL/30°	MHGX10/35W/3K	35	5000	GX10	51	65	>70
MH-GX10 35/NDL/30°	MHGX10/35W/4K	35	5000	GX10	51	65	>70



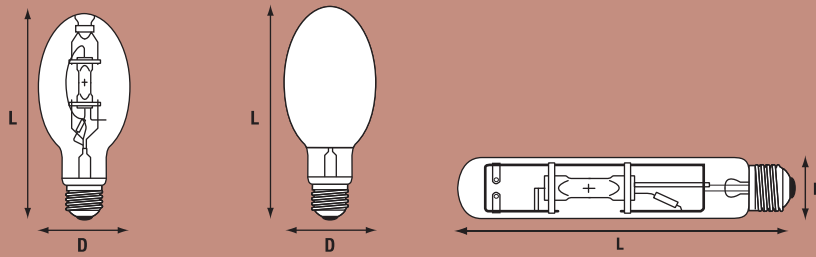
- Universal burning position
- Most compact metal halide lamps with stable light colour
- Crispy white light
- Easy installation with new GX10 twist & lock base
- Quick warm up time 2 mins; hot restart time 5 mins
- Long life time 4,000 hours

Applications

- Interior applications in retail
- Hotel, Restaurant
- Gallery
- Residential

Single-Ended Metal Halide Lamps - European System

For Enclosed Fixtures

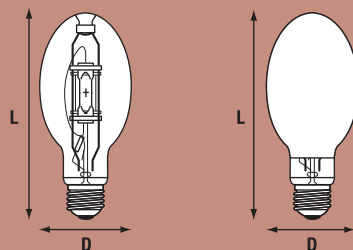


- High Luminous efficacy with very good color rendition
- Universal burning position
- Long burning hours

Lamp Code	Description	Wattage (W)	Lumen (lm)	Base	Diameter D (mm)	Length L (mm)
Elliptical bulb						
MH-E70/WDL/CL	MH70W/ED54/clear/E27/3K	70	5200	E27	55	137± 3
MH-E70/WDL	MH70W/ED54/coated/E27/3K	70	4800	E27	55	137± 3
MH-E70/NDL/CL	MH70W/ED54/clear/E27/4K	70	5500	E27	55	137± 3
MH-E70/NDL	MH70W/ED54/coated/E27/4K	70	5100	E27	55	137± 3
MH-E100/WDL/CL	MH100W/ED54/clear/E27/3K	100	8400	E27	55	137± 3
MH-E100/WDL	MH100W/ED54/coated/E27/3K	100	7800	E27	55	137± 3
MH-E100/NDL/CL	MH100W/ED54/clear/E27/4K	100	8400	E27	55	137± 3
MH-E100/NDL	MH100W/ED54/coated/E27/4K	100	7800	E27	55	137± 3
MH-E150/WDL/CL	MH150W/ED54/clear/E27/3K	150	12500	E27	55	137± 3
MH-E150/WDL	MH150W/ED54/coated/E27/3K	150	11800	E27	55	137± 3
MH-E150/NDL/CL	MH150W/ED54/clear/E27/4K	150	12500	E27	55	137± 3
MH-E150/NDL	MH150W/ED54/coated/E27/4K	150	11800	E27	55	137± 3
MH-E250/NDL	MH250W/ED90/coated/E40/4K	250	*18000-25000	E40	90	203± 3
MH-E250/D(3.0A)	MH250W/ED90/coated/E40/6K	250	19000	E40	90	203± 3
MH-E400/NDL	MH400W/ED118/coated/E40/4K	400	*35000-40000	E40	120	275± 3
MH-E400/D(4.0/4.4A)	MH400W/ED118/coated/E40/6K	400	30000	E40	120	275± 3
Tubular bulb						
MH-T250/NDL	MH250W/T46/clear/E40/4K	250	*17000-22000	E40	46	259± 3
MH-T250/D(3.0A)	MH250W/T46/clear/E40/6K	250	19000	E40	46	259± 3
MH-T400/NDL	MH400W/T46/clear/E40/4K	400	*34000-38000	E40	46	281± 3
MH-T400/D(4.0/4.4A)	MH400W/T46/clear/E40/6K	400	30000	E40	46	281± 3
MH-T600/D(6.2A)	MH600W/T46/clear/E40/6K	600	50000	E40	80	340± 3
MH-T1000/NDL(8.0A)	MH1000W/T64/clear/E40/4K	1000	80000	E40	64	377± 3

Special 'O' Rated Metal Halide Lamps – European System

MHP Series – With Shrouded Arc-tube For Open Fixtures

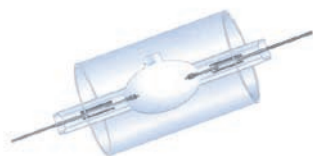


- High Luminous efficacy with very good colour rendition
- Universal burning position
- Long burning hours
- 'O' rated lamps permit greater flexibility in fixture design, reduce fixture operating temperatures and lower fixture costs



