

Lighting Catalog

Lamp specification guide - 2012



Discover the Possibilities


HAVELLS

The Havells logo consists of a stylized red 'H' shape with a smaller red 'A' shape nested within it. Below the logo, the word 'HAVELLS' is written in a bold, red, sans-serif font.

Your global partner for full spectrum **lighting solutions**

World-class lighting from a global manufacturer

As the North American division of a global lighting manufacturer, Havells offers a wide range of incandescent, halogen, fluorescent, LED and high-intensity discharge products whose benefits include:

- Longer lamp life
- Increased light quality
- Energy and maintenance cost savings
- Improved lumen maintenance
- Excellent Color Rendering

Havells complies with many international standards, including IEC, ANSI, ISO 9000, ISO 14000, UL and US EPA Energy Star.

Meeting specs and exceeding expectations

Recent Havells lamp innovations include:

- Havells Toughcoat shatter-resistant lamps which prevent flying glass and glass contamination of products.
- Havells Ceramic Metal Halide lamps, which provide a highly efficient white light source with a CRI of over 90+.
- Havells new generation LED lamps, which offers longer life and increased light output.

An exceptional lighting partner

As a partner, Havells brings excellent value by offering:

- Competitive pricing
- An ease to doing business
- Low transaction costs
- Large product portfolio
- One common warranty
- Superior quality
- Local representation
- Exceptional customer service
- Lighting expertise
- One purchase point: Ballasts, Lamps, & Fixtures

Explore Havells Lighting



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Experience the Light



Retail

A unique shopping experience

As every retailer knows, lighting plays a crucial part in the store's success. Lighting can create the appropriate look, mood, and feel that enhances a retailer's image. The right lighting can also attract shoppers into retail spaces as well as encourage consumer spending.

Havells can offer retailers an opportunity to create enticing shopping environments while also saving big on energy costs.

Hospitality

Allow guests to feel at home

In the hospitality industry it is crucial to create a memorable and inviting experience for guests. From the minute a guest enters a hotel, the lighting within should create a comfortable and familiar environment.

Havells can help make a guest's stay a wonderful experience through its wide portfolio of experience enhancing solutions.





Healthcare

Improve the patient experience

As patient needs change, lighting continues to play a tremendous part in helping patients feel a sense of comfort and ease. In healthcare facilities effective lighting can create a friendlier environment that improves the overall mood of both its staff and patients.

Havells lighting solutions can help provide solutions that elevate the patient experience, while also reducing lighting costs.

Outdoor

Filling cities with light

Lighting can create a new experience for cities as well as its residents. The proper lighting can increase visibility as well as provide a greater sense of safety.

Havells outdoor lighting solutions aim to provide greater visibility and security to improve the atmosphere of the city and the residents living within them.





Office

Increasing work productivity

In an office environment, good lighting can lead to improved productivity. Lighting can keep workers more alert and focused on tasks at hand as well as increasing communication and teamwork.

Havells offers a wide range of energy efficient products dedicated to help offices improve the working experience.

Industrial

A sustainable future

Industrial facilities are always under pressure to reduce costs while increasing productivity. Sustainable lighting solutions offer facilities great cost savings while improving the quality of light.

Havells energy efficient lighting solutions positions industrial facilities for greater performance and growth.

Color the Mood



Warm White 3000°K

A very warm color that mimics the tone of an incandescent light bulb. This soft smooth glow is ideal for creating a cozy atmosphere.

Cool White 4100°K

This cool color gives the impression of high quality white light, making things look clean and fresh.

Daylight 6500°K

Natural light is the coolest, healthiest light source we know and the Daylight lamp mimics it perfectly, keeping you alert and active by day and night.

Tips on color temperature

Color Temperature is the measure of the light bulb's color when illuminated and is measured in degrees Kelvin. The higher the number the more white or blue the light, or cooler the color. The lower the number the more yellow the light, or warmer the color.

Color Temp.	Warm
Kelvin	3000K
Atmosphere	Soft, Comfortable, Relaxing

Color Temp.	Cool
Kelvin	4100K
Atmosphere	Clean, Efficient

Color Temp.	Daylight
Kelvin	6500K
Atmosphere	Crisp, Refreshing, Energetic

HAVELLS is proud to play its part
in saving the **environment** with its
new range of Energy Saving Lamps

The rapid reduction of the polar icecaps and rising sea levels are directly related to global warming – the most urgent issue facing the world today. Saving energy is the most efficient way of reducing CO₂ emissions – the single cause of global warming. HAVELLS new Mini-Lynx Compact Fluorescent is a comprehensive range of incandescent replacement lamps that consume less energy than standard incandescent lamps thus lowering CO₂ emissions.



Save energy, save money

Since lighting accounts for 20% of the domestic energy consumption, it plays a significant role when it comes to saving energy. Mini-Lynx Compact lamps require 80% less energy than standard incandescent lamps for the same light output i.e. a 20W Mini-Lynx Compact = 100W incandescent.

Incandescent



INCANDESCENT

The incandescent light bulb is the most common light source in homes and also is found in many commercial applications. Incandescent lights have excellent color rendering with a CRI of 100, which creates a warm and colorful atmosphere for people and products.

Compared to the typically short 750-1,000 hour service lives of other incandescents, Havells incandescent line features lamps that operate for 1,500 hours to 5,000 hours. Our top-of-the-line incandescents have service lives from 2,000 hours up to 20,000 hours, dramatically reducing maintenance and replacement costs. Havells advanced incandescent technology makes our lamps highly resistant to premature failure from vibration or sudden jarring.

Incandescent applications

- General purpose retail, commercial and industrial indoor and outdoor lighting
- Indoor directional, track, recessed and down-lighting
- Stairwells, bathrooms and storage areas
- Display and showcase lighting
- Decorative lighting





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TOUGHCOAT

Havells Toughcoat® is an incandescent line of shatter-resistant lamps that are safety-coated to provide indoor and outdoor protection from bulb breakage caused by accidental impact, the thermal shock of weather extremes, or exposure to hot or cold liquids.

Designed with a rugged all-weather coating, Toughcoat® safety-coated lamps are specifically designed to contain glass fragments

if broken, preventing flying glass from endangering employees and customers as well as avoiding glass contamination of products.

The Toughcoat® safety-coated line enables compliance with FDA, USDA and OSHA guidelines while protecting the workplace

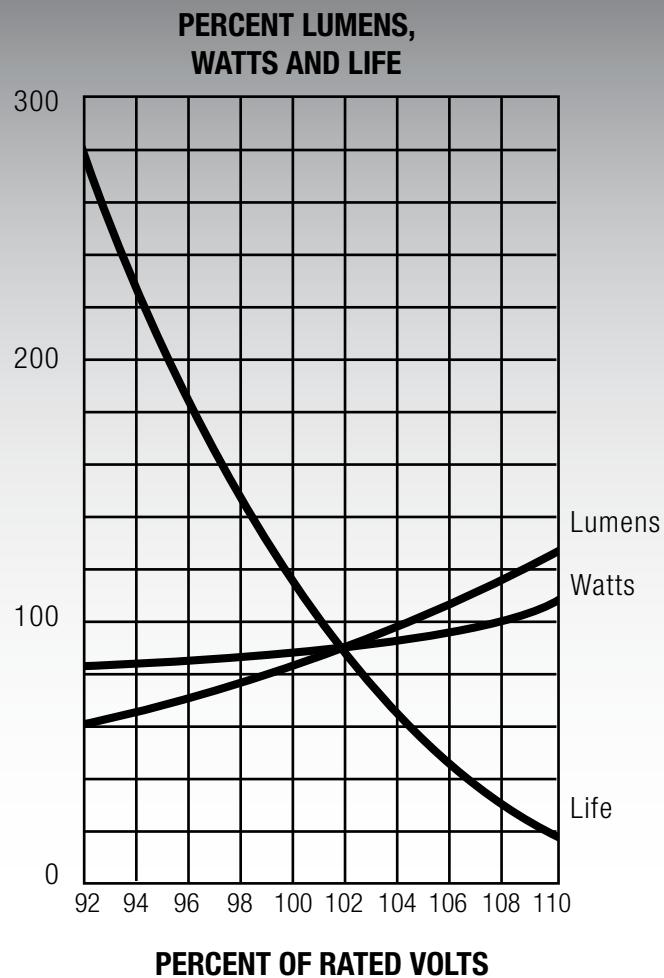
environment—and your bottom line—without sacrificing lamp life, light quality or color performance.

Toughcoat lamp applications include hospitals, health care facilities, schools, museums, restaurants, auto garages, amusement parks, supermarkets, mines, industrial plants and shipyards. Special applications include ovens, freezers, mechanic drop cords, heat lamp applications, food processing and preparation, meat processing, meat packing, food and salad bars, paint drying and sand blasting.



Incandescent lamp characteristics

If voltage applied to an incandescent lamp is varied, there is a resulting change in the filament resistance and temperature, current watts, light output and life. These characteristics are interrelated as shown by the following curves.



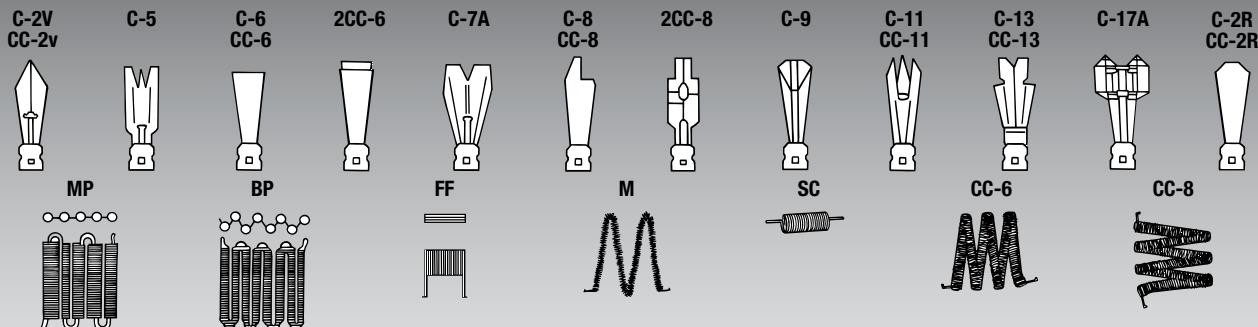
Havells 130 volt lamps most often are operated at 120 volts which reduces the wattage consumed and light output while greatly extending the life. Following are some examples of these changes on the common wattages:

CHARACTERISTICS WHEN OPERATED AT 120 VOLTS

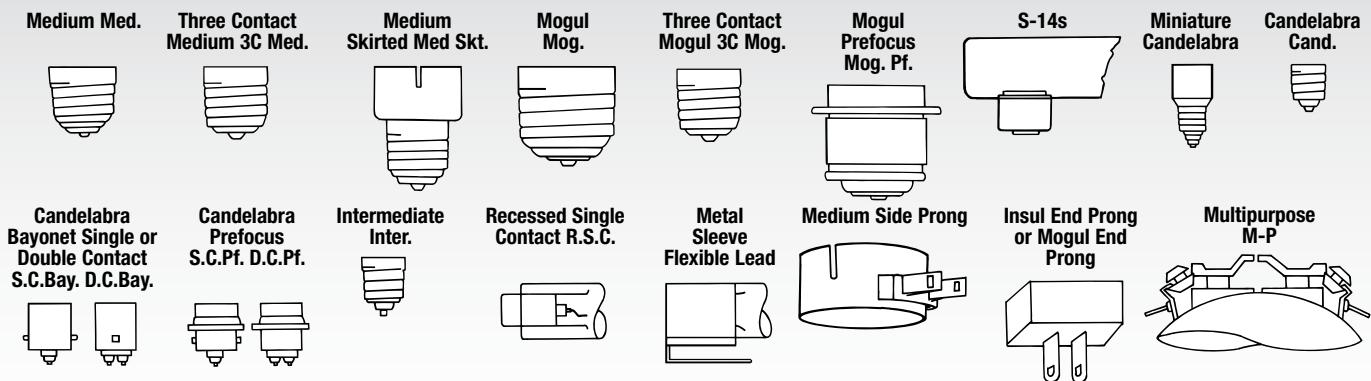
WATTAGE/ DESIGN VOLTS	WATTS CONSUMED	% LIFE EXTENDED	% LIGHT OUTPUT
150/130V	132W	280%	88%
100/130V	88W	280%	88%
75/130V	66W	280%	88%
60/130V	53W	280%	88%
40/130V	35W	280%	88%

Filament Designations

Filament designations consist of a letter or letters to indicate how the wire is coiled, and an arbitrary number sometimes followed by a letter to indicate the arrangement of the filament on the supports. Prefix letters include C (coil) – wire is wound into a helical coil or it may be deeply fluted; CC (coiled coil) – wire is wound into a helical coil and this coiled wire is again wound into a helical coil. Some of the more commonly used types of filament arrangements are illustrated.

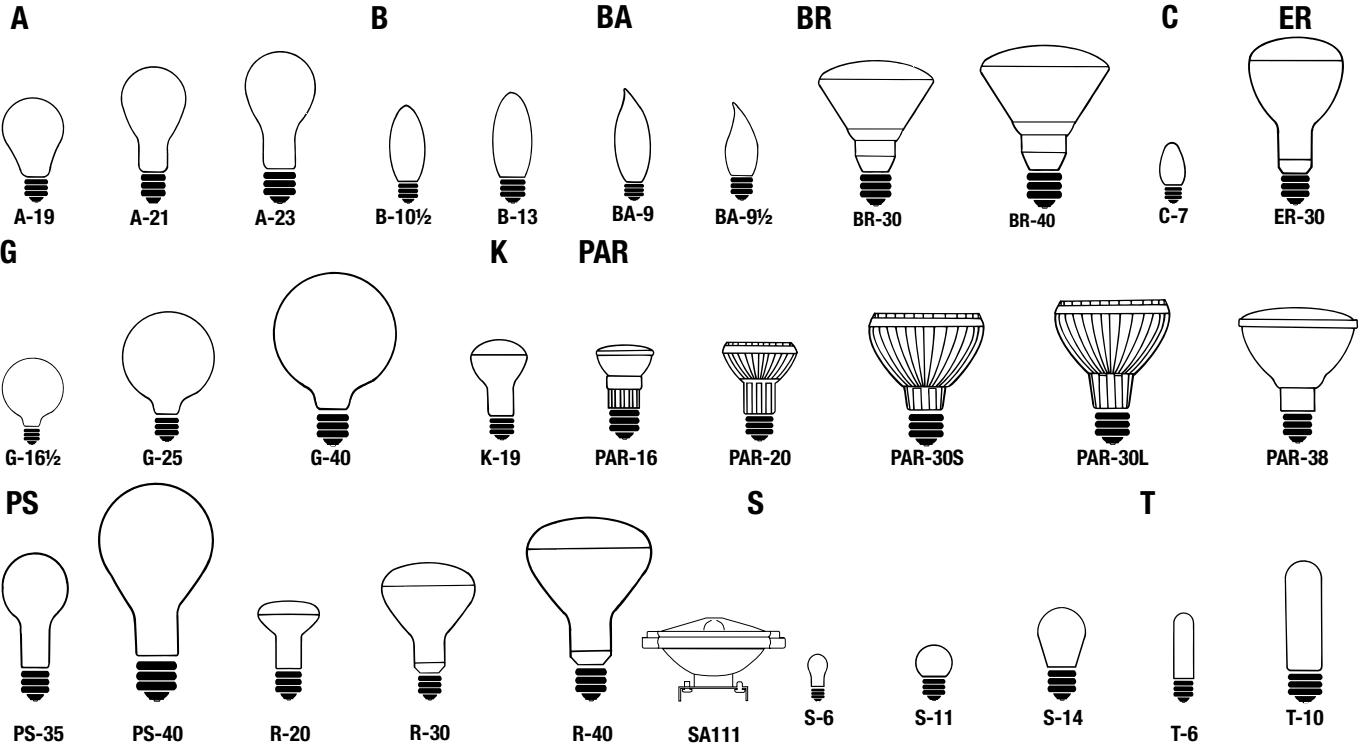


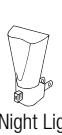
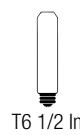
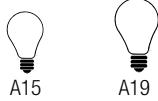
Base Types (Not Actual Sizes)



Bulb Shapes (Not Actual Sizes)

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





Watts	Bulb	Base	Order Code	Description	Volts	Pkg. Qty.	Rated Avg. Life (Hrs)	Filament	MOL (in.)	Apprx. Lumen	
4	C7	Cand	61042	BC4C7/CL (4/CD)	Night Light	120	12 cds	3000	C-7A	2 1/8	16
			60934	BC4C7/CL (2/CD)	Night Light	130	12 cds	3000	C-7A	2 1/8	16
			61047	BC4C7/CL/CLIP STRIP		120	48 cds	3000	C-7A	2 1/8	16
6	S6	Cand	60495	6S6/CL		130	240	3500	C-7A	1 7/8	40
7	C7	Cand	60935	BC7C7/CL (2/CD)		130	12 cds	3000	C-7A	2 1/8	45
			60936	BC7C7/WH (2/CD)		130	12 cds	3000	C-7A	2 1/8	45
			61043	BC7C7/CL 4/CD		120	12 cds	3000	C-7A	2 1/8	45
			61045	BC7C7/WH (4/CD)		120	12 cds	3000	C-7A	2 1/8	45
			60496	7C7/CL		130	240	3000	C-7A	2 1/8	45
			61038	7W STANDARD NIGHT LIGHT (1/CD)		120	12 cds	3000	C-7A	2 1/8	45
7 1/2	S11	Med	61104	7W AUTO NIGHT LIGHT (1/CD)		120	12 cds	3000	C-7A	2 1/8	45
			61106	7W STANDARD NIGHT LIGHT CLIP STRIP (2/CD)		120	24 cds	3000	C-7A	2 1/8	45
			60937	BC71/2S/WH (1/CD)		130	12 cds	3500	C-7A	2 1/4	50
			60499	71/2S/WH	White	130	25	3500	C-7A	2 1/4	40
			60498	71/2S/CL	Clear	130	25	3500	C-7A	2 1/4	40
			60500	71/2S11/TC	Toughcoat	130	25	3500	C-7A	2 1/4	
11	S14	Med	16019^	71/2S11/GREEN		130	25	3500	C-7A	2 1/4	
			16018^	71/2S11/YELLOW		130	25	3500	C-7A	2 1/4	
			60106	11S14/IF	Frost	130	120	5000	C-9	3 1/2	80
			60109	11S14/CL	Clear	130	120	5000	C-9	3 1/2	80
			60112	11S14/YELLOW		130	120	5000	C-9	3 1/2	
			60502	15A15/IF	Appliance	130	120	5000	C-9	3 1/2	125
15	A15	Med	60503	15A15/CL	Appliance	130	120	5000	C-9	3 1/2	125
			60252	15T6/CL	Switchboard	145	60	5000	C-7A	3 1/16	105
			16076	15T7/CL	Appliance	120	60	5000	C-7A	2 1/4	115
			60511	20T61/2/IF/INT	Exit Sign	130	25	5000	C-8	5 1/2	90
20	T6 1/2	Int	60512	20T61/2/CL/INT	Exit Sign	130	25	5000	C-8	5 1/2	90
			60513	20T61/2/IF/DC	Exit Sign	130	25	5000	C-8	5 1/2	90
			60514	20T61/2/CL/DC	Exit Sign	130	25	5000	C-8	5 1/2	90
			60504	25A15/IF	Appliance	130	120	5000	C-9	3 1/2	150
25	A15	Med	60505	25A15/CL	Appliance	130	120	5000	C-9	3 1/2	150
			60522	25A15/TC	Appliance Toughcoat	130	120	5000	C-9	3 1/2	145
			60006	25A/IF		130	120	5000	C-9	4 1/2	170
			60941	25A/IF/2PK		120	24	2500	C-9	4 1/2	150
	A19	Med	60127	25A/CL		130	120	5000	C-9	4 1/2	170

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^ Stock available until inventory depleted

