Lighting Catalog

Lamp Specification Guide 2012–2013

PHILIPS

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Lighting solutions to suit your needs

From the cities we live in, to the places we work and shop, to our schools and care facilities, lighting touches our lives like nothing else. As a world leader in Lighting, Philips is dedicated to improving people's lives through the introduction of innovative and energy-efficient solutions.

Philips is leading the way in energy-efficient solutions, helping professionals in all segments—retail, office, and industrial, hospitality, healthcare and home—by delivering sustainable and environmentally-friendly lighting technologies and initiatives to the marketplace that also meet design requirements.

Philips is a leader in shaping the future with exciting new lighting applications and platforms such as LED technology, which, besides energy efficiency, provides attractive benefits and endless new 'never-before-possible' lighting solutions.

At Philips, every innovation is driven by the needs of the people, to help them feel more comfortable and to improve the functionality of their surroundings. Our approach is based on obtaining direct input both from customers and from end-users. Through this segment-based approach, we can assess specific customer needs, track changes over time, define new insights that fuel our innovation process, and ultimately help to bring the ideal new products into the market.

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Transforming conventional light sources to LED can improve ambiance and energy efficiency and reduce maintenance.

Making possible uses where before it just didn't seem practical

Suited for accent, hard-to-maintain areas and around-the-clock operations, Philips LED retrofit lamps are a simple replacement for existing inefficient technology, reducing installation cost and complexity.

Philips LED retrofit lamps address key issues of heat management and overall lifespan. Designed for superb color consistency and sharp optics, LED lamps are ideal for close-range and general accent lighting. With no harmful UV radiation and virtually no heat, LEDs won't fade colors and avoid inventory spoilage.

The LED 800 Series retrofit lamps offer smooth dimming✤ and improved lumens for more 'punch' where you need it.

AirFlux Technology is an enhanced thermal technology that uses convection and conduction to dissipate heat, while maintaining first-in-class performance.

Current Product	Philips Upgrade Product	Benefit	Page
60W A19 Incandescent (450 lumens)	Philips LED 12.5W A19	• Smooth dimming to 10% of full light levels✤ • Up to 25,000 hours rated average life • 3-year limited warranty	6
90W PAR38 Halogen	Philips LED 18W PAR38 with Airflux Technology	• Smooth dimming to 10% of full light levels✤ • Improved lumens • Increased candela	9
50W Halogen	Philips LED 10W MR16	• Active cooling • Improved lumens • Increased transformer compatibility	7

✤ Dimmable when using leading edge dimmers. See Philips Website (www.philips.com/ledtechguide) for compatible leading edge dimmers.

LED Lamps

LED A-Type and Candle Lamps

Watts	Bulb Type	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Description	Case Qty.	Rated Avg. Life (Hrs.) (501,502)	Approx. MBCP♦	CRI	MOL (In.)	Approx. Lumens (503)	Life (Yrs.) (446)	Energy Cost (445)	Color Temp. (K)
LED A-Type Lamps																**FTC REQUIREMENTS**
8	A-Type	Med	41483-9	■	8A19/END/2700 DIM	120	A19 Dim✤	6	25,000	—	81	4⅛	470	22.8	$0.96	2700
			40993-8		8A19/END/2700 DIM	120	A19 Dim✤	6	25,000	—	80	4 3/10	450	22.8	$0.96	2700
12.5	A-Type	Med	40994-6	■	12A19/END/2700 DIM	120	A19 Dim✤	6	25,000	—	80	4⅛	800	22.8	$1.45	2700
17	A-Type	Med	41859-0	■	17A21/END/2700 DIM	120	A21 Dim✤	6	25,000	—	80	4⅝	1100	22.8	$2.05	2700
Philips Award Winning LED Bulb																
10	A-Type	Med	42022-4	■	10A19/LPRIZE-PRO/2700 DIM 6/1	120	A19 Dim✤	6	25,000	—	92	4⅛	940	22.8	$1.20	2700
LED Candle Lamps																
3	BA11	Cand.	42042-2		3BA11/END/2700-E12 DIM 8/1	120	BA11 Clear Candle Dim✤	8	25,000	—	92	4	180	22.8	$0.36	2700
	B11	Cand.	42041-4		3B11/END/2700-E12 DIM 8/1	120	B11 Candle Dim✤	8	25,000	—	92	3⅜	180	22.8	$0.36	2700
	B12	Cand.	42691-6		3B12/END/2700-E12 DIM 8/1	120	B12 Candle Dim✤	8	25,000	—	92	3⅜	180	22.8	$0.36	2700
	F15	Med.	42043-0		3F15/END/2700-E26 DIM 8/1	120	F15 Clear Postlight Dim✤	8	25,000	—	92	4⅜	200	22.8	$0.36	2700
4	F15	Med.	42723-7		4F15/END/2700-150 E26 DIM 10/1	120	F15 Frosted Postlight Dim✤	8	25,000	—	90	4⅜	320	22.8	$0.48	2700

For the most current product information, go to the e-catalog on **www.philips.com**

LED symbols and footnotes located on page 12

8W A-Type 450 lumen Med. | 8W/12.5W A-Type Med. | 17W A-Type Med. | 10W A-Type Med. | BA11 Cand. | B11 Cand. | B12 Med. | F15 Med.

LED Lamps

LED MR16, PAR16 GU10 and PAR20 Lamps

Watts	Bulb Type	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Description	Case Qty.	Rated Avg. Life (Hrs.) (501,502)	Approx. MBCP♦	CRI	MOL (In.)	Approx. Lumens (503)	Life (Yrs.) (446)	Energy Cost (445)	Color Temp. (K)
LED MR16 Lamps																**FTC REQUIREMENTS**
4	MR16	GU5.3	40828-6	■▶	4MR16/END/F24 4000 12V	12	MR16 Flood 24°	10	45,000	720	82	1⅝	180	41.1	$0.48	4000
5.5	MR16	GU5.3	42039-8	■	5MR16/END/F24 2700 12V	12	MR16 Flood 24°	10	25,000	1200	85	1⅝	290	41.1	$0.60	2700
			42038-0	■	5MR16/END/F24 3000 12V	12	MR16 Flood 24°	10	25,000	1250	82	1⅝	300	41.1	$0.60	3000
7	MR16	GU5.3	41465-6	▶	7MR16/END/S15 2700 12V DIM	12	MR16 Spot 15° Dim✤	10	40,000	2580	80	2 1/10	325	36.5	$0.84	2700
			41466-4	▶	7MR16/END/S15 3000 12V DIM	12	MR16 Spot 15° Dim✤	10	40,000	2680	80	2 1/10	345	36.5	$0.84	3000
			41468-0		7MR16/END/F24 2700 12V DIM	12	MR16 Flood 24° Dim✤	10	40,000	1450	82	2 1/10	360	36.5	$0.84	2700
			41471-4		7MR16/END/F36 2700 12V DIM	12	MR16 Wide Flood 36° Dim✤	10	40,000	820	84	2 1/10	335	36.5	$0.84	2700
			41469-8		7MR16/END/F24 3000 12V DIM	12	MR16 Flood 24° Dim✤	10	40,000	1520	82	2 1/10	380	36.5	$0.84	3000
			41472-2		7MR16/END/F36 3000 12V DIM	12	MR16 Wide Flood 36° Dim✤	10	40,000	900	82	2 1/10	360	36.5	$0.84	3000
			41470-6	▶	7MR16/END/F24 4000 12V DIM	12	MR16 Flood 24° Dim✤	10	40,000	1580	85	2 1/10	350	36.5	$0.84	4000
			41473-0	▶	7MR16/END/F36 4000 12V DIM	12	MR16 Wide Flood 36° Dim✤	10	40,000	860	84	2 1/10	325	36.5	$0.84	4000
10	MR16	GU5.3	41474-8	▶	10MR16/END/S15 2700 DIM 10/1	12	MR16 Spot 15° Dim✤	10	25,000	3320	80	2 1/9	405	22.8	$1.20	2700
			41475-5	▶	10MR16/END/S15 3000 DIM 10/1	12	MR16 Spot 15° Dim✤	10	25,000	3560	80	2 1/9	435	22.8	$1.20	3000
			42016-6	■	10MR16/END/F24 2700 DIM 10/1	12	MR16 Flood 24° Dim✤	10	25,000	1920	83	2	480	22.8	$1.20	2700
			42017-4	■	10MR16/END/F24 3000 DIM 10/1	12	MR16 Flood 24° Dim✤	10	25,000	1980	82	2	495	22.8	$1.20	3000
			41479-7	▶	10MR16/END/F24 4000 DIM 10/1	12	MR16 Flood 24° Dim✤	10	25,000	2060	84	2 1/9	440	22.8	$1.20	4000
			42018-2	■	10MR16/END/F35 2700 DIM 10/1	12	MR16 Wide Flood 35° Dim✤	10	25,000	1260	83	2	470	22.8	$1.20	2700
			42019-0	■	10MR16/END/F35 3000 DIM 10/1	12	MR16 Wide Flood 35° Dim✤	10	25,000	1300	82	2	485	22.8	$1.20	3000
LED PAR16 GU10 Lamps																
6	PAR16	GU10	42350-9		6PAR16/F25 3000 120V 10/1	120	PAR16 Twistline GU10 Flood 24°	10	45,000	1050	85	2⅛	300	41.1	$0.72	3000
LED PAR20 Lamps																
7	PAR20	Med.	41857-4	■	7PAR20/END/F25 2700 DIM 6/1	120	PAR20 Flood 25° Dim✤	6	45,000	1300	83	3⅜	280	41.1	$0.84	2700
			41858-2		7PAR20/END/F25 3000 DIM 6/1	120	PAR20 Flood 25° Dim✤	6	45,000	1300	83	3⅜	280	41.1	$0.84	3000
			41010-0		7PAR20/END/F25 4000 DIM 6/1	120	PAR20 Flood 25° Dim✤	6	45,000	1200	83	3⅜	280	41.1	$0.84	4000
8	PAR20	Med.	42612-2	●■	8PAR20/END/F25 2700 DIM 6/1	120	PAR20 Flood 25° Dim✤	6	45,000	2300	84	3⅜	450	41.1	$0.84	2700
			42613-0	●■	8PAR20/END/F25 3000 DIM 6/1	120	PAR20 Flood 25° Dim✤	6	45,000	2400	84	3⅜	470	41.1	$0.84	3000
			42614-8	●■▶	8PAR20/END/F25 4000 DIM 6/1	120	PAR20 Flood 25° Dim✤	6	45,000	2400	84	3⅜	470	41.1	$0.84	4000
			42615-5	●■	8PAR20/END/F36 2700 DIM 6/1	120	PAR20 Wide Flood 36° Dim✤	6	45,000	2300	84	3⅜	450	41.1	$0.84	2700
			42616-3	●■	8PAR20/END/F36 3000 DIM 6/1	120	PAR20 Wide Flood 36° Dim✤	6	45,000	2400	84	3⅜	470	41.1	$0.84	3000
			42617-1	●■▶	8PAR20/END/F36 4000 DIM 6/1	120	PAR20 Wide Flood 36° Dim✤	6	45,000	2400	84	3⅜	470	41.1	$0.84	4000

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LED symbols and footnotes located on page 12

4W MR16 GU5.3

5.5W MR16 GU5.3

7W & 10W MR16 GU5.3

6W PAR16 GU10

7W PAR20 Med.

8W PAR20 Med.

LED Lamps

LED PAR30S and PAR30L Lamps

Watts	Bulb Type	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Description	Case Qty.	Rated Avg. Life (Hrs.) (501,502)	Approx. MBCP♦	CRI	MOL (In.)	Approx. Lumens (503)	Life (Yrs.) (446)	Energy Cost (445)	Color Temp. (K)
LED PAR30S Lamps																**FTC REQUIREMENTS**
11	PAR30S	Med.	40809-6	■	11PAR30S/END/F22 2700 DIM	120	PAR30S Flood 22° Dim✤	6	45,000	2200	82	3½	440	41.1	$1.32	2700
			40810-4	■	11PAR30S/END/F22 3000 DIM	120	PAR30S Flood 22° Dim✤	6	45,000	2200	83	3½	440	41.1	$1.32	3000
			40811-2	▶	11PAR30S/END/F20 4200 DIM	120	PAR30S Flood 20° Dim✤	6	45,000	3100	65	3½	610	41.1	$1.32	4200
12	PAR30S	Med.	41011-8	■	12PAR30S/END/F22 2700 DIM	120	PAR30S Flood 22° Dim✤	6	45,000	2900	85	3½	660	41.1	$1.45	2700
			41012-6	■	12PAR30S/END/F22 3000 DIM	120	PAR30S Flood 22° Dim✤	6	45,000	3100	85	3½	700	41.1	$1.45	3000
13	PAR30S	Med.	42535-5*	● ▶	13PAR30S/END/S15 2700 DIM 6/1	120	PAR30S Spot 15° Dim✤	6	45,000	6000	83	3½	720	41.1	$1.57	2700
			42536-3*	● ▶	13PAR30S/END/S15 3000 DIM 6/1	120	PAR30S Spot 15° Dim✤	6	45,000	6075	83	3½	750	41.1	$1.57	3000
			42537-1*	● ▶	13PAR30S/END/S15 4000 DIM 6/1	120	PAR30S Spot 15° Dim✤	6	45,000	6075	83	3½	750	41.1	$1.57	4000
			42344-2	●	13PAR30S/END/F25 2700 DIM 6/1	120	PAR30S Flood 25° Dim✤	6	45,000	3000	83	3½	720	41.1	$1.57	2700
			42345-9	●	13PAR30S/END/F25 3000 DIM 6/1	120	PAR30S Flood 25° Dim✤	6	45,000	3150	83	3½	750	41.1	$1.57	3000
			42538-9*	● ▶	13PAR30S/END/F25 4000 DIM 6/1	120	PAR30S Flood 25° Dim✤	6	45,000	3200	83	3½	750	41.1	$1.57	4000
			42346-7	●	13PAR30S/END/F36 2700 DIM 6/1	120	PAR30S W. Flood 36° Dim✤	6	45,000	1450	83	3½	720	41.1	$1.57	2700
			42347-5	●	13PAR30S/END/F36 3000 DIM 6/1	120	PAR30S W. Flood 36° Dim✤	6	45,000	1550	83	3½	750	41.1	$1.57	3000
			42539-7*	● ▶	13PAR30S/END/F36 4000 DIM 6/1	120	PAR30S W. Flood 36° Dim✤	6	45,000	1550	83	3½	750	41.1	$1.57	3000
LED PAR30L Lamps																
11	PAR30L	Med.	40812-0	■	11PAR30L/END/F22 2700 DIM	120	PAR30L Flood 22° Dim✤	6	45,000	2200	82	4⅜	440	41.1	$1.32	2700
			40813-8	■	11PAR30L/END/F22 3000 DIM	120	PAR30L Flood 22° Dim✤	6	45,000	2200	85	4⅜	440	41.1	$1.32	3000
			40814-6	▶	11PAR30L/END/F20 4200 DIM	120	PAR30L Flood 20° Dim✤	6	45,000	3100	67	4⅜	610	41.1	$1.32	4200
12	PAR30L	Med.	41014-2	■	12PAR30L/END/F22 2700 DIM	120	PAR30L Flood 22° Dim✤	6	45,000	2900	85	4⅜	660	41.1	$1.45	2700
			41457-3	■	12PAR30L/END/F36 2700 DIM	120	PAR30L W. Flood 36° Dim✤	6	45,000	1200	84	4⅜	660	41.1	$1.45	2700
			41015-9	■	12PAR30L/END/F22 3000 DIM	120	PAR30L Flood 22° Dim✤	6	45,000	3000	85	4⅜	700	41.1	$1.45	3000
			41458-1	■	12PAR30L/END/F36 3000 DIM	120	PAR30L W. Flood 36° Dim✤	6	45,000	1300	82	4⅜	700	41.1	$1.45	3000
13	PAR30L	Med.	41856-6		13PAR30L/END/F25 2700 DIM 6/1	120	PAR30L Flood 25° Dim✤	6	45,000	3600	80	4⅜	820	41.1	$1.57	2700
			42047-1	●	13PAR30L/END/F25 2700 DIM 6/1	120	PAR30L Flood 25° Dim✤	6	45,000	3200	83	4⅜	720	41.1	$1.57	2700
			42080-2	●	13PAR30L/END/F25 3000 DIM 6/1	120	PAR30L Flood 25° Dim✤	6	45,000	3200	80	4⅜	750	41.1	$1.57	3000
			42533-0*	● ▶	13PAR30L/END/F25 4000 DIM 6/1	120	PAR30L Flood 25° Dim✤	6	45,000	3200	83	4⅜	750	41.1	$1.57	4000
			42049-7	●	13PAR30L/END/F36 2700 DIM 6/1	120	PAR30L W. Flood 36° Dim✤	6	45,000	1512	82	4⅜	720	41.1	$1.57	2700
			42050-5	●	13PAR30L/END/F36 3000 DIM 6/1	120	PAR30L W. Flood 36° Dim✤	6	45,000	1512	81	4⅜	750	41.1	$1.57	3000
			42534-8*	● ▶	13PAR30L/END/F36 4000 DIM 6/1	120	PAR30L W. Flood 36° Dim✤	6	45,000	1512	83	4⅜	750	41.1	$1.57	4000

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LED symbols and footnotes located on page 12
*Available in Q4 2012

11W PAR30S Med.

12W PAR30S Med.

13W PAR30S Med.

11W PAR30L Med.

12W PAR30L Med.

13W PAR30L Med.

LED PAR38 Lamps

Watts	Bulb Type	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Description	Case Qty.	Rated Avg. Life (Hrs.) (501,502)	Approx. MBCP♦	CRI	MOL (In.)	Approx. Lumens (503)	Life (Yrs.) (446)	Energy Cost (445)	Color Temp. (K)
																FTC REQUIREMENTS
16	PAR38	Med.	40817-9	▶	16PAR38/END/F20 4200 DIM	120	PAR38 Flood 20° Dim✤	6	45,000	4800	67	5½	920	41.1	$1.93	4200
			40815-3		16PAR38/END/F22 2700 DIM	120	PAR38 Flood 22° Dim✤	6	45,000	2900	82	5½	650	41.1	$1.93	2700
			40816-1		16PAR38/END/F22 3000 DIM	120	PAR38 Flood 22° Dim✤	6	45,000	2900	85	5½	650	41.1	$1.93	3000
			41854-1	■ ▲	16PAR38/END/F25 2700 DIM	120	PAR38 Flood 25° Dim✤	6	45,000	3100	90	5½	730	41.1	$1.93	2700
17	PAR38	Med.	41451-6	■ ▶	17PAR38/END/S15 2700 DIM	120	PAR38 Spot 15° Dim✤	6	45,000	7200	84	5⅞	880	41.1	$2.05	2700
			41453-2	■	17PAR38/END/S15 4000 DIM	120	PAR38 Spot 15° Dim✤	6	45,000	9600	78	5⅞	1080	41.1	$2.05	4000
			41019-1	■	17PAR38/END/F22 4000 DIM	120	PAR38 Flood 22° Dim✤	6	45,000	4800	75	5½	1050	41.1	$2.05	4000
			41855-8	■ ●	17PAR38/END/F25 3000 OD	120	PAR38 Flood 25° Outdoor✤	6	25,000	4000	81	5⅞	1050	22.8	$2.05	3000
18	PAR38	Med.	42540-5*	◐ ▶	18PAR38/END/S15 2700 DIM	120	PAR38 Spot 15° Dim✤	6	45,000	7300	83	5½	900	41.1	$2.17	2700
			41852-5	■ ▶	18PAR38/END/S15 3000 DIM	120	PAR38 Spot 15° Dim✤	6	45,000	10,000	80	5½	1200	41.1	$2.17	3000
			42541-3*	◐ ▶	18PAR38/END/S15 3000 DIM	120	PAR38 Spot 15° Dim✤	6	45,000	7700	83	5½	950	41.1	$2.17	3000
			42542-1*	◐ ▶	18PAR38/END/S15 4000 DIM	120	PAR38 Spot 15° Dim✤	6	45,000	7700	83	5½	950	41.1	$2.17	4000
			42051-3	◐ ■	18PAR38/END/F25 2700 DIM	120	PAR38 Flood 25° Dim✤	6	45,000	3900	83	5½	900	41.1	$2.17	2700
			41853-3	■	18PAR38/END/F25 3000 DIM	120	PAR38 Flood 25° Dim✤	6	45,000	5070	81	5½	1200	41.1	$2.17	3000
			42052-1	◐ ■	18PAR38/END/F25 3000 DIM	120	PAR38 Flood 25° Dim✤	6	45,000	4100	82	5½	950	41.1	$2.17	3000
			42543-9*	◐ ▶	18PAR38/END/F25 4000 DIM	120	PAR38 Flood 25° Dim✤	6	45,000	3990	83	5½	950	41.1	$2.17	3000
			42088-5	◐ ■	18PAR38/END/F36 2700 DIM	120	PAR38 W. Flood 36° Dim✤	6	45,000	2050	83	5½	900	41.1	$2.17	2700
			42089-3	◐ ■	18PAR38/END/F36 3000 DIM	120	PAR38 W. Flood 36° Dim✤	6	45,000	2200	84	5½	950	41.1	$2.17	3000
			42544-7*	◐ ■ ▶	18PAR38/END/F36 4000 DIM	120	PAR38 W. Flood 36° Dim✤	6	45,000	2200	84	5½	950	41.1	$2.17	4000
19.5	PAR38	Med.	42545-4*	◐ ▶	19.5PAR38/END/S15 2700 DIM	120	PAR38 Spot 15° Dim✤	6	45,000	9100	83	5½	1100	41.1	$2.35	2700
			42547-0*	◐ ▶	19.5PAR38/END/S15 3000 DIM	120	PAR38 Spot 15° Dim✤	6	45,000	10,000	83	5½	1100	41.1	$2.35	3000
			42549-6*	◐ ▶	19.5PAR38/END/S15 4000 DIM	120	PAR38 Spot 15° Dim✤	6	45,000	10,000	83	5½	1100	41.1	$2.35	4000
			42121-4	◐	19.5PAR38/END/F25 2700 DIM	120	PAR38 Flood 25° Dim✤	6	45,000	5400	84	5½	1100	41.1	$2.35	2700
			42122-2	◐	19.5PAR38/END/F25 3000 DIM	120	PAR38 Flood 25° Dim✤	6	45,000	5900	83	5½	1200	41.1	$2.35	3000
			42335-0*	◐ ■ ▶	19.5PAR38/END/F25 4000 DIM	120	PAR38 Flood 25° Dim✤	6	45,000	5800	83	5½	1200	41.1	$2.35	4000
			42546-2	◐ ▶	19.5PAR38/END/F36 2700 DIM	120	PAR38 W. Flood 36° Dim✤	6	45,000	2310	84	5½	1100	41.1	$2.35	2700
			42548-8	◐ ▶	19.5PAR38/END/F36 3000 DIM	120	PAR38 W. Flood 36° Dim✤	6	45,000	2520	83	5½	1200	41.1	$2.35	3000
			42550-4*	◐ ▶	19.5PAR38/END/F36 4000 DIM	120	PAR38 W. Flood 36° Dim✤	6	45,000	2520	83	5½	1200	41.1	$2.35	4000

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LED symbols and footnotes located on page 12
* Available in Q4 2012

16W PAR38
Med.