Shrouded arc-tube

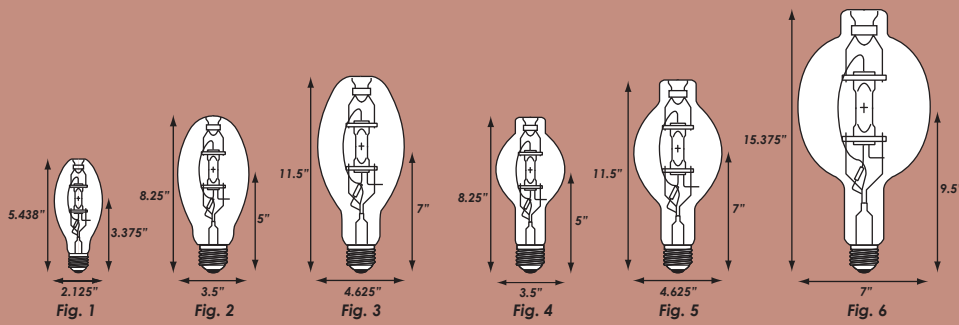
The shroud helps contain hot particles in the lamp in case the arc-tube fails, hence there is no need to enclose the lamp



Quartz Arc-tube Technology

Lamp Code	Description	Wattage (W)	Lumen (lm)	Base	Diameter D (mm)	Length L (mm)
MHP-E70/WDL/CL	MHP70W/ED54/clear/E27/3K	70	5200	E27	55	137±3
MHP-E70/WDL	MHP70W/ED54/coated/E27/3K	70	4800	E27	55	137±3
MHP-E70/NDL/CL	MHP70W/ED54/clear/E27/4K	70	5500	E27	55	137±3
MHP-E70/NDL	MHP70W/ED54/coated/E27/4K	70	5100	E27	55	137±3
MHP-E100/WDL/CL	MHP100W/ED54/clear/E27/3K	100	8400	E27	55	137±3
MHP-E100/WDL	MHP100W/ED54/coated/E27/3K	100	7800	E27	55	137±3
MHP-E100/NDL/CL	MHP100W/ED54/clear/E27/4K	100	8400	E27	55	137±3
MHP-E100/NDL	MHP100W/ED54/coated/E27/4K	100	7800	E27	55	137±3
MHP-E150/WDL/CL	MHP150W/ED54/clear/E27/3K	150	12500	E27	55	137±3
MHP-E150/WDL	MHP150W/ED54/coated/E27/3K	150	11800	E27	55	137±3
MHP-E150/NDL/CL	MHP150W/ED54/clear/E27/4K	150	12500	E27	55	137±3
MHP-E150/NDL	MHP150W/ED54/coated/E27/4K	150	11800	E27	55	137±3
MHP-E250/NDL	MHP250W/ED90/coated/E40/4K	250	20000	E40	90	203±3
MHP-E250/D	MHP250W/ED90/coated/E40/6K	250	19000	E40	90	203±3
MHP-E400/NDL	MHP400W/ED118/coated/E40/4K	400	34000	E40	120	275±3
MHP-E400/D	MHP400W/ED118/coated/E40/6K	400	30000	E40	120	275±3

Single-Ended Metal Halide Lamps – N. American System For Enclosed Fixtures



- High Luminous efficacy with very good colour rendition
- Universal burning position
- Long burning hours

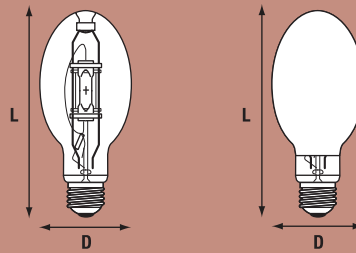


Quartz Arc-tube Technology

Lamp Code	ANSI Spec	Description	Wattage (W)	Lumen (lm)	Base	Fig.
MH50/4K	M110	MH50W/ED17/clear/MED/4K	50	3400	Medium	1
MH50/C/4K	M110	MH50W/ED17/coated/MED/4K	50	3200	Medium	1
MH70/3K	M98	MH70W/ED17/clear/MED/3K	70	5200	Medium	1
MH70/C/3K	M98	MH70W/ED17/coated/MED/3K	70	4800	Medium	1
MH70/4K	M98	MH70W/ED17/clear/MED/4K	70	5500	Medium	1
MH70/C/4K	M98	MH70W/ED17/coated/MED/4K	70	5100	Medium	1
MH100/3K	M90	MH100W/ED17/clear/MED/3K	100	8400	Medium	1
MH100/C/3K	M90	MH100W/ED17/coated/MED/3K	100	7800	Medium	1
MH100/4K	M90	MH100W/ED17/clear/MED/4K	100	8400	Medium	1
MH100/C/4K	M90	MH100W/ED17/coated/MED/4K	100	7800	Medium	1
MH150/3K	M102	MH150W/ED17/clear/MED/3K	150	12500	Medium	1
MH150/C/3K	M102	MH150W/ED17/coated/MED/3K	150	11800	Medium	1
MH150/4K	M102	MH150W/ED17/clear/MED/4K	150	12500	Medium	1
MH150/C/4K	M102	MH150W/ED17/coated/MED/4K	150	11800	Medium	1
MH175/4K	M57	MH175W/ED28/clear/MOG/4K	175	14000	Mogul	2
MH175/C/4K	M57	MH175W/ED28/coated/MOG/4K	175	13200	Mogul	2
MH250/4K	M58	MH250W/ED28/clear/MOG/4K	250	21000	Mogul	2
MH250/C/4K	M58	MH250W/ED28/coated/MOG/4K	250	20000	Mogul	2
MH250/BT28/4K	M58	MH250W/BT28/clear/MOG/4K	250	21000	Mogul	4
MH250/BT28/C/4K	M58	MH250W/BT28/coated/MOG/4K	250	20000	Mogul	4
MH400/4K	M59	MH400W/ED37/clear/MOG/4K	400	36000	Mogul	3
MH400/C/4K	M59	MH400W/ED37/coated/MOG/4K	400	34000	Mogul	3
MH400/BT37/4K	M59	MH400W/BT37/clear/MOG/4K	400	36000	Mogul	5
MH400/BT37/C/4K	M59	MH400W/BT37/coated/MOG/4K	400	34000	Mogul	5
MH1000/4K	M47	MH1000W/BT56/clear/MOG/4K	1000	110000	Mogul	6
MH1000/C/4K	M47	MH1000W/BT56/coated/MOG/4K	1000	105000	Mogul	6
MH1500/4K	M48	MH1500W/BT56/clear/MOG/4K	1500	155000	Mogul	6
Special Versions						
MH175/MED/4K	M57	MH175W/ED28/clear/MED/4K	175	14000	Medium	2
MH175/MED/C/4K	M57	MH175W/ED28/coated/MED/4K	175	13200	Medium	2
MH400/ED28/4K	M59	MH400W/ED28/clear/MOG/4K	400	36000	Mogul	2
MH1000/BT37/4K	M47	MH1000W/BT37/clear/MOG/4K	1000	110000	Mogul	5