See page 66 for lamp description abbreviations

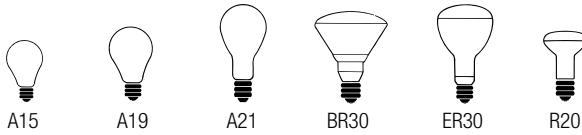


Watts	Bulb	Base	Order Code	Description	Volts	Pkg. Qty.	Rated Avg. Life (Hrs)	Filament	MOL (in.)	Apprx. Lumen
25	A19	Med	60949	25A/TRANS/AMBER	120	24	2500	C-9	4 1/2	
			60942	25A/TRANS/BLUE	120	24	2500	C-9	4 1/2	
			60943	25A/TRANS/GREEN	120	24	2500	C-9	4 1/2	
			60952	25A/TRANS/ORANGE	120	24	2500	C-9	4 1/2	
			60944	25A/TRANS/RED	120	24	2500	C-9	4 1/2	
T10	Med		60515	25T10/IF	130	25	5000	C-8	5 5/8	260
			60516	25T10/CL	130	25	5000	C-8	5 5/8	260
R14	Med		17070	25R14/FL	130	60	5000	C-9	2 1/8	260
30	A21	Med	60900	30/70/100/IF/3-WAY	130	24	2500	2/CC-8	5 5/16	200/615/825
			15641	30R20/RFL/5M	Reflector	130	60	5000	C-9	3 15/16
			60171	30R20/TC	Toughcoat	130	60	5000	C-9	3 15/16
40	A15	CAND	60531	40A15/CL CAN 2/CD	Ceiling Fan	120	12 cds	1000	C-9	3 1/2
			60529	40A15/CL INT 2/CD	Ceiling Fan	120	12 cds	1000	C-9	3 1/2
		Med	60507	40A15/IF	Appliance	130	120	5000	C-9	3 1/2
			60974	40A15/IF		130	12	5000	C-9	3 1/2
			60975	40A15/CL (1/CD)	Appliance	130	12 cds	5000	C-9	3 1/2
			60509	40A15/CL	Appliance	130	120	5000	C-9	3 1/2
			60510	40A15/TC	Toughcoat	130	120	5000	C-9	3 1/2
			62507	40A15/TC 2PK	Toughcoat	120	12	1000	C-9	3 1/2
			00263^	40A/IF/10M		120	24	10000	C-9	4 1/2
A19	Med	00262^	40A/IF/20M			120	24	20000	C-9	4 1/2
		41005	40A/IF/1M			120	120	1000	C-9	4 1/2
		00268^	40A/IF/5M/D			130	120	5000	C-9	4 1/2
		60008	40A/IF			130	120	5000	C-9	4 1/2
		61207	40A/CL/1M			120	120	1000	C-9	4 1/2
		60131	40A/CL			130	120	5000	C-9	4 1/2
		60945	40A/SOFT WHITE			120	120	2000	CC-6	4 1/2
		63945	40A/SOFT WHITE			120	24	1250	CC-6	4 1/2
		61513	40A/SOFT WHITE/VALUE PACK			120	24	2000	CC-6	4 1/2
		00277^	40A/TC	Toughcoat		130	120	2000	C-9	4 1/2
		60253	40R14/FL			130	60	5000	C-9	2 1/8
R14	Med	60254	40R16/FL			130	60	5000	C-9	2 13/16
		60517	40T10/IF			130	25	5000	CC-8	5 5/8
T10	Med	60979	40T10/CL (1/CD)			130	12 cds	5000	C-8	5 5/8
		60518	40T10/CL			130	25	5000	CC-8	5 5/8
		80347	40T10/TC	Toughcoat		130	25	5000	CC-8	5 5/8
S11	Inter	60986	40S11/N (1/CD)	High Intensity		130	12 cds	1000	CC2-V	2 3/16
		60300	40S11/N	High Intensity		130	120	1000	CC2-V	2 3/16
S14	Med	60938^	40S14/IF (1/CD)			130	12 cds	3000	C-9	3 1/2
		60939	40S14/CL (1/CD)			130	12 cds	3000	C-9	3 1/2

* HI-TEMP lamps should not be used as heat or brooder lamps for poultry or birds

^ Stock available until inventory depleted

See page 66 for lamp description abbreviations

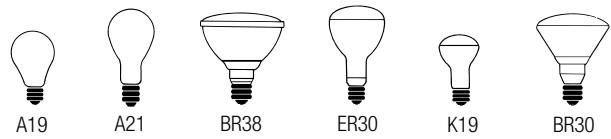


Watts	Bulb	Base	Order Code	Description	Volts	Pkg. Qty.	Apprx. Life (Hrs)	Filament	Length (in.)	Apprx. Lumen
50	A19	Med	00400	50A/IF/12V	12	120	1000	C-9	4 1/2	
			60015	50A/IF/RS	Rough Service	130	120	5000	C-9	4 1/2
			00020^	50A/IF/RS-USA	Rough Service	130	120	5000	C-9	4 1/2
	A21	Med	60901	50/100/150/IF/3-WAY		130	24	2500	CC-8	5 5/16 325/925/1250
	R20	Med	15642	50R20/RFL/5M	Reflector	130	60	5000	C-9	3 15/16 360
			60193	50R20/AMBER		130	60	5000	C-9	3 15/16
			60179	50R20/BLUE		130	60	5000	C-9	3 15/16
			60183	50R20/DAWN-PINK		130	60	5000	C-9	3 15/16
			60181	50R20/GREEN		130	60	5000	C-9	3 15/16
			60186	50R20/PINK		130	60	5000	C-9	3 15/16
			60188	50R20/RED		130	60	5000	C-9	3 15/16
			60191	50R20/YELLOW		130	60	5000	C-9	3 15/16
			60184	50R20/TC	Toughcoat	130	60	5000	C-9	3 15/16
	ER30	Med	01013	50ER30/RFL	Elliptical Reflector	130	24	5000	C-9	6 3/8
	BR30	Med	03219	50BR30/FL	Flood	130	60	5000	C-9	5 3/8
60	A15	Cand	60532	60A15/CL CAN 2/CD	Ceiling Fan	120	12 cds	1000	C-9	4 1/2 750
		Med	60533	60A15/CL 1/CD	Appliance	130	120 cds	5000	C-9	3 1/2 750
			60521	60A15/CL	Appliance	130	120	5000	C-9	3 1/2 600
			60519	60A15/F	Appliance	130	120	5000	C-9	3 1/2 600
			60523	60A15/TC	Appliance Toughcoat	130	120	5000	C-9	3 1/2 588
			62523	60A15/TC 2PK	Appliance Toughcoat	120	12/2pks	1000	C-9	3 1/2 750
	A19	Med	41002	60A/IF/1M		120	120	1000	C-9	4 1/2 765
			16683	60A/IF/2M		120	24	2000	C-9	4 1/2 750
			18610	60A/IF		130	24	5000	C-9	4 1/2 630
			60010	60A/IF		130	120	5000	C-9	4 1/2 630
			00288^	60A/IF/5M/D		130	120	5000	C-9	4 1/2 600
			61204	60A/CL/1M		120	120	1000	C-9	4 1/2 775
			60204	60A/CL/5M		130	120	5000	C-9	4 1/2 630
			00290^	60A/CL/5M/D		130	120	5000	C-9	4 1/2 600
			60950	60A/SOFT WHITE 4 PK		120	120	2000	CC-6	4 1/2 800
			63950	60A/SOFT WHITE 3 PK		120	24	1250	CC-6	4 1/2 800
			61514	60A/SOFT WHITE/VALUE PACK 4 PK		120	24	2000	CC-6	4 1/2 750
			16246	60A/IF/RS/I	Rough Service	130	120	5000	C-9	4 1/2
			00361^	60A/IF/RS-USA	Rough Service	130	120	5000	C-9	4 1/2
			00365	60A/RS/TC	Rough Service Toughcoat	130	120	5000	C-9	4 1/2
			60951	60A/BUG/2PK	Bug Yellow	130	12 pks	2000	C-9	4 1/2

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Watts	Bulb	Base	Order Code	Description	Volts	Pkg. Qty.	Rated Avg. Life (Hrs)	Filament	MOL (in.)	Apprx. Lumen
60	A19	Med	60955	60A/BLACKLIGHT	120	24	1000	C-9	4 1/2	
			00297	60A/TC Toughcoat	130	120	5000	C-9	4 1/2	
65	BR30	Med	00156	65BR30/FL	120	24	2000	C-9	5 3/8	685
			03201	65BR30/FL	130	24	5000	C-9	5 3/8	650
			15670	65BR30/FL	130	60	5000	C-9	5 3/8	650
			00723	65BR30/AMBER	130	24	5000	C-9	5 3/8	
			00720	65BR30/BLUE	130	24	5000	C-9	5 3/8	
			00727	65BR30/DAWN-PINK	130	24	5000	C-9	5 3/8	
			00722	65BR30/GREEN	130	24	5000	C-9	5 3/8	
			00725	65BR30/PINK	130	24	5000	C-9	5 3/8	
			00721	65BR30/RED	130	24	5000	C-9	5 3/8	
			00724	65BR30/YELLOW	130	24	5000	C-9	5 3/8	
			15680	65BR30FL/TC Toughcoat	130	24	5000	C-9	5 5/16	
	BR40	Med	03206	65BR40/FL	130	24	4000	C-9	6 1/2	600
68	A19	Med	01109	K75-68A/IF Krypton	130	120	8000	C-9	4 1/2	640
75	A19	Med	41003	75A/IF/1M	120	120	1000	C-9	4 1/2	975
			16685	75A/IF/2M	120	24	2000	C-9	4 1/2	1030
			60012	75A/IF	130	120	5000	C-9	4 1/2	685
			61205	75A/CL/1M	120	120	1000	C-9	4 1/2	900
			00314^	75A/CL/5M/D	130	120	5000	C-9	4 1/2	685
			60205	75A/CL	130	120	5000	C-9	4 1/2	685
			60016	75A/IF/RS Rough Service	130	120	5000	C-9	4 1/2	620
			00378	75A/RS/TC Rough Service Toughcoat	130	120	5000	C-9	4 1/2	650
			00321	75A/TC Toughcoat	130	120	5000	C-9	4 1/2	650
			60956	75A/SOFT WHITE 4 PK	120	120	1500	CC-6	4 1/2	1080
			63956	75A/SOFT WHITE 3 PK	120	24	1250	CC-6	4 1/2	1080
			61515	75A/SOFT WHITE/VALUE PACK	120	24	1500	CC-6	4 1/2	1080
			60565	75A21/IF/12V	12	120	1000	C-9	5 5/16	
			60550	75A21/IF	130	120	5000	C-9	5 5/16	
ER30	Med		01018	75ER30/RFL Elliptical Reflector	130	24	5000	C-9	6 3/8	690
BR38	Med		00160^	75BR38/FL/2M	120	12	2000	C-9	5 5/16	800

* HI-TEMP lamps should not be used as heat or brooder lamps for poultry or birds

^ Stock available until inventory depleted

See page 66 for lamp description abbreviations

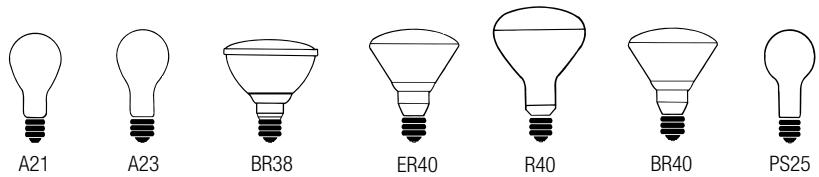


Watts	Bulb	Base	Order Code	Description	Volts	Pkg. Qty.	Rated Avg. Life (Hrs)	Filament	MOL (in.)	Apprx. Lumen	
75	BR38	Med	00510^	75BR38/FL/20M	120	12	20000	C-9	5 5/16	685	
			63036	75BR38/FL	130	12	5000	C-9	5 5/16	900	
			63037	75BR38/FL	130	24	5000	C-9	5 5/16	900	
			03207	75BR40/FL	130	24	5000	C-9	6 1/2	735	
85	BR30	Med	60990	85BR30/FL	130	60	5000	C-9	5 3/8	850	
	BR40	Med	03212	85BR40/FL	130	24	5000	C-9	5 5/16	850	
90	A19	Med	01116^	K100-90A/CL	Krypton	130	120	8000	C-9	4 1/2	890
100	A19	Med	41004	100A/IF/1M		120	120	1000	C-9	4 1/2	1425
			16687	100A/IF/2M		120	24	2000	C-9	4 1/2	1400
			60014	100A/IF/5M		130	120	5000	C-9	4 1/2	1050
			61206	100A/CL/1M		120	120	1000	C-9	4 1/2	1470
			60206	100A/CL		130	120	5000	C-9	4 1/2	1050
			00391	100A/RS/TC	Rough Service Toughcoat	130	120	5000	C-9	4 1/2	
			60018	100A/IF/RS	Rough Service	130	120	5000	C-9	4 1/2	1050
			00044^	100A/IF/RS-USA	Rough Service	130	120	5000	C-9	4 1/2	1050
			60959	100A/SOFT WHITE 4 PK		120	120	1500	CC-6	4 1/2	1580
			63959	100A/SOFT WHITE 3 PK		120	24	1500	CC-6	4 1/2	1580
			61516	100A/SOFT WHITE VALUE PACK 4 PK		120	24	1500	CC-6	4 1/2	1580
			60948	100A/BUG/YELLOW/2PK		130	12 pks	2000	C-9	4 1/2	
			16543^	100A/C-GREEN		130	24	2500	C-9	4 1/2	
			16544^	100A/C-ORANGE		130	24	2500	C-9	4 1/2	
			00343	100A/TC	Toughcoat	130	120	5000	C-9	4 1/2	1030
K19	K19	Med	61008^	100K19/RFL/2PK	Directional Reflector	120	12 pks	1150	C-9	4 1/2	1200
A21	A21	Med	60567	100A21/IF/12V		12	120	1000	C-9	5 5/16	1750
			60569	100A21/IF/34V		34	120	1000	C-9	5 5/16	
			60551	100A21/IF		130	120	5000	C-9	5 5/16	1100
			00685	100A21/TC	Toughcoat	130	120	5000	C-9	5 5/16	1075
A23	A23	Med	60580	100A23/IF		130	60	5000	C-9	6 5/16	1125
BR38	BR38	Med	00515	100BR38/FL		130	12	5000	C-9	5 5/16	

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^ Stock available until inventory depleted

See page 66 for lamp description abbreviations



Watts	Bulb	Base	Order Code	Description	Volts	Pkg. Qty.	Rated Avg. Life (Hrs)	Filament	MOL (in.)	Apprx. Lumen
100	BR38	Med	03046	100BR38/AMBER	130	12	5000	C-9	5 5/16	
			03041	100BR38/BLUE	130	12	5000	C-9	5 5/16	
			03040	100BR38/BUG/YELLOW	130	12	5000	C-9	5 5/16	
			03049	100BR38/DAWN PINK	130	12	5000	C-9	5 5/16	
			03042	100BR38/GREEN	130	12	5000	C-9	5 5/16	
			03044	100BR38/RED	130	12	5000	C-9	5 5/16	
			03043	100BR38/PINK	130	12	5000	C-9	5 5/16	
			03048^	100BR38/SNOWWHITE	130	12	5000	C-9	5 5/16	
			00516	100BR38/1/CL/WP Weatherproof Heat Clear	130	12	8000	C-9	5 5/16	
			03515*	100BR38/FL/TC/HI-TEMP	130	12	5000	C-9	5 5/16	
120	BR40	Med	03209	100BR40/FL	130	24	5000	C-9	6 1/2	945
			01134^	K150-120BR38/FL	Krypton	130	12	8000	C-9	5 5/16
			03208	120BR40/FL		130	24	5000	C-9	6 1/2 1380
			03210	120BR40/SP		130	24	5000	C-9	6 1/2 1380
125	ER40	Med	00775	120BR40/TC	Toughcoat	130	24	5000	C-9	6 1/2 1380
			01029	120ER40/RFL	Elliptical Reflector	130	24	5000	C-9	7 3/8 930
			03495	125BR40/1/CL	Clear	120	12	6000	C-9	6 1/2
135	A21	Med	03119^	K150-135A21/CL	Krypton	130	120	8000	C-9	5 5/16 1650
			03005	150A21/IF		130	24	5000	C-9	5 5/16 1770
150	A21	Med	60150	150A21/IF/RS	Rough Service	130	120	5000	C-9	5 5/16 1770
			03006	150A21/CL		130	24	5000	C-9	5 5/16 1770
			60151	150A21/CL		130	120	5000	C-9	5 5/16 1770
			00393^	150A21/IF/RS	Rough Service	130	120	5000	C-9	5 5/16 1770
150	A23	Med	60169	150A23/IF		130	60	5000	C-9	6 5/16 1770
			00477^	150A23/TC	Toughcoat	130	60	5000	C-9	6 5/16 1770
150	PS25	Med	60156	150PS25/IF		130	60	5000	C-9	6 13/16 1770
			03054	150BR38/SP		130	12	5000	C-9	5 5/16 1730
150	BR38	Med	63050	150BR38/FL		130	12	5000	C-9	5 5/16 1730
			63051	150BR38/FL		130	24	5000	C-9	5 5/16 1730
150	PAR38	Med	03508*	150PAR38/FL/TC/ HI-TEMP		130	12	5000	C-9	5 5/16 1730
			00526	175BR38/1/CL/WP Weatherproof Clear		130	12	8000	C-9	5 5/16
175	BR38	Med	00527	175BR38/10/WP Weatherproof Red		130	12	8000	C-9	5 5/16
			03512*	175BR38/1/CL/HI-TEMP		130	12	8000	C-9	5 5/16
175	PAR38	Med/Skt	00525	175PAR38/1/CL Med SKT		130	12	8000	C-9	5 5/16

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^ Stock available until inventory depleted

See page 66 for lamp description abbreviations

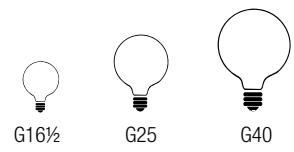


Watts	Bulb	Base	Order Code	Description	Volts	Pkg. Qty.	Rated Avg. Life (Hrs)	Filament	MOL (in.)	Apprx. Lumen
200	A23	Med	00039	200A23/IF	130	24	5000	C-9	6 5/16	2335
			60152	200A23/IF	130	60	5000	C-9	6 5/16	2335
			00041	200A23/CL	130	24	5000	C-9	6 5/16	2390
			60153	200A23/CL	130	60	5000	C-9	6 5/16	2390
			00474	200A23/IF/RS Rough Service	130	60	5000	C-9	6 5/16	2335
PS25	Med		60154	200PS25/IF	130	60	5000	C-9	6 13/16	2335
			60168	200PS25/TC Toughcoat	130	60	5000	C-9	6 13/16	2288
250	BR40	Med	17526	250BR40/1/CL	Clear Heat	120	3	6000	C-9	6 1/2
			03496	250BR40/1/CL/BX	Clear Heat	120	12	6000	C-9	6 1/2
			00098	250BR40/AUTO	Frost Heat	120	12	6000	C-9	6 1/2
			03509*	250BR40/1/CL/TC/HI-TEMP	Coated	120	12	6000	C-9	6 1/2
R40	Med		17527	250R40/10/WP	Weatherproof Red	120	3	6000	C-9	6 1/2
			03072	250R40/10/WP/BX	Weatherproof Red	120	12	6000	C-9	6 1/2
			03510*	250R40/10/WP/TC/HI-TEMP	Coated Weatherproof Red	120	12	6000	C-9	6 1/2
300	PS25	Med	60158	300PS25/IF		130	60	5000	C-9	6 13/16
			00040	300PS25/IF		130	24	5000	C-9	6 13/16
			60159	300PS25/CL		130	60	5000	C-9	6 13/16
			00042	300PS25/CL		130	24	5000	C-9	6 13/16
PS35	Mog		30204	300PS35/IF		130	24	5000	C-9	9 1/8
			00535	300BR38/FL		130	24	5000	C-9	5 5/16
375	R40	Med	60200	375R40/1/CL	Clear Heat	120	12	5000	C-9	6 1/2
			60202	375R40/1/CL 3PK	Clear Heat	125	3	6000	C-9	6 1/2
			60201*	375R40/1/CL/TC/HI-TEMP	Clear Heat	125	12	6000	C-9	6 1/2
500	PS35	Mog	30207	500PS35/CL		130	24	5000	C-9	9 1/8
										7825

* HI-TEMP lamps should not be used as heat or brooder lamps for poultry or birds.

^ Stock available until inventory depleted

See page 66 for lamp description abbreviations.