17W/18W PAR38
Med.

PAR38 Outdoor
Med.

18W SM/19.5W SM PAR38
Med.

LED Lamps

LED BR30, BR40 and T8 Tube Lamps

LED Reflector Lamps

Watts	Bulb Type	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Description	Case Qty.	Rated Avg. Life (Hrs.) (501,502)	Approx. MBCP♦	CRI	MOL (In.)	Approx. Lumens (503)	Life (Yrs.) (446)	Energy Cost (445)	Color Temp. (K)
													FTC REQUIREMENTS			
13	BR30	Med.	42055-4		13BR30/END/F90 2700 DIM SM	120	BR30 Wide Flood 90°✣	6	25,000	—	82	5 1/10	730	22.8	$1.57	2700
14	BR40	Med.	42056-2		14BR40/END/S90 2700 DIM SM	120	BR40 Wide Flood 90°✣	6	25,000	—	82	6½	800	22.8	$1.57	2700

LED T8 Tube GA Specifier Series Lamps

Watts	Bulb Type	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Description	Pkg. Qty.	CRI	Rated Avg. Life (Hrs.) (501,502)	Nom. Length (In.)	Approx. Lumens (504)	Life (Yrs.) (446)	Energy Cost (445)	Color Temp. (K)
												FTC REQUIREMENTS			
10	T8	G13	42182-6*		10T8/END/24-3500 UNV 10/1	100–277	Linear LED T8 Tube, 3500K	10	85	40,000	24	825	36.5		3500
			42186-7*		10T8/END/24-4000 UNV 10/1	100–277	Linear LED T8 Tube, 4000K	10	85	40,000	24	825	36.5		4000
19	T8	G13	42183-4*		19T8/END/48-3500 UNV 10/1	100–277	Linear LED T8 Tube, 3500K	10	85	40,000	48	1650	36.5		3500
			42187-5*		19T8/END/48-4000 UNV 10/1	100–277	Linear LED T8 Tube, 4000K	10	85	40,000	48	1650	36.5		4000

For the most current product information, go to the e-catalog on **www.philips.com**
LED symbols and footnotes located on page 12
* Available in Q4 2012

BR30
Med.

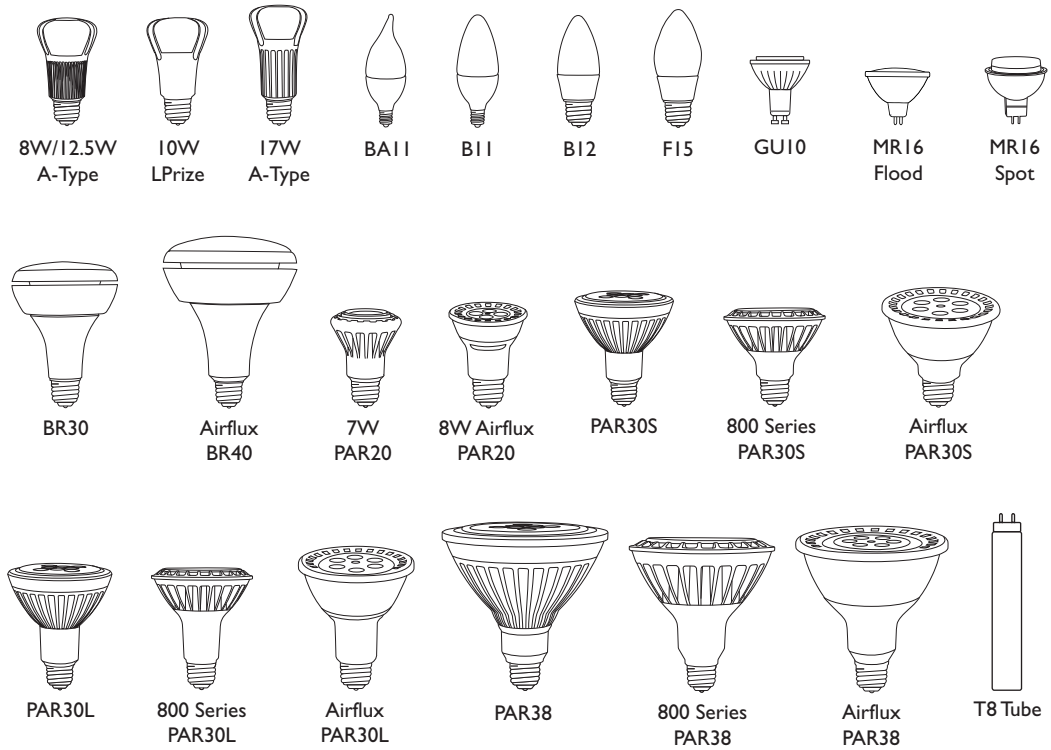
BR40
Med.

T8
G13

LED Base Types (Not Actual Sizes)

Med. Medium | Cand. Candelabra | GU10 | GU5.3 | G13

LED Bulb Shapes (Not Actual Sizes)



LED Lamps

Symbols and Footnotes

For the most current product information, go to the e-catalog on www.philips.com

♦ Maximum Beam Candlepower

✤ Dimmable when using leading edge dimmers. See Philips Website (www.philips.com/ledtechguide) for compatible leading edge dimmers.

Exclusive to Philips Lighting Company

ENERGY STAR Bulb: As an ENERGY STAR Partner, Philips has determined that this product meets the ENERGY STAR guidelines for energy efficiency.

Make to order lamps.

Uses AirFlux Technology.

90 CRI enables superior color rendition.

Suitable for wet locations.

(445) Estimated energy cost is based on 3 hrs/day, 11¢/kWh. Cost depends on rates and use.

(446) Life in years is based on 3 hrs/day.

(501) Rated average life is the length of operation (in hours) at which point an average of 50% of the lamps will still be operational and 50% will not.

(502) Rated average life based on engineering testing and probability analysis.

(503) Lifetime testing consistent with IES LM-80, Lumen Maintenance Procedure.

(504) Photometric testing consistent with IES LM-79.

(505) Maximum power consumed at start-up. Steady state power consumption will be less.

(506) Minimum Lumen Maintenance is the minimum number of hours after which the LED light output depreciates to 70% of its initial output. This value, L_{70}, is tested @ 25°C ambient temperature. (IES LM-80)

(507) The LED Fixture, Initial Lumens is determined as prescribed in IESNA LM-79, Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products, which specifies lumen measurements of the fixture be reported after the measurements have stabilized at 25°C.

(508) Photometric testing consistent with IES LM-79. Maximum Beam Candlepower.

c UL us
LISTED
LED LAMPS 3 PRR E317295

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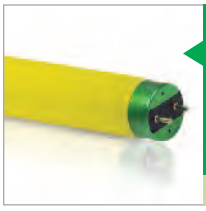
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ALTO lamp technology with green endcaps has become synonymous with environmental responsibility and low mercury.

Reduce your energy and maintenance costs

The Philips Linear Fluorescent lamp portfolio offers some of the lowest mercury and longest life lamps in the industry.

Philips Energy Advantage T8 25W featuring ALTO II Technology offers high energy savings in an environmentally responsible lamp. Save 7 watts per lamp instantly when compared to a T8 32W lamp.

Philips Energy Advantage T8 XLL 25W featuring ALTO II Technology will last 53% longer than an industry standard 4' T8 32W lamp* (12hrs per start on an instant start ballast), and provide a cost saving solution that is better for the environment.

Philips Energy Advantage T5 HO 49W featuring ALTO Lamp Technology is the only energy saving T5 lamp that saves you 5W by just changing a lamp (compared to a T5 54W lamp) with no sacrifice to performance.

Current Product	Philips Upgrade Product	Benefit	Page
32W 4ft T8	Energy Advantage T8 4ft 25W featuring ALTO II Technology	• Saves 7W per lamp • 97% lumen maintenance • Up to 38,000 hours rated average life†; 42 month lamp warranty period	21
32W 4ft T8	Energy Advantage T8 XLL 4ft 25W featuring ALTO II Technology	• Saves 7W per lamp • 97% lumen maintenance • Up to 46,000 hours rated average life†; 48 month lamp warranty period	23
54W 4ft T5 HO	Energy Advantage T5 HO 44W featuring ALTO Lamp Technology	• Saves 10W per lamp • 40,000 hours rated average life for an extended relamping cycle†	17

† Average life under engineering data with lamps turned off and restarted once every 12 operating hours.
* When replacing a standard 4' T8 32W lamp with 30,000 hours rated average life and 2850 lumens with a Philips Energy Advantage T8 32W with 46,000 hours rated average life and 2400 lumens. Rated average life based on 12 hours per start on an instant start ballast.

Philips T5 Fluorescent Lamps featuring ALTO Technology

Powerful, environmentally-responsible, ultra-slim lamps

- ✓ Industry low 1.4mg of mercury in all Philips T5 and T5HO lamps
- ✓ No burn in required before dimming Philips T5 and T5HO lamps
- ✓ Operate on programmed start ballast only to maintain warranty
- ✓ Lumen output ratings at 35°C, lumens at 25°C, average 10% lower

T5 High Efficiency

- New 25W Energy Advantage version of 28W
- Up to 116 lumens per watt
- 5000 kelvin being added to all sizes
- Slim profile lamp and ballast
- Perfect for office, healthcare and government applications

T5 High Output

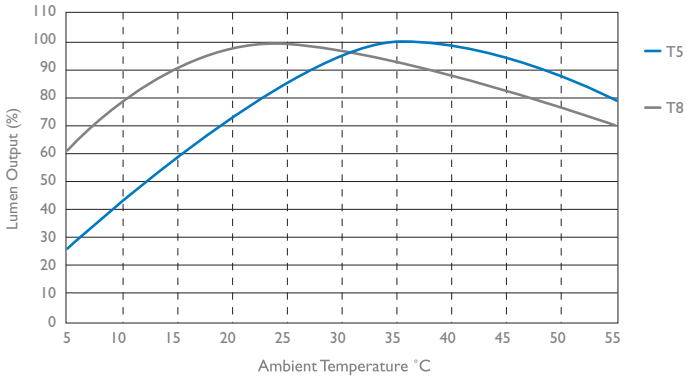
- New 49W HO Energy Advantage version of 54W HO
- 49W HO also available in extreme temperature version
- T5HO offers superb high bay options
- Increased energy saving options for many applications
- Perfect for retail, industrial and warehouse applications

Philips T5 Lamp Warranty Periods

Philips Lamp	Warranty period*	
	3 Hr. Start	12 Hr. Start
T5HE—14W, 21W, 28W and 35W	30 Months	36 Months
T5HE Energy Advantage F28T5/800/EA/ALTO 25W	36 Months	42 Months
T5HO—24W, 39W, 54W and 80W	30 Months	36 Months
T5HO—Energy Advantage F54T5/800/HO/EA/ALTO 49W	36 Months	42 Months
T5HO—Extra Energy Advantage F54T5/800/HO/EA/ALTO 44W	42 Months	48 Months

* Certain limitations and conditions apply. See Philips for further warranty details.

T5/T8 Lumens vs. Temperature



Philips T5 Lamp Family—Life Ratings

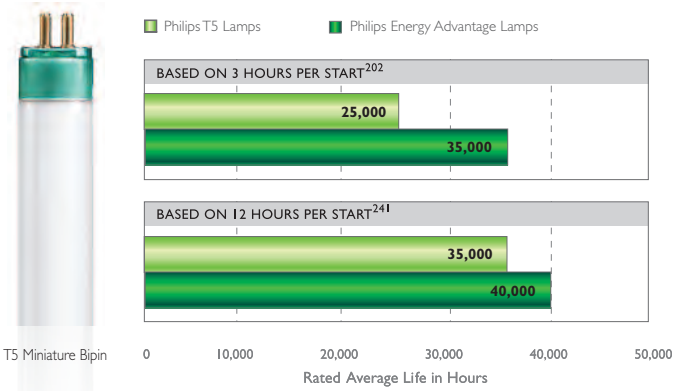
Products	Programmed Start[1] Rated Average Life (Hrs.)	
	3 Hr. Start	12 Hr. Start
T5HE—14W, 21W, 28W and 35W	25,000	35,000
T5HE Energy Advantage F28T5/800/EA/ALTO 25W	35,000	40,000
T5HO—24W, 39W, 54W and 80W	25,000	35,000
T5HO—Energy Advantage F54T5/800/HO/EA/ALTO 49W	35,000	40,000
T5HO—Extra Energy Advantage F54T5/800/HO/EA/ALTO 44W	35,000	40,000

1) Average life under engineering data on programmed start ballast with lamps turned off and restarted once every 3 or 12 operating hours as noted.

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Average Life 3 Hr. Start (202)	Rated Average Life 12 Hr. Start (241)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
T5 High Output (HO) Energy Advantage Lamps											
T5 Miniature Bipin; Programmed Start (226)											
44	41781-6	$ Ⓔ ●	F54T5/835/HO/XEW/ALTO 44W	40	TL 835, 3500K	46	35,000	40,000	4500	4275	85
	41782-4	$ Ⓔ ●	F54T5/841/HO/XEW/ALTO 44W	40	TL 841, 4100K	46	35,000	40,000	4500	4275	85
	41783-2	$ Ⓔ ●	F54T5/850/HO/XEW/ALTO 44W	40	TL 850, 5000K	46	35,000	40,000	4320	4100	82
49	22049-1	$ Ⓔ ●	F54T5/830/HO/EA/ALTO 49W	40	TL 830, 3000K	46	35,000	40,000	5000	4750	85
	22050-9	$ Ⓔ ●	F54T5/835/HO/EA/ALTO 49W	40	TL 835, 3500K	46	35,000	40,000	5000	4750	85
	22052-5	$ Ⓔ ●	F54T5/841/HO/EA/ALTO 49W	40	TL 841, 4100K	46	35,000	40,000	4800	4600	85
	40649-6	$ Ⓔ ●	F54T5/850/HO/EA/ALTO 49W	40	TL 850, 5000K	46	35,000	40,000	4850	4625	82
T5 High Output (HO) Energy Advantage Lamps "Extreme Temperature" with Amalgam Technology											
T5 Miniature Bipin; Programmed Start (226)											
49	40729-6	$ Ⓔ ●	F54T5/835/HO/A/EA/ALTO 49W	40	TL 835, 3500K	46	35,000	40,000	5000	4750	85
	40730-4	$ Ⓔ ●	F54T5/841/HO/A/EA/ALTO 49W	40	TL 841, 4100K	46	35,000	40,000	5000	4750	85
	40752-8	$ Ⓔ ● †	F54T5/850/HO/A/EA/ALTO 49W	40	TL 850, 5000K	46	35,000	40,000	4800	4600	82
T5 High Output (HO) Lamps—(2ft–5ft)											
T5 Miniature Bipin; Programmed Start (226)											
24	29019-7	$ ●	F24T5/830/HO/ALTO	40	TL 830, 3000K	22	25,000	35,000	1950	1850	85
	29020-5	$ ●	F24T5/835/HO/ALTO	40	TL 835, 3500K	22	25,000	35,000	1950	1850	85
	29021-3	$ ●	F24T5/841/HO/ALTO	40	TL 841, 4100K	22	25,000	35,000	1950	1850	85
	41277-5	$ ●	F24T5/850/HO/ALTO	40	TL 850, 5000K	22	25,000	35,000	1870	1775	82
39	29022-1	$ ●	F39T5/830/HO/ALTO	40	TL 830, 3000K	34	25,000	35,000	3500	3325	85
	29023-9	$ ●	F39T5/835/HO/ALTO	40	TL 835, 3500K	34	25,000	35,000	3500	3325	85
	29025-4	$ ●	F39T5/841/HO/ALTO	40	TL 841, 4100K	34	25,000	35,000	3500	3325	85
	41435-9	$ ●	F39T5/850/HO/ALTO	40	TL 850, 5000K	34	25,000	35,000	3360	3190	82
54	29026-2	$ ● Ⓔ	F54T5/830/HO/ALTO	40	TL 830, 3000K	46	25,000	35,000	5000	4750	85
	29028-8	$ ● Ⓔ	F54T5/835/HO/ALTO	40	TL 835, 3500K	46	25,000	35,000	5000	4750	85
	29083-3	$ ● Ⓔ	F54T5/841/HO/ALTO	40	TL 841, 4100K	46	25,000	35,000	5000	4750	85
	13510-3	$ ● Ⓔ	F54T5/850/HO/ALTO	40	TL 850, 5000K	46	25,000	35,000	4800	4600	82
	14745-4	$ ● Ⓔ	F54T5/865/HO/ALTO	40	TL 865, 6500K	46	25,000	35,000	4650	4415	82

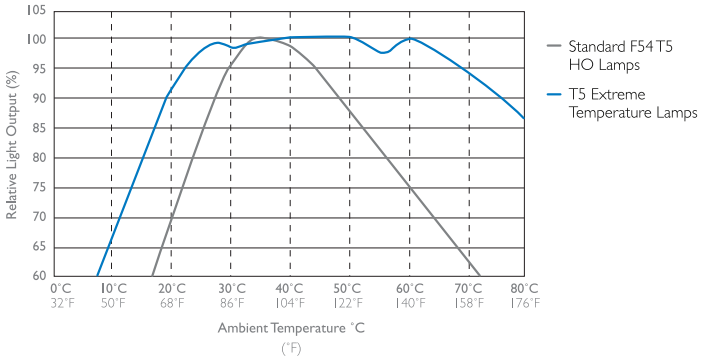
For the most current product information, go to the e-catalog on **www.philips.com**
Fluorescent symbols and footnotes located on page 40

Rated Average Life



Performance (Relative Light Output vs. Temperature)

Philips T5 Extreme Temperature Lamps vs. Standard F54T5 Lamps



Fluorescent Lamps

T5, Colored Linear Fluorescent Lamps

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Average Life 3 Hr. Start (202)	Rated Average Life 12 Hr. Start (241)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
Energy Advantage T5 Lamps —(4ft)											
T5 Miniature Bipin; Programmed Start (226)											
25	40631-4	●	F28T5/835/EA/ALTO 25W	40	TL 835, 3500K	46	35,000	40,000	2900	2750	85
	40632-2	●	F28T5/841/EA/ALTO 25W	40	TL 841, 4100K	46	35,000	40,000	2900	2750	85
	41420-1	●	F28T5/850/EA/ALTO 25W	40	TL 850, 5000K	46	35,000	40,000	2780	2640	82
T5 High Efficiency Lamps—(2ft–5ft)											
T5 Miniature Bipin; Programmed Start (226)											
14	23077-1	$ ●	F14T5/830/ALTO	40	TL 830, 3000K	22	25,000	35,000	1350	1275	85
	23079-7	$ ●	F14T5/835/ALTO	40	TL 835, 3500K	22	25,000	35,000	1350	1275	85
	23080-5	$ ●	F14T5/841/ALTO	40	TL 841, 4100K	22	25,000	35,000	1350	1275	85
21	23081-3	$ ●	F21T5/830/ALTO	40	TL 830, 3000K	34	25,000	35,000	2100	2000	85
	23082-1	$ ●	F21T5/835/ALTO	40	TL 835, 3500K	34	25,000	35,000	2100	2000	85
	23083-9	$ ●	F21T5/841/ALTO	40	TL 841, 4100K	34	25,000	35,000	2100	2000	85
28	23084-7	$ ● Ⓔ	F28T5/830/ALTO	40	TL 830, 3000K	46	25,000	35,000	2900	2750	85
	23085-4	$ ● Ⓔ	F28T5/835/ALTO	40	TL 835, 3500K	46	25,000	35,000	2900	2750	85
	40485-3	$ ● Ⓔ	F28T5/835/ALTO	6	TL 835, 3500K	46	25,000	35,000	2900	2750	85
	23086-2	$ ● Ⓔ	F28T5/841/ALTO	40	TL 841, 4100K	46	25,000	35,000	2900	2750	85
35	23088-8	$ ●	F35T5/830/ALTO	40	TL 830, 3000K	58	25,000	35,000	3650	3450	85
	23095-3	$ ●	F35T5/841/ALTO	40	TL 841, 4100K	58	25,000	35,000	3650	3450	85