Special 'O' Rated Metal Halide Lamps - N. American System

MHP Series – With Shrouded Arc-tube For Open Fixtures



- High Luminous efficacy with very good color rendition
- Universal burning position
- Long burning hours
- 'O' rated lamps permit greater flexibility in fixture design, reduce fixture operating temperatures and lower fixture costs
- Special EX39 socket is required for 175W, 250W, 400W and 1000W lamps



E/S lamp with E39 mogul base in an EX39 restricted socket

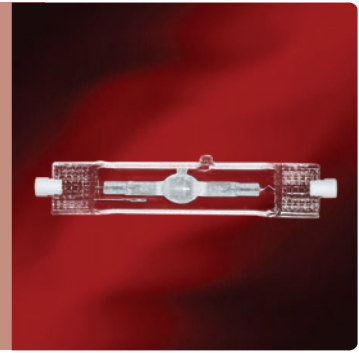
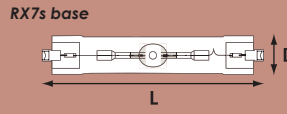
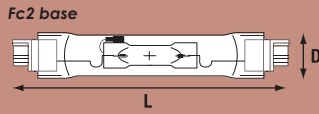


'O' lamp with EX39 restricted base in an EX39 restricted socket

Quartz Arc-tube Technology

Lamp Code	ANSI Spec	Description	Wattage (W)	Lumen (lm)	Base	Diameter D (inch)	Length L (inch)
MHP50/4K	M110	MHP50W/ED17/clear/MED/4K	50	3400	Medium	2.13	5.37
MHP50/C/4K	M110	MHP50W/ED17/coated/MED/4K	50	3200	Medium	2.13	5.37
MHP70/3K	M98	MHP70W/ED17/clear/MED/3K	70	5200	Medium	2.13	5.37
MHP70/C/3K	M98	MHP70W/ED17/coated/MED/3K	70	4800	Medium	2.13	5.37
MHP70/4K	M98	MHP70W/ED17/clear/MED/4K	70	5500	Medium	2.13	5.37
MHP70/C/4K	M98	MHP70W/ED17/coated/MED/4K	70	5100	Medium	2.13	5.37
MHP100/3K	M90	MHP100W/ED17/clear/MED/3K	100	8400	Medium	2.13	5.37
MHP100/C/3K	M90	MHP100W/ED17/coated/MED/3K	100	7800	Medium	2.13	5.37
MHP100/4K	M90	MHP100W/ED17/clear/MED/4K	100	8400	Medium	2.13	5.37
MHP100/C/4K	M90	MHP100W/ED17/coated/MED/4K	100	7800	Medium	2.13	5.37
MHP150/3K	M102	MHP150W/ED17/clear/MED/3K	150	12500	Medium	2.13	5.37
MHP150/C/3K	M102	MHP150W/ED17/coated/MED/3K	150	11800	Medium	2.13	5.37
MHP150/4K	M102	MHP150W/ED17/clear/MED/4K	150	12500	Medium	2.13	5.37
MHP150/C/4K	M102	MHP150W/ED17/coated/MED/4K	150	11800	Medium	2.13	5.37
MHP175/4K	M57	MHP175W/ED28/clear/EMOG/4K	175	14000	EX39	3.5	8.25
MHP175/C/4K	M57	MHP175W/ED28/coated/EMOG/4K	175	13200	EX39	3.5	8.25
MHP250/4K	M58	MHP250W/ED28/clear/EMOG/4K	250	21000	EX39	3.5	8.25
MHP250/C/4K	M58	MHP250W/ED28/coated/EMOG/4K	250	20000	EX39	3.5	8.25
MHP400/4K	M59	MHP400W/ED37/clear/EMOG/4K	400	36000	EX39	4.62	11.25
MHP400/C/4K	M59	MHP400W/ED37/coated/EMOG/4K	400	34000	EX39	4.62	11.25
MHP1000/4K	M47	MHP1000W/ED56/clear/EMOG/4K	1000	110000	EX39	7	15.37
MHP1000/C/4K	M47	MHP1000W/ED56/coated/EMOG/4K	1000	105000	EX39	7	15.37