Watts	Bulb	Base	Order Code	Description	Volts Qty.	Pkg.	Rated Avg. Life (Hrs)	Filament	MOL (in.)
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Complexion or Vanity — 2" Diameter - Boxed

15	G16 1/2	Cand	17698	15G161/2/WH/BX	130	25	3000	C-7A	3
			17697	15G161/2/CL/BX	130	25	3000	C-7A	3
25	G16 1/2	Cand	60463	25G161/2/WH/BX	130	25	3000	C-7A	3
			60462	25G161/2/CL/BX	130	25	3000	C-7A	3
40	G16 1/2	Cand	60465	40G161/2/WH/BX	130	25	3000	C-7A	3
			60464	40G161/2/CL/BX	130	25	3000	C-7A	3
60	G16 1/2	Cand	60520	60G161/2/W/BX	130	25	3000	C-7A	3
			60466	60G161/2/CL/BX	130	25	3000	C-7A	3

Complexion or Vanity — 2" Diameter - Carded

25	G16 1/2	Cand	60905	25G161/2/WH (2/CD)	130	12 cds	3000	C-7A	3
			60904	25G161/2/CL (2/CD)	130	12 cds	3000	C-7A	3
40	G16 1/2	Cand	60907	40G161/2/WH (2/CD)	130	12 cds	3000	C-7A	3
			60906	40G161/2/CL (2/CD)	130	12 cds	3000	C-7A	3

Mini Globe Bulb — 3" Diameter

25	G25	Med	60966	25G25/CL	130	60	5000	C-9	4 7/16
			60967	25G25/WH	130	60	5000	C-9	4 7/16
40	G25	Med	60968	40G25/CL	130	60	5000	C-9	4 7/16
			60969	40G25/WH	130	60	5000	C-9	4 7/16
			60970	40G25/WH/3PK	130	20 pks	5000	C-9	4 7/16
60	G25	Med	60971	60G25/CL	130	60	5000	C-9	4 7/16
			61005	60G25/WH	120	60	1500	C-9	4 7/16
			60972	60G25/WH	130	60	5000	C-9	4 7/16
			60973	60G25/WH/3PK	130	20 pks	5000	C-9	4 7/16

Globe Bulb — 5" Diameter

40	G40	Med	61010	40G40/CL	130	24	5000	C-9	6 15/16
			61011	40G40/WH	130	24	5000	C-9	6 15/16
60	G40	Med	61012	60G40/CL	130	24	5000	C-9	6 15/16
			61013	60G40/WH	130	24	5000	C-9	6 15/16
100	G40	Med	61014	100G40/CL	130	24	5000	C-9	6 15/16
			61015	100G40/WH	130	24	5000	C-9	6 15/16

See page 66 for lamp description abbreviations



BA9



BA9 Carded



B 10 1/2



B 10 1/2 Carded

Watts	Bulb	Base	Order Code	Description	Volts Qty.	Pkg.	Rated Avg. Life (Hrs)	Filament	MOL (in.)
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Flame Tip — Candelabra — Boxed

15	BA-9	Cand	17675	15FC/IF/BX	130	25	3000	C-7A	3 3/4
			17676	15FC/CL/BX	130	25	3000	C-7A	3 3/4
25	BA-9	Cand	60482	25FC/IF/BX	130	25	3000	C-7A	4 3/16
			60483	25FC/CL/BX	130	25	3000	C-7A	4 3/16
40	BA-9	Cand	60486	40FC/IF/BX	130	25	3000	C-7A	4 3/16
			60487	40FC/CL/BX	130	25	3000	C-7A	4 3/16
60	BA-9	Cand	60490	60FC/IF/BX	130	25	3000	C-7A	4 3/16
			60491	60FC/CL/BX	130	25	3000	C-7A	4 3/16

Flame Tip — Candelabra — Carded

15	BA-9	Cand	60931	15FC/IF (2/CD)	130	12 cds	3000	C-7A	4 3/16
			60932	15FC/CL (2/CD)	130	12 cds	3000	C-7A	4 3/16
25	BA-9	Cand	60919	25FC/IF (2/CD)	130	12 cds	3000	C-7A	4 3/16
			60920	25FC/CL (2/CD)	130	12 cds	3000	C-7A	4 3/16
40	BA-9	Cand	60923	40FC/IF (2/CD)	130	12 cds	3000	C-7A	4 3/16
			60924	40FC/CL (2/CD)	130	12 cds	3000	C-7A	4 3/16
60	BA-9	Cand	60927	60FC/IF (2/CD)	130	12 cds	3000	C-7A	4 3/16
			60928	60FC/CL (2/CD)	130	12 cds	3000	C-7A	4 3/16

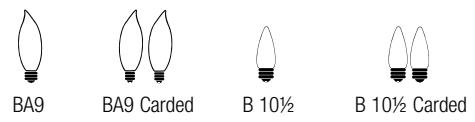
Torpedo — Candelabra — Boxed

15	B10 1/2	Cand	17709	15TC/CL/BX	130	25	3000	C-7A	4 1/16
25	B10 1/2	Cand	60467	25TC/IF/BX	130	25	3000	C-7A	4 1/16
			60468	25TC/CL/BX	130	25	3000	C-7A	4 1/16
40	B10 1/2	Cand	60472	40TC/IF/BX	130	25	3000	C-7A	4 1/16
			60473	40TC/CL/BX	130	25	3000	C-7A	4 1/16
60	B10 1/2	Cand	60477	60TC/IF/BX	130	25	3000	C-7A	4 1/16
			60478	60TC/CL/BX	130	25	3000	C-7A	4 1/16

Torpedo — Candelabra — Carded

25	B10 1/2	Cand	60908	25TC/IF (2/CD)	130	12 cds	3000	C-7A	4 1/16
			60909	25TC/CL (2/CD)	130	12 cds	3000	C-7A	4 1/16
40	B10 1/2	Cand	60912	40TC/IF (2/CD)	130	12 cds	3000	C-7A	4 1/16
			60913	40TC/CL (2/CD)	130	12 cds	3000	C-7A	4 1/16
60	B10 1/2	Cand	60916	60TC/IF (2/CD)	130	12 cds	3000	C-7A	4 1/16
			60917	60TC/CL (2/CD)	130	12 cds	3000	C-7A	4 1/16

See page 66 for lamp description abbreviations



Watts	Bulb	Base	Order Code	Description	Volts Qty.	Pkg.	Rated Avg. Life (Hrs)	Filament	MOL (in.)	
Flame Tip — Medium — Boxed										
25	BA-9	Med	60484	25FM/IF/BX	130	25	3000	C-7A	4 1/16	
			60485	25FM/CL/BX	130	25	3000	C-7A	4 1/16	
40	BA-9	Med	60488	40FM/IF/BX	130	25	3000	C-7A	4 1/16	
			60489	40FM/CL/BX	130	25	3000	C-7A	4 1/16	
60	BA-9	Med	60492	60FM/IF/BX	130	25	3000	C-7A	4 1/16	
			60493	60FM/CL/BX	130	25	3000	C-7A	4 1/16	
Flame Tip — Medium — Carded										
25	BA-9	Med	60921	25FM/IF (2/CD)	130	12 cds	3000	C-7A	4 1/16	
			60922	25FM/CL (2/CD)	130	12 cds	3000	C-7A	4 1/16	
40	BA-9	Med	60925	40FM/IF (2/CD)	130	12 cds	3000	C-7A	4 1/16	
			60926	40FM/CL (2/CD)	130	12 cds	3000	C-7A	4 1/16	
60	BA-9	Med	60929	60FM/IF (2/CD)	130	12 cds	3000	C-7A	4 1/16	
			60930	60FM/CL (2/CD)	130	12 cds	3000	C-7A	4 1/16	
Torpedo — Medium — Boxed										
25	B10 1/2	Med	60469	25TM/IF/BX	130	25	3000	C-7A	3 3/4	
			60471	25TM/CL/BX	130	25	3000	C-7A	3 3/4	
40	B10 1/2	Med	60474	40TM/IF/BX	130	25	3000	C-7A	3 3/4	
			60475	40TM/CL/BX	130	25	3000	C-7A	3 3/4	
60	B-10 1/2	Med	60479	60TM/IF/BX	130	25	3000	C-7A	3 3/4	
			60480	60TM/CL/BX	130	25	3000	C-7A	3 3/4	
			60374	60TM/TC/BX	Toughcoat	130	25		C-7A	3 3/4
Torpedo — Medium — Carded										
25	B-10 1/2	Med	60910	25TM/IF (2/CD)	130	12 cds	3000	C-7A	3 3/4	
			60911	25TM/CL (2/CD)	130	12 cds	3000	C-7A	3 3/4	
40	B-10 1/2	Med	60914	40TM/IF (2/CD)	130	12 cds	3000	C-7A	3 3/4	
			60915	40TM/CL (2/CD)	130	12 cds	3000	C-7A	3 3/4	
60	B-10 1/2	Med	60987	60TM/IF (2/CD)	130	12 cds	3000	C-7A	3 3/4	
			60918	60TM/CL (2/CD)	130	12 cds	3000	C-7A	3 3/4	

See page 66 for lamp description abbreviations



Halogen



HALOGEN LAMPS

Halogen lamps cost more than standard incandescent light bulbs, but their energy-efficiency and longer life (2,500 hours) make up for the difference in the initial cost. Like standard incandescents, halogen lamps also produce light by using a tungsten filament heated by electricity. In the halogen lamp, the halogen gas-fill causes the particles of tungsten to be redeposited on the filament. This increases the lumens per watt (LPW), produces whiter light and longer life and slows lumen depreciation.

The Havells halogen portfolio contains a broad range of halogen PAR lamps that deliver crisp white light in both indoor and outdoor applications where accuracy and beam control are desired. Our halogen PARs are available in four different beam spreads ranging from a 10 degree spot to a 50 degree wide flood and are suitable for dimming applications.

Halogen applications

- Accent lighting
- Recessed lighting
- Track and spot lighting

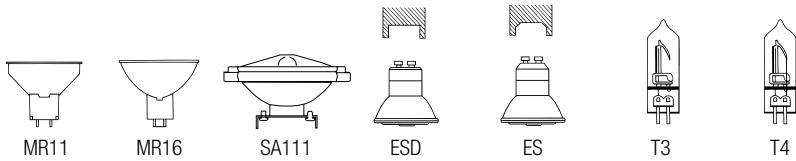




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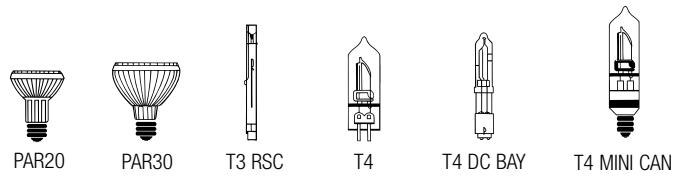


Watts	Bulb	Base	Order Code	Description	Beam Spread	Volts	Pkg. Qty.	Apprx. Hours	Filament	Length (in.)	CBCP (1)
MR11 Display (Open reflector)											
20	MR11	GZ4	60211	20MR11/SP FTB	12°	12	10	3000	C-8	1 7/16	5000
			60212	20MR11/NFL FTC	20°	12	10	3000	C-8	1 7/16	1800
			60210	20MR11/FL FTD	30°	12	10	3000	C-8	1 7/16	700
35	MR11	GZ4	60214	35MR11/NFL FTF	20°	12	10	3000	C-8	1 7/16	3000
			60215	35MR11/FL FTH	30°	12	10	3000	C-8	1 7/16	1500
MR16 Display (Open reflector)											
20	MR16	GU5.3	60266	Q20MR16/NSP ESX	12°	12	10	3000	C-8	1 3/4	3000
			60249	Q20MR16/FL BAB	36°	12	10	3000	C-8	1 3/4	600
50	MR16	GU5.3	60238	Q50MR16/NSP EXT	12°	12	10	3000	C-8	1 3/4	10000
			60270	Q50MR16/NFL EXZ	24°	12	10	3000	C-8	1 3/4	1500
			60268	Q50MR16/WFL EXN	38°	12	50	3000	C-8	1 3/4	300
75	MR16	GU5.3	60257	Q75MR16/WFL EYC	38°	12	10	3000	C-8	1 3/4	2200
Superia MR16 Dichroic (Lensed reflector w/UV Stop. Suitable for open fixtures.)											
20	MR16	GU5.3	14800	20MR16/SP/10/C	10°	12	10	5000	C-8	1 15/16	4000
			14801	20MR16/FL/38/C	38°	12	10	5000	C-8	1 15/16	1800
35	MR16	GU5.3	14810	35MR16/SP/10/C	10°	12	10	5000	C-8	1 15/16	7700
			14811	35MR16/FL/38/C	38°	12	10	5000	C-8	1 15/15	3250
			14812	35MR16/WFL/60/C	60°	12	10	5000	C-8	1 15/16	1450
50	MR16	GU5.3	14820	50MR16/SP/10/C	10°	12	10	5000	C-8	1 15/16	11500
			14823	50MR16/NFL/24/C	24°	12	10	5000	C-8	1 15/16	3600
			14821	50MR16/FL/38/C	38°	12	10	5000	C-8	1 15/16	2250
			14822	50MR16/WFL/60/C	60°	12	10	5000	C-8	1 15/16	1000
SA111 Halogen											
50	SA111	G53	12001	50SA111/FL	24°	12	6	3000	C-8	2 3/16	4000
75	SA111	G53	12005	75SA111/FL	24°	12	6	3000	C-8	2 3/16	5300
100	SA111	G53	12010	100SA111/SP	8°	12	6	3000	C-8	2 3/16	48000
100	SA111	G53	12011	100SA111/FL	24°	12	6	3000	C-8	2 3/16	8500
Dichroic Reflector Hi-Spot Line Voltage Display Halogen (No transformer needed)											
50	ESD	GZ10	14002^	50ESD-16/25	25°	120	15	2000	C-8	2 1/4	1400
75	ESD	GZ10	14102^	75ESD-20/25	25°	120	15	2000	C-8	2 1/2	3000
Aluminum Reflector											
50	ES	GU10	14000	50ES-16/25	25°	120	15	2000	C-8	2 1/4	1400
			14001	50ES-16/50	50°	120	15	2000	C-8	2 1/4	650
75	ES	GU10	14100	75ES-20/25	25°	120	15	2000	C-8	2 1/2	3000
			14101	75ES-20/50	50°	120	15	2000	C-8	2 1/2	1300
Bi-Pin Display (For use in enclosed fixtures)											
20	T3	G-4	14851	20T3Q/CL		12	50	3000	C-8	1 5/16	350
50	T4	GY6.35	14850	50T4Q/CL		12	50	3000	C-8	1 3/4	1000

(1) Center Beam Candle Power

^ Stock available until inventory depleted

See page 66 for lamp description abbreviations

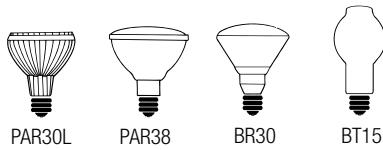


Watts	Bulb	Base	Order Code	Description	Beam Spread	Volts	Pkg. Qty.	Apprx. Hours	Filament	Length (in.)	Apprx. Lumen	CBCP (1)
Single Ended T4												
75	T4	Mini Can	60262	75Q/CL Mini-Can		130	10	2000	CC-8	2 9/16		1400
100	T4	Mini Can	60263	100Q/CL Mini-Can		130	10	2000	CC-8	3		1900
150	T4	Mini Can	60265	150Q/CL Mini-Can		130	10	2000	CC-8	2 5/8		2700
		DC Bay	60267	150Q/CL DC Bay		130	10	2000	CC-8	2 9/16		2700
250	T4	Mini Can	60269	250Q/CL Mini-Can		130	10	2000	CC-8	3 1/8		4800
		DC Bay	60271	250Q/CL DC Bay		130	10	2000	CC-8	2 13/16		4800
500	T4	Mini Can	60273	500Q/CL Mini-Can		130	10	2000	CC-8	3 5/8		7850
Double Ended T3												
100	T3	RSC	14904	100T3Q/CL		120	50	2000	C-8	3 1/8		1400
150	T3	RSC	61000	150T3Q/S/CL (1/CD)		130	12 cds	2000	C-8	3 1/8		2400
300	T3	RSC	60272	300T3Q/CL		130	12	2000	C-8	4 11/16		6000
			60995	300T3Q/CL (1/CD)		130	12 cds	2000	C-8	4 11/16		6000
500	T3	RSC	60275	500T3Q/CL		130	12	2000	C-8	4 11/16		10500
			60996	500T3Q/CL (1/CD)		130	12 cds	2000	C-8	4 11/16		10500
1500	T3	RSC	60276	1500T3Q/CL-240		240	12	2000	C-8	10 1/16		33000
			60277	1500T3Q/CL-277		277	12	2000	C-8	10 1/16		33000
PAR20 Halogen												
50	PAR20	Med	14203^	H50PAR20/SP/10	10°	120	15	2500	CC-8	3 3/8	550	5000
			14204	H50PAR20/FL/30	30°	120	15	2500	CC-8	3 3/8	550	1250
			14253	H50PAR20/SP/10	10°	130	15	2500	CC-8	3 3/8	550	5000
			14254	H50PAR20/FL/30	30°	130	15	2500	CC-8	3 3/8	550	1250
PAR30 Halogen												
50	PAR30	Med	14500^	H50PAR30/SP/10	10°	120	15	2500	CC-8	3 5/8	600	8000
			14501	H50PAR30/FL/30	30°	120	15	2500	CC-8	3 5/8	600	1300
			54551	H50PAR30/FL/TC/30	30°	130	15	2500	CC-8	3 5/8	600	1300
			14502	H50PAR30/WFL/40	40°	120	15	2500	CC-8	3 5/8	600	500
			14550	H50PAR30/SP/10	10°	130	15	2500	CC-8	3 5/8	600	8000
			14551	H50PAR30/FL/30	30°	130	15	2500	CC-8	3 5/8	600	1300
			14552	H50PAR30/WFL/40	40°	130	15	2500	CC-8	3 5/8	600	500
75	PAR30	Med	14503	H75PAR30/SP/10	10°	120	15	2500	CC-8	3 5/8	1100	14000
			14504	H75PAR30/FL/30	30°	120	15	2500	CC-8	3 5/8	1100	3000
			54554	H75PAR30/FL/TC/30	30°	120	15	2500	CC-8	3 5/8	1100	3000
			14505	H75PAR30/WFL/40	40°	120	15	2500	CC-8	3 5/8	1100	2000
			14553	H75PAR30/SP/10	10°	130	15	2500	CC-8	3 5/8	1100	14000
			14554	H75PAR30/FL/30	30°	130	15	2500	CC-8	3 5/8	1100	3000
			14555	H75PAR30/WFL/40	40°	130	15	2500	CC-8	3 5/8	1100	2000
PAR30 Halogen Long Neck												
50	PAR30L	Med	30257	H50PAR30/LN/SP/12	12°	130	15	2500	CC-8	4 1/2	600	1300
			30256	H50PAR30/LN/NFL/30	30°	130	15	2500	CC-8	4 1/2	600	8000
			30258	H50PAR30/LN/WFL/50	50°	120	15	2500	CC-8	4 1/2	600	500
			30265	H50PAR30/LN/WFL/50	50°	130	15	2500	CC-8	4 1/2	600	500
75	PAR30L	Med	30262	H75PAR30/LN/SP/12	12°	130	15	2500	CC-8	4 1/2	1100	3000
			30261	H75PAR30/LN/NFL/30	30°	130	15	2500	CC-8	4 1/2	1100	14000
			30259	H75PAR30/LN/WFL/50	50°	120	15	2500	CC-8	4 1/2	1100	2000
			30260	H75PAR30/LN/WFL/50	50°	130	15	2500	CC-8	4 1/2	1100	2000

(1) Center Beam Candle Power

^ Stock available until inventory depleted

See page 66 for lamp description abbreviations



Watts	Bulb	Base	Order Code	Description	Beam Spread	Volts	Pkg. Qty.	Apprx. Hours	Filament	Length (in.)	Apprx. Lumen	CBCP (1)
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PAR38 Halogen

45	PAR38	Med	14700	H45PAR38/SP/10	10°	120	15	2500	CC-8	5 5/16	530	5800	
			14701	H45PAR38/FL/30	30°	120	15	2500	CC-8	5 5/16	530	2000	
			14750	H45PAR38/SP/10	10°	130	15	2500	CC-8	5 5/16	530	5800	
			14751	H45PAR38/FL/30	30°	130	15	2500	CC-8	5 5/16	530	2000	
			14758	H45PAR38/WFL/50	50°	130	15	2500	CC-8	5 5/16	530	2000	
60	PAR38	Med	14706	H60PAR38/SP/10	10°	120	15	2500	CC-8	5 5/16	900	8400	
			14707	H60PAR38/FL/30	30°	120	15	2500	CC-8	5 5/16	900	3000	
			14756	H60PAR38/SP/10	10°	130	15	2500	CC-8	5 5/16	900	8400	
			14757	H60PAR38/FL/30	30°	130	15	2500	CC-8	5 5/16	900	3000	
75	PAR38	Med	14702	H75PAR38/SP/10	10°	120	15	2500	CC-8	5 5/16	1100	11500	
			14703	H75PAR38/FL/30	30°	120	15	2500	CC-8	5 5/16	1100	3900	
			14752	H75PAR38/SP/10	10°	130	15	2500	CC-8	5 5/16	1100	11500	
			14753	H75PAR38/FL/30	30°	130	15	2500	CC-8	5 5/16	1100	3900	
90	PAR38	Med	14704	H90PAR38/SP/10	10°	120	15	2500	CC-8	5 5/16	1300	14500	
			14705	H90PAR38/FL/30	30°	120	15	2500	CC-8	5 5/16	1300	4500	
			14754	H90PAR38/SP/10	10°	130	15	2500	CC-8	5 5/16	1300	14500	
			14755	H90PAR38/FL/30	30°	130	15	2500	CC-8	5 5/16	1300	4500	
			54755	H90PAR38/FL/TC	Toughcoat	30°	130	15	2500	CC-8	5 5/16	1300	4500
120	PAR38	Med	30280	H120PAR38/FL/30	30°	130	15	2500	CC-8	5 5/16	1800	4600	
			30281	H120PAR38/FL/10	10°	130	15	2500	CC-8	5 5/16	1800	22500	

Crystal-Lux Indoor Halogen BR30

60	BR30	Med	15668	H60BR30/FL 80°	Crystal-Lux	120	24	2500	C-8	5	730	
75	BR30	Med	15669	H75BR30/FL 80°	Crystal-Lux	120	24	2500	C-8	5	900	

Crystal-Lux Indoor Halogen BT15

60	BT15	Med	30270	BC-H60BT15/CL	1/CD Crystal-Lux	120	24 cds	2500	CC-8	4	930	
			30271	BC-H60BT15/WH	1/CD Crystal-Lux	120	24 cds	2500	CC-8	4	840	
75	BT15	Med	30272	BC-H75BT15/WH	1/CD Crystal-Lux	120	24 cds	2500	CC-8	4	980	
100	BT15	Med	30273	BC-H100BT15/WH	1/CD Crystal-Lux	120	24 cds	2500	CC-8	4	1620	

Halogen ECO

28	A19	Med	30290	28A19/CL		120	24	2000			345	800
42	A19	Med	30291	42A19/CL		120	24	2000			630	800
53	A19	Med	30294	53A19/CL		120	24	2000			850	800
70	A19	Med	30295	70A19/CL		120	24	2000			1200	800

Decorative Bulbs

28	C12	Cand	30292	28C12/CL/Decor		120	24	2000			345	2800
42	C12	Cand	30293	42C12/CL/Decor		120	24	2000			630	2800

Reflector

53	R30	Med	30296	53R30/CL		120	24	2000			750	2800
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(1) Center Beam Candle Power

See page 66 for lamp description abbreviations



Linear Fluorescent



LINEAR FLUORESCENT

Havells family of energy-efficient linear fluorescent lamps is the heart of a cost-effective lighting system for new commercial construction or an energy cost-saving lighting upgrade. We manufacture a wide variety of long-life (7,500 to 24,000 hours) fluorescent products including T5, T5HO, T8 and T12 models in linear, U-bent and circline configurations.

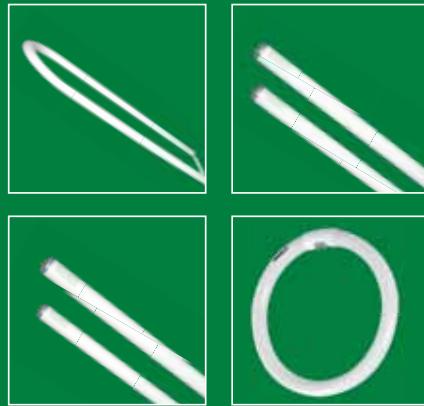
For maximum lumen maintenance, Havells T8 lamps feature a cathode guard around each electrode to effectively reduce lamp darkening and retain a clean appearance in the fixture throughout lamp life. Havells T8 and T12 lamps designated Eco-Line are low-mercury TCLP-compliant lamps which can be disposed of as non-hazardous waste in most states, reducing disposal costs.