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life (Hrs.) (202)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
Colored—Linear Fluorescent Lamps—T5 High Output (226)										
24	27547-9	$	F24T5/BLUE/HO	15	TL5HO Colored Pro 24W/180 Blue	22	12,000	550	440	N/A
54	27562-8	$	F54T5/BLUE/HO	15	TL5HO Colored Pro 54W/180 Blue	46	12,000	1500	1200	N/A

For the most current product information, go to the e-catalog on **www.philips.com**

Fluorescent symbols and footnotes located on page 40

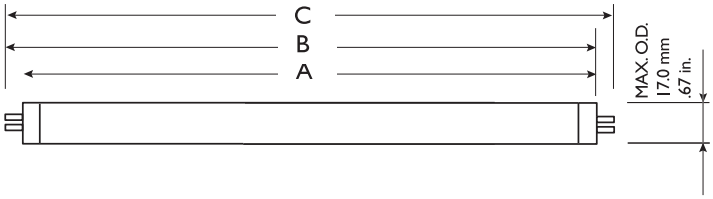
T5 Lumens at 35°C and 25°C

Lamp Type	Approx. Initial Lumens at 35° C (203, 204)	Approx. Initial Lumens at 25° C (203, 204)
F14T5	1350	1175
F21T5	2100	1800
F28T5	2900	2625
F35T5	3650	3275
F24T5/HO	1950	1675
F39T5/HO	3500	3100
F54T5/HO	5000	4450

T5 Miniature Bipin

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life (Hrs.) (202)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
T5 Circular Fluorescent Lamps										
2GX13 Base; Programmed Start										
22	16601-7	$	TL5C 22W/830	10	Formerly FC9T5/830	9 OD	16,000	1800	1530	85
	16600-9	$	TL5C 22W/840	10	Formerly FC9T5/841	9 OD	16,000	1800	1530	85
40	14859-3	$	TL5C 40W/835	10	Formerly FC12T5/835	12 OD	16,000	3300	2805	85
55	16593-6	$	TL5C 55W/830	10	Formerly FC12T5/830/HO	12 OD	16,000	4200	3580	85
	16592-8	$	TL5C 55W/840	10	Formerly FC12T5/841/HO	12 OD	16,000	4200	3580	85
Preheat Fluorescent Lamps										
T5 Miniature Bipin; Requires Use of Starters										
4	33236-1		F4T5/CW	25	Cool White, 4100K	6	6000	135	95	59
6	33241-1		F6T5/CW	25	Cool White, 4100K	9	7500	295	230	59
8	33247-8		F8T5/CW	25	Cool White, 4100K	12	7500	400	300	59
13	33253-6		F13T5/CW	25	Cool White, 4100K	21	7500	820	655	59
	20703-5		F13T5/30U	25	Ultralume, 3000K	21	7500	1000	800	85

For the most current product information, go to the e-catalog on **www.philips.com**
Fluorescent symbols and footnotes located on page 40



T5 Circular

T5 Miniature Bipin

T5 and T5 High Output Dimensions (226)

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

Philips ALTO II Technology

Philips T8 Fluorescent Lamps featuring ALTO II Technology
Better for your business, better for the environment

ALTO lamps with green endcaps have become synonymous with environmental responsibility and low mercury. Since the launch of ALTO Lamp Technology in 1995, 2.0 billion Philips fluorescent lamps with ALTO Lamp Technology have been produced with over 20 tons less mercury than previous non-ALTO lamps[1].

Philips launched ALTO II Technology in 2007. ALTO II Technology has 50% less mercury than prior T8 lamps featuring ALTO Technology, making these lamps the most sustainable linear fluorescents available. Best of all, these lamps offer the same performance levels as ALTO lamps (life, energy, and light output).

Philips T8 Lamp Warranty Periods[2]

Philips Lamp	Instant Start Warranty (3hr/12hr starts)	Programmed Start Warranty (3hr/12hr starts)
T8 700 and 800 Series	30/30 Months	30/36 Months
Advantage T8 32W High Lumen	30/30 Months	36/36 Months
PLUS T8 32W	36/42 Months	42/48 Months
Energy Advantage and Value Energy Advantage 25W and 32W	36/42 Months	48/54 Months
T8 32W Extra Long Life (XLL)	42/48 Months	48/60 Months
Energy Advantage T8 25W and 28W (XLL) Extra Long Life	42/48 Months	48/60 Months

Did you know?

- ALTO II T8 lamps have warranty periods ranging from 2½–4 years[3]
- ALTO II T8 lamps require no burn in before dimming
- ALTO II T8 lamps can contribute to LEED-EB certification. For more information, go to ww.usgbc.org

Philips T8 Lamp Family—Life ratings

Philips Lamp	Instant Start[4]		Programmed Start[5]	
	3 hours	12 hours	3 hours	12 hours
T8 700 and 800 Series	24,000	30,000	30,000	36,000
Advantage T8 32W High Lumen	24,000	30,000	30,000	36,000
PLUS T8 32W	30,000	36,000	38,000	44,000
Energy Advantage and Value Energy Advantage 25W and 32W	32,000	38,000	38,000	44,000
T8 32W Extra Long Life (XLL)	40,000	46,000	46,000	52,000
Energy Advantage T8 25W and 28W (XLL) Extra Long Life	40,000	46,000	46,000	52,000

1) [1994 industry average (22.8mg)—PLC average (4.0mg)] x 2 billion lamps. Convert to pounds by dividing by 464. Convert to tons by dividing by 2000.
2) Conditions apply—Based on maximum annual burn hours of 5110. Please contact Philips for warranty conditions for use of other equipment, including sensors.
3) Warranty Periods: 700 & 800 Series T8–30 months; Energy Advantage T8–36 months; PLUS T8–36 months; and Advantage T8–36 months; Extra Long Life T8–48 months; Energy Advantage Extra Long Life T8–48 months.
4) Average life under engineering data on instant start ballast with lamps turned off and restarted once every 3 or 12 operating hours as indicated.
5) Average life under engineering data on programmed start ballast with lamps turned off and restarted once every 3 or 12 operating hours as noted.

Energy Advantage T8 25 Watt Fluorescent Lamps

T8 Medium Bipin Featuring ALTO II Technology

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Average Life 3 Hr. Start (202)	Rated Average Life 12 Hr. Start (241)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
25	28204-6	$ Ⓔ ● †	F32T8/ADV830/XEW/ALTO 25 Watt	30	Advantage 830, 3000K	48	32,000	38,000	2500	2450	85
	28209-5	$ Ⓔ ● †	F32T8/ADV835/XEW/ALTO 25 Watt	30	Advantage 835, 3500K	48	32,000	38,000	2500	2450	84
	28078-4	$ Ⓔ ● †	F32T8/ADV841/XEW/ALTO 25 Watt	30	Advantage 841, 4100K	48	32,000	38,000	2500	2450	82
	15238-9	$ Ⓔ ●	F32T8/ADV841/XEW/ALTO 25 Watt	10	Advantage 841, 4100K, 10PK	48	32,000	38,000	2500	2450	82
	28079-2	$ Ⓔ ● †	F32T8/ADV850/XEW/ALTO 25 Watt	30	Advantage 850, 5000K	48	32,000	38,000	2400	2350	82

Energy Advantage T8 28 Watt Fluorescent Lamps

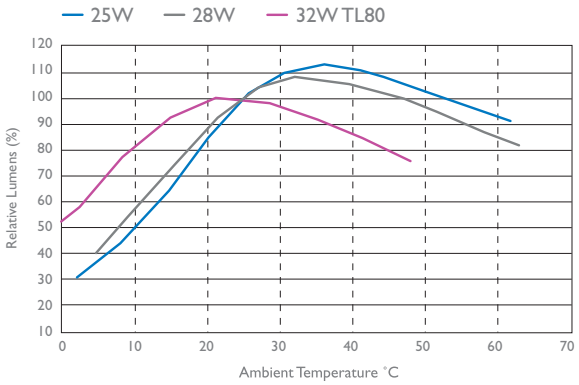
T8 Medium Bipin Featuring ALTO II Technology

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Average Life 3 Hr. Start (202)	Rated Average Life 12 Hr. Start (241)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
28	28101-4	$ Ⓔ ● †	F32T8/ADV830/EW/ALTO 28 Watt	30	Advantage 830, 3000K	48	32,000	38,000	2725	2645	85
	28102-2	$ Ⓔ ● †	F32T8/ADV835/EW/ALTO 28 Watt	30	Advantage 835, 3500K	48	32,000	38,000	2725	2645	84
	28103-0	$ Ⓔ ● †	F32T8/ADV841/EW/ALTO 28 Watt	30	Advantage 841, 4100K	48	32,000	38,000	2725	2645	82
	28105-5	$ Ⓔ ● †	F32T8/ADV850/EW/ALTO 28 Watt	30	Advantage 850, 5000K	48	32,000	38,000	2675	2595	82

For the most current product information, go to the e-catalog on **www.philips.com**
Fluorescent symbols and footnotes located on page 40

Relative Light Output vs. Ambient Temperature

4' T8 Lamps—0.88 BF Ballast



Relative light output with respect to 25°C rated temperature

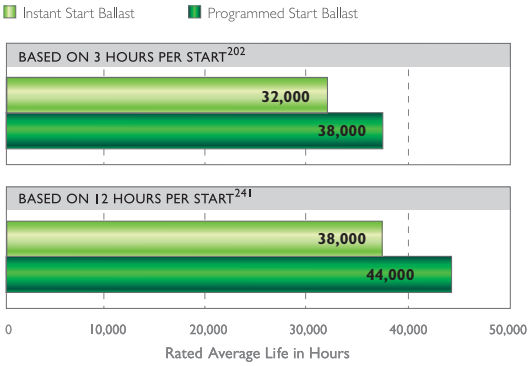
Energy Advantage 25W T8 Savings

Save 7 Watts Instantly			
7 watts per lamp saved	Energy Savings Calculator		
	Annual Operating Hours**		Savings Over Lamp Life
KWH Rate	4380	8760	38,000 hrs.
$0.06	$1.84	$3.68	$15.96
$0.08	$2.45	$4.90	$20.28
$0.10	$3.07	$6.13	$26.60
$0.12	$3.68	$7.36	$31.92
$0.20	$6.13	$12.26	$53.20

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

T8 Medium Bipin

Rated Average Life



Cost of Ownership Savings

Energy Advantage T8 fluorescent lamps vs. standard T8 lamps.

General Overview

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

Benefits

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

Financial Impact

Energy Savings per Lamp	7 W
Operating Hours per Year	8760 hours, continuous burn
Cost per kWh	$ .10

Cost of Ownership Savings = $6.13 per lamp per year

Fluorescent Lamps

Value Energy Advantage T8 Lamps

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Average Life 3 Hr. Start (202)	Rated Average Life 12 Hr. Start (241)	Approx. Initial Lumens (203,204)	Design Lumens (208, 239)	CRI
Energy Advantage T8 Value 25 Watt Fluorescent Lamps											
T8 Medium Bipin Featuring ALTO II Technology											
25	42418-4	$ Ⓔ ● †	F32T8/VEA835/XEW/ALTO 25W	30	Value Energy Advantage 835, 3500K	48	32,000	38,000	2300	2250	82
	42420-0	$ Ⓔ ● †	F32T8/VEA841/XEW/ALTO 25W	30	Value Advantage 841, 4100K	48	32,000	38,000	2300	2250	82
	42422-6	$ Ⓔ ● †	F32T8/VEA850/XEW/ALTO 25W	30	Value Advantage 850, 5000K	48	32,000	38,000	2300	2250	82
Energy Advantage T8 Value 28 Watt Fluorescent Lamps											
T8 Medium Bipin Featuring ALTO II Technology											
28	42417-6	$ Ⓔ ● †	F32T8/VEA835/EW/ALTO 28W	30	Value Energy Advantage 835, 3500K	48	32,000	38,000	2600	2550	82
	42419-2	$ Ⓔ ● †	F32T8/VEA841/EW/ALTO 28W	30	Value Advantage 841, 4100K	48	32,000	38,000	2600	2550	82
	42421-8	$ Ⓔ ● †	F32T8/VEA850/EW/ALTO 28W	30	Value Advantage 850, 5000K	48	32,000	38,000	2600	2550	82

For the most current product information, go to the e-catalog on **www.philips.com**

Fluorescent symbols and footnotes located on page 40

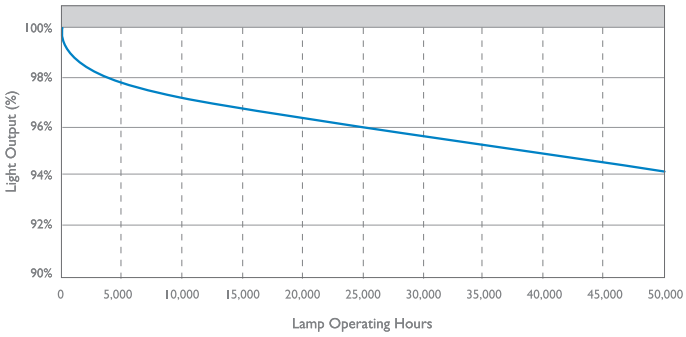
T8 Medium Bipin

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Average Life 3 Hr. Start (202)	Rated Average Life 12 Hr. Start (241)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
Extra Long Life Energy Advantage 25 Watt T8 Fluorescent Lamp											
T8 Medium Bipin Featuring ALTO II Technology											
25	28121-2	$ ● †	F32T8/ADV830/XLL/ALTO 25 Watt	30	Advantage 830, 3000K	48	40,000	46,000	2400	2330	85
	28122-0	$ ● †	F32T8/ADV835/XLL/ALTO 25 Watt	30	Advantage 835, 3500K	48	40,000	46,000	2400	2330	84
	28123-8	$ ● †	F32T8/ADV841/XLL/ALTO 25 Watt	30	Advantage 841, 4100K	48	40,000	46,000	2400	2330	82
	28125-3	$ ● †	F32T8/ADV850/XLL/ALTO 25 Watt	30	Advantage 850, 5000K	48	40,000	46,000	2350	2280	82
Extra Long Life Energy Advantage 28 Watt T8 Fluorescent Lamp											
T8 Medium Bipin Featuring ALTO II Technology											
28	28146-9	● †	F32T8/ADV830/XLL/ALTO 28 Watt	30	Advantage 830, 3000K	48	40,000	46,000	2675	2595	85
	28148-5	● †	F32T8/ADV835/XLL/ALTO 28 Watt	30	Advantage 835, 3500K	48	40,000	46,000	2675	2595	84
	28127-9	● †	F32T8/ADV841/XLL/ALTO 28 Watt	30	Advantage 841, 4100K	48	40,000	46,000	2675	2595	82
	28128-7	● †	F32T8/ADV850/XLL/ALTO 28 Watt	30	Advantage 850, 5000K	48	40,000	46,000	2625	2545	82
Extra Long Life 32 Watt T8 Fluorescent Lamps											
T8 Medium Bipin Featuring ALTO II Technology											
32	28115-4	$ Ⓔ ● †	F32T8/TL835/XLL/ALTO	30	TL 835, 3500K	48	40,000	46,000	2950	2800	84
	28116-2	$ Ⓔ ● †	F32T8/TL841/XLL/ALTO	30	TL 841, 4100K	48	40,000	46,000	2950	2800	82
	28120-4	$ Ⓔ ● †	F32T8/TL850/XLL/ALTO	30	TL 850, 5000K	48	40,000	46,000	2850	2700	82

For the most current product information, go to the e-catalog on **www.philips.com**
Fluorescent symbols and footnotes located on page 40

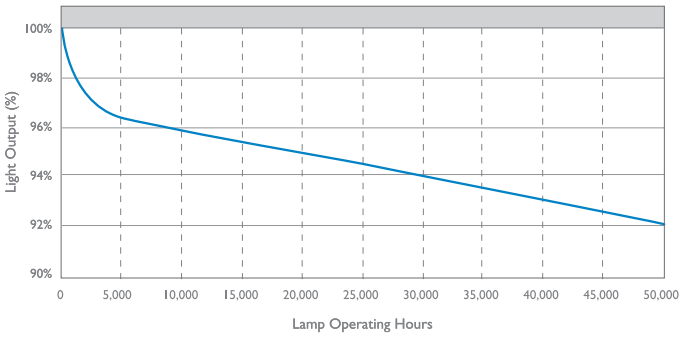
97% Lumen Maintenance

Philips Energy Advantage T8 25W and 28W XEW and XLL Lamps



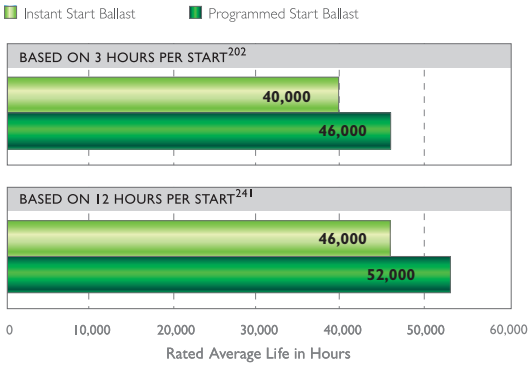
95% Lumen Maintenance

Philips T8 32W XLL Lamps



T8 Medium Bipin

Rated Average Life



Fluorescent Lamps

Advantage T8 Lamps

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Average Life 3 Hr. Start (202)	Rated Average Life 12 Hr. Start (241)	Approx. Initial Lumens (203,204)	Design Lumens (208, 239)	CRI
Advantage T8 High Lumen Fluorescent Lamps											
T8 Medium Bipin Featuring ALTO II Technology											
17	28130-3	$ Ⓔ ● †	F17T8/ADV830/ALTO	30	Advantage 830, 3000K	24	24,000	30,000	1500	1450	85
	28131-1	$ Ⓔ ● †	F17T8/ADV835/ALTO	30	Advantage 835, 3500K	24	24,000	30,000	1500	1450	84
	28132-9	$ Ⓔ ● †	F17T8/ADV841/ALTO	30	Advantage 841, 4100K	24	24,000	30,000	1500	1450	82
25	28140-2	$ Ⓔ ● †	F25T8/ADV835/ALTO	30	Advantage 835, 3500K	36	24,000	30,000	2380	2300	84
	28142-8	$ Ⓔ ● †	F25T8/ADV841/ALTO	30	Advantage 841, 4100K	36	24,000	30,000	2380	2300	82
32	28080-0	▢ $ Ⓔ ● †	F32T8/ADV830/ALTO	30	Advantage 830, 3000K	48	24,000	30,000	3100	3000	85
	28081-8	▢ $ Ⓔ ● †	F32T8/ADV835/ALTO	30	Advantage 835, 3500K	48	24,000	30,000	3100	3000	84
	28085-9	▢ $ Ⓔ ● †	F32T8/ADV841/ALTO	30	Advantage 841, 4100K	48	24,000	30,000	3100	3000	82
	28089-1	▢ $ Ⓔ ● †	F32T8/ADV850/ALTO	30	Advantage 850, 5000K	48	24,000	30,000	3000	2910	82

For the most current product information, go to the e-catalog on **www.philips.com**

Fluorescent symbols and footnotes located on page 40

Energy Savings: Two Lamp vs. Two Lamp System

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

Combine Advantage T8 lamps with reduced light output electronic ballasts, with these results:

- Saves 7 system watts vs. standard T8 system
- Saves $2.80 per fixture per year
- Energy savings based on 4000 hrs/yr @ $.10 kw/hr

Energy Savings: Two Lamp vs. Three Lamp System

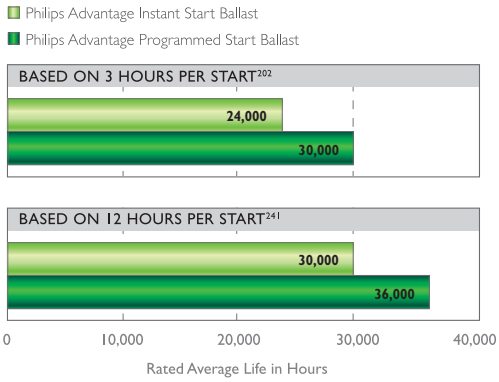
Electronic Ballast	Ballast Factor	No. of Lamps	Lamp Watts	Standard T8 Lumens	Advantage T8 Lumens	System Watts	Savings
Standard T8	0.87	3	32	2850	—	88	—
Increased Light Output T8	1.20	2	32	—	3100	78	$4.00/yr

Combine advantage T8 lamps with increased light output ballasts. A two lamp advantage T8 system vs. a three lamp standard T8 system will:

- Save 10 system watts
- Save $4.00 per fixture per year
- Save energy based on 4000 hrs/yr @ $.10 kw/hr
- Reduce lighting installation costs (lamps, ballasts, fixtures and labor)
- Operate on ballast with ballast factors up to 1.32 with warranty intact