Double-Ended Metal Halide Lamps – Ignitor Pluse Start



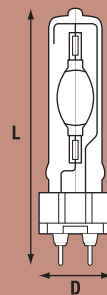
Quartz Arc-tube Technology

Lamp Code	Description	Wattage (W)	Lumen (lm)	Base	Diameter D (mm)	Length L (mm)
MH-DE 70/WDL	MHDE70W/3K	70	5000	RX7s	20	120
MH-DE 70/NDL	MHDE70W/4K	70	5500	RX7s	20	120
MH-DE 100/WDL	MHDE100W/3K	100	6400	RX7s	23	138
MH-DE 100/NDL	MHDE100W/4K	100	6800	RX7s	23	138
MH-DE 150/WDL	MHDE150W/3K	150	11500	RX7s	23	138
MH-DE 150/NDL	MHDE150W/4K	150	12000	RX7s	23	138
MH-DE 250/NDL	MHDE250W/4K	250	20000	Fc2	25	163
MH-DE 400/NDL	MHDE400W/4K	400	34000	Fc2	30	254

- High luminous efficacy
- Very good colour rendition
- Long service life 8000 hours



G12 Bi-pin Metal Halide Lamps – Ignitor Pluse Start



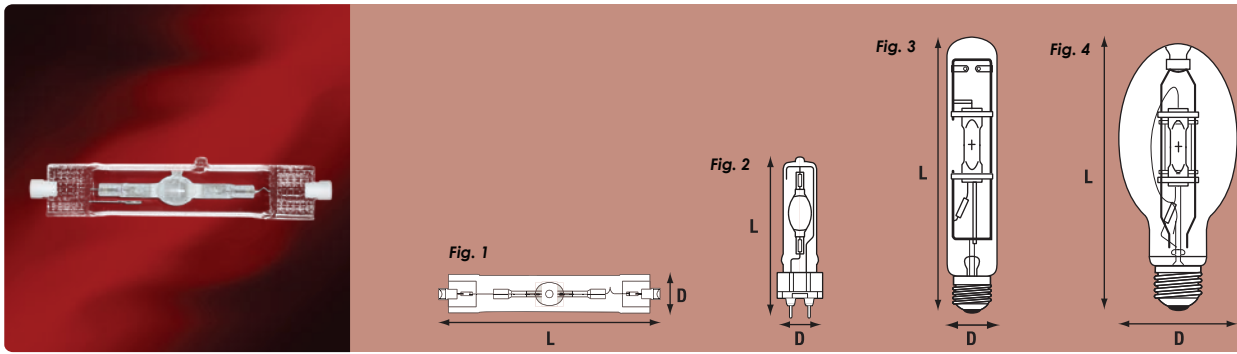
Quartz Arc-tube Technology

Lamp Code	Description	Wattage (W)	Lumen (lm)	Base	Diameter D (mm)	Length L (mm)
MH70/G12/WDL	MH70W/G12/3K	70	5200	G12	25	110
MH70/G12/NDL	MH70W/G12/4K	70	5500	G12	25	110
MH100/G12/WDL	MH100W/G12/3K	100	8000	G12	25	110
MH100/G12/NDL	MH100W/G12/4K	100	8400	G12	25	110
MH150/G12/WDL	MH150W/G12/3K	150	12000	G12	25	110
MH150/G12/NDL	MH150W/G12/4K	150	12500	G12	25	110

KANDOLite®
Brings you Light and Prosperity

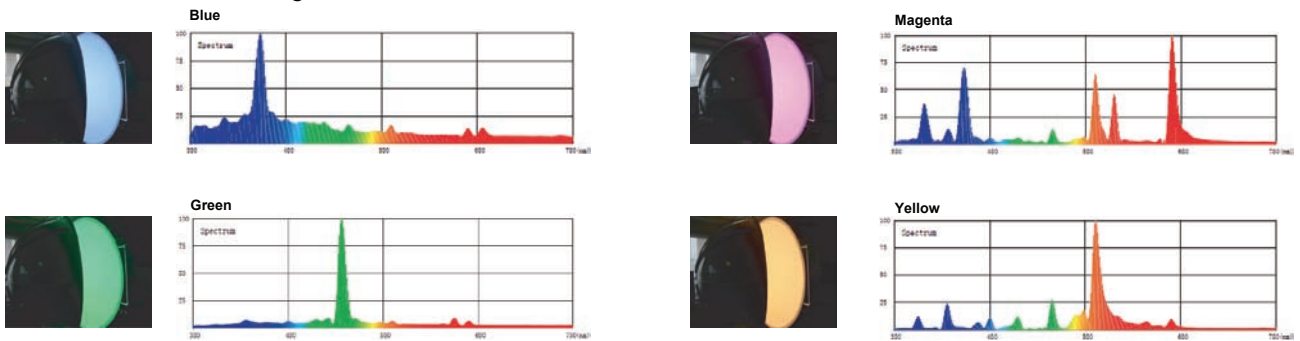
Special Colour Metal Halide Lamps

Creation of vivid and rich colours without the need of filters for applications with style and appeal



Colour High Intensity Discharge Lamps

- Create colour effect without the need of filters
- White, Blue, Green, Magenta, Yellow

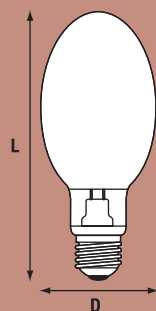


Aquarium Metal Halide 10,000K & 14,000K :

- Neutral daylight 10,000K and 14,000K for daylight simulation
- Aquariums: simulate ocean condition for coral growth
- Also available with **20,000K** for deep water penetration