T5 fluorescent lamps are thinner, more efficient, and offer a higher intensity of light output than T8 lamps. The T5 High Output (HO) fluorescent high bay lamp delivers highly controlled, high-intensity vertical light output and superior lumen maintenance.

Fluorescent applications

- General purpose low bay (i.e., low ceilings, less than 15 feet) interior lighting
- Low bay manufacturing
- Task lighting
- (T5) cove lighting and display cases
- (T5 HO) high ceilings greater than 15 feet



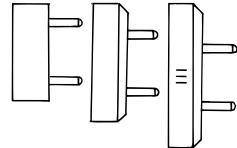
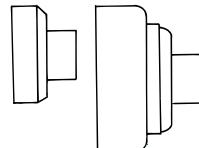
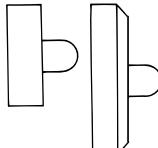
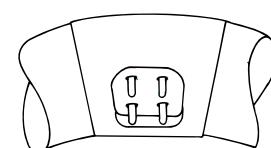


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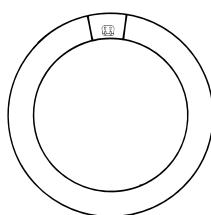
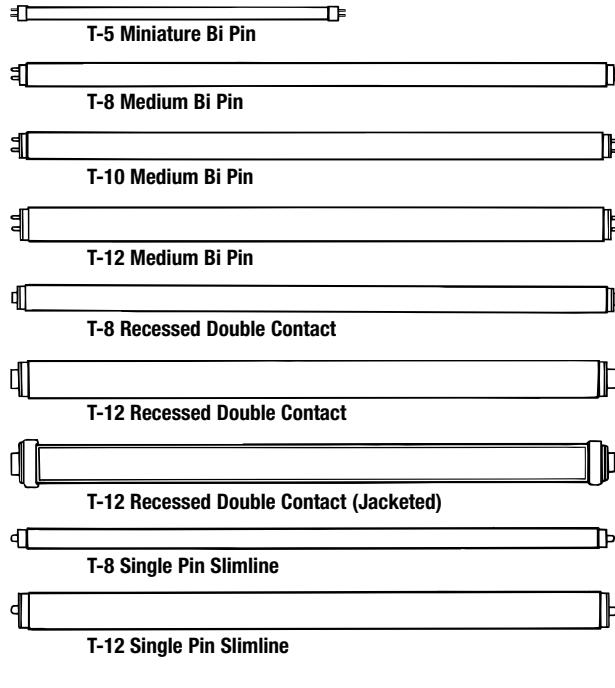
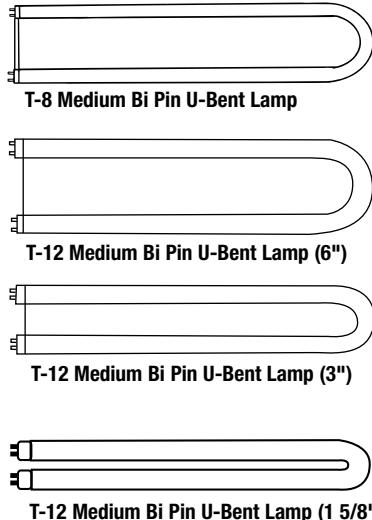


Base Types (Not Actual Sizes)

Miniature
Bi Pin T-5
Min. Bi PinMedium
Bi Pin T-8/T-10/T-12
Med. Bi PinRecessed Double
Contact T-8/T-12
Recessed D.C.Slimline
Single Pin
T-8/T-12Circle
4-Pin

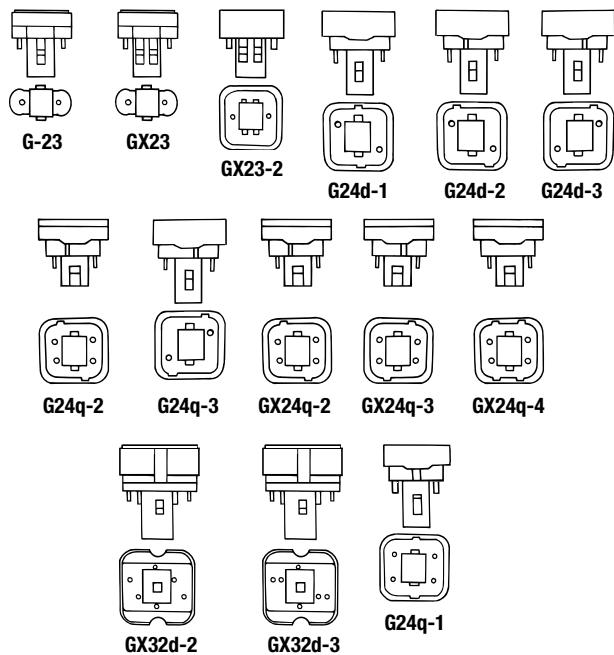
Bulb Shapes (Not Actual Sizes)

The size and shape of a bulb is designated by a letter followed by a number. The letter indicates the shape of the bulb while the number indicates the diameter of the bulb in eighths of an inch. For example, "T-12" is a tubular shaped bulb having a diameter of 12/8 or 1 1/2 inches. The following illustrations show some of the more popular bulb shapes and sizes.

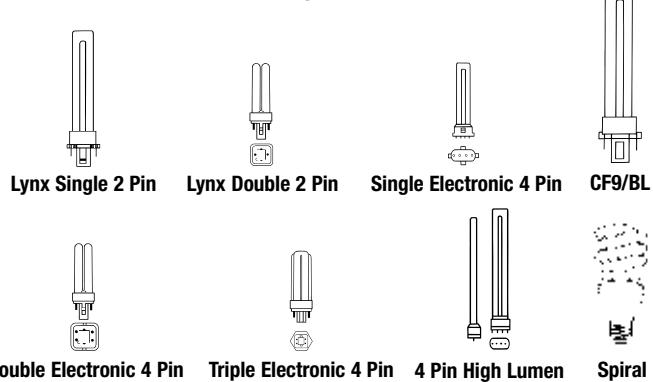
T-9
4-Pin
Circline

T-12 Medium Bi Pin U-Bent Lamp (1 5/8")

Compact Fluorescent Lamp Bases



Compact Fluorescent Lamp Bases





Watts	Nom. Length (in.)	Base	Bulb	Order Code	Description	Pkg. Qty.	Rated Avg. Life (Hrs)	Initial Lumens	Design Lumens	Color Temp. (Kelvin)	CRI	
T-5 HIGH EFFICIENCY												
14	24	Mini Bi Pin	T5	00800	F14T5/830	25	20000	1350	1275	3000	85	
				00801	F14T5/835	25	20000	1350	1275	3500	85	
				00802	F14T5/841	25	20000	1350	1275	4100	85	
21	34	Mini Bi Pin	T5	00813	F21T5/830	25	20000	2100	2000	3000	85	
				00814	F21T5/835	25	20000	2100	2000	3500	85	
				00815	F21T5/841	25	20000	2100	2000	4100	85	
28	48	Mini Bi Pin	T5	00803	F28T5/830	25	24000	2900	2750	3000	85	
				00804	F28T5/835	25	24000	2900	2750	3500	85	
				00805	F28T5/841	25	24000	2900	2750	4100	85	
				62805	F28T5/841/TC	Toughcoat	25	24000	2900	2750	4100	85
T-5 HIGH OUTPUT ENERGY SAVER												
50		Mini Bi Pin	T5	00816	F50T5/841/ES/HO	25	24000	5000	4450	4100	85	
T5 HIGH OUTPUT												
24	24	Mini Bi Pin	T5	00806	F24T5/830/HO	25	20000	2000	1895	3000	85	
				00807	F24T5/835/HO	25	20000	2000	1895	3500	85	
				00808	F24T5/841/HO	25	20000	2000	1895	4100	85	
39	34	Mini Bi Pin	T5	50816	F39T5/830/HO	25	20000	3500	3320	3000	85	
				50817	F39T5/835/HO	25	20000	3500	3320	3500	85	
				50818	F39T5/841/HO	25	20000	3500	3320	4100	85	
54	48	Mini Bi Pin	T5	00809	F54T5/830/HO	25	24000	5000	4740	3000	85	
				62810	F54T5/835/HO/TC	Toughcoat	25	24000	4500	4740	3500	85
				00810	F54T5/835/HO	25	24000	5000	4740	3500	85	
				00811	F54T5/841/HO	25	24000	5000	4740	4100	85	
				61811	F54T5/841/HO	high output	6	24000	5000	4740	4100	85
				62811	F54T5/841/HO/TC	Toughcoat	25	24000	4500	4740	4100	85
				00812	F54T5/850/HO	25	24000	5000	4740	5000	85	
				00839	F54T5/865/HO	high output	25	24000	5000	4740	6500	85
				00840	F54T5/865/HO	high output	6	24000	5000	4740	6500	85
				62812	F54T5/850/HO/TC	Toughcoat	25	24000	4500	4740	5000	85
T-5 PREHEAT												
4	6	Mini Bi Pin	T5	26300	F4T5/CW	Cool White	24	10000	135	95	4100	62
6	9	Mini Bi Pin	T5	26304	F6T5/CW	Cool White	24	10000	295	230	4100	62
8	12	Mini Bi Pin	T5	26301	F8T5/CW	Cool White	24	10000	400	300	4100	62
				26306	F8T5/D	Daylight	24	10000	330	265	6500	79
13	21	Mini Bi Pin	T5	26302	F13T5/CW	Cool White	24	10000	820	665	4100	62
				19000^	F13T5/CW	Cool White	6	10000	820	665	4100	62
T-8 HIGH PERFORMANCE												
17	24	Med Bi Pin	T8	01718	F17T8/730	Eco-Line	25	20000	1325	1200	3000	75
				01717	F17T8/735	Eco-Line	25	20000	1325	1200	3500	75
				01728	F17T8/741	Eco-Line	25	20000	1325	1200	4100	75
				01721	F17T8/830	Eco-Line	25	20000	1400	1315	3000	85
				01720	F17T8/835	Eco-Line	25	20000	1400	1315	3500	85
				01719	F17T8/841	Eco-Line	25	20000	1400	1315	4100	85
				01702	F17T8/850	Eco-Line	25	20000	1400	1315	5000	85
25	36	Med Bi Pin	T8	01724	F25T8/730	Eco-Line	25	20000	2125	1925	3000	75
				01723	F25T8/735	Eco-Line	25	20000	2125	1925	3500	75
				01722	F25T8/741	Eco-Line	25	20000	2125	1925	4100	75
				01727	F25T8/830	Eco-Line	25	20000	2250	2115	3000	85
				01726	F25T8/835	Eco-Line	25	20000	2250	2115	3500	85
				01725	F25T8/841	Eco-Line	25	20000	2250	2115	4100	85
				01703	F25T8/850	Eco-Line	25	20000	2250	2115	5000	85
25	48	Med Bi Pin	T8	01906	F25T8/ES/835/ECO	Eco-Line	25	24000	2500	2350	3500	85
				01907	F25T8/ES/841/ECO	Eco-Line	25	24000	2500	2350	4100	85
				01908	F25T8/ES/850/ECO	Eco-Line	25	24000	2500	2350	5000	85

^ Available until Inventory Depleted

• See page 66 for lamp description abbreviations



Med Bi Pin

T8 Med Bi Pin

T-8 Single Pin Slimline

Watts	MOL (in.)	Base	Bulb	Order Code	Description	Pkg. Qty.	Rated Avg. Life (Hrs)	Initial Lumens	Design Lumens	Color Temp. (Kelvin)	CRI	
T-8 HIGH PERFORMANCE												
28	48	Med Bi Pin	T8	01900	F28T8/830/ES	Eco-Line Energy Saver	25	24000	2775	2635	3000	85
				01901	F28T8/835/ES	Eco-Line Energy Saver	25	24000	2775	2635	3500	85
				01902	F28T8/841/ES	Eco-Line Energy Saver	25	24000	2775	2635	4100	85
				01903	F28T8/850/ES	Eco-Line Energy Saver	25	24000	2775	2635	5000	85
32	48	Med Bi Pin	T8	01920	F32T8/835/HL	Eco-Line High Lumen	25	24000	3100	2915	3500	85
				01921	F32T8/841/HL	Eco-Line High Lumen	25	24000	3100	2915	4100	85
				01923	F32T8/850/HL	Eco-Line High Lumen	25	24000	3100	2915	5000	85
				01711	F32T8/730	Eco-Line	25	20000	2850	2710	3000	75
				01712	F32T8/735	Eco-Line	25	20000	2850	2710	3500	75
				01713	F32T8/741	Eco-Line	25	20000	2850	2710	4100	75
				01911	F32T8/741	Eco-Line	6	20000	2850	2710	4100	75
				01705	F32T8/750	Eco-Line	25	20000	2850	2710	5000	75
				01708	F32T8/830	Eco-Line	25	24000	2950	2800	3000	85
				01709	F32T8/835	Eco-Line	25	24000	2950	2800	3500	85
				01707	F32T8/841	Eco-Line	25	24000	2950	2800	4100	85
				41707	F32T8/841/TC	Toughcoat	30	24000	2950	2800	4100	85
				01704	F32T8/850	Eco-Line	25	24000	2950	2800	5000	85
				01737	F32T8/865	Eco-Line	25	24000	2950	2800	6500	85
58	60	Med Bi Pin	T8	01740	F58T8/835		25	15000	5200	4840	3500	85
				01741	F58T8/841		25	15000	5200	4840	4100	85
70	72	Med Bi Pin	T8	01751	F70T8/841		25	15000	6000	5580	4100	85
				51752	F70T8/860		25	15000	6000	5580	6000	85
59	96	Single Pin	T8	60453	F96T8/730		24	15000	5800	5190	3000	78
				60439	F96T8/735		24	15000	5800	5190	3500	78
				60438	F96T8/741		24	15000	5800	5190	4100	78
				60454	F96T8/835		24	24000	5950		3500	86
				60455	F96T8/841		24	24000	5950		4100	86
				60456	F96T8/850		24	24000	5950		5000	86

T-8 STANDARD

15	18	Med Bi Pin	T8	01714	F15T8/CW	Cool White	25	10000	870	765	4100	62
				01715	F15T8/D	Daylight	25	10000	870	765	6500	76
30	36	Med Bi Pin	T8	17923	F30T8/CW	Cool White	6	7500	2200	2000	4100	62
				60412	F30T8/CW	Cool White	30	7500	2200	2000	4100	62
				01738	F30T8/D	Daylight	25	7500	820	655	6500	76

T-10

40	48	Med Bi Pin	T10	30539	F40T10/4100		25	24000	3700	3300	4100	88
				30540	F40T10/5000		25	24000	3700	3300	5000	88

T-12 ENERGY SAVER

34	48	Med Bi Pin	T12	30530	F34T12/CW/ES	Eco-Line	30	20000	2650	2300	4100	60
				30534	F34T12/CW/ES/Strong Box	Eco-Line	6	20000	2650	2300	4100	60
				30531	F34T12/CW/ES/Strong Box	Eco-Line	30	20000	2650	2300	4100	60
				30537	F34T12/WW/ES	Eco-Line	30	20000	2700	2350	3000	53
				30538	F34T12/WW/ES/Strong Box	Eco-Line	30	20000	2700	2350	3000	53
				18120^	F40T12/LIGHT-WHITE/ES	Light White	6	20000	2850	2500	4100	62

^ Available until Inventory Depleted

See page 66 for lamp description abbreviations



Watts	MOL (in.)	Base	Bulb	Order Code	Description	Pkg. Qty.	Rated Avg. Life (Hrs)	Initial Lumens	Design Lumens	Color Temp. (Kelvin)	CRI
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T-12 ENERGY SAVER

60	96	Single Pin	T12	30545	F96T12/CW/ES	Eco-Line	15	12000	5500	4750	4100	60
				30543	F96T12/CW/ES/Overwrap	Eco-Line	15	12000	5500	4750	4100	60
				18053	F96T12/CW/ES/Strong Box	Eco-Line	15	12000	5500	4750	4100	60
				18117	F96T12/CW/ES/TC	Toughcoat	15	12000	5500	4750	4018	60

T-12 STANDARD

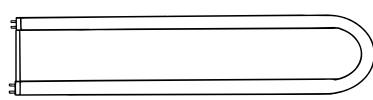
14	15	Med Bi Pin	T12	18187	F14T12/CW	Cool White	30	9000	710	590	4100	62
15	18	Med Bi Pin	T12	60415	F15T12/CW	Cool White	30	9000	800	695	4100	62
20	24	Med Bi Pin	T12	60418	F20T12/CW	Cool White	30	9000	1200	1050	4100	60
30	36	Med Bi Pin	T12	60417	F30T12/CW	Cool White	30	18000	2250	1900	4100	62
				01761	F30T12/DL	Daylight	25	18000	2250	1900	6500	76
40	48	Med Bi Pin	T12	30561	F40T12/CWX/Shoplite		30	20000	3200	1800	4100	72
				30562	F40T12/CWX/Strong Box	Cool White Deluxe	6	20000	3200	1800	4000	72
				30563	F40T12/CWX/Strong Box	Cool White Deluxe	30	20000	3200	1800	4100	72
				18115	F40T12/CWX/TC	Toughcoat	30	20000	2250	1800	4100	89
				30568	F40T12/DL/DLX	Daylight Deluxe	30	20000	2050	2325	6500	90
				30570	F40T12/DL/DLX/Overwrap	Daylight Deluxe	30	20000	2050	2325	6500	90
				30571	F40T12/DL/DX/Strong Box	Daylight Deluxe	30	20000	2050	2325	6500	90
				01774	F40T12/730		25	20000	3200	2750	3000	75
				01771	F40T12/735		25	20000	3200	2750	3500	75
				01782	F40T12/741		25	20000	3200	2750	4100	75
				01775	F40T12/750		25	20000	3200	2750	5000	75
75	96	Single Pin	T12	18072^	F96T12/EXCELLA		15	12000	5370	4720	5765	91
				18074^	F96T12/EXCELLA STRONG BOX	Excella	15	12000	5370	4720	5370	91
				18075^	F96T12/EXCELLA OVERWRAP	Excella	30	12000	5370	4720	5370	91

T-12 SLIM LINE INSTANT START

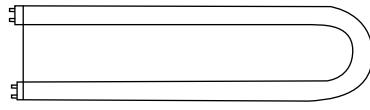
39	48	Single Pin	T12	30525	F48T12/CW		30	9000	2900	2600	4100	62
				30527	F48T12/CW/Strong Box		30	9000	2900	2600	4100	62
50	60	Single Pin	T12	18122	F60T12/CW	Cool White	6	12000	3700	3450	4100	62
56	72	Single Pin	T12	30528	F72T12/CW	Cool White	6	12000	4450	3900	4100	62
75	96	Single Pin	T12	30565	F96T12/DL/DLX		15	12000	4300	3950	6500	90
				30567	F96T12/DL/DLX/Overwrap		15	12000	4500	3950	6500	90

^ Available until Inventory Depleted

See page 66 for lamp description abbreviations



T-8 Medium Bi Pin U-Bent Lamp

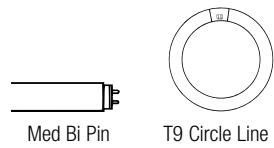


T-12 Medium Bi Pin U-Bent Lamp (6')

Watts	MOL (in.)	Base	Bulb	Order Code	Description	Pkg. Qty.	Rated Avg. Life (Hrs)	Initial Lumens	Design Lumens	Color Temp. (Kelvin)	CRI	
HIGH OUTPUT												
60	48	RDC	T12	30551	F48T12/CW/HO	15	12000	4050	3500	4100	62	
				00301	F48T12/DL/HO	30	12000	3400	3000	6500	76	
85	72	RDC	T12	00340	F72T12/CW/HO	15	12000	6350	5000	4100	60	
				00341	F72T12/D/HO	15	12000	6350	5000	4100	62	
95	96	RDC	T12	30547	F96T12/CW/HO/ES	15	12000	8000	6900	4100	60	
				30548	F96T12/CW/HO/ES/Overwrap	15	12000	8000	6900	4100	60	
110	96	RDC	T12	18731	F96T12/CW/HO/TC	Toughcoat	15	10000	8800	7650	4100	60
				18693	F96T12DL/DLX/HO		15	12000	6100	6788	6500	87
				18694	F96T12/DL/DLX/HO/OVERWRAP		15	12000	6100	6788	6500	87
				01590	F96T12/CW/HO-O	Outdoor	15	10000	14400	7650	4100	60
				30555	F96T12/CW/HO-O/Overwrap	Outdoor	15	10000	14400	7650	4100	60
				18107	F96T12/CW/HO-O/Strong Box	Outdoor	6	10000	14400	7650	4100	60
VERY HIGH OUTPUT												
215	96	RDC	T12	30558	F96T12/CW/VHO	Very High Output	15	10000	13500	10700	4100	60
				30559	F96T12/CW/VHO	Very High Output	30	10000	13500	10700	4100	60
U-BENT T-8 6 INCH												
32	22 1/2	Med Bi Pin	T8	30470	FB32T8/730/6	Eco-Line	20	24000	2750	2475	3000	75
				30472	FB32T8/735/6	Eco-Line	20	24000	2750	2475	3500	75
				30471	FB32T8/741/6	Eco-Line	20	24000	2750	2475	4100	75
				30478	FB32T8/750/6	Eco-Line	20	24000	2750	2475	5000	75
				30475	FB32T8/830/6	Eco-Line	20	24000	2900	2610	3000	85
				30476	FB32T8/835/6	Eco-Line	20	24000	2900	2610	3500	85
				30477	FB32T8/841/6	Eco-Line	20	24000	2900	2610	4100	85
				30479	FB32T8/850/6	Eco-Line	20	24000	2900	2610	5000	85
U-BENT T-8 1-5/8 INCH												
31	22 1/2	Med Bi Pin	T8	30468	FB31T8/835 1-5/8		12	20000	2725	2507	3500	82
31	22 1/2	Med Bi Pin	T8	30469	FB31T8/841 1-5/8		12	20000	2725	2507	4100	82
U-BENT T-12												
34	22 1/2	Med Bi Pin	T12	30473^	FB34CW/ES/6		12	18000	2400	2000	4100	62
				30480^	FB34CW/ES/6/Overwrap		12	18000	2400	2000	4100	62
				30474	FB40WW/ES/6		12	14000	2350	2000	3000	52