T8 Medium Bipin

Rated Average Life

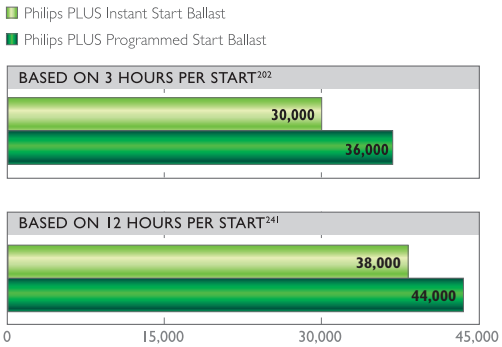


Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Average Life 3 Hr. Start (202)	Rated Average Life 12 Hr. Start (241)	Approx. Initial Lumens (203,204)	Design Lumens (208, 239)	CRI
PLUS 800 Series Long Life T8 Fluorescent Lamps											
T8 Medium Bipin Featuring ALTO II Technology											
17	29093-3	$ Ⓔ ● †	F17T8/TL830/PLUS/ALTO	30	TL 830, 3000K	24	30,000	36,000	1400	1330	85
	28094-1	$ Ⓔ ● †	F17T8/TL835/PLUS/ALTO	30	TL 835, 3500K	24	30,000	36,000	1400	1330	85
	28095-8	$ Ⓔ ● †	F17T8/TL841/PLUS/ALTO	30	TL 841, 4100K	24	30,000	36,000	1400	1330	85
	28096-6	$ Ⓔ ● †	F17T8/TL850/PLUS/ALTO	30	TL 850, 5000K	24	30,000	36,000	1325	1260	82
	28193-1	$ Ⓔ ● †	F17T8/TL865/PLUS/ALTO	30	TL 865, 6500K	24	30,000	36,000	1275	1210	82
25	28097-4	$ Ⓔ ● †	F25T8/TL830/PLUS/ALTO	30	TL 830, 3000K	36	30,000	36,000	2225	2115	85
	28098-2	$ Ⓔ ● †	F25T8/TL835/PLUS/ALTO	30	TL 835, 3500K	36	30,000	36,000	2225	2115	85
	28099-0	$ Ⓔ ● †	F25T8/TL841/PLUS/ALTO	30	TL 841, 4100K	36	30,000	36,000	2225	2115	85
32	28165-9	$ Ⓔ ● †	F32T8/TL830/PLUS/ALTO	30	TL 830, 3000K	48	30,000	36,000	2950	2800	85
	28167-5	$ Ⓔ ● †	F32T8/TL835/PLUS/ALTO	30	TL 835, 3500K	48	30,000	36,000	2950	2800	85
	28179-0	$ Ⓔ ● †	F32T8/TL841/PLUS/ALTO	30	TL 841, 4100K	48	30,000	36,000	2950	2800	85
	20277-0	$ Ⓔ ●	F32T8/TL841/PLUS/ALTO	10	TL 841, 4100K, 10 PK	48	30,000	36,000	2950	2800	85
	28181-6	$ Ⓔ ● †	F32T8/TL850/PLUS/ALTO	30	TL 850, 5000K	48	30,000	36,000	2850	2710	82
PLUS 700 Series Long Life T8 Fluorescent Lamps											
T8 Medium Bipin Featuring ALTO II Technology											
32	28182-4	$ Ⓔ ● †	F32T8/TL730/PLUS/ALTO	30	TL 730, 3000K	48	30,000	36,000	2800	2660	78
	28183-2	$ Ⓔ ● †	F32T8/TL735/PLUS/ALTO	30	TL 735, 3500K	48	30,000	36,000	2800	2660	78
	28184-0	$ Ⓔ ● †	F32T8/TL741/PLUS/ALTO	30	TL 741, 4100K	48	30,000	36,000	2800	2660	78
	28185-7	$ Ⓔ ● †	F32T8/TL750/PLUS/ALTO	30	TL 750, 5000K	48	30,000	36,000	2700	2550	78
	42306-1	$ Ⓔ ● †	F32T8/TL765/PLUS/ALTO	30	TL 765, 6500K	48	30,000	36,000	2750	2610	78

For the most current product information, go to the e-catalog on **www.philips.com**
Fluorescent symbols and footnotes located on page 40

T8 Medium Bipin

Rated Average Life



Fluorescent Lamps

800 Series T8 Lamps, 700 Series T8 Lamps

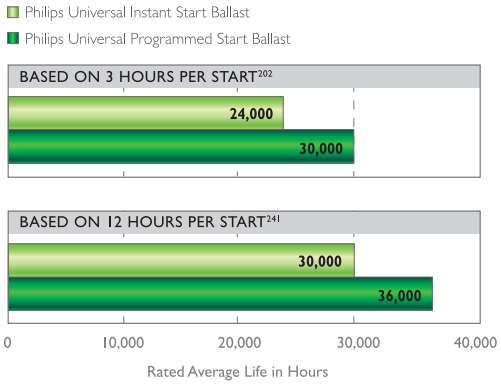
Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Average Life 3 Hr. Start (202)	Rated Average Life 12 Hr. Start (241)	Approx. Initial Lumens (203,204)	Design Lumens (208, 239)	CRI
800 Series T8 Fluorescent Lamps											
T8 Medium Bipin Featuring ALTO II Technology											
17	28188-1	$ ● †	F17T8/TL835/ALTO	30	TL 835, 3500K	24	24,000	30,000	1350	1280	84
	28189-9	$ ● †	F17T8/TL841/ALTO	30	TL 841, 4100K	24	24,000	30,000	1350	1280	82
	28090-9	$ ● †	F17T8/TL850/ALTO	30	TL 850, 5000K	24	24,000	30,000	1300	1235	82
25	28190-7	$ ● †	F25T8/TL835/ALTO	30	TL 835, 3500K	36	24,000	30,000	2150	2040	85
	28191-5	$ ● †	F25T8/TL841/ALTO	30	TL 841, 4100K	36	24,000	30,000	2150	2040	84
	28092-5	$ ● †	F25T8/TL850/ALTO	30	TL 850, 5000K	36	24,000	30,000	2150	2040	82
32	28151-9	$ ● Ⓔ †	F32T8/TL830/ALTO	30	TL 830, 3000K	48	24,000	30,000	2850	2710	85
	28153-5	$ ● Ⓔ †	F32T8/TL835/ALTO	30	TL 835, 3500K	48	24,000	30,000	2850	2710	84
	28155-0	$ ● Ⓔ †	F32T8/TL841/ALTO	30	TL 841, 4100K	48	24,000	30,000	2850	2710	82
	27235-1	$ ● Ⓔ †	F32T8/TL841/ALTO PLZ	1350	TL 841, 4100K	48	24,000	30,000	2850	2710	82
	28156-8	$ ● Ⓔ †	F32T8/TL850/ALTO	30	TL 850, 5000K	48	24,000	30,000	2850	2710	82
40	36834-0	$ ● †	F40T8/TL835/ALTO	25	TL 835, 3500K	60	24,000	30,000	3725	3500	84
	36847-2	$ ● †	F40T8/TL841/ALTO	25	TL 841, 4100K	60	24,000	30,000	3725	3500	82
700 Series T8 Fluorescent Lamps											
T8 Medium Bipin Featuring ALTO II Technology											
32	28162-6	$ ● Ⓔ †	F32T8/TL730 ALTO	30	TL 730, 3000K	48	24,000	30,000	2700	2565	78
	28161-8	$ ● Ⓔ †	F32T8/TL735/ALTO	30	TL 735, 3500K	48	24,000	30,000	2700	2565	78
	27259-1	$ ● Ⓔ †	F32T8/TL735/ALTO PLZ	1350	TL 735, 3500K	48	24,000	30,000	2700	2565	78
	28157-6	$ ● Ⓔ †	F32T8/TL741/ALTO	30	TL 741, 4100K	48	24,000	30,000	2700	2565	78
	38351-3	$ ● Ⓔ †	F32T8/TL741/ALTO	10	TL 741, 4100K, 10PK	48	24,000	30,000	2700	2565	78
	27255-9	$ ● Ⓔ †	F32T8/TL741/ALTO PLZ	1350	TL 741, 4100K	48	24,000	30,000	2700	2565	78
	28163-4	$ ● Ⓔ †	F32T8/TL750/ALTO	30	TL 750, 5000K	48	24,000	30,000	2600	2470	78

For the most current product information, go to the e-catalog on **www.philips.com**

Fluorescent symbols and footnotes located on page 40

T8 Medium Bipin

Rated Average Life



Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Average Life 3 Hr. Start (202)	Rated Average Life 12 Hr. Start (241)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
Energy Advantage U-Bent 6" T8 Fluorescent Lamps											
T8 Medium Bipin with 6" Wide Spacing (212)											
25	20420-6	$ ●	FB32T8/ADV830/6/XEW/ALTO 25 WATT	20	TL 830, 3000K	22 7/16	24,000	30,000	2400	2330	85
	20421-4	$ ●	FB32T8/ADV835/6/XEW/ALTO 25 WATT	20	TL 835, 3500K	22 7/16	24,000	30,000	2400	2330	85
	20423-0	$ ●	FB32T8/ADV841/6/XEW/ALTO 25 WATT	20	TL 841, 4100K	22 7/16	24,000	30,000	2400	2330	85
	20424-8	$ ●	FB32T8/ADV850/6/XEW/ALTO 25 WATT	20	TL 850, 5000K	22 7/16	24,000	30,000	2350	2280	82
800 Series U-Bent Rapid Start T8 Fluorescent Lamps											
T8 Medium Bipin with 6" Wide Spacing (212)											
32	37897-6	$ ●	FB32T8/TL830/6/ALTO	20	TL 830, 3000K	22 7/16	24,000	30,000	2800	2535	85
	37900-8	$ ●	FB32T8/TL835/6/ALTO	20	TL 835, 3500K	22 7/16	24,000	30,000	2800	2535	85
	37902-4	$ ●	FB32T8/TL841/6/ALTO	20	TL 841, 4100K	22 7/16	24,000	30,000	2800	2535	85
	37880-2	$ ●	FB32T8/TL850/6/ALTO	20	TL 850, 5000K	22 7/16	24,000	30,000	2700	2450	82
700 Series U-Bent Rapid Start T8 Fluorescent Lamps											
T8 Medium Bipin with 6" Wide Spacing (212)											
32	37892-7	$ ●	FB32T8/TL730/6/ALTO	20	TL 730, 3000K	22 7/16	20,000	24,000	2650	2370	78
	37893-5	$ ●	FB32T8/TL735/6/ALTO	20	TL 735, 3500K	22 7/16	20,000	24,000	2650	2370	78
	37894-3	$ ●	FB32T8/TL741/6/ALTO	20	TL 741, 4100K	22 7/16	20,000	24,000	2650	2370	78
	37882-8	$ ●	FB32T8/TL750/6/ALTO	20	TL 750, 5000K	22 7/16	20,000	24,000	2600	2325	78

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life (Hrs.) (202)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
Energy Advantage U-Bent 1 5/8" T8 Fluorescent Lamps										
T8 Medium Bipin with 1 5/8" Wide Spacing (212)										
29	22675-3	●	FB29T8/TL830/EA/ALTO	15	TL 830, 3000K	22 3/8	24,000	2600	2470	85
	22676-1	●	FB29T8/TL835/EA/ALTO	15	TL 835, 3500K	22 3/8	24,000	2600	2470	85
	22677-9	●	FB29T8/TL841/EA/ALTO	15	TL 841, 4100K	22 3/8	24,000	2600	2470	85
800 Series U-Bent 1 5/8" T8 Fluorescent Lamps										
T8 Medium Bipin with 1 5/8" Wide Spacing (212)										
31	22671-2	●	FB31T8/TL830/ALTO	15	TL 830, 3000K	22 3/8	24,000	2775	2636	85
	22672-0	●	FB31T8/TL835/ALTO	15	TL 835, 3500K	22 3/8	24,000	2775	2636	85
	22674-6	●	FB31T8/TL841/ALTO	15	TL 841, 4100K	22 3/8	24,000	2775	2636	85

For the most current product information, go to the e-catalog on **www.philips.com**
Fluorescent symbols and footnotes located on page 40

T8 U-Bent Lamp
Medium Bipin

T8 1 5/8" U-Bent Lamp
Medium Bipin

Philips Standard and 1 5/8" U-Bent T8
Warranty Period: 24 months*

Philips Energy Advantage U-Bent T8
Warranty Period: 36 months*

* Certain limitations and conditions apply.
See Philips for further warranty details.

Fluorescent Lamps

Rapid Start T8 Lamps, Preheat T8 Lamps

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Average Life 3 Hr. Start (202)	Rated Average Life 12 Hr. Start (241)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
Rapid Start T8 Fluorescent Lamps											
T8 Medium Bipin; High CRI											
17	20905-6	$	F32T8/TL950	25	TL 950, 5000K	48	20,000	20,000	2000	1860	98
TL-D Rapid Start T8 Fluorescent Lamps—for Operation on European Ballast											
T8 Medium Bipin; High CRI											
36	29189-8		TLD36W/840NG	25	TL840, 4000K	48	20,000	—	3350	3100	82
58	29184-9		TLD58W/840NG	25	TL840, 4000K	60	20,000	—	5200	4300	82
70	29186-4		TLD70W/840NG	25	TL840, 4000K	72	20,000	—	6200	5100	82
Preheat T8 Fluorescent Lamps											
T8 Medium Bipin Linear Fluorescent Lamps; Requires Use of Starters (202)											
15	40720-5		F15T8D	25	Daylight, 6500K	18	7500	—	750	660	73
	40719-7		F15T8/CW	25	Cool White, 4100K	18	7500	—	870	765	59
	36436-4		F15T8/CW BULK	96	Cool White, 4100K	18	7500	—	850	750	59
	39226-6		F15T8/PLANT	6	Plant Lite, Sleeved	18	7500	—	410	N/A	N/A
30	28147-7	● †	F30T8/CW/ALTO	25	Cool White, 4100K	36	7500	—	2200	2000	59

For the most current product information, go to the e-catalog on **www.philips.com**

Fluorescent symbols and footnotes located on page 40

T8 Medium Bipin

Energy Advantage T8 Slimline 8-Ft Fluorescent Lamps

T8 Single Pin; Featuring ALTO Lamp Technology; Instant Start

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Average Life 3 Hr. Start (202)	Rated Average Life 12 Hr. Start (241)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
51	16321-2	▢ $ Ⓔ ●	F96T8/ADV835/XEW/ALTO 51W	25	TL 835, 3500K	96	24,000	30,000	5300	4940	85
	16331-1	▢ $ Ⓔ ●	F96T8/ADV841/XEW/ALTO 51W	25	TL 841, 4100K	96	24,000	30,000	5300	4940	85
	16457-4	▢ $ Ⓔ ●	F96T8/ADV850/XEW/ALTO 51W	25	TL 850, 5000K	96	24,000	30,000	5200	4840	82

PLUS Slimline T8 8-Ft Fluorescent Lamps

T8 Single Pin; Featuring ALTO Lamp Technology; Instant Start

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Average Life 3 Hr. Start (202)	Rated Average Life 12 Hr. Start (241)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
59	23684-4	▢ $ Ⓔ ●	F96T8/TL835/PLUS/ALTO	25	TL 835, 3500K	96	24,000	30,000	5900	5490	85
	23685-1	▢ $ Ⓔ ●	F96T8/TL841/PLUS/ALTO	25	TL 841, 4100K	96	24,000	30,000	5900	5490	85
	23686-9	▢ $ Ⓔ ●	F96T8/TL850/PLUS/ALTO	25	TL 850, 5000K	96	24,000	30,000	5780	5375	82
	23681-0	▢ $ Ⓔ ●	F96T8/TL735/PLUS/ALTO	25	TL 735, 3500K	96	24,000	30,000	5700	5190	78
	23682-8	▢ $ Ⓔ ●	F96T8/TL741/PLUS/ALTO	25	TL 741, 4100K	96	24,000	30,000	5700	5190	78

For the most current product information, go to the e-catalog on **www.philips.com**
Fluorescent symbols and footnotes located on page 40

Philips XEW Slimline T8
Warranty Period: 30 months*

Philips PLUS Slimline T8
Warranty Period: 24 months*

* Certain limitations and conditions apply.
See Philips for further warranty details.

PLUS Slimline T8 8-Ft Cost of Ownership Savings

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

General Overview

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

Benefits

By using PLUS Slimline 8-foot T8 lamps, the lamp replacement and labor costs are extended by an extra 2 years on a facility that operates an average of 4000 hours per year. For example, a standard 8-foot T8 product, with a rated average life expectancy of 15,000 hours, will last nearly 4 years (15,000 hours rated average life/4000 hours per year = 3¾ years).

Conversely, PLUS Slimline 8-foot T8 lamps will operate for 6 years due to their rated average life expectancy of 24,000 hours (24,000 hours rated average life/4000 hours per year = 6 years).

Financial Impact

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

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

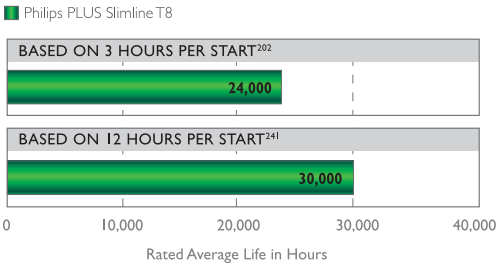
A Material Cost Avoidance is the annualized acquisition cost per lamp (average cost per lamp of $7.50 for standard 8-Foot T8 product / 3 3/4 years = $2.00 per year). By installing PLUS Slimline 8-Foot T8 lamps, a material cost per lamp of $4.00 is avoided due to the extra 2 years of life expectancy.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

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

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

T8 Single Pin

Rated Average Life



Fluorescent Lamps

High Output T8 Lamps, U-Bent T12 Lamps, Rapid Start T12 Lamps

PLUS High Output (HO) T8 8-Foot Fluorescent Lamps

T8 Recessed D.C.; Featuring ALTO Lamp Technology, Use on proper Programmed Start Ballasts Only*

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Average Life 3 Hr. Start (202)	Rated Average Life 12 Hr. Start (241)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
86	23687-7	▢ $ Ⓔ ●	F96T8/TL835/HO/PLUS/ALTO	25	TL 835, 3500K	96	24,000	30,000	8200	7625	85
	23688-5	▢ $ Ⓔ ●	F96T8/TL841/HO/PLUS/ALTO	25	TL 841, 4100K	96	24,000	30,000	8200	7625	85
	23689-3	▢ $ Ⓔ ●	F96T8/TL850/HO/PLUS/ALTO	25	TL 850, 5000K	96	24,000	30,000	8100	7550	82

* Per ANSI C78.81, this lamp is designed for programmed start operation with high frequency operating currents of 400mA (nominally) to achieve the rated lumens and life

High Output (HO) T8 Fluorescent Lamps—4 foot

T8 Recessed D.C.; Featuring ALTO Lamp Technology, Use on proper Programmed Start Ballasts Only*

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life (Hrs.) (202)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
44	23679-4	▢ $ ●	F48T8/TL841/HO/ALTO	25	TL 841, 4100K	48	18,000	4000	3600	85

* Per ANSI C78.81, this lamp is designed for programmed start operation with high frequency operating currents of 400mA (nominally) to achieve the rated lumens and life

U-Bent T12 Fluorescent Lamps

T12 Medium Bipin

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life (Hrs.) (202)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
40	42309-5		FB40/T12/NX/6	12	Neutral Deluxe, 3500K	22 7/16	18,000	2300	1955	90
	42308-7		FB40/T12/CWSupreme/6	12	Cool White Supreme, 4100K	22 7/16	18,000	2300	1955	90
	21993-1		FB40/DX/6	12	Daylight Deluxe, 6500K	22 7/16	18,000	2250	1950	90

Rapid Start T12 Fluorescent Lamps

T12 Medium Bipin

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life (Hrs.) (202)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
30	37649-1	●	F30T12/D/RS/ALTO	30	Daylight, 6500K	36	18,000	1950	1700	73
	27242-7	●	F30T12/CW/RS/ALTO	30	Cool White, 4100K	36	18,000	2250	1900	59
	13221-7	●	F30T12/WW/RS/ALTO	30	Warm White, 3000K	36	18,000	2300	1950	49
40	42318-6		F40T12/NX/ALTO	30	Neutral Deluxe, 3500K	48	20,000	2550	2200	88
	42389-9		F40T12/CWSupreme/ALTO	30	Cool White Supreme, 4100K	48	20,000	2600	2250	89
	42312-9		F40T12/CWSupreme/PLUS/ALTO	30	Cool White Supreme, 4100K	48	24,000	2550	2220	89
	42389-7		F40T12/C50Supreme/ALTO	30	Color Tone 50 Supreme, 5000K	48	20,000	2500	2175	90
	27359-9		F40/DX/ALTO	30	Daylight Deluxe, 6500K	48	20,000	2325	2025	90
	39228-2		F40/PLANT	6	Plant Light, Sleeved	48	20,000	1600	1360	—

For the most current product information, go to the e-catalog on **www.philips.com**
Fluorescent symbols and footnotes located on page 40