Lamp Code	Wattage (W)	Base	Colours	Diameter D (mm)	Length L (mm)	Fig.
For special decor flood lighting						
MH-DE 70W	70	RX7s	Blue, Green, Magenta, Yellow	20	120	1
MH-DE 150W	150	RX7s	Blue, Green, Magenta, Yellow	23	138	1
MH-E 70W	70	E27	Blue, Green, Magenta, Yellow	55	137	4
MH-E 100W	100	E27	Blue, Green, Magenta, Yellow	55	137	4
MH-E 150W	150	E27	Blue, Green, Magenta, Yellow	55	137	4
MH-E 175W	175	E27	Blue, Green, Magenta, Yellow	55	137	4
MH-E 250W	250	E40	Blue, Green, Magenta, Yellow	90	203	4
MH-E 400W	400	E40	Blue, Green, Magenta, Yellow	120	275	4
MH-T 250W	250	E40	Blue, Green, Magenta, Yellow	46	259	3
MH-T 400W	400	E40	Blue, Green, Magenta, Yellow	46	281	3
MH 70W G12	70	G12	Blue, Green, Magenta, Yellow	25	110	2
MH 150W G12	150	G12	Blue, Green, Magenta, Yellow	25	110	2
For aquarium lighting						
MH-DE 70W	70	RX7s	10000K, 14000K, 20000K	20	120	1
MH-DE 150W	150	RX7s	10000K, 14000K, 20000K	23	138	1
MH-T 250W	250	E40	10000K, 14000K, 20000K	46	259	3

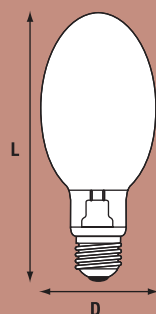
Mercury Vapor Lamps - European System



- High Luminous efficacy
- Universal burning position
- Long average burning hours, up to 10000 hours service life

Lamp Code	Description	Wattage (W)	Lumen (lm)	Base	Diameter D (mm)	Length L (mm)
HQ50-W	HQ50/ED55/coated/E27	50	1800	E27	55	130
HQ80-W	HQ80/ED70/coated/E27	80	3800	E27	70	156
HQ125-W	HQ125/ED75/coated/E27	125	6200	E27	75	170
HQ250-W	HQ250/ED90/coated/E40	250	13000	E40	90	226
HQ400-W	HQ400/ED120/coated/E40	400	23000	E40	120	290

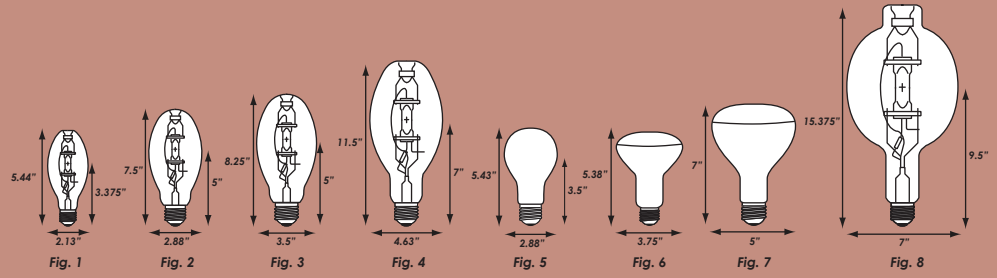
Self-Ballasted Mercury Vapor Lamps - European System



- Operating voltage options : 220V, 230V and 240V
- High Luminous efficacy
- Universal burning position
- Long average burning hours of up to 5000 hours service life

Lamp Code	Description	Wattage (W)	Lumen (lm)	Base	Diameter D (mm)	Length L (mm)
HML 160W	HML160/ED75/coated/E27	160	3100	E27	75	170
HML 250W-E27	HML250/ED90/coated/E27	250	5600	E27	90	226
HML 250W-E40	HML250/ED90/coated/E40	250	5600	E40	90	226
HML 500W	HML500/ED120/coated/E40	500	14000	E40	120	290

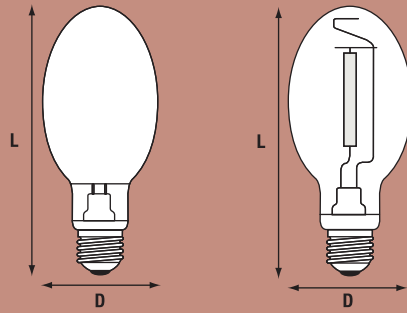
Mercury Vapor Lamps - N. American System



- High Luminous efficacy
- Universal burning position
- Long average burning hours

Lamp Code	ANSI Spec	Description	Wattage (W)	Lumen (lm)	Base	Fig.
Elliptical Coated						
HQ50DX	H46	HQ50/ED17/coated/MED	50	1800	Medium	1
HQ75DX	H43	HQ75/ED17/coated/MED	75	2800	Medium	1
HQ75ED23DX	H43	HQ75/ED23/coated/MOG	75	2800	Mogul	2
HQ100A23DX	H38	HQ100/A23/coated/MED	100	4000	Medium	5
HQ100DX	H38	HQ100/ED17/coated/MED	100	4000	Medium	1
HQ100ED23DX	H38	HQ100/ED23/coated/MOG	100	4000	Mogul	2
HQ175DX	H39	HQ175/ED28/coated/MOG	175	8400	Mogul	3
HQ250DX	H37	HQ250/ED28/coated/MOG	250	13000	Mogul	3
HQ400DX	H33	HQ400/ED37/coated/MOG	400	23000	Mogul	4
HQ1000DX	H36	HQ1000/BT56/coated/MOG	1000	58000	Mogul	8
Elliptical Clear						
HQ100	H38	HQ100/ED17/clear/MED	100	3900	Medium	1
HQ100ED23	H38	HQ100/ED23/clear/MOG	100	3900	Mogul	2
HQ175	H39	HQ175/ED28/clear/MOG	175	8000	Mogul	3
HQ250	H37	HQ250/ED28/clear/MOG	250	12000	Mogul	3
HQ400	H33	HQ400/ED37/clear/MOG	400	21000	Mogul	4
HQ1000DX	H36	HQ1000/BT56/clear/MOG	1000	56000	Mogul	8
Reflector						
HQ50R30	H46	HQ50/R30/MED	50	1350	Medium	6
HQ100R40	H38	HQ100/R40/MED	100	2600	Medium	7
HQ175R40	H39	HQ175/R40/MED	175	5000	Medium	7