^ Available until Inventory Depleted

See page 66 for lamp description abbreviations



Nom. Watts	MOL (in.)	Base	Bulb	Order Code	Description	Pkg. Qty.	Rated Avg. Life (Hrs)	Initial Lumens	Design lumens	Color Temp. (Kelvin)	CRI
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CIRCLINE

20	6 1/2 (OD)	4 Pin	T9	60424	FC6T9/CW	12	12000	800	590	4100	62
22	8 1/4 (OD)	4 Pin	T9	00450	FC8T9/CW	12	12000	1050	775	4100	62
32	12 (OD)	4 Pin	T9	00452	FC12T9/CW	12	12000	1800	1495	4100	62
40	16 (OD)	4 Pin	T9	00453	FC16T9/CW	12	12000	2750	2350	4100	62

BLACKLIGHT

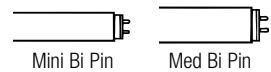
15	18	Med Bi Pin	T8	01800	F15T8/BL350	25	10000				
				01802	F15T8/BL368	25	10000				
				01805	F15T8/BL350/TC	Toughcoat	25	10000			
				11800	F15T8 BLACKLIGHT BLUE		25	10000			
20	24	Med Bi Pin	T12	01803	F20T12/BL350	25	9000				
				01807	F20T12/BL350/TC	Toughcoat	25	9000			
				11801	F20T12 BLACKLIGHT BLUE		6	9000			
30	36	Med Bi Pin	T8	01804	F30T8/BL350	25	7500				
40	48	Med Bi Pin	T12	01801	F40T12/BL350	25	20000				
				01809	F40T12/BL368		25				
				18118	F40T12/BL350/TC	Toughcoat	25	20000			
				11802	F40T12 BLACKLIGHT BLUE		6	10000			

TUBE GUARDS

		T12	30800	T12 END CAPS for tube guards	50						
		T12	30806	F40T12/CL/TG clear tube guard	24						
		T12	30826	F96T12/CL/TG clear tube guard	24						

HEAT SINK SCREEN

		T12	18276	T12 HEAT SINK SCREEN	50						
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Watts	Bulb	Base	Order Code	Description	Wave Length (nm)	Pkg. Qty.	Length (in.)	Apprx. Hours	Lamp Current (A)	U.V. Output (W)
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GERMICIDAL LAMPS

8	T5	Mini Bi Pin	00501	G8T5	253.7	50	12	6000	.170	2.5
15	T8	Med Bi Pin	00502	G15T8	253.7	20	18	6000	.300	4.8
25	T8	Med Bi Pin	00505	G25T8	253.7	20	18	6000	.600	6.9
30	T8	Med Bi Pin	00503	G30T8	253.7	10	36	6000	.355	11.6

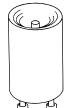
Germicidal lamps efficiently emit a large amount of Ultraviolet rays, 253.7 nanometers, which have excellent germicidal effect. They are primarily useful for sterilization of air, the surfaces of various materials and water or other liquids.

Warning: The radiation of Germicidal lamps is harmful to eyes and skin. Protect them against the Ultraviolet rays.

See page 66 for lamp description abbreviations



Conventional Starter



Reset Starter

Lamp Watt	Order Code			Description	Pkg. Qty.
	HAVELLS	Hemco	Certified		
CONVENTIONAL STARTER (UL, ETL, CSA LISTED)					
14W, 15W, 20W	18342	31676	31680	FS2	25
13W	18343		31704	FS4	25
4W, 6W, 8W	18344		31715	FS5	25
32W CIRCLINE	18345		32028	FS12	25
4-22W CIRCLINE	18346			FS22	25
18W-25W	18347	31656^	31657	FS25	25
14W, 15W, 20W	90004		31682	FS2 BULK	1000
30W, 40W	90005		31705	FS4 BULK	1000
4W, 6W, 8W	90006		31714	FS5 BULK	1000
4-22W	31674			FS22 BULK	1000
25W	90009		31660	FS25 BULK	1000

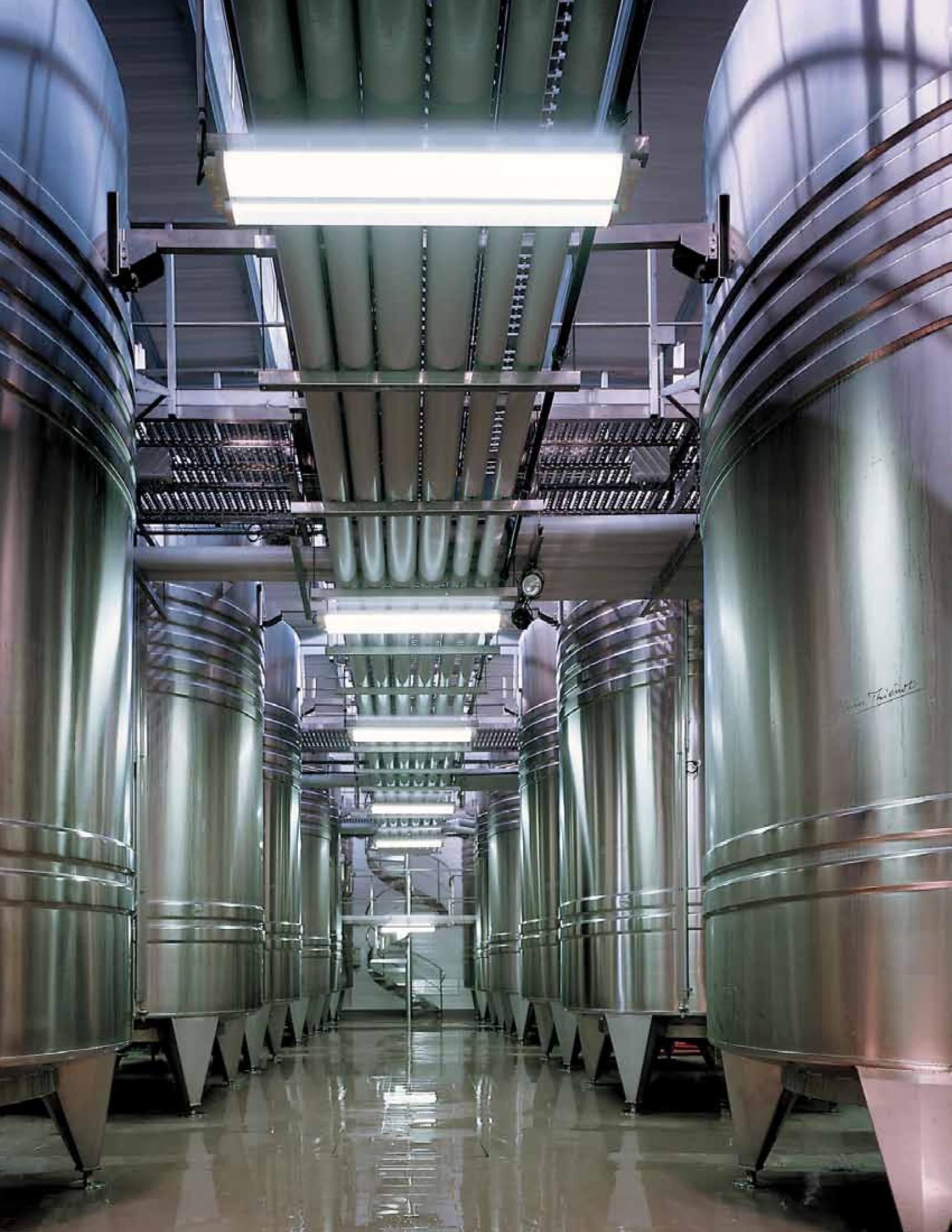
Description	Order Code	Source Voltage	Lamp Watt	Pkg. Qty.	Weight (pounds)
GLOWBOTTLE-MYLAR CAPACITOR					
GB-22-E	31720	110-130V, 220-240V	CF-S 5-13W, CF-DE 9W	10000	38
GB-43	31729^	110-130V, 220-240V	13, 30, 32, 36, 40	10000	38
GB-58	31728^	220-240V	4-80	10000	38

ADVANTAGES of HAVELLS STARTERS

- Faster starting time
- Meet rigorous international standards
- Longer durability
- Reliability in different environments such as high temperatures and continuous operation
- No blinking problems or recycling of the lamp
- Longer average life for the ballasts
- ISO 9001 Certified and ISO 14001 Certified
- Technical Support

[^] Stock available until inventory depleted

See page 66 for lamp description abbreviations



Compact Fluorescent



COMPACT FLUORESCENT

Compact fluorescent lamps (CFL) bring all the advantages of fluorescent lighting to an incandescent socket. CFLs provide comparable color rendering to incandescents, are four times more energy efficient, and have rated service lives up to 13 times longer (10,000 hours) which provides significant maintenance and replacement cost savings. Offered in both integrated and non-integrated models, many Havells CFLs utilize spiral glass design, allowing an easy fit in table lamps and other base down applications. With a CRI of 80 or more, they can be a direct and energy-cost saving replacement for the standard incandescent light bulb.

Because CFLs use substantially less energy to produce comparable light to an incandescent source, incandescent bulbs can be replaced with CFLs that are generally one-fourth the wattage. For example, a 100 watt incandescent bulb can be replaced with a 26 watt CFL with no change in light level.

Compact fluorescent applications

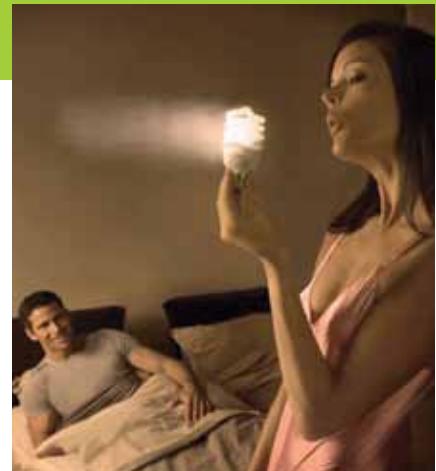
- General purpose retail, commercial and industrial interior lighting
- Recessed and down-lighting
- Stairwells, bathrooms and storage areas

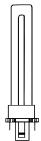




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Lynx Single 2 Pin



Lynx Double 2 Pin

Watts	Base	Order Code	Description	Pkg. Qty.	MOL (in.)	Rated Avg. Life (Hrs)	Apprx. Initial Lumen	Apprx. Incandescent Equivalent	CRI	Color Temp. (Kelvin)
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LYNX SINGLE 2 PIN (BOXED)

5	G23	26080	CF5LS/827	50	4.2	10000	250	25W	82	2700
		26380	CF5LS/835	50	4.2	10000	250	25W	82	3500
		26180	CF5LS/841	50	4.2	10000	250	25W	82	4100
		26480	CF5LS/850	50	4.2	10000	250	25W	82	5000
7	G23	26081	CF7LS/827	50	5.3	10000	420	40W	82	2700
		26381	CF7LS/835	50	5.3	10000	420	40W	82	3500
		26181	CF7LS/841	50	5.3	10000	420	40W	82	4100
		26481	CF7LS/850	50	5.3	10000	420	40W	82	5000
9	G23	26082	CF9LS/827	50	6.5	10000	600	50W	82	2700
		26382^	CF9LS/835	50	6.5	10000	600	50W	82	3500
		26182	CF9LS/841	50	6.5	10000	600	50W	82	4100
		26482	CF9LS/850	50	6.5	10000	600	50W	82	5000
13	GX23	26083	CF13LS/827	50	7.1	10000	850	60W	82	2700
		26383	CF13LS/835	50	7.1	10000	850	60W	82	3500
		26183	CF13LS/841	50	7.1	10000	850	60W	82	4100
		26483	CF13LS/850	50	7.1	10000	850	60W	82	5000

LYNX DOUBLE 2 PIN (BOXED)

9	G23-2	26090	CF9LD/827	50	4.3	10000	525	50W	82	2700
		26190	CF9LD/835	50	4.3	10000	525	50W	82	3500
		26290	CF9LD/841	50	4.3	10000	525	50W	82	4100
13	GX23-2	26091	CF13LD/827	50	4.6	10000	780	60W	82	2700
		26391^	CF13LD/830	50	4.6	10000	780	60W	82	3000
		26191	CF13LD/835	50	4.6	10000	780	60W	82	3500
		26291	CF13LD/841	50	4.6	10000	780	60W	82	4100
18	G24d-2	26092	CF18LD/827	50	6	10000	1200	75W	82	2700
		26392^	CF18LD/830	50	6	10000	1200	75W	82	3000
		26192	CF18LD/835	50	6	10000	1200	75W	82	3500
		26292	CF18LD/841	50	6	10000	1200	75W	82	4100
22 (15mm)	GX32d-2	30617	F22TT/QUAD/827	40	6	10000	1200	75W	82	2700
26	G24d-3	26093	CF26LD/827	50	6.8	10000	1800	100W	82	2700
		26193	CF26LD/835	50	6.8	10000	1800	100W	82	3500
		26293	CF26LD/841	50	6.8	10000	1800	100W	82	4100

^ Stock available until inventory depleted

See page 66 for lamp description abbreviations



Single Electronic 4 Pin



Double Electronic 4 Pin



Triple Electronic 4 Pin

Watts	Base	Order Code	Description	Pkg. Qty.	MOL (in.)	Rated Avg. Life (Hrs)	Apprx. Initial Lumen	Apprx. Incandescent Lumen	CRI	Color Temp. Kelvin
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LYNX SINGLE ELECTRONIC 4 PIN

9	2G7	26086^	CF9LS/E/827	50	4.5	10000	600	50W	82	2700
13	2GX7	26087	CF13LS/E/827	50	6.2	10000	810	60W	82	2700
		26187	CF13LS/E/841	50	6.2	10000	810	60W	82	4100

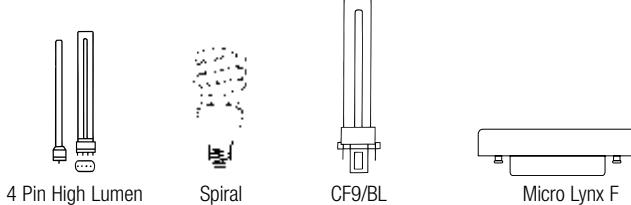
LYNX DOUBLE ELECTRONIC 4 PIN

13	G24q-1	26095	CF13LD/E/827	50	5.2	10000	900	60W	82	2700
		26395	CF13LD/E/830	50	5.2	10000	900	60W	82	3000
		26195	CF13LD/E/835	50	5.2	10000	900	60W	82	3500
		26295	CF13LD/E/841	50	5.2	10000	900	60W	82	4100
18	G24q-2	26096	CF18LD/E/827	50	5.8	10000	1200	75W	82	2700
		26396	CF18LD/E/830	50	5.8	10000	1200	75W	82	3000
		26196	CF18LD/E/835	50	5.8	10000	1200	75W	82	3500
		26296	CF18LD/E/841	50	5.8	10000	1200	75W	82	4100
26	G24q-3	26097	CF26LD/E/827	50	6.5	10000	1800	100W	82	2700
		26397	CF26LD/E/830	50	6.5	10000	1800	100W	82	3000
		26197	CF26LD/E/835	50	6.5	10000	1800	100W	82	3500
		26297	CF26LD/E/841	50	6.5	10000	1800	100W	82	4100

LYNX TRIPLE ELECTRONIC 4 PIN (BOXED)

18	GX24q-2	26102	CF18L/T/E/827	10	4.3	10000	1200	75W	82	270
		26314	CF18L/T/E/835	10	4.3	10000	1200	75W	82	3500
		26318	CF18L/T/E/841	10	4.3	10000	1200	75W	82	4100
26	GX24q-3	26103	CF26L/T/E/827	10	4.9	10000	1800	100W	82	2700
		26311	CF26L/T/E/830	10	4.9	10000	1800	100W	82	3000
		26315	CF26L/T/E/835	10	4.9	10000	1800	100W	82	3500
		26319	CF26L/T/E/841	10	4.9	10000	1800	100W	82	4100
32	GX24q-3	26104	CF32L/T/E/827	10	5.5	10000	2400	135W	82	2700
		26312	CF32L/T/E/830	10	5.5	10000	2400	135W	82	3000
		26316	CF32L/T/E/835	10	5.5	10000	2400	135W	82	3500
		26320	CF32L/T/E/841	10	5.5	10000	2400	135W	82	4100
42	GX24q-4	26105	CF42L/T/E/827	10	6.5	10000	3200	200W	82	2700
		26313	CF42L/T/E/830	10	6.5	10000	3200	200W	82	3000
		26317	CF42L/T/E/835	10	6.5	10000	3200	200W	82	3500
		26321	CF42L/T/E/841	10	6.5	10000	3200	200W	82	4100

See page 66 for lamp description abbreviations



Watts	Bulb Shape	Order Code	Description	Pkg. Qty.	MOL (in.)	O.D. (in.)	Rated Avg. Life (Hrs)	Apprx. Initial Lumen	Min. Starting Temp.	Apprx. Incandes. Equivalent	CRI	Color Temp. (Kelvin)
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LYNX L 4 PIN BASE HIGH LUMEN

18	2G11	25670	FT18LD/830	10	9		8000	1250		75W	82	3000
		25672	FT18LD/835	10	9		8000	1250		75W	82	3500
		25671	FT18LD/841	10	9		8000	1250		75W	82	4100
24	2G11	25675	FT24LD/830	10	12.9		12000	1800		100W	82	3000
		25677	FT24LD/835	10	12.9		12000	1800		100W	82	3500
		25676	FT24LD/841	10	12.9		12000	1800		100W	82	4100
36	2G11	25680	FT36LD/830	10	16.6		12000	2900		200W	82	3000
		25682	FT36LD/835	10	16.6		12000	2900		200W	82	3500
		25681	FT36LD/841	10	16.6		12000	2900		200W	82	4100
40	2G11	25685	FT40LD/830	10	21.1		20000	3150		250W	82	3000
		25687	FT40LD/835	10	21.1		20000	3150		250W	82	3500
		25686	FT40LD/841	10	21.1		20000	3150		250W	82	4100
55	2G11	25690	FT55LD/830	10	21.1		12000	4800		300W	82	3000
		25689	FT55LD/835	10	21.1		12000	4800		300W	82	3500
		25691	FT55LD/841	10	21.1		12000	4800		300W	82	4100

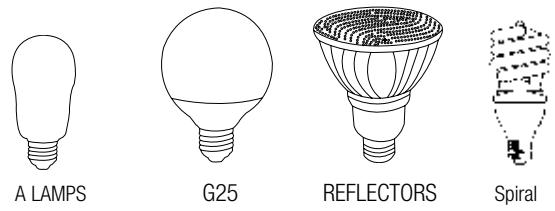
MICRO-LYNX F

6	GX53	55231	Micro-Lynx/830	20			10000	220			85	4100
		55232	Micro-Lynx/841	20			10000	220			85	3000

BLACKLIGHT

9	G23	26088	CF9BL/350	50	6.5		10000					
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See page 66 for lamp description abbreviations



Watts	Bulb Shape	Base	Order Code	Description	Pkg. Qty	Color Temp. (Kelvin)	Rated Avg. Life (Hrs) (1)	Initial Lumen	MOL (In.)	Incand. Equal
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A LAMPS

9	A16	Med	26123**	MLS9/827/A16	10	2700	8000	450	4.45	40W
			26124**	MLS9/827/A16 Blister Pack (1/pk)	10/1pk	2700	8000	450	4.45	40W
14	A19	Med	26125**	MLS14/827/A19	10	2700	8000	800	4.88	60W
			26126**	MLS14/827/A19 Blister Pack (1pk)	10/1pk	2700	8000	800	4.88	60W

DECORATIVE

5	B	Med	26210**	MLS5/827/FROST/CANDLE	10	2700	8000	215	4	25W
9	B	Med	26211**	MLS9/827/FROST/CANDLE	10	2700	8000	420	4	40W
	G25		26127**	MLS9/827/G25	10	2700	8000	450	4.33	40W
			26128**	MLS9/827/G25 Blister Pack (2/pk)	10/2pk	2700	8000	450	4.33	40W
14	G25	Med	26129**	MLS14/827/G25	10	2700	8000	800	4.33	60W
			26130**	MLS14/827/G25 Blister Pack (2/pk)	10/2pk	2700	8000	450	4.33	40W

PREPACKED COUNTER DISPLAY

13W	T2	Med	26178**	CFL Mini Lynx Spiral Prepack Counter Display	18	2700	10000	900	3.78	60W
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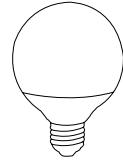
SPIRALS

11	T3	Med	26150**	11MLS/827	10	2700	10000	700	4.29	40W
			26151**	11MLS/827 Blister Pack (3pk)	10/3pk	2700	10000	700	4.29	40W
			26152**	11MLS/841	10	4100	10000	700	4.29	40W
			26153**	11MLS/850	10	5000	10000	700	4.29	40W
			26135**	11MLS/865	10	6500	10000	700	4.29	40W
			26131**	11MLS/865 Blister Pack (1pk)	10/1pk	6500	10000	700	4.29	40W
			26132**	11MLS/865 Blister Pack (2pk)	10/2pk	6500	10000	700	4.29	40W
13	T2	Med	26166**	13MLS/827	10	2700	10000	840	3.78	60W
			26169**	13/MLS827 Blister Pack (4pk)	10/4pk	2700	10000	840	3.78	60W
			26098**	13MLS/835	10	3500	10000	840	3.78	60W
			26167**	13MLS/841	10	4100	10000	840	3.78	60W
			26168**	13MLS/850	10	5000	10000	840	3.78	60W
			26149**	13MLS/865	10	6500	10000	840	3.78	60W
			26108**	13MLS/865 Blister Pack (1pk)	10/1pk	6500	10000	840	3.78	60W
			26109**	13MLS/865 Blister Pack (2pk)	10/2pk	6500	10000	840	3.78	60W