T8 Recessed DC

T12 Medium Bipin

T12 U-Bent
Medium Bipin

Fluorescent Lamps

Preheat T12 Lamps, Slimline T12 Lamps, High Output T12 Lamps

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life (Hrs.) (202)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
Preheat T12 Fluorescent Lamps										
T12 Medium Bipin Linear Fluorescent Lamps										
14	14151-5		F14T12/CW	30	Cool White, 4100K	15	9000	710	590	59
15	14149-9		F15T12/CW 30PK	30	Cool White, 4100K	18	9000	800	695	62
20	27328-4	●	F20T12/D/ALTO	30	Daylight, 6500K	24	9000	960	960	73
	27332-6	●	F20T12/CW/ALTO	30	Cool White, 4100K	24	9000	1200	1050	59
	27349-0	●	F20T12/WW/ALTO	30	Warm White, 3000K	24	9000	1250	1100	49
	39227-4		F20T12/PLANT	6	Plant Lite, Sleeved	24	9000	600	500	—
Slimline T12 Fluorescent Lamps										
T12 Single Pin Linear Fluorescent Lamps; Instant Start										
39	36219-4	●	F48T12/D/ALTO	15	Daylight, 6500K	48	9000	2500	2220	73
	36321-8		F48T12/CW ALTO 15PK	15	Cool White, 4100K	48	9000	2950	2600	62
56	36985-0	●	F72T12/D/ALTO	15	Daylight, 6500K	72	12,000	3800	3350	73
	36989-2	●	F72T12/CW/ALTO	15	Cool White, 4100K	72	12,000	4450	3900	59
75	42305-3		F96T12/NX/ALTO	15	Neutral Deluxe, 3500K	96	12,000	5000	4250	88
	42319-4		F96T12/CWSupreme/ALTO	15	Cool White Supreme, 4100K	96	12,000	5000	4250	89
	42387-1		F96T12/C50Supreme/ALTO	15	Color Tone 50 Supreme, 5000K	96	12,000	5000	4350	90
	37282-1	●	F96T12/DX/ALTO	15	Daylight Deluxe, 6500K	96	12,000	4775	4200	90
High Output T12 Fluorescent Lamps (800ma)										
T12 Recessed D.C. Linear Fluorescent Lamps (207, 214)										
35	14145-7		F24T12/CW/HO	30	Cool White, 4100K	24	9000	1650	1390	59
40	14142-4		F30T12/CW/HO	30	Cool White, 4100K	30	9000	2290	1900	59
50	14138-2		F36T12/D/HO	30	Daylight, 6500K	36	9000	2500	2150	73
	14139-0		F36T12/CW/HO	30	Cool White, 4100K	36	9000	2800	2450	59
55	14137-4		F42T12/CW/HO	30	Cool White, 4100K	42	9000	3400	2950	59
60	36984-3	●	F48T12/D/HO/ALTO	15	Daylight, 6500K	48	12,000	3400	3000	73
	36978-5	●	F48T12/CW/HO/ALTO	15	Cool White, 4100K	48	12,000	4050	3500	59
80	35578-4		F64T12/CW/HO	15	Cool White, 4100K	64	12,000	5600	4850	62
85	36653-4	●	F72T12/D/HO/ALTO	15	Daylight, 6500K	72	12,000	5600	4850	73
	36651-8	●	F72T12/CW/HO/ALTO	15	Cool White, 4100K	72	12,000	6350	5500	59
High Output T12 Fluorescent Lamps (800ma)										
T12 Recessed D.C. Linear Fluorescent Lamps (207, 214)										
110	21489-0	●	F96T12/DX/HO	15	Daylight Deluxe, 6500K	96	12,000	6750	5800	90
High Output T12 800 Series Fluorescent Lamps (800ma)										
T12 Recessed D.C. Linear Fluorescent Lamps; For Low Temperature Applications (223)										
110	38177-4	●	F96T12/D/HO-O/ALTO	15	Daylight, 6500K	96	12,000	7800	6800	73
	38176-4	●	F96T12/CW/HO-O/ALTO	15	Cool White, 4100K	96	12,000	8800	7650	59

For the most current product information, go to the e-catalog on **www.philips.com**
Fluorescent symbols and footnotes located on page 40

T12 Medium Bipin T12 Single Pin T12 Recessed DC

Fluorescent Lamps

Very High Output T12, Gold Fluorescent, Appliance, T9 Circline Lamps

Very High Output T12 Fluorescent Lamps (1500ma)

T12 Recessed D.C. Linear Fluorescent Lamps (214)

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Average Life 3 Hr. Start (202)	Rated Average Life 12 Hr. Start (241)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
110	21819-8		F48T12/CW/VHO	15	Cool White, 4100K	48	12,000	12,000	7050	4950	59
185	34232-9	$	F96T12/CW/VHO/EW	15	Cool White, 4100K	96	12,000	12,000	13,000	9000	59
215	34234-5		F96T12/CW/VHO	15	Cool White, 4100K	96	12,000	12,000	15,200	10,700	59

Gold Fluorescent Lamps

Blocks UV Emissions

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life (Hrs.) (202)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
32	42531-4		F32T8/GOLD PLUS	30	Gold Sleeved	48	24,000	1750	1480	—
40	14750-4		F40T12/GOLD	30	Gold Sleeved	48	20,000	1700	1465	—

Appliance Fluorescent Lamps

T8 Medium Bipin Linear Fluorescent Lamps; For use with Starters

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life (Hrs.) (202)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
18	23690-1	†	F18T8/CW/24	24	Cool White, 4100K	24	7500	1175	940	59

Circline Fluorescent Lamps

T9 4-Pin Circular Fluorescent Lamps

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life (Hrs.) (202)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
20	24982-1		FC6T9/COOL WHITE PLUS	12	Cool White, 4100K	6½ OD	12,000	800	590	59
22	39222-5		FC8T9/SOFT WHITE	12	3000K	8 OD	12,000	1150	875	85
	39235-7		FC8T9/DAYDLX	12	6500K	8 OD	12,000	910	675	79
	39116-9		FC8T9/COOL WHITE PLUS	12	Cool White, 4100K	8 OD	12,000	1050	775	59
32	39122-7		FC12T9/SOFT WHITE	12	3000K	12 OD	12,000	1900	1600	85
	26260-0		FC12T9/D	12	Daylight, 6500K	12 OD	12,000	1570	1300	73
	39117-7		FC12T9/COOL WHITE PLUS	12	Cool White, 4100K	12 OD	12,000	1800	1500	59
40	39118-5		FC16T9/COOL WHITE PLUS	12	Cool White, 4100K	16 OD	12,000	2500	1975	59

For the most current product information, go to the e-catalog on **www.philips.com**

Fluorescent symbols and footnotes located on page 40

T12 Recessed DC

GOLD Lamp

T8 Medium Bipin

T9 4-Pin Circular

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Color Temp. (K)	Nom. Length (In.)	Rated Avg. Life (Hrs.)(241)	Approx. Initial Lumens (203,204)	CRI	Availability
TuffGuard T5 Fluorescent Coated Lamps										
T5 Miniature Bipin Linear Fluorescent Lamps										
14	16690-0	●	F14T5/830/ALTO TG	40	3000	22	35,000	1350	85	Made to Order
21	16669-4	●	F21T5/841/ALTO TG	40	4100	34	35,000	2100	85	Made to Order
28	16417-8	●	F28T5/835/ALTO TG	40	3500	46	35,000	2900	85	Stocked
	16674-4	●	F28T5/841/ALTO TG	40	4100	46	35,000	2900	85	Stocked
44	42060-4	$ Ⓔ ● †	F54T5/835/HO/XEW/ALTO 44W TG	40	3500	46	35,000	4520	85	Made to Order
	42058-8	$ Ⓔ ● †	F54T5/841/HO/XEW/ALTO 44W TG	40	4100	46	35,000	4520	85	Made to Order
	42059-6	$ Ⓔ ● †	F54T5/850/HO/XEW/ALTO 44W TG	40	5000	46	35,000	4400	82	Made to Order
49	16961-5	● †	F54T5/841/HO/EA/ALTO 49W TG	40	4100	46	35,000	5000	85	Stocked
	40900-3	● †	F54T5/850/HO/EA/ALTO 49W TG	40	5000	46	35,000	4850	82	Stocked
54	16672-8	●	F54T5/835/HO/ALTO TG	40	3500	46	35,000	5000	85	Stocked
	16298-2	●	F54T5/841/HO/ALTO TG	40	4100	46	35,000	5000	85	Stocked
	16686-8	●	F54T5/850/HO/ALTO TG	40	5000	46	35,000	5000	82	Stocked
TuffGuard T8 Fluorescent Coated Lamps										
T8 Medium Bipin Linear Fluorescent Lamps										
25	28290-5	● †	F25T8/TL830/PLUS/ALTO TG	30	3000	36	36,000	2225	85	Stocked
	28301-0	● †	F25T8/TL835/PLUS/ALTO TG	30	3500	36	36,000	2225	85	Stocked
	28308-5	● †	F25T8/TL841/PLUS/ALTO TG	30	4100	36	36,000	2225	85	Stocked
28	28319-2	● †	F32T8/ADV830/EW/ALTO 28W TG	30	3000	48	36,000	2725	85	Stocked
32	28329-1	● †	F32T8/ADV850/ALTO TG	30	5000	48	30,000	3000	82	Made to Order
	28312-7	● †	F32T8/ADV850/XEW/ALTO TG	30	5000	48	30,000	2400	82	Made to Order
	28330-9	● †	F32T8/TL730/ALTO TG	30	3,000	48	30,000	2700	78	Made to Order
	28331-7	● †	F32T8/TL735/ALTO TG	30	3500	48	30,000	2700	78	Stocked
	28332-5	● †	F32T8/TL741/ALTO TG	30	4100	48	30,000	2700	78	Stocked
	28333-3	● †	F32T8/TL750/ALTO TG	30	5000	48	30,000	2600	78	Made to Order
	28335-8	● †	F32T8/TL835/ALTO TG	30	3500	48	30,000	2850	85	Stocked
	28336-6	● †	F32T8/TL841/ALTO TG	30	4100	48	30,000	2850	85	Made to Order
	28337-4	● †	F32T8/TL850/ALTO TG	30	5000	48	30,000	2850	82	Made to Order
	28339-0	● †	F32T8/ADV841/ALTO TG	30	4100	48	30,000	3150	85	Stocked
	28342-4	● †	F32T8/TL741/PLUS/ALTO TG	30	4100	48	36,000	2800	78	Stocked
	28343-2	● †	F32T8/TL750/PLUS/ALTO TG	30	5000	48	36,000	2700	78	Stocked
	28345-7	● †	F32T8/TL835/PLUS/ALTO TG	30	3500	48	36,000	2950	85	Stocked
	28303-6	● †	F32T8/TL841/XLL/ALTO TG	30	4100	48	40,000	2950	85	Stocked
	28346-5	● †	F32T8/TL841/PLUS/ALTO TG	30	4100	48	36,000	2950	85	Stocked
	28347-3	● †	F32T8/TL850/PLUS/ALTO TG	30	5000	48	36,000	2850	82	Stocked
	42304-6	● †	F32T8/TL765/PLUS/ALTO TG	30	6500	48	36,000	2750	78	Made To Order
44	40905-2	● †	F48T8/TL841/HO/ALTO TG	25	4100	48	18,000	4000	85	Made to Order
59	40907-8	● †	F96T8/TL741/PLUS/ALTO TG	25	4100	96	30,000	5700	78	Made to Order
	40909-4	● †	F96T8/TL841/PLUS/ALTO TG	25	4100	96	30,000	5900	85	Made to Order
86	40912-8	● †	F96T8/TL841/HO/PLUS/ALTO TG	25	4100	96	30,000	8200	85	Stocked

Note: Made to order products require a 3 week lead time.
For the most current product information, go to the e-catalog on **www.philips.com**
Fluorescent symbols and footnotes located on page 40

T5 Miniature Bipin

T8 Medium Bipin

Fluorescent Lamps

TuffGuard Lamps

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Color Temp. (K)	Nom. Length (In.)	Rated Avg. Life (Hrs.)(202)	Approx. Initial Lumens (203,204)	CRI	Availability
TuffGuard T12 Fluorescent Coated Lamps										
39	16307-1	●	F48T12/D/ALTO TG	15	6500	48	9000	2500	73	Stocked
40	42310-3	● †	F40T12/NX/ALTO TG	30	3500	48	20,000	2550	88	Made To Order
	42400-2	● †	F40T12/CWSUPREME/ALTO TG	30	4100	48	20,000	2600	89	Made To Order
	42399-5	● †	F40T12/C50 SUPREME/ALTO/TG	30	5000	48	20,000	2500	90	Made To Order
	16299-0	●	F40DX/ALTO TG	30	6500	48	20,000	2325	90	Stocked
60	16296-6	●	F48T12/CW/HO/ALTO TG	15	4100	48	12,000	4050	59	Stocked
75	42317-8	● †	F96T12/NX/ALTO TG	15	3500	96	12,000	5000	88	Made To Order
	42316-0	● †	F96T12/CWSUPREME/ALTO TG	15	4100	96	12,000	5000	89	Made To Order
	42401-0	● †	F96T12/C50 SUPREME/ALTO/TG	15	5000	96	12,000	5000	90	Made To Order
	16297-4	●	F96T12/DX/ALTO/TG	15	6500	96	12,000	4500	90	Stocked
110	16301-4	●	F96T12/CW/HO-O/ALTO TG	15	4100	96	12,000	8800	59	Stocked
	16302-2	●	F96T12/D/HO-O/ALTO TG	15	6500	96	12,000	7800	73	Stocked

Note: Made to order products require a 3 week lead time.
For the most current product information, go to the e-catalog on **www.philips.com**
Fluorescent symbols and footnotes located on page 40

T12 Medium Bipin

T12
Single Pin

T12
Recessed DC Bay

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life (Hrs.) (202)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
T5 Fluorescent Lamps										
Blister-Carded Linear Fluorescent Lamps; Miniature Bipin										
4	39218-3		F4T5/SOFT WHITE	12/1	3000K	6	6000	150	120	85
6	39219-1		F6T5/SOFT WHITE	12/1	3000K	9	7500	325	260	85
8	39220-9		F8T5/SOFT WHITE	12/1	3000K	12	7500	450	360	85
	39114-4		F8T5/COOL WHITE PLUS	12/1	4100K	12	7500	400	300	59
	15756-0		F8T5/BLB UPC	25/1	—	12	7500	—	—	—
13	39221-7		F13T5/SOFT WHITE	12/1	3000K	21	7500	1000	800	85
	40974-8		F13T5/Cool White	12/1	4100K	21	7500	820	660	59
T5 Fluorescent Lamps										
28	20613-6	●	F28T5/TL835 ALTO UPC 15/1	15	TL835, 3500K	46	20,000	2900	2750	85
	40963-1	●	F28T5/TL841 ALTO UPC 15/1	15	TL841, 4100K	46	25,000	2900	2750	85

For the most current product information, go to the e-catalog on **www.philips.com**
Fluorescent symbols and footnotes located on page 40

T5 Miniature Bipin

Fluorescent Lamps

Consumer Lamps

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life (Hrs.) (202)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
T8 Fluorescent Lamps										
Medium Bipin & Single Pin Linear Fluorescent Lamps										
15	39212-6	●	F15T8/Soft White	1	3000K Individually Sleeved	18	7500	1000	900	85
	39207-6	●	F15T8/Cool White Plus	1	4100K Individually Sleeved	18	7500	870	765	59
	39108-6	●	F15T8/Cool White Plus	1	4100K Individually Sleeved	24	7500	1175	1035	59
	39226-6		F15T8/Plant	1	Individually Sleeved	18	7500	410	—	—
	15760-2		F15T8/Blacklight	6/1	Individually Sleeved	18	7500	—	—	—
17	28126-1	● †	F17T8/Soft White UPC	30	3000K 30 Pk Case	24	20,000	1400	1300	85
30	39216-7	●	F30T8/Soft White	6/1	3000K Individually Sleeved	36	7500	2500	2250	85
	28145-1	● †	F30T8/CW ALTO UPC	30	4100K Individually Sleeved	36	7500	2200	1760	59
32	40943-3	●	F32T8/SOFT WHITE ALTO	10	3000K 10 Pk Case	48	24,000	2950	2800	85
	40986-0	●	F32T8/TL735/ALTO 15/2	15/2	3500K 2 Pk	48	24,000	2700	2565	78
	20545-0	●	F32T8/TL735 ALTO 10PK	10	3500K 10 Pk Case	48	24,000	2700	2565	78
	40944-1	●	F32T8/TL741/ALTO TG	10	Safety Coated 4100K 10 Pk	48	24,000	2700	2565	78
	38351-3	●	F32T8/TL741 ALTO 10PK	10	4100K 10 Pk Case	48	24,000	2700	2565	78
	15238-9	●	F32T8/ADV841/XEW/ALTO 25W	10	4100K 10 Pk Case	48	30,000	2500	2425	85
	20278-8	●	F32T8/TL841/XLL/ALTO 10PK	10	4100K 10 Pk Case	48	36,000	2950	2800	85
	20504-7	●	F32T8/TL850 ALTO 10PK	10	5000K 10 Pk Case	48	24,000	2850	2710	82
	42294-9	● †	F32T8/Daylight Deluxe/ALTO 1/10	10	6500K 10 Pk Case	48	30,000	2750	2600	78
	28200-4	● †	F32T8/TL735/ALTO	30	3500K 30 Pk Case	48	24,000	2700	2565	78
	28197-2	● †	F32T8/TL741/ALTO	30	4100K 30 Pk Case	48	24,000	2700	2565	78
	28199-8	● †	F32T8/TL850/ALTO	30	5000K 30 Pk Case	48	24,000	2850	2710	82
	42295-5	● †	F32T8/Daylight Deluxe/ALTO 1/30	30	6500K 30 Pk Case	48	30,000	2750	2600	78
	40966-4	●	F32T8/TL850/ALTO	15/2	5000K 2 Pk	48	24,000	2850	2710	82
	22682-9	●	F32T8/SOFT WHITE /ALTO 36/2	36/2	3000K 2 Pk	48	24,000	2950	2800	84
	22679-5		F32T8/COOL WHITE PLUS 36/2	36/2	4100K 2 Pk	48	24,000	2800	2660	78
	42296-3	● †	F32T8/Daylight Deluxe/ALTO 36/2	36/2	6500K 2 Pk	48	30,000	2750	2600	78
75	42279-0	● †	F96T12/NX/ALTO 8/2	8/2	Neutral Deluxe, 3500K	96	12,000	5000	4250	88
	42277-4	● †	F96T12/CWSupreme/ALTO 1/15	1/15	Cool White Supreme, 4100K	96	12,000	5000	4250	89
	42278-2	● †	F96T12/CWSupreme/ALTO 8/2	8/2	Cool White Supreme, 4100K	96	12,000	5000	4250	89
	42398-7	● †	F96T12/C50 Natural Supreme 8/2	8/2	Natural Light, 5000K	96	12,000	4800	4350	90

For the most current product information, go to the e-catalog on **www.philips.com**

Fluorescent symbols and footnotes located on page 40

T8 Medium Bipin

T8 Single Pin

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life (Hrs.) (202)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
T12 Fluorescent Lamps										
Medium Bipin, Single Pin and High Output										
14	14150-7		F14T12/SOFT WHITE	6/1	3000K Individually Sleeved	15	9000	700	560	85
15	14146-5		F15T12/SOFT WHITE	6/1	3000K Individually Sleeved	18	9000	800	720	85
20	39120-1	●	F20T12/SOFT WHITE	6/1	3000K Individually Sleeved	24	9000	1350	1215	85
	39230-8		F20T12/NATURAL SUNSHINE	6/1	5000K Individually Sleeved	24	9000	850	755	92
	39227-4		F20T12/PLANT	6/1	Individually Sleeved	24	9000	600	—	—
	15761-0		F20T12/BLACKLIGHT	6/1	Individually Sleeved	24	9000	—	—	—
	40945-8	●	F20T12/CW/ALTO	10	4100K 10 Pk Case	24	9000	1200	1050	59
	38693-8	●	F20T12/SPEC 35 UPC	30	3500K 30 Pk Case	24	9000	1200	1050	75
	20550-0	●	F20T12/CW/ALTO 15/2	15/2	4100K 2 Pk	24	9000	1200	1050	59
	20554-2	●	F20T12/D/ALTO 15/2	15/2	6500K 2 Pk	24	9000	1075	960	73
30	39215-9	●	F30T12/SOFT WHITE	6/1	3000K Individually Sleeved	36	18,000	2400	2160	85
	40937-5	●	F30T12/DAYLIGHT DELUXE/ALTO	6/1	6500K Individually Sleeved	36	18,000	1950	1700	90
	38694-6	●	F30T12/SPEC 35 UPC	30	3500K 30 Pk Case	36	18,000	2350	2080	73
40	39228-2		F40T12/PLANT	6/1	Individually Sleeved	48	20,000	1600	—	—
	15762-8	●	F40T12/BLACKLIGHT	6/1	Individually Sleeved	48	20,000	—	—	—
	42275-8	● †	F40T12/SOFT WHITE DX/ALTO 1/10	1/10	Soft White Deluxe, 3000K	48	20,000	2600	2260	88
	42276-6	● †	F40T12/SOFT WHITE DX/ALTO 15/2	15/2	Soft White Deluxe, 3000K	48	20,000	2850	2710	88
	42272-5	● †	F40T12/NEUTRAL DX/ALTO 1/10	1/10	Neutral Deluxe, 3500K	48	20,000	2550	2200	88
	42273-3	● †	F40T12/NEUTRAL DX/ALTO 1/30	1/30	Neutral Deluxe, 3500K	48	20,000	2550	2200	88
	42274-1	● †	F40T12/NEUTRAL DX/ALTO 15/2	15/2	Neutral Deluxe, 3500K	48	20,000	2550	2200	88
	42267-5	● †	F40T12/CWSUPREME/ALTO 1/10	1/10	Cool White Supreme, 4100K	48	20,000	2600	2250	89
	42270-9	● †	F40T12/CWSUPREME/ALTO 1/30	1/30	Cool White Supreme, 4100K	48	20,000	2600	2250	89
	42281-6	● †	F40T12/CWSUPREME/ALTO 36/2	36/2	Cool White Supreme, 4100K	48	20,000	2600	2250	89
	42283-2	● †	F40T12/CWSUPREME/PLUS/ALTO 1/10	1/10	Cool White Supreme, 4100K	48	24,000	2600	2250	89
	42285-7	● †	F40T12/CWSUPREME/PLUS/ALTO 15/2	15/2	Cool White Supreme, 4100K	48	24,000	2600	2250	89
	42396-1	● †	F40T12/C50 NATURAL SUPREME 1/10	10	Natural Light, 5000K	48	20,000	2500	2250	92
	42395-3	● †	F40T12/C50 NATURAL SUPREME 1/30	30	Natural Light, 5000K	48	20,000	2500	2250	92
	42397-9	● †	F40T12/C50 NATURAL SUPREME 15/2	15/2	Natural Light, 5000K	48	20,000	2500	2250	92
	38752-2	●	F40T12/DAYDLX	10	6500K 10 Pk	48	20,000	2325	2025	90
	22683-7	●	F40T12/DAYDELUX ALTO 36/2PK	36/2	6500K 2 Pk	48	20,000	2325	2025	90
	40938-3	●	F40T12/DAYLIGHT DELUXE/ALTO	30	6500K 30 Pk Case	48	20,000	2325	2025	90
56	36999-1	●	F72T12/CW/ALTO UPC	15	4100K 15 Pk Case	72	12,000	4450	3900	59
60	36982-7	●	F48T12/CW/HO/UPC	15	4100K 15 Pk Case	48	12,000	4050	3500	59
75	37663-2	●	F96T12/DAYDLX/ ALTO 8/2PK	8/2	6500K 2 Pk	96	12,000	4775	4200	90
110	38176-4	●	F96T12/CW/HO-O/ALTO	15	Cool White, 4100K 15 Pk	96	12,000	8800	7650	59
	20544-3	●	F96T12/CW/HO-O/ALTO	8/2	4100K 2 Pk	96	12,000	8800	7650	59