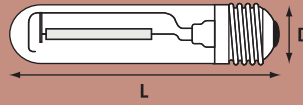
High Pressure Sodium Lamps Elliptical Bulb - European System



- High Luminous efficacy
- Universal burning position
- Long average burning hours

Lamp Code	Description	Wattage (W)	Lumen (lm)	Base	Diameter D (mm)	Length L (mm)
SON-E 70	SON70/ED70/coated/E27	70	4600	E27	70	156
SON-E 70/I	SON70/ED70/coated/E27/Ignitor	70	4600	E27	70	156
SON-E 100	SON100/ED75/coated/E27	100	7300	E27	75	156
SON-E 150	SON150/ED90/coated/E40	150	12000	E40	90	226
SON-E 250	SON250/ED90/coated/E40	250	21000	E40	90	226
SON-E 400	SON400/ED120/coated/E40	400	38000	E40	120	290

High Pressure Sodium Lamps Tubular Bulb - European System

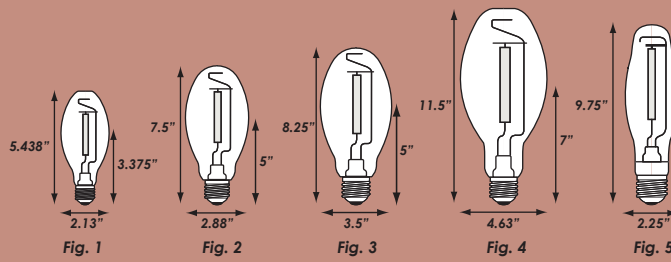


- High Luminous efficacy
- Universal burning position
- Long average burning hours

Lamp Code	Description	Wattage (W)	Lumen (lm)	Base	Diameter D (mm)	Length L (mm)
SON-T 70	SON70/T38/clear/E27	70	5000	E27	38	156
SON-T 100	SON100/T46/clear/E40	100	7800	E40	46	211
SON-T 150	SON150/T46/clear/E40	150	13000	E40	46	211
SON-T 250	SON250/T46/clear/E40	250	23000	E40	46	260
SON-T 400	SON400/T46/clear/E40	400	41000	E40	46	287

The SON-PLUS High Output versions are available with 130% lumen output of above standard types

High Pressure Sodium Lamps - N. American System



- High Luminous efficacy
- Universal burning position
- Long average burning hours



Lamp Code	ANSI Spec	Description	Wattage (W)	Lumen (lm)	Base	Fig.
Elliptical clear						
SON/E/70	S62	SON70/ED17/clear/MED	70	5000	Medium	1
SON/E/100	S54	SON100/ED17/clear/MED	100	7800	Medium	1
SON/E/100/MOG	S54	SON100/ED23/clear/MOG	100	7800	Mogul	2
SON/E/150/Med	S55	SON150/ED17/clear/MED	150	13000	Medium	1
SON/E/150	S55	SON150/ED23/clear/MOG	150	13000	Mogul	1
SON/E/150/100	S56	SON150/100/ED28/clear/MOG	150	13000	Mogul	2
SON/E/250	S50	SON250/ED28/clear/MOG	250	23000	Mogul	3
SON/E/400	S51	SON400/ED37/clear/MOG	400	41000	Mogul	4
Elliptical coated						
SON/E/70/C	S62	SON70/ED17/coated/MED	70	4600	Medium	1
SON/E/100/C	S54	SON100/ED17/coated/MED	100	7300	Medium	1
SON/E/100/C/MOG	S54	SON100/ED23/coated/MOG	100	7300	Mogul	2
SON/E/150/C/Med	S55	SON150/ED17/coated/MED	150	12000	Medium	1
SON/E/150/C	S55	SON150/ED23/coated/MOG	150	12000	Mogul	2
SON/E/250/C	S50	SON250/ED28/coated/MOG	250	21000	Mogul	3
SON/E/400/C	S51	SON400/ED37/coated/MOG	400	38000	Mogul	4
Elliptical tubular clear						
SON/T/250	S50	SON250/ET18/clear/MOG	250	23000	Mogul	5
SON/T/400	S51	SON400/ET18/clear/MOG	400	41000	Mogul	5



Automotive Lamps



Halogen Headlight Lamps

European System 108



Halogen Headlight Lamps

N. American System 109



Halogen Headlight Lamps

For motorcycles 109



Automobile Lamps

European System - Side/Indicator/Brake/Tail/Flasher.....110

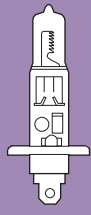


Automobile Lamps

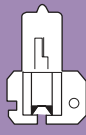
N. American System - Side/Indicator/Brake/Tail/Flasher.....111

Halogen Headlight Lamps European System

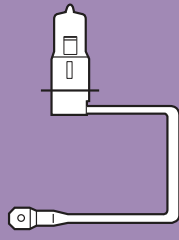
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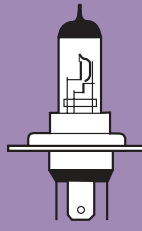
H1