(1) Use in recessed fixtures could reduce average life hours

** Energy Star Certified

See page 66 for lamp description abbreviations



A Lamps

G25

Reflectors

Spiral

Watts	Bulb Shape	Base	Order Code	Description	Pkg. Qty	Color Temp (Kelvin)	Rated Avg. Life (Hrs) (1)	Initial Lumen	MOL (In.)	Incand. Equal
20	T3	Med	26158**	20MLS/827	10	2700	10000	1200	5.24	75W
			26159**	20MLS/827 Blister Pack (3pk)	10/3pk	2700	10000	1200	5.24	75W
			26099**	20MLS/835	10	3500	10000	1200	5.24	75W
			26160**	20MLS/841	10	4100	10000	1200	5.24	75W
			26161**	20MLS/850	10	5000	10000	1200	5.24	75W
			26147**	20MLS/865	10	6500	10000	1200	5.24	75W
			26133**	20MLS/865 Blister Pack (1pk)	10/1pk	6500	10000	1200	5.24	75W
			26134**	20MLS/865 Blister Pack (2pk)	10/2pk	6500	10000	1200	5.24	75W
23	T3	Med	26170**	23MLS/827	10	2700	10000	1600	5.12	90W
			26173**	23MLS/827 Blister Pack (3pk)	10/3pk	2700	10000	1600	5.12	90W
			26100**	23MLS/835	10	3500	10000	1600	5.12	90W
			26171**	23MLS/841	10	4100	10000	1600	5.12	90W
			26172**	23MLS/850	10	5000	10000	1600	5.12	90W
			26148**	23MLS/865	10	6500	10000	1600	5.12	90W
			26107**	23MLS/865 Blister Pack (1pk)	10/1pk	6500	10000	1600	5.12	90W
			26106**	23MLS/865 Blister Pack (2pk)	10/2pk	6500	10000	1600	5.12	90W
27	T3	Med	26174**	27MLS/827	10	2700	10000	1750	5.39	100W
			26177**	27MLS/827 Blister Pack (1pk)	10/1pk	2700	10000	1750	5.39	100W
			26101**	27MLS/835	10	3500	10000	1750	5.39	100W
			26175**	27MLS/841	10	4100	10000	1750	5.39	100W
			26176**	27MLS/850	10	5000	10000	1750	5.39	100W
			26179**	27MLS/865	10	6500	10000	1750	5.39	100W
42	T3	Med	26136**	42MLS/827	10	2700	10000	2800	7.01	150W
			26139**	42MLS/827 Blister Pack (1pk)	10/1pk	2700	10000	2800	7.01	150W
			26137**	42MLS/841	10	4100	10000	2800	7.01	150W
			26138**	42MLS/850	10	5000	10000	2800	7.01	150W

THREE WAY

13/20/25	T3	Med	26144**	3WAY/MLS/827	10	2700	8000	900-1200-1550	6.06	60-75-100W
			26145**	3WAY/MLS/827 Blister Pack (1pk)	10/1pk	2700	8000	900-1200-1550	6.06	60-75-100W

REFLECTORS

16	R30	Med	26200**	16LR30/827	12	2700	8000	750	6.30	60W
	PAR30		26202**	15PAR30/830	12	3000	8000	700		65W
23	R40	Med	26201**	23LR40/827	10	2700	8000	1300		90W
	PAR38		26203**	23PAR38/827	12	2700	8000	1280		90W

DIMMABLE T-4

20	T4	Med	26258	20MLS/827 DIMMABLE	10	2700	10000	1350	5	100W
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(1) Use in recessed fixtures could reduce average life hours

** Energy Star Certified

See page 66 for lamp description abbreviations



High Intensity Discharge



HIGH INTENSITY DISCHARGE

High intensity discharge (HID) lamps cast light over large areas and can operate outdoors in temperatures up to -20°C. Common indoor HID applications include high bay (i.e., high ceiling, greater than 15 feet) industrial lighting, warehouses, commercial high bay lighting such as big box retail and indoor and outdoor sports facilities. Outdoor applications include security lighting, parking garages and sports facilities.

HID lamps are electric arc discharge lamps that operate under high pressure and generate their light directly from an arc. The arc is contained in a small arc tube that is enclosed in a larger outer glass bulb. Most HID lamps do not operate instantly; they require time to strike and, when power is removed, longer to cool down and restrike. HID advantages include high lumen ratings and long life.

Contents



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NEXT GENERATION CERAMIC METAL HALIDE LIGHTING

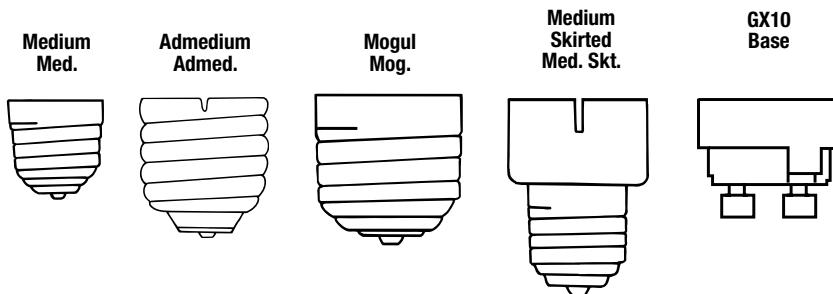
Now more than ever it's important to present your business in the best possible light. And the best way to do this is with ceramic metal halide technology – the industry standard when it comes to high quality light. Havells new Superia CMI lamps with elliptical arc tubes are more efficient and provide longer-lasting color stability compared to the previous generation's cylindrical arc tubes. They are ideal for shop lighting and in areas where high quality goods are presented. Their unique, one-piece elliptical arc tube construction provides highly efficient, brilliant light with best-in-class color rendering.

High intensity discharge applications

- High bay (i.e. high ceiling) industrial, manufacturing and retail
- Heated and refrigerated warehouses
- Indoor and outdoor sports and fitness facilities
- Outdoor security lighting
- Parking garages

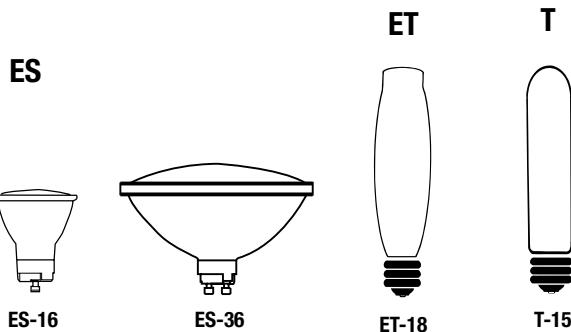
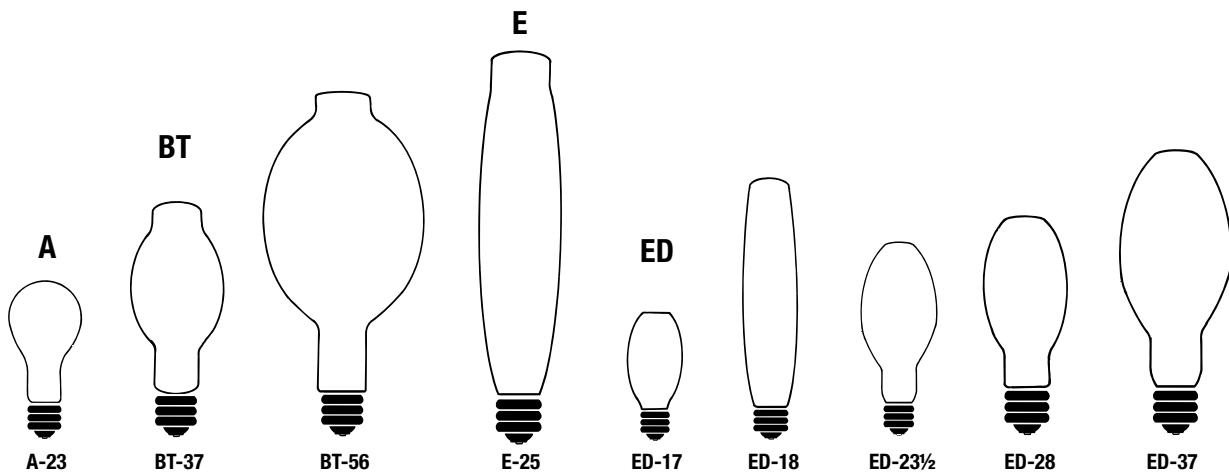


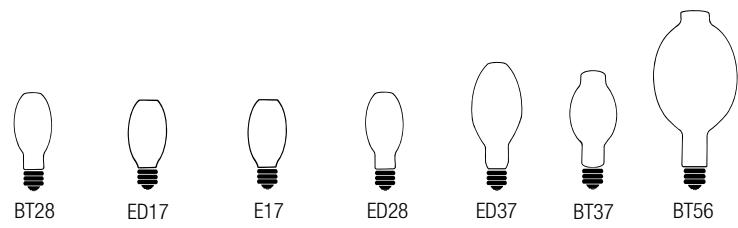
Base Types (Not Actual Sizes)



Bulb Shapes (Not Actual Sizes)

The size and shape of a bulb is designated by a letter followed by a number. The letter indicates the shape of the bulb while the number indicates the diameter of the bulb in eighths of an inch. For example, "T-12" is a tubular shaped bulb having a diameter of 12/8 or 1 1/2 inches. The following illustrations show some of the more popular bulb shapes and sizes.



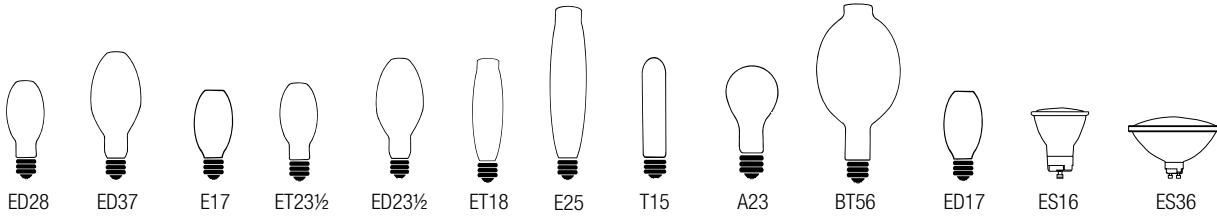


Watts	Bulb	Base	Order Code	Description	Pkg. Qty.	Rated Avg. Life (Hrs)	Burning Position	Apprx. Initial Lumen	Apprx. Mean Lumen (2)	Color Temp. (Kelvin)	CRI	MOL (In.)	LCL
STANDARD METAL HALIDE													
50	ED17	MED	30023	MH 50/U/MED	(1)	12	10000	UNIVERSAL	3400	2700	4000	65	
70	ED17	MED	20304	MH 70/C/U/MED/4K		20	15000	UNIVERSAL	5300	3300	4000	70	
	ED17	MED	20301	MH 70/U/MED	(1)	12	15000	UNIVERSAL	5600	4200	4000	65	
100	ED17	MED	20305	MH 100/C/U/MED/4K		20	15000	UNIVERSAL	8500	5900	4000	70	
	ED17	MED	20302	MH 100/U/MED	(1)	12	15000	UNIVERSAL	9000	6800	4000	65	
150	ED17	MED	20306	MH 150/C/U/MED/4K		20	15000	UNIVERSAL	12000	7900	4000	70	
	ED17	MED	20303	MH150/U/MED	(1)	12	15000	UNIVERSAL	13300	10000	4000	65	
175	ED17	MED	30019	MH 175/C/U/MED		20	15000	UNIVERSAL	13000	8380	4000	70	
	ED28	MOG	30008	MH 175/C/U		6	15000	UNIVERSAL	13000	8200	4000	70	
	ED17	MED	30006	MH 175/U/MED	(1)	12	15000	UNIVERSAL	14000	10500	4000	65	
	ED28	MOG	30007	MH 175/U	(1)	6	10000	UNIVERSAL	15000	11300	4000	65	
250	ED28	MOG	30010	MH 250/C/U		6	15000	UNIVERSAL	19475	12500	4000	70	
	ED28	MOG	30009	MH 250/U	(1)	6	10000	UNIVERSAL	20500	17000	4000	65	
400	ED37	MOG	30012	MH 400/C/U		6	20000	UNIVERSAL	34200	22300	4000	70	
	ED37	MOG	30011	MH 400/U	(1)	6	20000	UNIVERSAL	36000	28800	4000	65	
	ED28	MOG	30015	MH 400/U/ED28		6	20000	UNIVERSAL	36000	28800	4000	65	
1000	ED37	MOG	30021	MH 1000/C/U		6	10000	UNIVERSAL	104500	65800	4000	70	
	BT56	MOG	30003	MH 1000/U	(1)	6	12000	UNIVERSAL	110000	88000	3700	65	
	BT37	MOG	80374	MH 1000/U/BT37		6	10000	UNIVERSAL	110000	71500	3700	65	
1500	BT56	MOG	30004	MH 1500/HBU	(1)	6	6000	BASE UP/HORIZONTAL	155000	140000	3700	65	
STANDARD PROTECTED METAL													
360	ED37	EX39 MOG	29120	MP 360/P/ES/BU		6	20000	BASE UP	36000	23500	4000	65	
400	ED37	EX39 MOG	29100	MP 400/P/BU		6	20000	BASE UP	40000	26000	3000	65	
1000	BT56	EX39 MOG	29101	MP 1000/P/BU		6	12000	BASE UP	109000	875000	3000	65	
PULSE START METAL HALIDE													
175	ED17	MED	29010	MH 175/MED/C/BU/PS		20	15000 (3)	BASE UP/HORIZONTAL	16600	12500	4000	70	
250	ED28	MOG	29007	MH 250/C/BU/PS		6	20000 (3)	BASE UP/HORIZONTAL	21500	15500	4000	70	
	ED28	MOG	29001	MH 250/PS/BU		6	20000 (3)	BASE UP/HORIZONTAL	23500	17000	4000	65	
320	ED28	MOG	29006	MH 320/C/BU/PS		6	20000 (3)	BASE UP/HORIZONTAL	32000	19700	4000	70	
	ED28	MOG	29003	MH 320/PS/HBU		6	20000 (3)	BASE UP/HORIZONTAL	32000	21000	4000	65	
							15000 (3)	HORIZONTAL	30000	19700	4000	65	
350	ED37	MOG	29114	MH 350/C/BU/PS		6	20000 (3)	BASE UP/HORIZONTAL	32000	23000	4000	70	
400	ED28	MOG	29008	MH 400/C/BU/PS		6	20000 (3)	BASE UP/HORIZONTAL	42000	29000	4000	70	
	ED37	MOG	29004	MH 400/PS/BU		6	20000 (3)	BASE UP/HORIZONTAL	42000	31000	4000	65	
1000	ED37	MOG	29005	MH 1000/PS/BU		6	15000	BASE UP	110000	96000	3800	65	
							9000	HORIZONTAL	109000	87500	3800	65	
PULSE START PROTECTED - "0" RATED LAMPS													
70	ED17	MED	28902	MP 70/C/MED/PS		20	15000	UNIVERSAL	4700	3100	4000	70	
		MED	28901	MP 70/P/U/PS		20	15000	UNIVERSAL	5200	3400	3000	75	
100	ED17	MED	28903	MP 100/C/MED/PS		20	15000	UNIVERSAL	7900	5800	4000	70	
		MED	28904	MP 100/P/U		20	15000	UNIVERSAL	8500	5525	3000	75	
150	ED17	MED	28905	MP 150/MED/PS		20	15000	UNIVERSAL	12900	8000	4000	65	
		MED	28906	MP 150/C/MED/PS		20	15000	UNIVERSAL	11600	7500	4000	70	

(1) For use in enclosed fixtures (2) 40% lamp rated life

(3) Rated average life: base up + 15%; other positions 75% of base up life

See page 66 for lamp description abbreviations



Watts	Bulb	Base	Order Code	Description	Pkg. Qty.	Rated Avg. Life (Hrs)	Burning Position	Apprx. Initial Lumen	Apprx. Mean Lumen (2)	Color Temp. (Kelvin)	CRI	MOL (in.)	LCL
PULSE START PROTECTED													
320	ED17	MOG	29011	MP 320/BU/PS	6	20000	BASE UP	28600	21000	4000	65		
	ED28	MOG	29012	MP 320/C/BU/PS	6	20000	BASE UP	27700	19000	4000	70		
350	ED28	MOG	29115	MP 350/BU/PS	6	20000	BASE UP	33000	24500	4000	65		
	ED28	MOG	29116	MP 350/C/BU/PS	6	20000	BASE UP	32000	23000	4000	70		
	ED37	MOG	29113	MP 350/PS/BU	6	20000	BASE UP	33000	24500	3700	65		
400	ED37	MOG	29013	MP 400/BU/PS	6	20000	BASE UP	40000	26000	4000	65		
	ED37	MOG	29014	MP 400/C/BU/PS	6	20000	BASE UP	38500	25000	4000	70		
CERAMIC METAL HALIDE - SUPERIA													
CMI-T													
35	T6	G12	30035	CMI-T 35W/WDL/U	12	9000	UNIVERSAL	3400		3000	90		
70	T6	G12	30070	CMI-T 70W/WDL/U	12	15000	UNIVERSAL	6900		3000	90		
150	T6	G12	30150	CMI-T 150W/WDL/U	12	12000	UNIVERSAL	15000		3000	90		
CMI-TC													
35	T4	G8.5	30036	CMI-TC35W/WDL/U	12	9000	UNIVERSAL	3400		3000	90		
70	T4	G8.5	30071	CMI-TC70W/WDL/U	12	15000	UNIVERSAL	6900		3000	90		
CMI-R BRITESPOT													
20	ES50	GX10	30030	CMI-R ES50 20W/24	15	9000	UNIVERSAL	3600		3000	85		
			30031	CMI-R ES50 20W/38	15	9000	UNIVERSAL	2100		4200	85		
			30032	CMI-R ES50 20W/60	15	9000	UNIVERSAL	1000		3000	85		
BRITE SPOT													
39	ES16	GX10	20272	MBS ES16 39W 24°	15	6000	BASE UP/HORIZONTAL	8000	3250	3000	92		
	ES16	GX10	20270	MBS ES16 39W 38°	15	6000	BASE UP/HORIZONTAL	4000	3250	3000	92		
	ES16	GX10	20271	MBS ES16 39W 60°	15	6000	BASE UP/HORIZONTAL	2000	3250	3000	92		
HIGH PRESSURE SODIUM													
35	E17	MED	20101	LU35/MED	Clear	20	24000	UNIVERSAL	2250	2025	2200	21	
50	E17	MED	20102	LU50/MED	Clear	20	24000	UNIVERSAL	4000	3600	2200	21	5 7/8 3 3/8
	ET23 1/2	MOG	20002	LU50/MOG	Clear	20	24000	UNIVERSAL	4000	3600	2200	21	7 3/4 5
70	E17	MED	20103	LU70/MED	Clear	20	24000	UNIVERSAL	6300	5670	2200	21	5 7/8 3 3/8
	ED23 1/2	MOG	20003	LU70/MOG	Clear	20	24000	UNIVERSAL	6300	5670	2200	21	7 3/4 5
100	E17	MED	20104	LU100/MED	Clear	20	24000	UNIVERSAL	9500	8550	2200	21	5 7/8 3 3/8
	ET23 1/2	MOG	20004	LU100/MOG	Clear	20	24000	UNIVERSAL	9500	8550	2200	21	7 3/4 5
150	E17	MED	20105	LU150/55/MED	Clear	20	24000	UNIVERSAL	16000	14400	2200	21	5 3/4 3 1/2
	ET23 1/2	MOG	20005	LU150/55/MOG	Clear	20	24000	UNIVERSAL	16000	14400	2200	21	7 3/4 5
250	ET18	MOG	20050	LU250/T/MOG	Clear	12	24000	UNIVERSAL	28000	25200	2200	21	9 3/4 5 3/4
400	ET18	MOG	20051	LU400/T/MOG	Clear	12	24000	UNIVERSAL	50000	45000	2200	21	9 3/4 5 3/4
1000	E25	MOG	60318	LU1000/MOG	Clear	6	24000	UNIVERSAL	140000	126000	2200	21	15 8
MERCURY VAPOR													
100	ED23 1/2	MOG	60328	H38JA-100/DX/MOG	12	24000	UNIVERSAL	4400	3400	3700	45	7 3/4	
175	ED28	MOG	60326	H39KC-175/DX/MOG	12	24000	UNIVERSAL	7900	7400	3700	45	8 5/16	
		MOG	60325	H39KB-175/CL/MOG	12	24000	UNIVERSAL	8500	7600	6800	20	8 5/16	
250	ED28	MOG	60327	H37KC-250/DX/MOG	12	24000	UNIVERSAL	13000	10700	3700	45	9	
400	ED37	MOG	60239	H33GL-400/DX/MOG	6	24000	UNIVERSAL	23000	19100	3700	45	11 1/2	

See page 66 for lamp description abbreviations

HAVELLS



LED



LED

HAVELLS is proud to present the next generation of low-energy lighting. With a wide range of retrofit LED lamps that live up to the promise of attractive, safe and efficient lighting solutions.

HAVELLS LED lamps give you a lot of light for your energy. Up to 52 lumen per watt, to be precise. This makes them around 10 times more efficient than their incandescent or halogen counterparts and offers approximately 50% more light than equivalent LED lamps on the market.

Unlike regular energy saving lamps, HAVELLS LEDs produce instant warm, soothing light the moment you switch them on. Their unique construction ensures perfect insulation of the metal casing making them extremely safe to use even in humid conditions. HAVELLS retrofit LED lamps come in a variety of shapes, offering 100% compatibility and one-to-one replacement with existing installations.