For the most current product information, go to the e-catalog on **www.philips.com**
Fluorescent symbols and footnotes located on page 40

T12 Medium Bipin T12 Single Pin T12 Recessed DC

Fluorescent Lamps

Consumer Lamps

Watts	Product Number	Symbols, Footnotes	Ordering Code	Pkg. Qty.	Description	Nom. Length (In.)	Rated Avg. Life (Hrs.) (202)	Approx. Initial Lumens (203,204)	Design Lumens (208)	CRI
Circline Fluorescent Lamps										
T9 Circular 4-Pin Fluorescent Lamps										
22	39222-5		FC8T9/SOFT WHITE	6/1	3000K Individually Sleeved	8 OD	12,000	1150	875	85
	39116-9		FC8T9/COOL WHITE PLUS	6/1	4100K Individually Sleeved	8 OD	12,000	1050	775	59
	39235-7		FC8T9/DAYDLX	6/1	6500K Individually Sleeved	8 OD	12,000	910	675	79
32	39122-7		FC12T9/SOFT WHITE	6/1	3000K Individually Sleeved	12 OD	12,000	1900	1600	85
	39117-7		FC12T9/COOL WHITE PLUS	6/1	4100K Individually Sleeved	12 OD	12,000	1800	1500	59
	26260-0		FC12T9/DAYLIGHT DELUXE	6/2	6500K Individually Sleeved	13 OD	12,000	1570	1300	79
40	39118-5		FC16T9/COOL WHITE PLUS	6/1	4100K Individually Sleeved	16 OD	12,000	2500	1975	59
U-Bent T8										
T8 Medium Bipin										
32	20549-2	●	FB32T8/TL735/6/ALTO UPC 10/1	1	TL70, 3500K Individually Sleeved	22 7/16	20,000	2650	2370	78
	20548-4	●	FB32T8/TL741/6/ALTO UPC 10/1	1	TL70, 4100K Individually Sleeved	22 7/16	20,000	2650	2370	78
Rapid Start U-Bent T12										
T12 Medium Bipin										
40	42280-8	†	FB40/T12/CWSupreme/6 UPC 12/1	12/1	Cool White Supreme, 4100K	22 7/16	18,000	2300	1955	90
	42282-4	†	FB40/T12/Neutral DX/6 UPC 12/1	12/1	Neutral Deluxe, 3500K	22 7/16	18,000	2300	1955	90
	21993-1		FB40DX/6	12	Daylight Deluxe, 6500K	22 7/16	18,000	2250	1950	90

For the most current product information, go to the e-catalog on **www.philips.com**

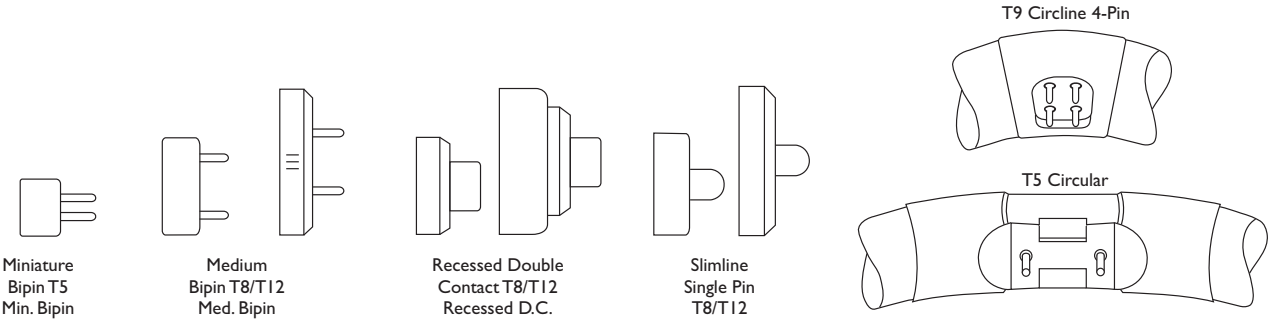
Fluorescent symbols and footnotes located on page 40

T9 4-Pin Circular

T8 U-Bent

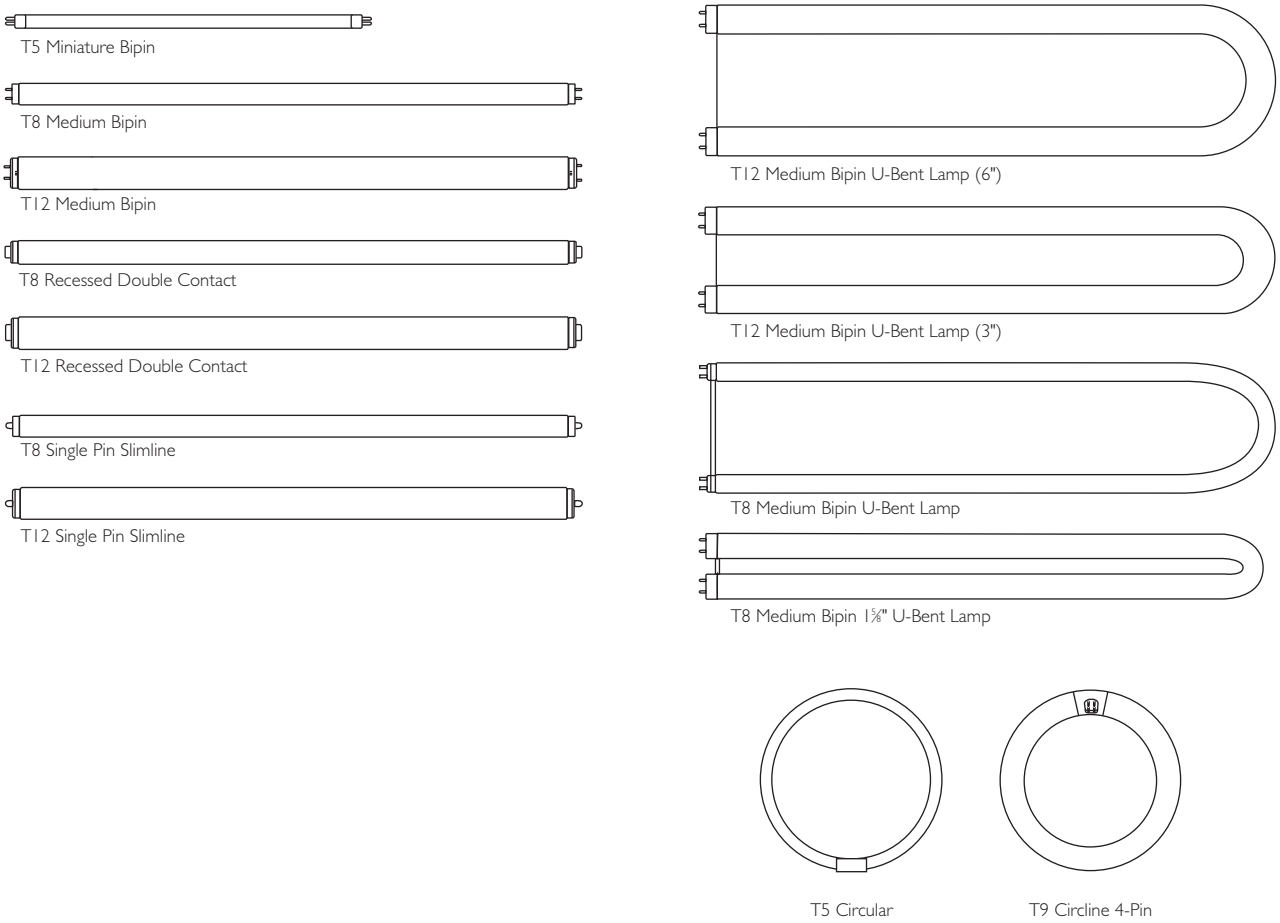
T12 U-Bent
Medium Bipin

Base Types (Not Actual Sizes)



Bulb Shapes (Not Actual Sizes)

The size and shape of a bulb is designated by a letter or letters followed by a number. The letter indicates the shape of the bulb, while the number indicates the diameter of the bulb in eighths of an inch. For example, "T12" indicates a tubular shaped bulb having a diameter of 12⁄8 or 1½ inches. The following illustrations show some of the more popular bulb shapes and sizes.



Fluorescent Lamps

Symbols and Footnotes

For the most current product information, go to the e-catalog on www.philips.com

▢ Exclusive to Philips Lighting Company

$ Energy Saving Product

● This lamp is better for the environment because of its reduced mercury content. All Philips ALTO lamps give you end-of-life options, which can simplify and reduce your lamp disposal costs, depending on your state and local regulations. ALTO II Lamps have only 1.7mg of mercury.

Ⓔ This Bulb Meets US Federal Minimum Efficiency Standard. Philips designs and manufactures fluorescent lamps to the following lighting industry standard: NEMA Standard LSD 26—Measurement Methods and Performance Tolerances for Verification Testing of General Purpose Incandescent and Fluorescent Lamps

† New since last printing

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

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

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

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

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

(212) Nominal length measured from face of base to maximum distant outside point of U. Measurement does not include base pins. Leg spacing center to center approximately 6", for /6 and 3⅝" for /3 lamps.

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

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

(226) T5 nominal lamp lengths are shorter than standard sizes. See chart on page 27 for details.

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

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

Fluorescent Lamps

Cross Reference Guide

Philips	GE	OSI
F15T8/CW/24/ALTO	F24"T8/CW/4	F18T8/CW/K/24
F16T8/CW/26	F26"T8/CW/4	F18T8/CW/K/26
F17T8/CW/28	F28"T8/CW/4	F18T8/CW/K/28
F18T8/CW/30	F30"T8/CW/4	F18T8/CW/K/30
F20T12/CW/ALTO (6PK)	F20T12/CW (6 Pack)	F20T12/CW/6
F25T12/CW	F25T12/CW/33	F25T12/CW/33
F30T12/CW/RS/EW/ALTO	F30T12/CW/RS/WM	F30T12/CW/RS/SS

TL 70	Trimline	Octron
F17T8/TL741/ALTO	F17T8/SP41/RS	FO17/741
F25T8/TL741/ALTO	F25T8/SP41/RS	FO25/741
F32T8/TL741/ALTO	F32T8/SP41/RS	FO32/741
F40T8/TL741/ALTO	F40T8/SP41/RS	FO40/741
F96T8/TL741/ALTO	F96T8/SP41	FO96T8/741
FB32T8/TL741/ALTO	F32T8/SP41/U/6	FB032/741/6

TL 80		
F17T8/TL841/ALTO	F17T8/SPX41	FO17/841
F25T8/TL841/ALTO	F25T8/SPX41	FO25/841
F32T8/TL841/ALTO	F32T8/SPX41	FO32/841
F40T8/TL841/ALTO	F40T8/SPX41	FO40/841
F96T8/TL841/ALTO	F96T8/SPX41	FO96/841
FB32T8/TL841/ALTO	F32T8/SPX41/U/6	FBO32/841/6

Long Life	XL EXTRA-LIFE	XP
F17T8/TL841/PLUS/ALTO	F17T8/XL/SPX41/ECO	FO17/841/XP/ECO
F25T8/TL841/PLUS/ALTO	F25T8/XL/SPX41/ECO	FO25/841/XP/ECO
F32T8/TL841/PLUS/ALTO	F32T8/XL/SPX41/ECO	FO32/841/XP/ECO

Energy Savings	WATTMISER/ULTRAMAX	SS
F32T8/ADV841/EW/ALTO 30 Watt	F32T8/XL/SP41/WM/ECO	FO30/841/XP/SS/ECO
F32T8/ADV841/EW/ALTO 28 Watt	F28T8/XL/SP41/WM/ECO	FO28/841/XP/SS/ECO
F32T8/ADV841/XEW/ALTO 25 Watt	NA	NA
F40CW/RS/EW/ALTO	F40CW/RS/WM	F40CW/RS/SS
F40LW/RS/EW/ALTO	F40LW/RS/WM	F40LW/RS/SS
F40T12/841/ALTO	F40/SP41	F40/D41
F40T12/ADV41/ALTO	F40/SPX41	F40/D841
F96T12/CW/EW/ALTO	F96T12/CW/WM	F96T12/CW/SS
F96T12/CW/HO/EW/ALTO	F96T12/CW/HO/WM	F96T12/CW/HO/SS
F96T12/CW/HO-O/ALTO	F96T12/CW/HO/CT	F96T12/CW/HO/COLD TEMP
F96T12/CW/VHO/EW/ALTO	F96PG17/CW/WM	F96T12/CW/VHO/SS
FB40CW/6/EW/ALTO	F40CW/U/6/WM	FB40CW/6/SS
F48T12/CW/VHO	F48T12/CW/1500	F48T12/CW/VHO
F72T12/CW/VHO	F72T12/CW/1500	F72T12/CW/VHO
F96T12/CW/VHO	F96T12/CW/1500	F96T12/CW/VHO
F48T12/CW/VHO-O	F48T12/CW/1500/0	F48T12/CW/VHO/LT
F60T12/CW/VHO-O	F60T10/CW	—
F72T12/CW/VHO-O	F72T12/CW/1500/0	F72T12/CW/VHO/LT
F96T12/CW/VHO-O	F96T12/CW/1500/0	F96T12/CW/VHO/LT

Fluorescent Lamps

Cross Reference Guide

Color Cross Reference Guide

Philips	GE	OSI
SPEC		
SPEC 30 or 730	SP 30	D 30
SPEC 35 or 735	SP 35	D 35
SPEC 41 or 741	SP 41	D 41
Ultralume	**Designer 800**	
27 or 27U	SPX 27	27K
30U or 830	SPX 30	D 830
35U or 835	SPX 35	D 835
41U or 841	SPX 41	D 841
C50	C50	DSGN50

Light Source Color Chart

Fluorescent Color	Color Abbreviation	Atmosphere	Light Output (%) In 4' Lamp	CCT	CRI	CIE Color Coordinates X	Y
Cool White	CW	Cool	100	4100K	62	0.38	0.38
Deluxe Cool White	CWX	Cool	72	4100K	89	0.376	0.367
Daylight	D	Cool Daylight	85	6500K	79	0.313	0.337
Daylight Deluxe	DX	Cool Daylight	76	6500K	84	0.314	0.341
Lite White	LW	Cool	104	4200K	51	0.376	0.386
Natural	N	Neutral	69	3700K	90	0.384	0.357
3000K, SPEC30	SPEC30	Warm	105	3000K	70	0.444	0.409
3500K, SPEC35	SPEC35	Neutral	105	3500K	73	0.41	0.395
4100K, SPEC41	SPEC41	Cool	105	4100K	70	0.382	0.385
Advantage T12 30	ADV30	Warm	118	3000K	82	0.444	0.409
Advantage T12 35	ADV35	Neutral	118	3500K	82	0.41	0.395
Advantage T12 41	ADV41	Cool	118	4100K	82	0.382	0.385
Advantage T12 50	ADV50	Daylight	118	5000K	82	0.346	0.36
Warm White	WW	Warm	102	3000K	53	0.44	0.403
Colortone 50	C50	Daylight	72	5000K	92	0.345	0.359
Colortone 75	C75	Daylight Plus	66	7500K	95	0.299	0.316
3000K, Ultralume	30U	Warm	108	3000K	85	0.444	0.409
3500K, Ultralume	35U	Neutral	108	3500K	85	0.413	0.395
4100K, Ultralume	41U	Cool	108	4100K	85	0.382	0.385
5000K, Ultralume	50U	Daylight	93	5000K	85	0.346	0.356
3000K, TL 70	TL730	Warm	93	3000K	78	0.439	0.402
3500K, TL 70	TL735	Neutral	93	3500K	78	0.41	0.395
4100K, TL 70	TL741	Cool	93	4100K	78	0.382	0.385
5000K, TL 70	TL750	Daylight	90	5000K	76	0.346	0.356
3000K, TL 80	TL830	Warm	98	3000K	86	0.439	0.402
3500K, TL 80	TL835	Neutral	98	3500K	86	0.41	0.395
4100K, TL 80	TL841	Cool	98	4100K	86	0.382	0.385
5000K, TL 80	TL850	Daylight	97	5000K	86	0.346	0.356
3000K, TL 90	TL930	Warm	66	3000K	95	0.438	0.399
5000K, TL 90	TL950	Daylight	66	5000K	98	0.344	0.355
Advantage T8 830	ADV830	Warm	105	3000K	86	0.444	0.409
Advantage T8 835	ADV835	Neutral	105	3500K	86	0.41	0.395
Advantage T8 841	ADV841	Cool	105	4100K	86	0.382	0.385
Advantage T8 850	ADV850	Daylight	105	5000K	86	0.346	0.36

Residential Applications Light Source Color Chart

Fluorescent Color	Light Output Atmosphere	Light Output (%) In 4' Lamp	CCT	CRI	Lighted Appearance CIE Color Coordinates X	Y
Cool White Plus	Cool	105	4100K	62-70	0.382	0.385
Natural Sunshine	Daylight	72	5000K	92	0.345	0.359
Soft White	Warm	108	3000K	85	0.444	0.409

Correlated Color Temperature, CCT, describes the apparent color, or chromaticity, of a light source. Fluorescent light sources of 3000K, for example, Warm White or 3000K Ultralume, have a warm chromaticity, while 5000K lamps such as Colortone® 50 or 5000K Ultralume have a higher blue content and are considered to be cooler in color.

Color Rendering Index, CRI, is a relative value that indicates the color rendering quality of illumination provided by a light source. The higher the index number, the better the quality of illumination. While one lamp may have the same apparent color in CCT as another, its ability to render colors properly may be more or less than another light source. For example, Warm White 3000K 53 CRI lamps will not render colors of objects in an illuminated space as well as 3000K Ultralume 85 CRI lamps.

Both CCT and CRI should be cited together when properly describing light source color attributes.

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PL-C Cluster Lamps
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PL-T Triple Lamps
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PL-L Long Lamps
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PL-Q Square Lamps
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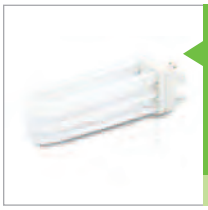
PL Consumer Lamps
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Switching from incandescent to compact fluorescent lamps can significantly lower energy consumption and operating costs.

Better for your business, better for the environment

Philips EnergySaver compact fluorescent bulbs can help reduce your electricity bill and save energy, while helping you create a relaxing, inviting atmosphere. From table lamps and recessed lighting to decorative fixtures, compact fluorescents are available in the shapes and sizes you are accustomed to.

Selecting the right type

There are 2 types of CFL bulbs; one with an integrated ballast (CFLi) and one without an integrated ballast (CFLni). Both types provide energy efficiency and long life. The integrated CFLi bulbs are a direct replacement for traditional incandescent bulbs, fitting into most standard fixtures. The non-integrated CFLni bulbs offer designers, specifiers and end users versatility in configurations, size, and application possibilities.