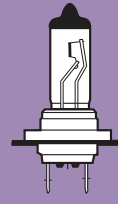
H2



H3



H4

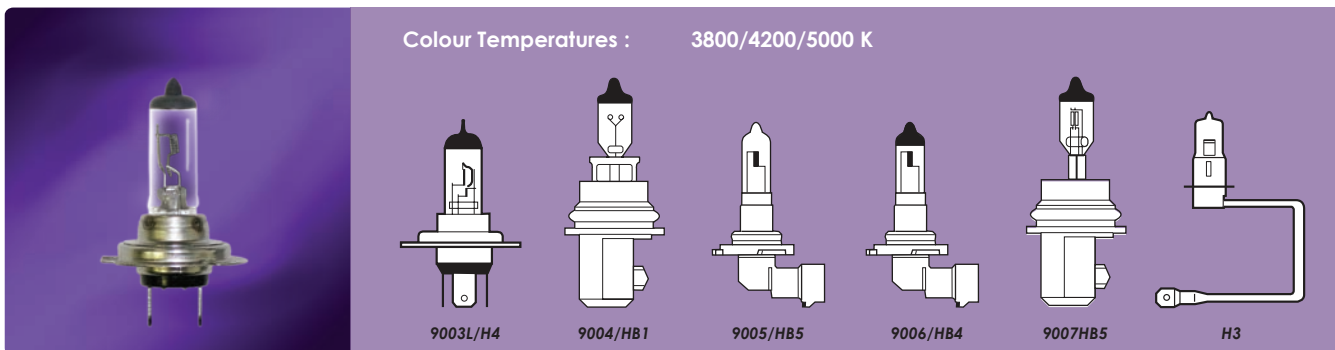


H7



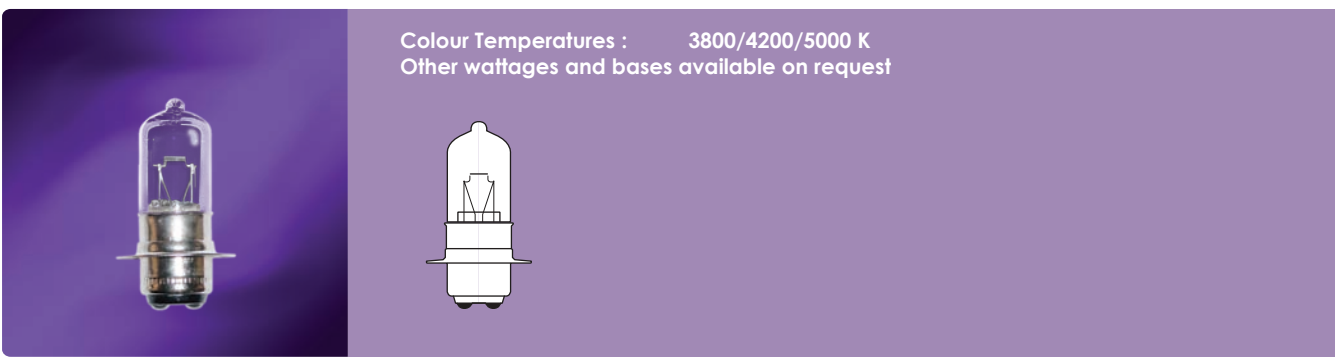
British No.	Model/Series	Voltage (V)	Wattage (W)	Base	ECE Approval
465	H1	6	55	P14.5s	-
448	H1	12	55	P14.5s	E
481	H1	12	100	P14.5s	-
466	H1	24	70	P14.5s	E
481	H1	24	100	P14.5s	-
494	H1	24	130	P14.5s	-
479	H2	12	55	X511	-
482	H2	12	100	X511	-
480	H2	24	70	X511	-
b492	H2	24	100	X511	-
455	H3	6	55	PK22s	-
453	H3	12	55	PK22s	E
483	H3	12	100	PK22s	-
460	H3	24	70	PK22s	E
493	H3	24	100	PK22s	-
	H4	6	35/35	P43t	-
	H4	12	45/45	P43t	-
472	H4	12	60/55	P43t	E
473	H4	12	100/55	P43t	-
484	H4	12	100/80	P43t	-
	H4	12	100/90	P43t	-
475	H4	24	75/70	P43t	E
475S	H4	24	100/80	P43t	-
	H4	24	100/90	P43t	-
HB6	H4	6	60/55	P45t	-
HB12	H4	12	60/55	P45t	-
485	H4	12	100/80	P45t	-
	H4	12	100/90	P45t	-
HB24	H4	24	75/70	P45t	-
HB24S	H4	24	100/90	P45t	-
447	H7	12	55	PX26d	E
446	H7	12	100	PX26d	-
467	H7	24	70	PX26d	E
468	H7	24	100	PX26d	-

Halogen Headlight Lamps N. American System



Lamp Code	SAE Category	Voltage (V)	Wattage (W)	Base
9003L	HB2/H4	12	60/55	P43t
	H4	12	55/60	P43t
9004	HB1	12.8	65/45	P29t
9005	HB3	12.8	60	P20d
9006	HB4	12.8	55	P22d
9007	HB5	12.8	65/55	PX29t
	H3	12	35	PK22s
	H3	12	55	PK22s