Try switching a HAVELLS LED lamp on and off 60,000 times over a period of 22 years and you will discover they are made to last a lifetime. Offering more than 40,000 hours of warm, white light, they will pay for themselves many times over.

LED applications

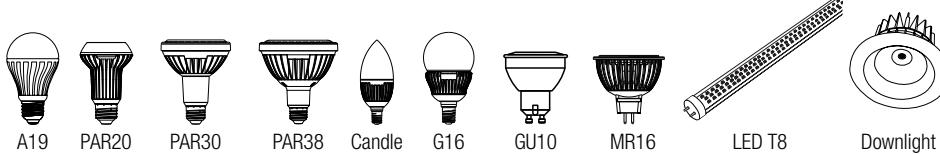


- Up to 90 % less energy
- Up to 52 lm/W
- Long Life (40,000+hours)
- Warm White Light
- High Light Output
- Highest Safety Standard



LED Mini Flashlights	58
LED Lamps - Dimmable	58
LED Lamps - Non Dimmable	58
LED Fluorescent T8	58
Downlight	58





Watts	Bulb	Base	Order Code	Description	Volts	Pkg. Qty.	Rated Avg. Life (Hrs)	Apprx. Lumen	Kelvin	CRI
-------	------	------	------------	-------------	-------	-----------	-----------------------	--------------	--------	-----

LED Mini Flashlights

		48501	9/LED FLASHLIGHT		20	100,000		3 1/2	
		48505	21/LED FLASHLIGHT		20	100,000		3 3/4	

LED LAMPS - DIMMABLE

8	A19	MED	**48524	8W/LED A19/WW/DIM	120	10	40000	450	3000	80
6	PAR20	MED	**48516	6W/LED PAR20/WW/NFL/DIM	120	10	40000	250	3000	80
10	PAR30	MED	**48518	10W/LED PAR30/WW/L/NFL/DIM	120	10	40000	450	3000	80
17	PAR38	MED	**48519	17W/LED PAR38/WW/NFL/DIM	120	10	40000	765	3000	80

LED LAMPS - NON DIMMABLE

3	CAN	CAND	**48525	3W/LED CNDL/CL	120	10	25000	120	3000	80
	G16	CAND	**48526	3W/LED GLB/FR	120	10	25000	120	3000	80
3.5	PAR16	GU10	^48512	3.5W/LED PAR16/GU10/NFL	120	10	15000	175	3000	
4	MR16	GU5.3	**48532	4W/LED MR16/GU53/FL	12	10	25000	160	3000	80
			^48531	4W/LED MR16/GU53/FL	12	12	15000	230	3000	
5	PAR20	MED	^48511	5WLED PAR20/FL	120	10	15000	200	3000	
6	A19	MED	^48513	6W/LED A19/WW	120	10	15000	250	3000	
10	PAR30	MED	**48527	10W/LED PAR30/WW/L/NFL	120	10	25000	450	3000	80
			^48510	10W/LED PAR30/WW/S/NFL	120	10	15000	400	3000	
16	PAR38	MED	^48541	16W/LED PAR38/WW/NFL	120	12	15000	750	3000	
17	PAR38	MED	**48543	17W/LED PAR38/WW/NFL	120	12	25000	765	3000	80

LED T8

18	T8	2 PIN	48560	18W/LED T8PW 4FT	120	20	50000	1700	5000	
22	T8	2 PIN	48551	22W/LED T8PW 5FT	120	20	50000	1900	5000	
24	T8	2 PIN	48554	24W/LED T8PW 6FT	120	20	50000	2250	5000	

Downlight

13			48600	LED DOWNLIGHT 13W 6INCH	120	12	15000	700	3000	85
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^Available until inventory depleted

**Energy Star certified

See page 66 for lamp description abbreviations



Specialty Lamps



SPECIALTY LIGHTING

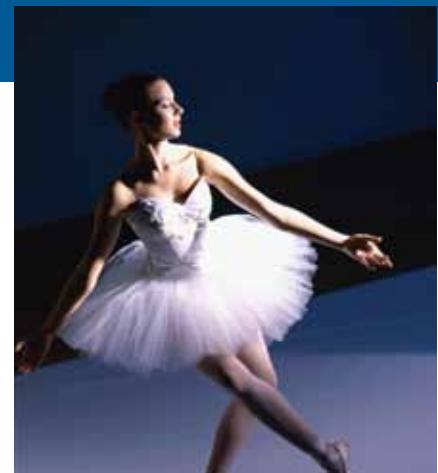
Havells manufactures a variety of lamps designed for highly specialized applications. AccurArc professional lamps are a family of high-pressure discharge light sources with a compact arc, specially designed for a wide variety of audio-visual applications. Germicidal UVC fluorescent tubes are designed to kill bacteria and other micro-organisms. Lamps radiate more than 85 percent of their energy in the UVC-spectrum at 253.7 mm. General Airfield lamps offer reliable light sources where maximum visibility is required to ensure safety.



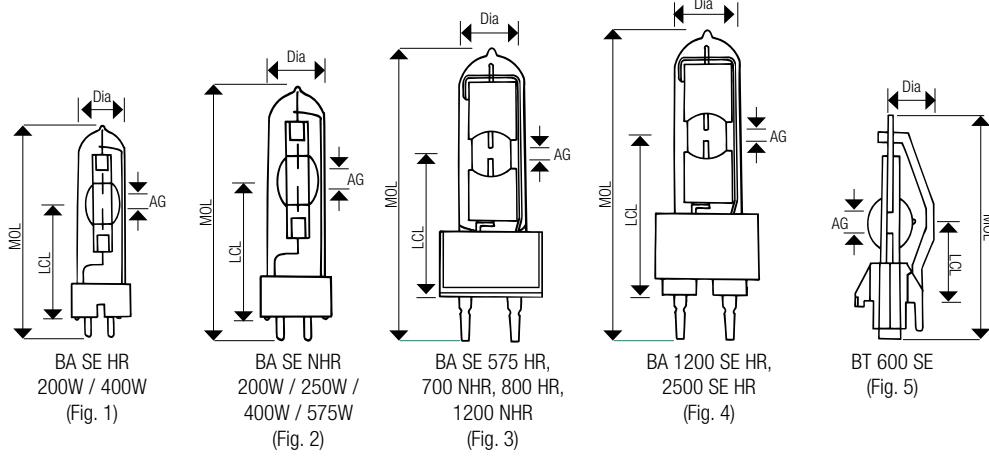


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AccuArc Single Ended—High Color Temp	62
AccuArc Single Ended—Short Arc	62
AccuArc Double Ended	63
GroXpress Tubular T18	63



Watts	Order Code	Description	Volts	Rated Avg.		Replace Time (hrs)	Luminous Flux (lm)	Dimensions						Base	Ignition Pulse (kV)	Fig. No.
				Current (Ampere)	Life (hrs)			CCT (K)	CRI	AG (mm)	MOL (mm)	LCL (mm)	Dia (mm)			
ACCUARC SINGLE ENDED — HOT RESTRIKE (HR)																
125	73961	BA 125 SE HR	70	1.8	300	400	9000	6500	95	5	80	39	20	GZX9.5	25.0	1
200	73956	BA 200 SE HR	70	3.30	200	450	15000	5600	80	5	80	39	20	GZY9.5	25.0	1
400	73904	BA 400 SE HR	67	6.90	650	750	33000	6200	92	6	110	60	23	GZZ9.5	25.0	1
575	73939	BA 575 SE HR	95	6.95	750	1000	49000	5600	92	7	145	70	30	G22	25.0	3
800	73991	BA 800 SE HR	95	8.5	1000	1500	65000	6000	90	7	145	70	31	G22	25	3
1200	73949	BA 1200 SE HR	100	13.80	750	1000	110000	6000	95	10	200	107	40	G38	50.0	4
2500	73951	BA 2500 SE HR	115	25.60	500	750	240000	5600	95	14	240	127	60	G38	50.0	4
ACCUARC SINGLE ENDED — NON HOT RESTRIKE (NHR)																
400	73974	BA 400 SE NHR	67	6.90	650	750	33000	6200	92	6	112	62	23	GX9.5	2.2	2
575	74525	BA 575 SE NHR	95	6.95	750	1000	49000	5600	90	7	125	65	30	GX9.5	2.2	2
700	73994	BA 700 SE NHR	72	11.00	1000	1500	56000	5600	95	8	155	75	30	G22	3.4	3
1200	73950	BA 1200 SE NHR	100	13.80	750	1000	110000	5600	95	10	175	85	40	G22	2.5	3
ACCUARC SINGLE ENDED — LONG LIFE (D)																
200	72170	BA 200 SE D	70	3.30	2000	2300	13700	5600	80	5	108	55	23	GY9.5	1.9	2
250	73993	BA 250 SE D	95	3.30	2000	2300	18800	5800	80	5	108	55	23	GY9.5	1.9	2
ACCUARC SINGLE ENDED — HIGH COLOR TEMP																
250	73999	BA 250/2 SE D	95	3.30	2000	2300	18000	8500	65	5	108	55	23	GY9.5	2.2	2
575	74011	BA 575/2 SE	95	6.95	1000	1200	44000	8500	80	7	125	65	30	GX9.5	2.2	2
	74413	BA 575/2 SE	95	6.95	1000	1200	45000	7200	85	7	125	65	30	GX9.5	2.2	2
ACCUARC SINGLE ENDED — SHORT ARC																
600	73973	BA 600 SE HR	95	6.30	300	350	48000	5300		5	84	35	16	FaX1.5	25.0	5



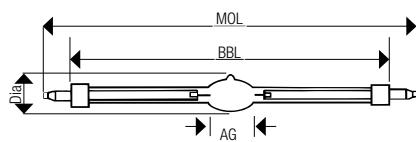
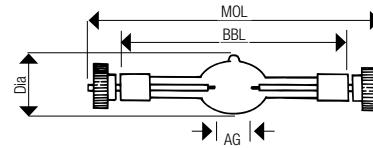
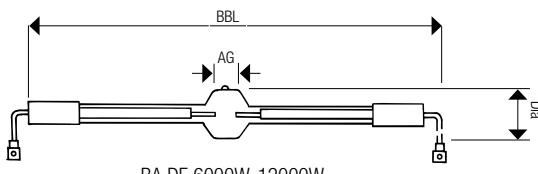
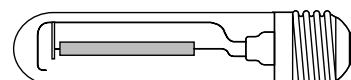
See page 66 for lamp description abbreviations

Watts	Order Code	Description	Volts	Current (Ampere)	Rated Avg.		Replace Time (hrs)	Luminous Flux (lm)	Dimensions						Base	Fig. No.
					Life (hrs)	Replace Time (hrs)			CCT (K)	CRI	AG (mm)	MOL (mm)	LCL (mm)	Dia (mm)		
ACCUARC DOUBLE ENDED (DE)																
400	73977	BA 400 DE	100	4.0	750	850	33000	5600	5.5	92	35	20	SFc10-4	2		
575	73915	BA 575 DE	95	7.0	750	1000	49000	5600	70	7.0	136	115	21	SFc10-4	2	
1200	73916	BA 1200 DE	100	13.8	750	1000	110000	5600	80	10.0	220	180	28	SFc15.5-6	2	
	73997	BA 1200 DES GOLD	100	13.8	750	1000	95000	7200		7.0	136	115	21	SFc10-4		
2500	73917	BA 2500 DE	115	25.6	500	750	240000	5600	90	20.5	355	290	32	SFa21.12	1	
4000	73954	BA 4000 DE	200	24.0	500	750	380000	6000	85	34.0	405	340	40	SFa21-12	1	
6000	73918	BA 6000 DE	123	55.0	350	450	570000	6000	90	22.0		450	52	S25.5x60	3	
12000	73919	BA 12000 DE	160	82.0	500	550	1100000	6000	90	32.0		470	65	S30x70	3	

GROXPRESS TUBULAR T18

425	50165	SHP-TS 430			20,000		128000	2050		248			E40	
615	72809	SHP-TS 600			20,000		200000	2050		267			E40	
620	50175	SHP-TS 600/RED			20,000		215000	2050		267			E40	

* Pre-focused base

BA DE 2500W, 4000W
(Fig. 1)BA DE 575W, 1200W
(Fig. 2)BA DE 6000W, 12000W
(Fig. 3)SHP-TS 430/600/600 RED
(Fig. 4)

Energy Saving Worksheet



Energy Savings Worksheet

To calculate potential energy dollars saved over the life of a lamp, use this formula. All you need is your present lamp wattage, the replacement lamp wattage and lamp life.





To calculate potential energy dollars saved over the life of a lamp, use this easy worksheet. Present lamp wattage, the replacement lamp wattage and lamp rated life hours is all you need.

Present Bulb Wattage Watts

Subtract

Replacement Bulb Wattage Watts

Equals Wattage Saved Watts

Multiply

By Replacement Bulb Life Hours Rated Average Life

Equals Energy Saved Watt-Hours

To Convert to Kilowatt

By Replacement Bulb Life Hours Rated Average Life

Hours Divide by 1000 $\div 1000$

Equals Energy Saved KiloWatt Hours

Multiply

By Your kWh Rate

Equals Energy Dollars Saved
by Each Bulb

Multiply

By Number of Bulbs
in Your Facility

TOTAL DOLLARS SAVED

Over the Rated Average Life
of the Bulbs



UNDERSTANDING OUR CODES

Incandescent & Halogen

1/cd	Number of lamps per card
AUTO	Auto Frost
BC	Blister Card
BX	Box
C	Coiled Filament
CC	Coiled Coil
CL	Clear
D	USA made
FC	Flame Tip Candelabra Base
FL	Flood
FM	Flame Tip Medium Base
HI TEMP	Hi Temperature shatter resistant coating
IF	Inside Frost
K	Krypton
LN	Long Neck
M	Hours in thousand
MEDSKT	Medium Skirt Base
NFL	Narrow Flood
RFL	Reflector
RS	Rough Service
SP	Spot
TC	Toughcoat
TC	Torpedo Shape Candelabra Base
TM	Torpedo Shape Medium Base
WFL	Wide Flood
WH	White
WP	Weatherproof

Fluorescent

CW	Cool White (4100k)
CWX	Cool White Delux
D	Daylight (6500K)
DL/DLX	Day Light Deluxe
ECO/Ecoline	Low mercury lamps
ES	Energy Saver
Excella	Special CCT of 5765k, CRI = 91
F	Fluorescent
HL	High Lumen
HO	High Output
HO-O	High Output Outdoor
Overwrap	Special Packaging type
SNO	Snow White
SN-WHT/DLX	Snow White Deluxe (5100k)
Strongbox	Special Package type
TC	Toughcoat (Shatter Resistant)
VHO	Very High Output
WW	Warm Whlte
T5	5/8" diameter
T8	1" diameter
T12	1 1/2" diameter

Compact Fluorescent

BL	Blacklight
CF	Compact Fluorescent
E	Electronic
FT	Fluorescent Tubular shape
FUL	Fluorescent "U" shape
LD	Lynx Double tube
LS	Lynx Single tube
MLX	Mini Lynx
T	Triple tube
MLS	Mini Lynx Series

LED

CL	Clear finish
DIM	Dimmable
FL	Flood
FR	Frost finish
L	Long Neck
NFL	Narrow Flood
PW	Pure White color
S	Short Neck
WW	Warm White
CNDL	Candelabra
GLB	Globe

SPECIALTY

BA	Accuarc
D	Long Life
DE	Double Ended
HR	Hot Restrike
NHR	Non Hot Restrike
SE	Single Ended

HID

C	Coated
BU	Base Up
D	Diffuse Coated
DX	Delux Coated
H	Mercury Vapor
HBU	Horizontal/ Base Up
LU	High Pressure Sodium
MED	Medium Base
MH	Metal Halide
U	Universal



MEASURING LAMPS

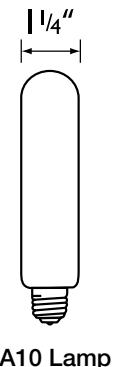
Measuring Incandescent, Halogen, CFL and HID Lamps Letters designate the shape of the glass bulb and numbers indicate the diameter of the bulb in eighths of an inch.

For example:

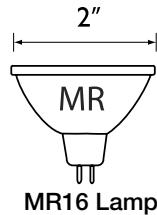
"A19" indicates a standard bulb having a diameter of 19/8 or 2 3/8 inches.



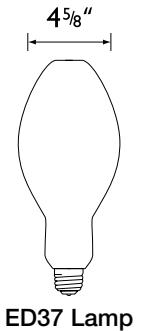
"T10" indicates a tubular shaped having a diameter of 10/8 or 1 1/4 inches.



"MR16" indicates mini reflector having a diameter of 16/8 or 2 inches.

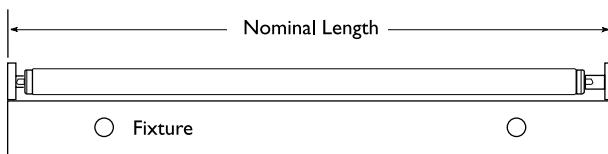


"ED37" indicates a large HID bulb having a diameter of 37/8 or 4 5/8 inches.

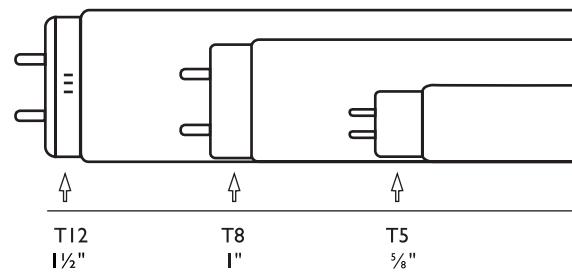


Measuring Fluorescent Lamps

To determine the length of a fluorescent lamp, you do not measure the bulb. The Nominal Length of the bulb is the measurement from back of socket to back of socket on the fixture.



To determine the type of lamp you need, measure the endcap and use the illustration below as a guide.







Average Rated Life

The length of operation (in hours) at which point an average of 50% of a large sample of lamps will still be operational and 50% will not.



Beam Angle

The beam angle defines the light pattern around the beam's central axis for which the luminous intensity is half that of the maximum luminous intensity.



Candlepower

A term used for the luminous intensity of a light source. The intensity in any one direction from the standard candle is called one candela (formerly one candlepower; cp).



Color Rendering Index (CRI)

A measurement of the color shift an object undergoes when illuminated by the light source, as compared to a reference source at the same color temperature. Color rendering is measured on an index from 0-100, with natural daylight and incandescent lighting both equal to 100. Objects and people viewed under lamps with a high color rendering index (CRI) appear more true to life.



Color Temperature or Correlated Color Temperature (CCT)

The chromaticity of an ideal "black body" when it is heated to a specific temperature in Kelvin (K). It is the measure of the color of light, not actual temperature.



Footcandle

A unit used in measuring direct illumination. It is defined as the illumination produced from a source of one candela at a point on a surface of one foot away and perpendicular to the source of light. A lumen per square foot.



Illumination

The result of the use of light, illuminance is the density of luminous flux on a surface is usually measured in footcandles.



Initial vs. Mean Lumens

The measured luminous output of a new light source versus the output at 40% of lamp life.



Inches to Metric Conversion

To calculate the metric equivalent of inches in millimeters (mm) use the following formula: inches x 25.4001 = millimeters.



Instant Start

A circuit used to start specially designed fluorescent lamps without the aid of a starter. The circuit utilizes higher open circuit voltage than is required for the same length preheat lamps to strike the arc instantly.



This circuit is used today in slimline and cold cathode lamps. Instant start 40-watt bipin lamps are made with a short-circuiting device built into the base.



Kilowatt (kW)

A larger unit of power; a thousand watts (watts x 1000 kilowatts).



Kilowatt Hour (kWh)

The measure of electrical usage from which electricity billing is determined. For example, a 100-watt bulb operated for 1000 hours would consume 100 kilowatt hours (100 watt x 1000 hours = 100 kWh). At a billing rate of \$0.10/kWh, this bulb would cost \$10.00 (100 kWh x \$0.10/kWh) to operate.



Lamp Dimensions

Bulb designations consist of a letter or letters to indicate the approximate diameter in eighths of an inch.

Lamp Listing Sequence

Lamps are listed in wattage sequence within their groups.

Light Center Length (LCL)

Light Center Length is the distance from a reference point on a lamp base (usually the eyelet) to the center of the light source. For high intensity discharge lamps, it is the distance from the center of the filament or center of the arc to the point shown below for the base indicated.

All Screw Bases: Bottom base contact

Medium and Mogul Prefocus: Top of base pin

Medium Bipost: Bottom of bulb

Bayonet Candelabra and Medium Bayonet:Top of base pins

SC or DC Prefocus: Plane of locating bosses of prefocusing collar

Mini-Can: Intersection of 45° taper with max. diameter of base



Light Emitting Diode (LED)

A solid-state semiconductor device that converts electrical energy directly into light. On its most basic level, the semiconductor is comprised of two regions. The p-region contains positive electrical charges while the n-region contains negative electrical charges. When voltage is applied and current begins to flow, the electrons move across the n region into the p region. The process of an electron moving through the p-n junction releases energy. The dispersion of this energy produces photons with visible wavelengths.

Light

The term generally applied to the visible energy from a source. Light is usually measured in lumens or candlepower. When light strikes a surface it is either absorbed, reflected or transmitted. Light is said to travel in straight lines.

Lumen

The unit that expresses the total quantity of light given off by a source, regardless of direction. A lumen is defined as the amount of light falling on a surface of one square foot, every point of which is one foot away from a source of one candlepower. A uniform source of one candlepower placed in a sphere emits 12.57 lumens, or mean spherical candela equals 12.57 lumens.

Lumens Per Watt (LPW)

A measure of the efficacy of a light source in terms of the light produced for the power consumed. For example, a 100-watt lamp producing 1750 lumens gives 17.5 lumens per watt.