Current Product	Philips Upgrade Product	Benefit	Page
65W BR30 Incandescent	EnergySaver 16W R30 Dimmable	• Smooth dimming curve • Compatible with many household dimmer switches[1]	48
60W A19 Incandescent	EnergySaver T2 Twister 13W	• Small size mini twister fits more fixtures • 10,000–12,000 hours rated average life	46
40W PL-L	Energy Advantage PL-L 25W	• 95% lumen maintenance • 20% energy savings (when compared to a PL-L 40W)* • Only 1.4mg of mercury	56

Actual lumen values may vary
1) For compatible dimmers, please see: http://www.usa.lighting.philips.com/connect/tools_literature/compatibility.wpd
* On Instant Start Ballast, a standard PL-L 40W only draws 32 Watts, so the actual savings is 7 Watts (32W - 25W = 7W). 40W - 32W = 8W / 40 = 20%

Compact Fluorescent Lamps

EnergySaver Twisters

Watts	Inc. Equiv. Watts	Bulb	Base	Product Number	Symbols, Footnotes	Description	Ordering Code	Pkg. Type	Case Qty.	MOL (In.)	Diam. (In.)	Rated Avg. Life (Hrs.) (230)	CRI	Brightness (Lumens) (231)	Life (Yrs.) (446)	Energy Cost (445)	Light Appear. (CCT)
EnergySaver T2 Mini Twister														FTC REQUIREMENTS			
9	40	T2 Twister	Med.	41398-8	$ ■	Mini Twister Soft White	EL/mdT 9W T2	Box	6	3⅜	2	12,000	82	550	11.0	$1.08	2700
				40854-2	$ ■	Mini Twister Soft White	BC-EL/mdT 9W T2	Clam	6	3⅜	2	12,000	82	550	11.0	$1.08	2700
				41706-3	$ ■ †	Mini Twister Soft White	BC-EL/mdT 9W T2 (4pk)	Clam	6	3⅜	2	12,000	82	550	11.0	$1.08	2700
13	60	T2 Twister	Med.	41399-6	$ ■	Mini Twister Soft White	EL/mdT2 13W	Box	6	3¾	2	12,000	82	900	11.0	$1.57	2700
				40855-9	$ ■	Mini Twister Soft White	BC-EL/mdT2 13W	Clam	6	3¾	2	12,000	82	900	11.0	$1.57	2700
				41707-1	$ ■ †	Mini Twister Soft White	BC-EL/mdT2 13W (4pk)	Clam	6	3¾	2	12,000	82	900	11.0	$1.57	2700
				41806-1	$ ■ †	Mini Twister Soft White	SBC-EL/mdT2 13W (3pk)	Std. Clam	6	3¾	2	12,000	82	900	11.0	$1.57	2700
				41402-9	$ ■	Mini Twister White Light	EL/mdT2 13W 3.5K	Box	6	3¾	2	10,000	82	840	9.1	$1.57	3500
				41403-7	$ ■	Mini Twister Cool White	EL/mdT2 13W 4.1K	Box	6	3¾	2	10,000	82	840	9.1	$1.57	4100
				41404-5	$ ■	Mini Twister Bright White	EL/mdT2 13W 5K	Box	6	3¾	2	10,000	82	810	9.1	$1.57	5000
				42712-0	$ ■	Mini Twister Daylight	BC-EL/mdT2 13W 6.5K	Clam	6	3¾	2	10,000	82	810	9.1	$1.57	6500
				42009-1	$ ■ †	Mini Twister Daylight	BC-EL/mdT2 13W 6.5K (4pk)	Clam	6	3¾	2	10,000	82	810	9.1	$1.57	6500
				41807-9	$ ■ †	Mini Twister Daylight	SBC-EL/mdT2 13W 6.5K (3pk)	Std. Clam	6	3¾	2	10,000	82	810	9.1	$1.57	6500
18	75	T2 Twister	Med.	41400-3	$ ■	Mini Twister Soft White	EL/mdT2 18W	Box	6	4½	2¼	12,000	82	1300	11.0	$2.17	2700
				40856-7	$ ■	Mini Twister Soft White	BC-EL/mdT2 18W	Clam	6	4½	2¼	12,000	82	1300	11.0	$2.17	2700
				41708-9	$ ■ †	Mini Twister Soft White	BC-EL/mdT2 18W (4pk)	Clam	6	4½	2¼	12,000	82	1300	11.0	$2.17	2700
				41808-7	$ ■ †	Mini Twister Soft White	SBC-EL/mdT2 18W (3pk)	Std. Clam	6	4½	2¼	12,000	82	1300	11.0	$2.17	2700
23	100	T2 Twister	Med.	41401-1	$ ■	Mini Twister Soft White	EL/mdT2 23W	Box	6	4½	2¼	12,000	82	1600	11.0	$2.77	2700
				40857-5	$ ■	Mini Twister Soft White	BC-EL/mdT2 23W	Clam	6	4½	2¼	12,000	82	1600	11.0	$2.77	2700
				41709-7	$ ■ †	Mini Twister Soft White	BC-EL/mdT2 23W (4pk)	Clam	6	4½	2¼	12,000	82	1600	11.0	$2.77	2700
				41809-5	$ ■ †	Mini Twister Soft White	SBC-EL/mdT2 23W (3pk)	Std. Clam	6	4½	2¼	12,000	82	1600	11.0	$2.77	2700
				41405-2	$ ■	Mini Twister White Light	EL/mdT2 23W 3.5K	Box	6	4½	2¼	10,000	82	1600	9.1	$2.77	3500
				41406-0	$ ■	Mini Twister Cool White	EL/mdT2 23W 4.1K	Box	6	4½	2¼	10,000	82	1600	9.1	$2.77	4100
				41407-8	$ ■	Mini Twister Bright White	EL/mdT2 23W 5K	Box	6	4½	2¼	10,000	82	1500	9.1	$2.77	5000
26	100	T2 Twister	Med.	41410-2	$ ■	Mini Twister Soft White	EL/mdT2 26W	Box	6	5⅔	2	12,000	82	1800	11.0	$3.13	2700
				41408-6	$ ■	Mini Twister Cool White	EL/mdT2 26W 4.1K	Box	6	5⅔	2	10,000	82	1800	9.1	$3.13	4100
				41409-4	$ ■	Mini Twister Bright White	EL/mdT2 26W 5K	Box	6	5⅔	2	10,000	82	1700	9.1	$3.13	5000
EnergySaver Twister																	
5	25	Twister	Med.	14792-6	$	Twister Soft White	EL/mdT 5W	Box	6	3⅜	1⅝	10,000	82	250	9.1	$0.60	2700
32	125	Twister	Med.	15639-8	$ ■	Twister Soft White	EL/mdT 32W	Box	6	5⅔	2⅝	12,000	82	2200	11.0	$3.85	2700
				42470-5	$ ■ †	Twister Soft White	EL/mdT 32W 3K	Box	6	5⅔	2⅝	10,000	82	2200	9.1	$3.85	3000
42	150	Twister	Med.	13948-5	$ ■	Twister Soft White	EL/dT42W	Box	6	6⅝	2⅝	12,000	82	2800	11.0	$5.06	2700
				42752-6	$ ■ †	Twister Soft White	EL/dT 42W 3K	Box	6	6⅝	2⅝	10,000	82	2800	9.1	$5.06	3000
				13947-7	$ ■	Twister Soft White	BC-EL/dT 42W	Clam	6	6⅝	2⅝	12,000	82	2800	11.0	$5.06	2700

For the most current product information, go to the e-catalog on **www.philips.com**

Compact fluorescent symbols and footnotes located on page 59

9W T2 Mini Twister Med. | 13W T2 Mini Twister Med. | 18W T2 Mini Twister Med. | 23W T2 Mini Twister Med. | 5W Twister Med. | 32W Twister Med. | 42W Twister Med.

Compact Fluorescent Lamps

EnergySaver Twisters, A-Shape Lamps

Watts	Inc. Equiv. Watts	Bulb	Base	Product Number	Symbols, Footnotes	Description	Ordering Code	Pkg. Type	Case Qty.	MOL (In.)	Diam. (In.)	Rated Avg. Life (Hrs.) (230)	CRI	Brightness (Lumens) (231)	Life (Yrs.) (446)	Energy Cost (445)	Light Appear. (CCT)
EnergySaver Twister Dimmable														**FTC REQUIREMENTS**			
15	60	Twist. Dim	Med.	42002-6	$ ■ †	Twister Dim Soft White	EL/mdT 15W 1% Dim	Box	6	4⅔	2⅓	10,000	82	950	9.1	$1.81	2700
				42004-2	$ ■ †	Twister Dim Soft White	BC-EL/mdT 15W 1% Dim	Clam	4	4⅔	2⅓	10,000	82	950	9.1	$1.81	2700
20	75	Twist. Dim	Med.	42003-4	$ ■ †	Twister Dim Soft White	EL/mdT 20W 1% Dim	Box	6	4⅞	2⅜	10,000	82	1250	9.1	$2.41	2700
				42005-9	$ ■ †	Twister Dim Soft White	BC-EL/mdT 20W 1% Dim	Clam	4	4⅞	2⅜	10,000	82	1250	9.1	$2.41	2700
32	125	Twist. Dim	Med.	40715-5	$ ■	Twister Dim Soft White	EL/dT DIM 32W	Box	6	6⅛	2¾	10,000	82	2100	9.1	$3.85	2700
EnergySaver Twister GU24																	
13	60	Twist.	GU24	41723-8	$ ■	Twister GU24 Soft White	EL/mdT 13W GU24	Box	6	3⅜	1½	10,000	82	900	9.1	$1.57	2700
		GU24		41138-9	$ ■	Twister GU24 Cool White	EL/mdT 13W GU24 4.1K	Box	6	3⅜	1½	10,000	82	900	9.1	$1.57	4100
18	75	Twist.	GU24	41724-6	$ ■	Twister GU24 Soft White	EL/mdT 18W GU24	Box	6	3⅜	2⅜	10,000	82	1250	9.1	$2.17	2700
		GU24		41177-7	$ ■	Twister GU24 Cool White	EL/mdT 18W GU24 4.1K	Box	6	3⅜	2⅜	10,000	82	1250	9.1	$2.17	4100
23	100	Twist.	GU24	41725-3	$ ■	Twister GU24 Soft White	EL/mdT 23W GU24	Box	6	4⅜	2⅜	10,000	82	1600	9.1	$2.77	2700
		GU24		41139-7	$ ■	Twister GU24 Cool White	EL/mdT 23W GU24 4.1K	Box	6	4⅜	2⅜	10,000	82	1600	9.1	$2.77	4100
EnergySaver Twister 3-Way																	
11	50	Twister	Med.	21486-6	$ ■	Twist. 3-Way	BC-EL/3W 11-23-34	Clam	6	6⅝	2⅔	10,000	82	700	9.1	$1.32	2700
23	100					Double Helix								1500		$2.77	
34	150													2200		$4.09	
				21193-8	$ ■	Twist. 3-Way	EL/3W 11-23-34	Box	6	6⅝	2⅔	10,000	82	700	9.1	$1.32	2700
						Double Helix								1500		$2.77	
														2200		$4.09	
EnergySaver A-Shape																	
9	40	A19	Med.	41736-0	$ ■	A19 Soft White	EL/A SWP 9W	Box	6	4⅜	2⅛	8000	82	450	7.3	$1.08	2700
				41979-6	$ ■	A19 Soft White	BC-EL/A SWP 9W	Clam	4	4⅜	2⅛	8000	82	450	7.3	$1.08	2700
14	60	A19	Med.	41737-8	$ ■ X	A19 Soft White	EL/A SWP 14W	Box	6	4⅜	2⅜	8000	82	800	7.3	$1.69	2700
				41981-2	$ ■ X	A19 Soft White	BC-EL/A SWP 14W	Clam	4	4⅜	2⅜	8000	82	800	7.3	$1.69	2700
				41980-4	$ ■ X	A19 Soft White	BC-EL/A SWP 14W 3PK	Clam	4	4⅜	2⅜	8000	82	800	7.3	$1.69	2700
20	75	A21	Med.	20080-8	$ ■	A21 Soft White	EL/A SWP 20W	Box	6	5⅜	2⅝	8000	82	1100	7.3	$2.41	2700

For the most current product information, go to the e-catalog on **www.philips.com**

Compact fluorescent symbols and footnotes located on page 59

15W Twister Dimmable Med.

20W Twister Dimmable Med.

32W Twister Dimmable Med.

GU24 Twister GU24

3-Way Twister Med.

A-Shape SWP Med.

Compact Fluorescent Lamps

EnergySaver Reflectors

Watts	Inc. Equiv. Watts	Bulb	Base	Product Number	Symbols, Footnotes	Description	Ordering Code	Pkg. Type	Case Qty.	MOL (In.)	Diam. (In.)	Rated Avg. Life (Hrs.) (230)	CRI	Brightness (Lumens) (231)	Life (Yrs.) (446)	Energy Cost (445)	Light Appear. (CCT)
EnergySaver Reflector														FTC REQUIREMENTS			
13	50	R20	Med.	42682-5	$ ■ †	R20 Soft White	EL/A R20 13W	Box	6	4⅜	2½	8000	82	470	7.3	$1.57	2700
				42753-4	$ ■ †	R20 Soft White	EL/A R20 13W 3K	Box	6	4⅜	2½	8000	82	470	7.3	$1.57	3000
				42683-3	$ ■ †	R20 Soft White	BC-EL/A R20 13W	Clam	3	4⅜	2½	8000	82	470	7.3	$1.57	2700
15	75	R30	Med.	15703-2	$ ■	R30 Soft White	EL/A R30 15W	Box	6	5⅜	3⅝	8000	82	750	7.3	$1.81	2700
				40620-7	$ ■	R30 Soft White	EL/A R30 15W	Box	4	5⅜	3⅝	8000	82	750	7.3	$1.81	2700
				40621-5	$ ■	R30 Soft White	EL/A R30 15W 2PK	Box	4	5⅜	3⅝	8000	82	750	7.3	$1.81	2700
				41863-2	$ ■	R30 Soft White	BC-EL/A 15W R30	Clam	2	5⅝	3⅝	8000	82	750	7.3	$1.81	2700
				41862-4	$ ■	R30 Cool White	EL/A R30 15W 4.1K	Box	6	5⅝	3⅝	8000	82	750	7.3	$1.81	4100
23	120	R40	Med.	15702-4	$ ■	R40 Soft White	EL/A R40 23W	Box	6	6½	4⅝	8000	82	1250	7.3	$2.77	2700
				42120-6	$ ■	R40 Soft White	BC-EL/A R40 23W	Clam	2	6½	4⅝	8000	82	1250	7.3	$2.77	2700
	90	PAR38	Med.	41995-1	$ ■	PAR38 Soft White	EL/A PAR38 23W	Box	6	6½	4⅝	8000	82	1300	7.3	$2.77	2700
				41678-4	$ ■	PAR38 Soft White	BC-EL/A PAR38 23W	Clam	2	6½	4⅝	8000	82	1300	7.3	$2.77	2700
		Hard PAR38	Med.	15716-4	$ ■	PAR38 2pc Soft White	EL/A PAR38 23W 2pc	Box	6	5⅞	4⅜	8000	82	1300	7.3	$2.77	2700
				22791-8	$ ■	PAR38 2pc Soft White	EL/A PAR38 23W 2pc	Box	4	5⅞	4⅜	8000	82	1300	7.3	$2.77	2700
				40892-2	$ ■	PAR38 2pc Soft White	EL/A PAR38 23W 2pc 2pk	Box	4	5⅞	4⅜	8000	82	1300	7.3	$2.77	2700
EnergySaver Dimmable Reflector																	
16	65	R30 DIM	Med.	41997-7	$ ■ †	R30 Dimm. Soft White	EL/A R30 EDIM 16W	Box	6	5⅜	3⅝	8000	82	630	7.3	$1.93	2700
				41998-5	$ ■ †	R30 Dimm. Soft White	BC-EL/A R30 EDIM 16W	Clam	5	5⅜	3⅝	8000	82	630	7.3	$1.93	2700
20	75	R40 DIM	Med.	41999-3	$ ■ †	R40 Dimm. Soft White	EL/A R40 EDIM 20W	Box	6	6	4⅝	8000	82	900	7.3	$2.41	2700
				42000-0	$ ■ †	R40 Dimm. Soft White	BC-EL/A R40 EDIM 20W	Clam	4	6	4⅝	8000	82	900	7.3	$2.41	2700
		PAR38 DIM	Med.	42001-8	$ ■ †	PAR38 Dimm. Soft White	EL/A PAR38 EDIM 20W	Box	6	6	4⅝	8000	82	850	7.3	$2.41	2700

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Compact fluorescent symbols and footnotes located on page 59

R20
Med.

R30
Med.

R40
Med.

PAR38
Med.

Hard Glass PAR38
Med.

Compact Fluorescent Lamps

EnergySaver Decoratives

Watts	Inc. Equiv. Watts	Bulb	Base	Product Number	Symbols, Footnotes	Description	Ordering Code	Pkg. Type	Case Qty.	MOL (In.)	Diam. (In.)	Rated Avg. Life (Hrs.) (230)	CRI	Brightness (Lumens) (231)	Life (Yrs.) (446)	Energy Cost (445)	Light Appear. (CCT)
EnergySaver Fan														**FTC REQUIREMENTS**			
5	25	Fan	Med.	41747-7	$	Fan Soft White	EL/A FAN 5W	Box	6	3⅝	1⅔	8000	82	250	7.3	$0.60	2700
				41745-1	$	Fan Soft White	BC-EL/A FAN 5W 3PK	Clam	4	3⅝	1⅔	8000	82	250	7.3	$0.60	2700
9	40	Fan	Med.	41978-8	$ ■	Fan Soft White	BC-EL/A FAN 9W	Clam	4	4⅜	2⅛	8000	82	450	7.3	$1.08	2700
				41977-0	$ ■	Fan Soft White	BC-EL/A FAN 9W 3PK	Clam	4	4⅜	2⅛	8000	82	450	7.3	$1.08	2700
EnergySaver Candle																	
5	25	mCan	Cand.	42230-3	$ ■	Candle Soft White	EL/mCan T2 5W	Box	6	4½	1⅜	8000	82	215	7.3	$0.60	2700
				42232-9	$ ■	Candle Soft White	BC-EL/mCan T2 5W	Clam	4	4½	1⅜	8000	82	215	7.3	$0.60	2700
				42231-1	$ ■	Candle Soft White	BC-EL/mCan T2 5W 3PK	Clam	4	4½	1⅜	8000	82	215	7.3	$0.60	2700
		Can	Med.	42229-5	$ ■	Candle Soft White	EL/Can T2 5W	Box	6	4⅜	1⅜	8000	82	215	7.3	$0.60	2700
9	40	mCan	Cand.	41741-0	$ ■	Candle Soft White	EL/mCan T2 9W	Box	6	4⅜	1⅜	8000	82	410	7.3	$1.08	2700
				41739-4	$ ■	Candle Soft White	BC-EL/mCan T2 9W	Clam	4	4⅜	1⅜	8000	82	410	7.3	$1.08	2700
				41740-2	$ ■	Candle Soft White	BC-EL/mCan T2 9W 3PK	Clam	4	4⅜	1⅜	8000	82	410	7.3	$1.08	2700
		Can	Med.	41744-4	$ ■	Candle Soft White	EL/Can T2 9W	Box	6	4¾	1⅜	8000	82	410	7.3	$1.08	2700
				41742-8	$ ■	Candle Soft White	BC-EL/Can T2 9W	Clam	4	4¾	1⅜	8000	82	410	7.3	$1.08	2700
				41743-6	$ ■	Candle Soft White	BC-EL/Can T2 9W 3PK	Clam	4	4¾	1⅜	8000	82	410	7.3	$1.08	2700
EnergySaver Globe																	
9	40	G25	Med.	41735-2	$ ■	G25 Globe Soft White	EL/A G25 T3 9W	Box	6	4⅜	3⅛	8000	82	500	7.3	$1.08	2700
				41733-7	$ ■	G25 Globe Soft White	BC-EL/A G25 T3 9W 3PK	Clam	4	4⅜	3⅛	8000	82	500	7.3	$1.08	2700
				41734-5	$ ■	G25 Globe Soft White	BC-EL/A G25 T3 9W	Clam	4	4⅜	3⅛	8000	82	500	7.3	$1.08	2700
14	60	G25	Med.	42787-2	$ ■	G25 Globe Soft White	EL/A G25 14W Case	Box	6	5½	5½	8000	82	800	7.3	$1.69	2700
16	60	G30	Med.	21106-0	$ ■	G30 Globe Soft White	EL/A G30 16W	Box	6	5½	5½	8000	82	900	7.3	$1.93	2700
23	75	G40	Med.	21107-8	$ ■	G40 Globe Soft White	EL/A G40 23W	Box	6	6⅛	6	8000	82	1400	7.3	$2.77	2700

For the most current product information, go to the e-catalog on **www.philips.com**
Compact fluorescent symbols and footnotes located on page 59

Compact Fluorescent Lamps

EnergySaver Outdoor, Universal, TuffGuard Lamps

Watts	Inc. Equiv. Watts	Bulb	Base	Product Number	Symbols, Footnotes	Description	Ordering Code	Pkg. Type	Case Qty.	MOL (In.)	Diam. (In.)	Rated Avg. Life (Hrs.) (230)	CRI	Brightness (Lumens) (231)	Life (Yrs.) (446)	Energy Cost (445)	Light Appear. (CCT)
EnergySaver Outdoor														**FTC REQUIREMENTS**			
14	60	Twister	Med.	40585-2	$ ■	Twister Photosensor	BC-EL/mdT D2D 14W	Clam	6	4⅔	2⅛	8000	82	900	7.3	$1.69	2700
		A19	Med.	41748-5	$	A19 Bug-A-Way	BC-EL/A SWP 14W BAW	Clam	4	4⅔	2⅖	8000	72	600	7.3	$1.69	Yellow
		T16	Med.	40867-4	$ ■	Postlight	BC-EL/O 14W	Clam	4	5⅔	2½	8000	82	840	7.3	$1.69	2700
				40778-3	$ ■	Prismatic Postlight	EL/O 14W Prisma	Box	6	5 7/10	2	8000	82	840	7.3	$1.69	2700
EnergySaver Universal																	
14	60	SLS	Med.	14691-0	$ ● ■	SLS Universal Triple Tube	SLS 14W	Box	6	5	2⅖	12,000	82	860	11.0	$1.69	2700
20	75	SLS	Med.	13077-3	$ ●	SLS Universal Triple Tube	SLS 20W	Box	6	5⅝	2⅖	15,000	82	1200	11.0	$2.41	2700
25	100	SLS	Med.	13574-9	$ ●	SLS Universal Triple Tube	SLS 25W	Box	6	6⅛	2⅖	15,000	82	1750	11.0	$3.01	2700
EnergySaver TuffGuard																	
18	75	T20	Med.	13578-0	$ ■	TuffGuard	EL/O 18W	Box	6	6	2⅜	15,000	82	1100	9.1	$2.17	2700

For the most current product information, go to the e-catalog on **www.philips.com**

Compact fluorescent symbols and footnotes located on page 59

Twister Photosensor
Med.

Bug-A-Way
Med.

T16 Postlight
Med.

14W SLS Universal
Med.

20W SLS Universal
Med.

25W SLS Universal
Med.

18W TuffGuard T20
Med.