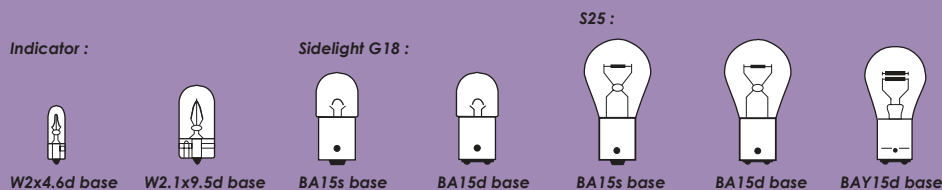
Halogen Headlight Lamps for Motorcycles



Lamp Code	Series	Voltage (V)	Wattage (W)	Base
H6M(HS) 6V 18/18W	HS	6	18/18	P15D-25-1
H6M(HS) 12V 20/20W	HS	12	20/20	P15D-25-1
H6M(HS) 12V 25/25W	HS	12	25/25	P15D-25-1
H6M(HS) 12V 30/30W	HS	12	30/30	P15D-25-1
H6M(HS) 12V 35/35W	HS	12	35/35	P15D-25-1
H6M(HV) 12V 25/25W	HV	12	25/25	P15D-25-3
H6M(HV) 12V 30/30W	HV	12	30/30	P15D-25-3
H6M(HV) 12V 35/35W	HV	12	35/35	P15D-25-3
H6M(HL) 12V 30/30W	HL	12	30/30	P15D-30
H6M(HL) 12V 35/35W	HL	12	35/35	P15D-30

Automobile Lamps European System

Side / Indicator / Brake / Tail / Flasher

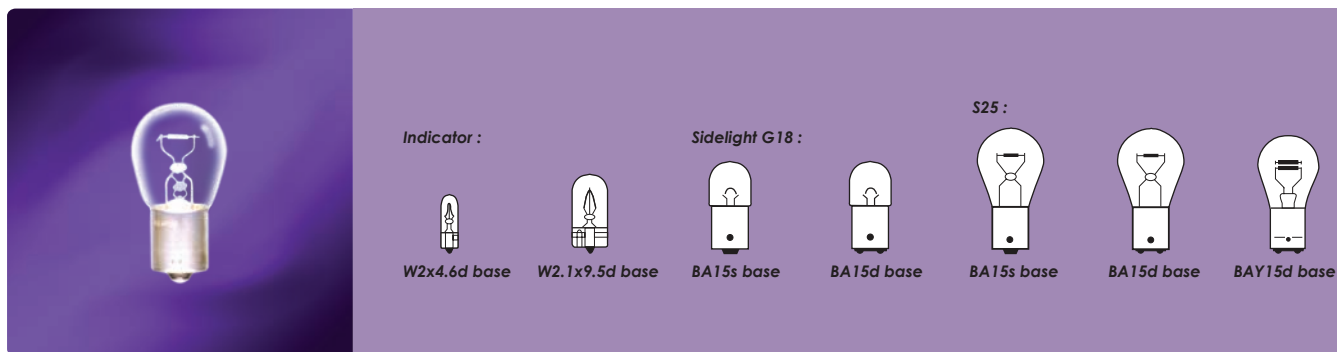


Lamp Code	SAE Category	Voltage (V)	Wattage (W)	Base
Indicator	T5	6, 12, 24	1 – 5	W2x4.6d
Indicator	T10	6, 12, 24	2 – 5	W2.1x9.5d
Sidelight	G18	6, 12, 24	5 – 15	BA15s
Sidelight	G18	6, 12, 24	5 – 15	BA15d

Lamp Code	Series	Voltage (V)	Wattage/CP (W)	Base
317	S25	6	21W	BA15s
336	S25	12	15W	BA15s
382E	S25	12	21W	BA15s
240	S25	24	15W	BA15s
337	S25	24	18W	BA15s
241E	S25	24	21W	BA15s
339	S25	24	26W	BA15s
345	S25	28	28W	BA15s
A4598	S25	48	25W	BA15s
319	S25	6	21W	BA15d
335E	S25	12	21W	BA15d
348	S25	24	12W	BA15d
338	S25	24	18W	BA15d
346E	S25	24	21W	BA15d
383	S25	6	18/5W	BA15d
381	S25	12	21/5W	BA15d
384	S25	6	21/5CP	BAY15d
380E	S25	12	21/5CP	BAY15d
294	S25	24	21/5CP	BAY15d
334	S25	24	24/6CP	BAY15d

Automobile Lamps N. American System

Side / Indicator / Brake / Tail / Flasher



Lamp Code	Bulb size	Voltage (V)	Wattage (W)	Base
Indicator	T1.75	6, 12, 24	1 – 5	W2x4.6d
Indicator	T3.25	6, 12, 24	2 – 5	W2.1x9.5d
Sidelight	G6	6, 12, 24	5 – 15	BA15s
Sidelight	G6	6, 12, 24	5 – 15	BA15d

Lamp Code	Bulb size	Voltage (V)	Wattage/CP (W)	Base
87	S8	6	15CP	BA15s
1129	S8	6	21CP	BA15s
93	S8	12	15CP	BA15s
1141	S8	12	21CP	BA15s
1073	S8	12	32CP	BA15s
1156	S8	12	32CP	BA15s
305	S8	24	15CP	BA15s
1203	S8	24	21CP	BA15s
94	S8	12	15CP	BA15s
1142	S8	12	21CP	BA15d
1076	S8	12	32CP	BA15d
1158	S8	6	21/3CP	BA15d
1176	S8	12	21/6CP	BA15d
1154	S8	6	21/3CP	BAY15d
1016	S8	12	21/6CP	BAY15d
198	S8	12	32/3CP	BAY15d
1034	S8	12	32/3CP	BAY15d
1157	S8	12	32/3CP	BAY15d
2057	S8	12	32/3CP	BAY15d