Luminance or Brightness

The light emitted, transmitted or reflected from a unit area of the source of surface is its brightness. It is usually expressed in candles per square inch or Lamberts or foot Lamberts.

Maximum Overall Length (MOL)

Maximum Overall Length is measured from the top of the bulb to bottom of the base.

Nominal Length

A measurement of fluorescent lamp length based on the length of the lamp plus the proper allowance for standard lamp holders.





Operating Position

Lamps may be operated in any position unless otherwise indicated.



Ordering Codes

The numbers shown in the order code column along with the descriptions should be used when placing orders. In a number of instances a lamp type may be available in different kinds of outer carton cases such as 24 or 120 pack. Each of these items is shown as a separate listing.



Preheat

A circuit used in fluorescent lamps where the electrodes are heated or warmed to a glow stage by an auxiliary switch or starter (can be a glow switch, thermal type or mechanical device like a push button) before the lamps are lighted. This system was used on the original fluorescent lamps and is still in use today.



Rapid Start

A circuit designed to start lamps by continuously heating or preheating the electrodes. This circuit is a modern version of the trigger start system and requires lamps designed for this circuit. In the rapid start



two-lamp circuit, one end of each lamp is connected to a separate starting winding. The other end of each lamp is connected to a common winding. Except for slimline lamps, all modern fixtures using 40-watt and higher lamps are equipped with Rapid Start ballasts.



Rated Average Life

The operating life (hours) at which 50 percent of the lamps are still operating. Where a plus (+) is used in starting the life, survival rate is 67 percent at the started time.



Trigger Start

A circuit used to eliminate the starter and start the preheat lamp almost instantly. In this circuit, each electrode is connected to a separate winding in the ballasts so that the electrode is continuously heated. This circuit is primarily used on 20-watt and lower wattage fluorescent lamps today.



Voltage (V or E)

A measurement of electromotive force or the pressure of electricity. This is analogous to the pressure in a water line, i.e., pounds per square inch. The voltage of a circuit is the electrical pressure it gives. In an incandescent lamp, "voltage" designates the supply voltage to which the lamps should be connected. In other lamp types, it may refer to "operating voltage" of a lighted arc discharge lamp.



Watt (W)

Unit to measure electric power consumption of a lamp.





Havells #	NEMA	Havells	PHILIPS	GENERAL ELECTRIC	OSRAM/SYLVANIA
PAR HALOGEN					
120V 130V					
14203 14253		H50PAR20/NSP	50PAR20/H/NSP9	50PAR20/H/NSP10	50PAR20/CAP/NSP
14204 14254		H50PAR20/NFL	50PAR20/H/NFL30	50PAR20/H/NFL/25	50PAR20/CAP/NFL
14500 14550		H50PAR30/NSP	50PAR30L/H/NSP9	50PAR30/H/NSP/11	50PAR30/CAP/NSP
14501 14551		H50PAR30/NFL	50PAR30L/H/NFL30	50PAR30/H/NFL/25	50PAR30/CAP/NFL
14502 14532		H50PAR30/FL	50PAR30L/H/FL40	50PAR30/H/FL/35	50PAR30/CAP/FL
30258 30265		H50PAR30/LN/WFL	50PAR20L/H/WFL	50PAR30L/H/60	50PAR30LN/CAP/WFL
14503 14553		H75PAR30/NSP	75PAR30/H/NSP9	75PAR30/H/NSP/11	75PAR30/CAP/NSP
14504 14554		H75PAR30/NFL	75PAR30/H/NFL/30	75PAR30/H/NFL/25	75PAR30/CAP/NFL
30259 30260		H75PAR30/LN/WFL	75PAR30L/H/WFL	75PAR30L/H/60	75PAR30LN/CAP/WFL
14700 14750		H45PAR38/SP	45PAR38/H/SP	45PAR/H/SP11	45PAR/CAP/SP
14701 14751		H45PAR38/FL	45PAR38/H/FL	45PAR/H/FL30	45PAR/CAP/FL
14702 14752		H75PAR38/NSP	75PAR38/H/SP	75PAR/H/NSP8	75PAR/CAP/SP
14703 14753		H75PAR38/NFL	75PAR38/H/FL	75PAR/H/NFL25	75PAR/CAP/FL
14704 14754		H90PAR38/SP	90PAR38/H/SP	90PAR/H/SP10	90PAR/CAP/SP
14705 14755		H90PAR38/FL	90PAR38/H/FL	90PAR/H/FL30	90PAR/CAP/FL
T8 LINEAR LAMPS 700 SERIES - 75 CR					
01718		F17T8/730	F17T8/TL730	F17T8/SP30	F017/730
01717		F17T8/735	F17T8/TL735	F17T8/SP35	F017/735
01728		F17T8/741	F17T8/TL741	F17T8/SP41	F017/741
01724		F25T8/730	F25T8/TL730	F25T8/SP30	F025/730
01723		F25T8/735	F25T8/TL735	F25T8/SP35	F025/735
01722		F25T8/741	F25T8/TL741	F25T8/SP41	F025/741
01711		F32T8/730	F32T8/TL730	F32T8/SP30	F032/730
01712		F32T8/735	F32T8/TL735	F32T8/SP35	F032/735
01713		F32T8/741	F32T8/TL741	F32T8/SP41	F032/741
800 SERIES - 85 CRI					
01721		F17T8/830	F17T8/TL830	F17T8/SPX30	F017/830
01720		F17T8/835	F17T8/TL835	F17T8/SPX35	F017/835
01719		F17T8/841	F17T8/TL841	F17T8/SPX41	F017/841
01727		F25T8/830	F25T8/TL830	F25T8/SPX30	F025/830
01726		F25T8/835	F25T8/TL835	F25T8/SPX35	F025/835
01725		F25T8/841	F25T8/TL841	F25T8/SPX41	F025/841
01708		F32T8/830	F32T8/TL830	F32T8/SPX30	F032/830
01709		F32T8/835	F32T8/TL835	F32T8/SPX35	F032/835
01707		F32T8/841	F32T8/TL841	F32T8/SPX41	F032/841
COMPACT FLUORESCENT LYNX SINGLE					
26080	CFT5W/G23/827	CF5LS/827	PL-S 5W/27	F5BX/SPX27	CF5DS/827
26081	CFT7W/G23/827	CF7LS/827	PL-S 7W/27	F7BX/SPX27	CF7DS/827
26381	CFT7W/G23/835	CF7LS/835	PL-S 7W/35	F7BX/SPX35	CF7DS/835
26181	CFT7W/G23/841	CF7LS/841	PL-S 7W/41	F7BX/SPX41	CF7DS/841
26481	CFT7W/G23/850	CF7LS/850	PL-S 7W/5	F7BX/SPX50	CF7DS/850
26082	CFT9W/G23/827	CF9LS/827	PL-S 9W/27	F9BX/SPX27	CF9DS/827
26382	CFT9W/G23/835	CF9LS/835	PL-S 9W/35	F9BX/SPX35	CF9DS/835
26182	CFT9W/G23/841	CF9LS/841	PL-S 9W/41	F9BX/SPX41	CF9DS/841
26482	CFT9W/G23/850	CF9LS/850	PL-S 9W/50	F9BX/SPX50	CF9DS/850
26083	CFT13W/G23/827	CF13LS/827	PL-S 13W/27	F13BX/SPX27	CF13DS/827
26283	CFT13W/G23/830	CF13LS/830	PL-S 13W/30	F13BX/SPX30	CF13DS/830
26383	CFT13W/G23/835	CF13LS/835	PL-S 13W/35	F13BX/SPX35	CF13DS/835
26183	CFT13W/G23/841	CF13LS/841	PL-S 13W/41	F13BX/SPX41	CF13DS/841
26483	CFT13W/G23/850	CF13LS/850	PL-S 13W/50	F13BX/SPX50	CF13DS/850



Havells #	NEMA	Havells	PHILIPS	GENERAL ELECTRIC	OSRAM/SYLVANIA
LYNX DOUBLE					
26090	CFQ9W/G23/827	CF9LD/827		F9DBX23T4/SPX27	CF9DD/827
26390	CFQ9W/G23/830	CF9LD/830			
26190	CFQ9W/G23/841	CF9LD/835			CF9DD/835
26091	CFQ13W/GX23/827	CF13LD/827	PL-C 13W/27/USA	F13DBX23T4/SPX27	CF13DD/827
26391	CFQ13W/GX23/830	CF13LD/830	PL-C 13W/30/USA	F13DBX23T4/SPX30	CF13DD/830
26191	CFQ13W/GX23/835	CF13LD/835	PL-C 13W/35/USA	F13DBX23T4/SPX35	CF13DD/835
26291	CFQ13W/GX23/841	CF13LD/841	PL-C 13W/41/USA	F13DBX23T4/SPX41	CF13DD/841
26092	CFQ18W/G24d/827	CF18LD/827	PL-C 18W/27	F18DBXT4/SPX27	CF18DD/827
26392	CFQ18W/G24d/830	CF18LD/830	PL-C 18W/30	F18DBXT4/SPX30	CF18DD/830
26192	CFQ18W/G24d/835	CF18LD/835	PL-C 18W/35	F18DBXT4/SPX35	CF18DD/835
26292	CFQ18W/G24d/841	CF18LD/841	PL-C 18W/41	F18DBXT4/SPX41	CF18DD/841
26093	CFQ26W/G24d/827	CF26LD/827	PL-C 26W/27	F26DBXT4/SPX27	CF26DD/827
26393	CFQ26W/G24d/830	CF26LD/830	PL-C 26W/30	F26DBXT4/SPX30	CF26DD/830
26193	CFQ26W/G24d/835	CF26LD/835	PL-C 26W/35	F26DBXT4/SPX35	CF26DD/835
26293	CFQ26W/G24d/841	CF26LD/841	PL-C 26W/41	F26DBXT4/SPX41	CF26DD/841
LYNX DOUBLE ELECTRONIC					
26095	CFQ13W/G24q/827	CF13LD/E/827	PL-C13W/27/4P	F13DBX/SPX27/4P	CF13DD/E/827
26395	CFQ13W/G24q/830	CF13LD/E/830		F13DBX/SPX30/4P	CF13DD/E/830
26195	CFQ13W/G24q/835	CF13LD/E/835	PL-C13W/35/4P	F13DBX/SPX35/4P	CF13DD/E/835
26295	CFQ13W/G24q/841	CF13LD/E/841	PL-C13W/41/4P	F13DBX/SPX41/4P	CF13DD/E/841
26096	CFQ18W/G25q/827	CF18LD/E/827	PL-C18W/27/4P	F18DBX/SPX27/4P	CF18DD/E/827
26396	CFQ18W/G25q/830	CF18LD/E/830		F18DBX/SPX30/4P	CF18DD/E/830
26196	CFQ18W/G25q/835	CF18LD/E/835	PL-C18W/35/4P	F18DBX/SPX35/4P	CF18DD/E/835
26296	CFQ18W/G25q/841	CF18LD/E/841	PL-C18W/41/4P	F18DBX/SPX41/4P	CF18DD/E/841
26097	CFQ26W/G24q/827	CF26LD/E/827	PL-C26W/27/4P	F26DBX/SPX27/4P	CF26DD/E/827
26397	CFQ26W/G24q/830	CF26LD/E/830	PL-C26W/30/4P	F26DBX/SPX30/4P	CF26DD/E/830
26197	CFQ26W/G24q/835	CF26LD/E/835	PL-C26W/35/4P	F26DBX/SPX35/4P	CF26DD/E/835
26297	CFQ26W/G24q/841	CF26LD/E/841	PL-C26W/41/4P	F26DBX/SPX41/4P	CF26DD/E/841
LYNX TRIPLE ELECTRONIC					
26102	CFTR18W/GX24q/827	CF18L/T/E/827		F18TBX/SPX27/4P	CF18DT/E/IN/827
26310	CFTR18W/GX24q/830	CF18L/T/E/830	PL-T18W/30/4P	F18TBX/SPX30/40	CF18DT/E/IN/830
26314	CFTR18W/GX24q/835	CF18L/T/E/835	PL-T18W/35/4P	F18TBX/SPX35/4P	CF18DT/E/IN/835
26318	CFTR18W/GX24q/841	CF18L/T/E/841	PL-T18W/41/4P	F18TBX/SPX41/4P	CF18DT/E/IN/841
26103	CFTR18W/GX24q/827	CF26L/T/E/827		F26TBX/SPX27/4P	CF26DT/E/IN/827
26311	CFTR18W/GX24q/830	CF26L/T/E/830	PL-T26W/30/4P	F26TBX/SPX30/4P	CF26DT/E/IN/830
26315	CFTR18W/GX24q/835	CF26L/T/E/835	PL-T26W/35/4P	F26TBX/SPX35/4P	CF26DT/E/IN/835
26319	CFTR18W/GX24q/841	CF26L/T/E/841	PL-T26W/41/4P	F26TBX/SPX41/4P	CF26DT/E/IN/841
26104	CFTR32W/GX24q/827	CF32L/T/E/827		F32TBX/SPX27/4P	CF32DT/E/IN/827
26312	CFTR32W/GX24q/830	CF32L/T/E/830	PL-T32W/30/4P	F32TBX/SPX30/4P	CF32DT/E/IN/830
26316	CFTR32W/GX24q/835	CF32L/T/E/835	PL-T32W/35/4P	F32TBX/SPX35/4P	CF32DT/E/IN/835
26320	CFTR32W/GX24q/841	CF32L/T/E/841	PL-T32W/41/4P	F32TBX/SPX41/4P	CF32DT/E/IN/841
26105	CFTR42W/GX24q/827	CF42L/T/E/827			CF42DT/E/827
26313	CFTR42W/GX24q/830	CF42L/T/E/830	PL-T42W/30/4P		CF42DT/E/830
26317	CFTR42W/GX24q/835	CF42L/T/E/835	PL-T42W/35/4P		CF42DT/E/835
26321	CFTR42W/GX24q/841	CF42L/T/E/841	PL-T42W/41/4P		CF42DT/E/841

Havells#	NEMA	Havells	PHILIPS	GENERAL ELECTRIC	OSRAM/SYLVANIA
LYNX L 4 Pin Base					
25670	FT18W/2G11/830	FT18LD/830	PL-L18W/30	F18DBXT4/SPX30	FT18DL/830
25672	FT18W/2G11/835	FT18LD/835		F18DBXT4/SPX35	FT18DL/835
25671	FT18W/2G11/841	FT18LD/841	PL-L18W/41	F18DBXT4/SPX41	FT18DL/841
25675	FT24W/2G11/830	FT24LD/830	PL-L24W/30	F27/24DBXT4/SPX30	FT24DL/830
25672	FT24W/2G11/835	FT24LD/835		F27/24DBXT4/SPX35	FT24DL/835
25676	FT24W/2G11/841	FT24LD/841	PL-L24W/41	F27/24DBXT4/SPX41	FT24DL/841
25680	FT36W/2G11/830	FT36LD/830	PL-L36W/30	F39/36DBXT4/SPX30	FT36DL/830
25682	FT36W/2G11/835	FT36LD/835	PL-L36W/35	F39/36DBXT4/SPX35	FT36DL/835
25681	FT36W/2G11/841	FT36LD/841	PL-L36W/41	F39/36DBXT4/SPX41	FT36DL/841
25685	FT40W/2G11/830	FT40LD/830	PL-L40W/30/RS	F40/30DBXT4/SPX30	FT40DL/830/RS
25687	FT40W/2G11/835	FT40LD/835	PF-L40W/35/RS	F40/30DBXT4/SPX35	FT40DL/835/RS
25686	FT40W/2G11/841	FT40LD/841	PL-L40W/41/RS	F40/30DBXT4/SPX41	FT40DL/841/RS
25690	FT55W/2G11/830	FT55LD/830			FT55DL/830
25689	FT55W/2G11/835	FT55LD/835			FT55DL/835
25691	FT55W/2G11/841	FT55LD/841			FT55DL/841

HAVELLS#	HAVELLS	PHILIPS	OSRAM/ SYLVANIA	GE	KOTO	USHIO	ILC	RADIUM	WOLFRAM
SPECIALTY									
73915	BA575 GS DE	MSI 575	HMI 575W	MID 575	DI-6	UMI 575 GS	DMI 575W		575
73916	BA1200 GS DE	MSI 1200	HMI 1200W GS	MID 1200	DI-12	UMI 1200	DMI 1200W		120
73917	BA2500 DE	MSI 2500	HMI 2500W GS	MID 2500	DI-25	UMI 2500	DMI 2500W		2500
73954	BA4000 DE	MSI 4000	HMI 4000W	MID 4000	DI-40	UMI 4000	DMI 4000W		4000
73918	BA6000 DE	MSI 6000	HMI 6000W	MID 6000	DI-60	UMI 6000	DMI 6000W		6000
73919	BA12000 DE	MSI 12000	HMI 12000W	MID 12000	DI-120	UMI 12000	DMI 12000W		12000
73956	BA200 SE HR	MSR 200 HR	HMI 200W SE					RSI 200W SE	
73904	BA400 SE HR	MSR 400 HR	HMI 400W SE					RSI 400W SE	
73939	BA575 SE HR	MSR 575 HR	HMI 575 SE	CSR 575 HR	DIS-6H	USR 575		RSI 575W SE	
73949	BA1200 SE HR	MSR 1200 HR	HMI 1200W SE	CSR 1200 HR	DIS-12H	USR 1200		RSI 1200W SE	
73951	BA2500 SE HR	MSR 2500 HR	HMI 2500W SE	CSR 2500 HR	DIS-25H	USR 2500	DSE 2500	RSI 2500W SE	
72170	BA200 SE D	MSD 200	HSD 200						
73974	BA400 SE NHR	MSR 400	HSR 400W	CSR 400 CS		UMR 400		RSR 400	
74525	BA575 SE NHR	MSR 575		CSR 575 CS	DIS-6D				575
72944	BA700 SE NHR	MSR 700	HSR 700W		DIS-7			RSR 700	
72950	BA1200 SE NHR	MSR 1200	HSR 1200W	CSR 1200 CS	DIS-12	USR 1200			120
73972	BT600 DE		HTI 600W DE						
73973	BT600 SE HR		HTI 600W SE						

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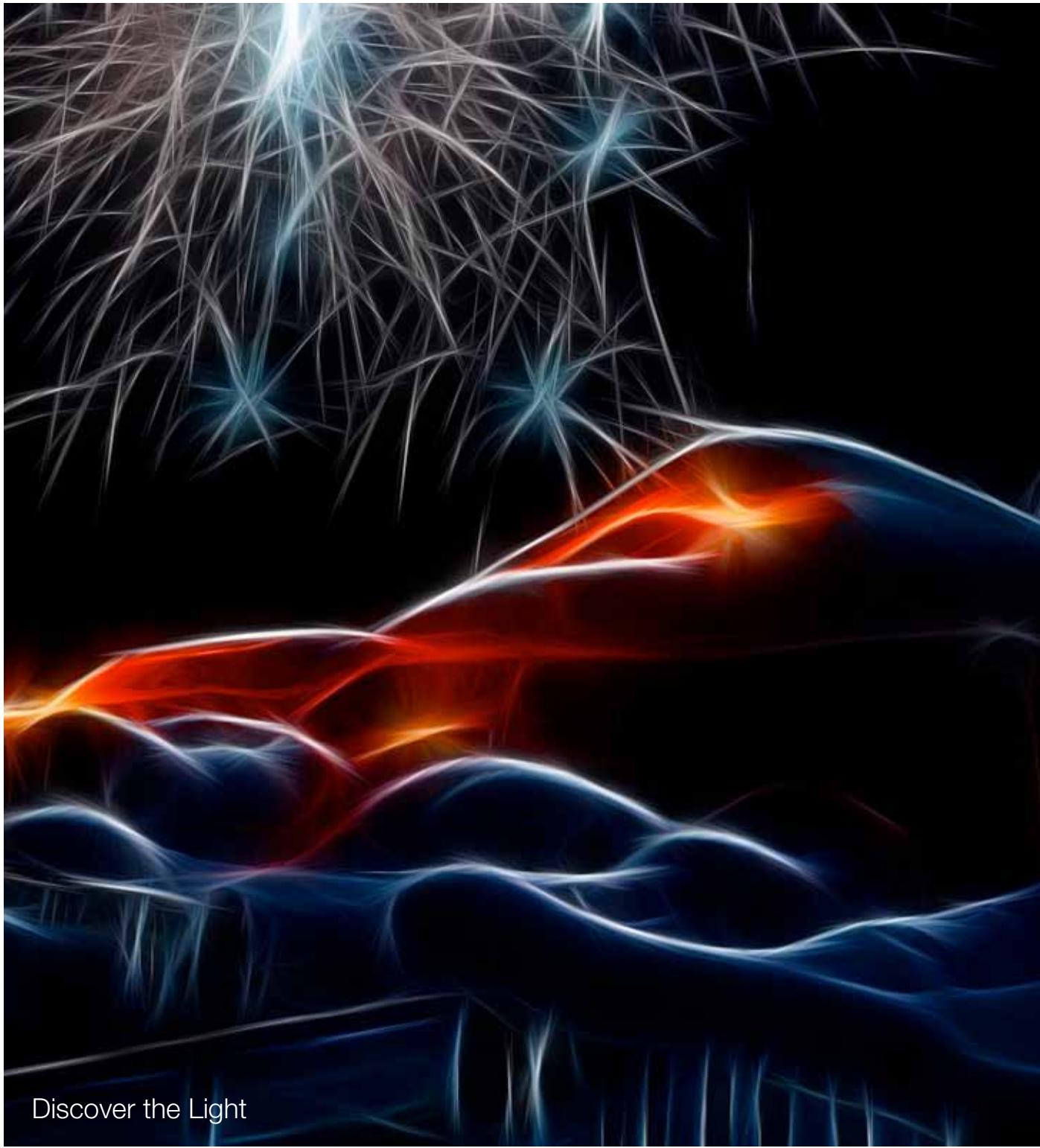
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