Compact Fluorescent Lamps

EnergySaver Decoratives

Watts	Inc. Equiv. Watts	Bulb	Base	Product Number	Symbols, Footnotes	Description	Ordering Code	Pkg. Type	Case Qty.	MOL (In.)	Diam. (In.)	Rated Avg. Life (Hrs.) (230)	CRI	Brightness (Lumens) (231)	Life (Yrs.) (446)	Energy Cost (445)	Light Appear. (CCT)
EnergySaver Silicone A-Shape														FTC REQUIREMENTS			
9	40	A17	Med.	41504-2	$ ■ †	A17 Silicone Soft White	EL/A T2 SC 9W 6/2	Clam	6	4⅛	2⅛	8000	82	450	7.3	$1.08	2700
14	60	A17	Med.	41503-4	$ ■ †	A17 Silicone Soft White	EL/A T2 SC 14W 6/2	Clam	6	4⅛	2⅛	8000	82	800	7.3	$1.69	2700
EnergySaver Silicone Candle																	
5	25	mCan	Cand.	41508-3	$ ■ †	Silicone Candle Soft White	EL/mCan T2 SC 5W 6/3	Clam	6	4	1½	8000	82	215	7.3	$0.60	2700
		Can	Med.	41509-1	$ ■ †	Silicone Candle Soft White	EL/Can T2 SC 5W 6/3	Clam	6	4	1½	8000	82	215	7.3	$0.60	2700
9	40	mCan	Cand.	41510-9	$ ■ †	Silicone Candle Soft White	EL/mCan T2 SC 9W 6/3	Clam	6	4⅜	1⅜	8000	82	410	7.3	$1.08	2700
		Can	Med.	41511-7	$ ■ †	Silicone Candle Soft White	EL/Can T2 SC 9W 6/3	Clam	6	4½	1⅜	8000	82	410	7.3	$1.08	2700

For the most current product information, go to the e-catalog on **www.philips.com**

Compact fluorescent symbols and footnotes located on page 59

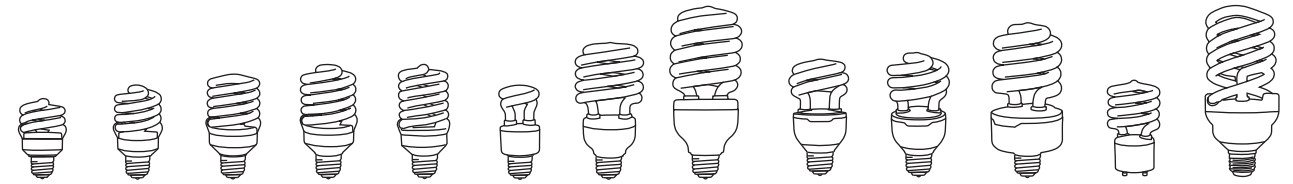
Compact Fluorescent Lamps

EnergySaver Base Types and Bulb Shapes

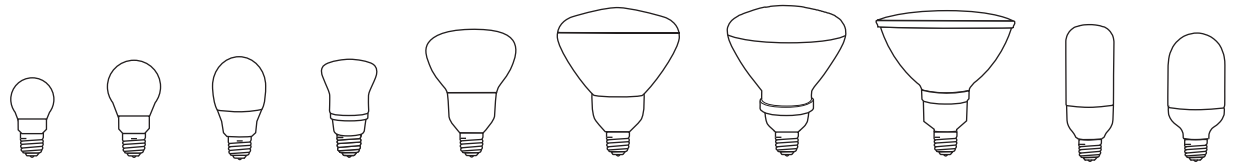
EnergySaver Compact Fluorescent Base Types (Not Actual Sizes)

Med. Medium | Cand. Candelabra | GU24

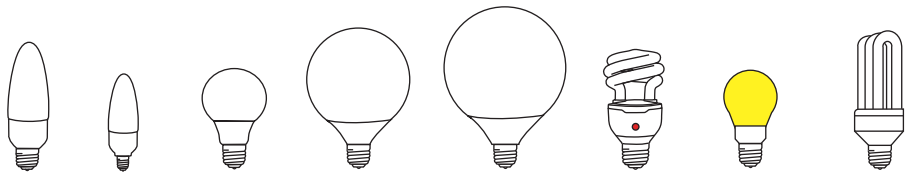
EnergySaver Compact Fluorescent Bulb Shapes (Not Actual Sizes)



EL/mdT2 9W | EL/mdT2 13W | EL/mdT2 18W | EL/mdT2 23W | EL/mdT2 26W | EL/mdT 5W | EL/mdT 32W | EL/dT 42W | EL/mdT DIM 15W | EL/mdT DIM 20W | EL/dT DIM 32W | EL/mdT GU24 | EL/3W



EL/A FAN | EL/A SWP | A17 | EL/A R20 | EL/A R30 | EL/A R40 | EL/A PAR38 | EL/A PAR38 2PC | T16 | T20



EL/Can | EL/mCan | EL/A G25 | EL/A G30 | EL/A G40 | EL/mdT D2D 14W | EL/A SWP BAW | SLS EL/T

Compact Fluorescent Lamps

PL-S and PL-C Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Description	Generic Designation	Pkg. Qty.	MOL (In.)	Rated Avg. Life (Hrs.) (230)	Design Lumens (208)	CRI	Brightness (Lumens) (231)	Life (Yrs.) (446)	Energy Cost (445)	Light Appear. (CCT)
												FTC REQUIREMENTS			
PL-S (Short) Fluorescent Lamps															
5	PL-S	G23	14671-2	$ ●	PL-S 5W/827/2P/ALTO	CFT5W/G23/827	10	4 5/32	10,000	210	82	250	9.1	$0.60	2700
			14868-4	$ ●	PL-S 5W/841/2P/ALTO	CFT5W/G23/841	10	4 5/32	10,000	210	82	250	9.1	$0.60	4100
7	PL-S	G23	14871-8	$ ●	PL-S 7W/827/2P/ALTO	CFT7W/G23/827	10	5 11/32	10,000	360	82	400	9.1	$0.84	2700
			14872-6	$ ●	PL-S 7W/835/2P/ALTO	CFT7W/G23/835	10	5 11/32	10,000	360	82	400	9.1	$0.84	3500
			14873-4	$ ●	PL-S 7W/841/2P/ALTO	CFT7W/G23/841	10	5 11/32	10,000	360	82	400	9.1	$0.84	4100
9	PL-S	G23	14867-6	$ ●	PL-S 9W/827/2P/ALTO	CFT9W/G23/827	10	6 19/32	10,000	540	82	600	9.1	$1.08	2700
			14869-2	$ ●	PL-S 9W/835/2P/ALTO	CFT9W/G23/835	10	6 19/32	10,000	540	82	600	9.1	$1.08	3500
			14870-0	$ ●	PL-S 9W/841/2P/ALTO	CFT9W/G23/841	10	6 19/32	10,000	540	82	600	9.1	$1.08	4100
13	PL-S	GX23	14681-1	$ ●	PL-S 13W/827/2P/ALTO	CFT13W/GX23/827	10	7 1/64	10,000	740	82	825	9.1	$1.57	2700
			14683-7	$ ●	PL-S 13W/830/2P/ALTO	CFT13W/GX23/830	10	7 1/64	10,000	740	82	825	9.1	$1.57	3000
			14684-5	$ ●	PL-S 13W/835/2P/ALTO	CFT13W/GX23/835	10	7 1/64	10,000	740	82	825	9.1	$1.57	3500
			14685-2	$ ●	PL-S 13W/841/2P/ALTO	CFT13W/GX23/841	10	7 1/64	10,000	740	82	825	9.1	$1.57	4100
			14687-8	$ ●	PL-S 13W/850/2P/ALTO	CFT13W/GX23/850	10	7 1/64	10,000	720	82	825	9.1	$1.57	5000
			14688-6	$ ●	PL-S 13W/850/2P/ALTO/BULK	CFT13W/GX23/850	50	7 1/64	10,000	720	82	825	9.1	$1.57	5000
PL-C (Cluster) 2-Pin—Energy Advantage															
21	PL-C	G24d-3	40976-3	$ †	PL-C 26W/830/XEW/ ALTO 21W	CFQ26W/G24d/830	10	6 13/16	10,000	1375	82	1600	9.1	$2.53	3000
			40977-1	$ †	PL-C 26W/835/XEW/ ALTO 21W	CFQ26W/G24d/835	10	6 13/16	10,000	1375	82	1600	9.1	$2.53	3500
PL-C (Cluster) 2-Pin															
13	PL-C	GX23-2	38310-9	$ ●	PL-C 13W/827/USA/ALTO	CFQ13W/GX23/827	10	4 5/8	10,000	735	82	860	9.1	$1.57	2700
			38311-7	$ ●	PL-C 13W/830/USA/ALTO	CFQ13W/GX23/830	10	4 5/8	10,000	735	82	860	9.1	$1.57	3000
			38312-5	$ ●	PL-C 13W/835/USA/ALTO	CFQ13W/GX23/835	10	4 5/8	10,000	735	82	860	9.1	$1.57	3500
			38313-3	$ ●	PL-C 13W/841/USA/ALTO	CFQ13W/GX23/841	10	4 5/8	10,000	735	82	860	9.1	$1.57	4100
		G24d-1	38314-1	$ ●	PL-C 13W/827/ALTO	CFQ13W/G24d/827	10	5 1/2	10,000	770	82	900	9.1	$1.57	2700
18	PL-C	G24d-2	38316-6	$ ●	PL-C 18W/827/ALTO	CFQ18W/G24d/827	10	6	10,000	1070	82	1250	9.1	$2.17	2700
			38317-4	$ ●	PL-C 18W/830/ALTO	CFQ18W/G24d/830	10	6	10,000	1070	82	1250	9.1	$2.17	3000
			38318-2	$ ●	PL-C 18W/835/ALTO	CFQ18W/G24d/835	10	6	10,000	1070	82	1250	9.1	$2.17	3500
			38319-0	$ ●	PL-C 18W/841/ALTO	CFQ18W/G24d/841	10	6	10,000	1070	82	1250	9.1	$2.17	4100
26	PL-C	G24d-3	38321-6	$ ●	PL-C 26W/827/ALTO	CFQ26W/G24d/827	10	6 13/16	10,000	1545	82	1800	9.1	$3.13	2700
			38322-4	$ ●	PL-C 26W/830/ALTO	CFQ26W/G24d/830	10	6 13/16	10,000	1545	82	1800	9.1	$3.13	3000
			38323-2	$ ●	PL-C 26W/835/ALTO	CFQ26W/G24d/835	10	6 13/16	10,000	1545	82	1800	9.1	$3.13	3500
			38324-0	$ ●	PL-C 26W/841/ALTO	CFQ26W/G24d/841	10	6 13/16	10,000	1545	82	1800	9.1	$3.13	4100
PL-C (Cluster) 2-Pin, 15mm Tube Diameter															
20	PL-C	GX32d-2	24168-7	$	PL-C 15mm/22W/827	CFQ20W/GX32d/827	40	6	10,000	995	82	1200	9.1	$2.41	2700
27	PL-C	GX32d-3	24169-5	$	PL-C 15mm/28W/827	CFQ27W/GX32d/827	40	6 13/16	10,000	1325	82	1600	9.1	$3.25	2700

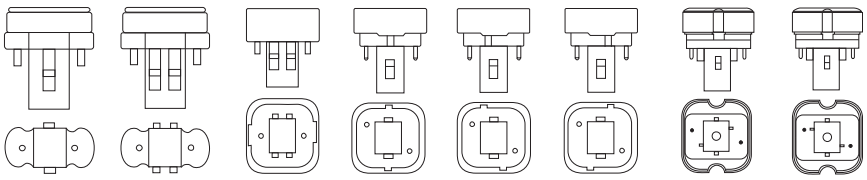
For the most current product information, go to the e-catalog on **www.philips.com**
Compact fluorescent symbols and footnotes located on page 59

Philips PL-S

Warranty Period: 12 months*

* Certain limitations and conditions apply.
See Philips for further warranty details.

PL-S G23 | PL-S GX23 | PL-C 2-Pin Energy Advantage | PL-C 2-Pin 15mm



PL-S G23 Base | PL-S GX23 Base | PL-C 2-Pin GX23-2 Base | PL-C 2-Pin G24d-1 Base | PL-C 2-Pin G24d-2 Base | PL-C 2-Pin G24d-3 Base | PL-C 2-Pin GX32d-2 Base | PL-C 2-Pin GX32d-3 Base

Compact Fluorescent Lamps

PL-C Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Description	Generic Designation	Pkg. Qty.	MOL (In.)	Rated Avg. Life (Hrs.) (230)	Design Lumens (208)	CRI	Brightness (Lumens) (231)	Life (Yrs.) (446)	Energy Cost (445)	Light Appear. (CCT)
PL-C (Cluster) 4-Pin, Energy Advantage												**FTC REQUIREMENTS**			
14	PL-C	G24q-2	22034-3	$ ●	PL-C 18W/827/XEW/4P/ ALTO 14W	CFQ18W/G24q/827	10	5 11/16	12,000	1010	82	1100	11	$1.69	2700
			22040-0	$ ●	PL-C 18W/835/XEW/4P/ ALTO 14W	CFQ18W/G24q/835	10	5 11/16	12,000	1010	82	1100	11	$1.69	3500
			22041-8	$ ●	PL-C 18W/841/XEW/4P/ ALTO 14W	CFQ18W/G24q/841	10	5 11/16	12,000	1010	82	1100	11	$1.69	4100
21	PL-C	G24q-3	22042-6	$ ●	PL-C 26W/827/XEW/4P/ ALTO 21W	CFQ26W/G24q/827	10	6½	12,000	1400	82	1525	11	$2.53	2700
			22047-5	$ ●	PL-C 26W/835/XEW/4P/ ALTO 21W	CFQ26W/G24q/835	10	6½	12,000	1400	82	1525	11	$2.53	3500
			22048-3	$ ●	PL-C 26W/841/XEW/4P/ ALTO 21W	CFQ26W/G24q/841	10	6½	12,000	1400	82	1525	11	$2.53	4100
PL-C (Cluster) 4-Pin															
13	PL-C	G24q-1	38325-7	$ ●	PL-C 13W/827/4P/ALTO	CFQ13W/G24q/827	10	5 3/16	12,000	775	82	900	11	$1.57	2700
			38326-5	$ ●	PL-C 13W/830/4P/ALTO	CFQ13W/G24q/830	10	5 3/16	12,000	775	82	900	11	$1.57	3000
			38327-3	$ ●	PL-C 13W/835/4P/ALTO	CFQ13W/G24q/835	10	5 3/16	12,000	775	82	900	11	$1.57	3500
			38328-1	$ ●	PL-C 13W/841/4P/ALTO	CFQ13W/G24q/841	10	5 3/16	12,000	775	82	900	11	$1.57	4100
18	PL-C	G24q-2	38329-9	$ ●	PL-C 18W/827/4P/ALTO	CFQ18W/G24q/827	10	5 11/16	12,000	1075	82	1250	11	$2.17	2700
			38330-7	$ ●	PL-C 18W/830/4P/ALTO	CFQ18W/G24q/830	10	5 11/16	12,000	1075	82	1250	11	$2.17	3000
			38332-3	$ ●	PL-C 18W/835/4P/ALTO	CFQ18W/G24q/835	10	5 11/16	12,000	1075	82	1250	11	$2.17	3500
			38333-1	$ ●	PL-C 18W/841/4P/ALTO	CFQ18W/G24q/841	10	5 11/16	12,000	1075	82	1250	11	$2.17	4100
26	PL-C	G24q-3	38334-9	$ ●	PL-C 26W/827/4P/ALTO	CFQ26W/G24q/827	10	6½	12,000	1550	82	1800	11	$3.13	2700
			38335-6	$ ●	PL-C 26W/830/4P/ALTO	CFQ26W/G24q/830	10	6½	12,000	1550	82	1800	11	$3.13	3000
			38336-4	$ ●	PL-C 26W/835/4P/ALTO	CFQ26W/G24q/835	10	6½	12,000	1550	82	1800	11	$3.13	3500
			38337-2	$ ●	PL-C 26W/841/4P/ALTO	CFQ26W/G24q/841	10	6½	12,000	1550	82	1800	11	$3.13	4100

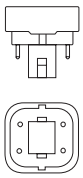
For the most current product information, go to the e-catalog on **www.philips.com**
Compact fluorescent symbols and footnotes located on page 59

Philips PL-C
Warranty Period: 18 months*

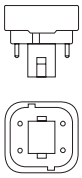
Philips PL-C Energy Advantage
Warranty Period: 24 months*

* Certain limitations and conditions apply.
See Philips for further warranty details.

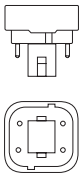
PL-C 4-Pin



PL-C 4-Pin G24q-1 Base



PL-C 4-Pin G24q-2 Base



PL-C 4-Pin G24q-3 Base

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Description	Generic Designation	Pkg. Qty.	MOL (In.)	Rated Avg. Life (Hrs.) (230)	Design Lumens (208)	CRI	Brightness (Lumens) (231)	Life (Yrs.) (446)	Energy Cost (445)	Light Appear. (CCT)
PL-T (Triple) 4-Pin, Energy Advantage												**FTC REQUIREMENTS**			
21	PL-T	GX24q-3	40779-1	$ ●	PL-T 26W/830/XEW/4P/ ALTO 21W	CFTR26W/GX24q/830	10	5	16,000	1235	82	1400	14.6	$2.53	3000
			40780-9	$ ●	PL-T 26W/835/XEW/4P/ ALTO 21W	CFTR26W/GX24q/835	10	5	16,000	1235	82	1400	14.6	$2.53	3500
27	PL-T	GX24q-3	22021-0	$ ●	PL-T 32W/830/XEW/4P/ ALTO 27W	CFTR32W/GX24q/830	10	5½	16,000	1725	82	1875	14.6	$3.25	3000
			22022-8	$ ●	PL-T 32W/835/XEW/4P/ ALTO 27W	CFTR32W/GX24q/835	10	5½	16,000	1725	82	1875	14.6	$3.25	3500
			22024-4	$ ●	PL-T 32W/841/XEW/4P/ ALTO 27W	CFTR32W/GX24q/841	10	5½	16,000	1725	82	1875	14.6	$3.25	4100
33	PL-T	GX24q-4	22026-9	$ ●	PL-T 42W/830/XEW/4P/ ALTO 33W	CFTR42W/GX24q/830	10	6⅓	16,000	2400	82	2615	14.6	$3.97	3000
			22028-5	$ ●	PL-T 42W/835/XEW/4P/ ALTO 33W	CFTR42W/GX24q/835	10	6⅓	16,000	2400	82	2615	14.6	$3.97	3500
			22029-3	$ ●	PL-T 42W/841/XEW/4P/ ALTO 33W	CFTR42W/GX24q/841	10	6⅓	16,000	2400	82	2615	14.6	$3.97	4100
PL-T (Triple) 4-Pin															
18	PL-T	GX24q-2	38437-0	$ ●	PL-T 18W/827/4P/ALTO	CFTR18W/GX24q/827	12	4⅝	16,000	1020	82	1200	14.6	$2.17	2700
			26802-9	$ ●	PL-T 18W/830/4P/ALTO	CFTR18W/GX24q/830	12	4⅝	16,000	1020	82	1200	14.6	$2.17	3000
			26820-1	$ ●	PL-T 18W/835/4P/ALTO	CFTR18W/GX24q/835	12	4⅝	16,000	1020	82	1200	14.6	$2.17	3500
			26822-7	$ ●	PL-T 18W/841/4P/ALTO	CFTR18W/GX24q/841	12	4⅝	16,000	1020	82	1200	14.6	$2.17	4100
26	PL-T	GX24q-3	38440-4	$ ●	PL-T 26W/827/4P/ALTO	CFTR26W/GX24q/827	12	5	16,000	1530	82	1800	14.6	$3.13	2700
			26823-5	$ ●	PL-T 26W/830/4P/ALTO	CFTR26W/GX24q/830	12	5	16,000	1530	82	1800	14.6	$3.13	3000
			26824-3	$ ●	PL-T 26W/835/4P/ALTO	CFTR26W/GX24q/835	12	5	16,000	1530	82	1800	14.6	$3.13	3500
			26825-0	$ ●	PL-T 26W/841/4P/ALTO	CFTR26W/GX24q/841	12	5	16,000	1530	82	1800	14.6	$3.13	4100
32	PL-T	GX24q-3	38443-8	$ ●	PL-T 32W/827/4P/ALTO	CFTR32W/GX24q/827	12	5⅝	16,000	2040	82	2400	14.6	$3.85	2700
			26832-6	$ ●	PL-T 32W/830/4P/ALTO	CFTR32W/GX24q/830	12	5⅝	16,000	2040	82	2400	14.6	$3.85	3000
			26833-4	$ ●	PL-T 32W/835/4P/ALTO	CFTR32W/GX24q/835	12	5⅝	16,000	2040	82	2400	14.6	$3.85	3500
			26872-2	$ ●	PL-T 32W/841/4P/ALTO	CFTR32W/GX24q/841	12	5⅝	16,000	2040	82	2400	14.6	$3.85	4100
42	PL-T	GX24q-4	38450-3	$ ●	PL-T 42W/827/4P/ALTO	CFTR42W/GX24q/827	12	6⅜	16,000	2720	82	3200	14.6	$5.06	2700
			26873-0	$ ●	PL-T 42W/830/4P/ALTO	CFTR42W/GX24q/830	12	6⅜	16,000	2720	82	3200	14.6	$5.06	3000
			26875-5	$ ●	PL-T 42W/835/4P/ALTO	CFTR42W/GX24q/835	12	6⅜	16,000	2720	82	3200	14.6	$5.06	3500
			26876-3	$ ●	PL-T 42W/841/4P/ALTO	CFTR42W/GX24q/841	12	6⅜	16,000	2720	82	3200	14.6	$5.06	4100
57	PL-T	GX24q-5	14631-6	$	PL-T 57W/830/4P/A	CFTR57W/GX24q/830	10	7 5/64	16,000	3741	82	4300	14.6	$6.87	3000
			14632-4	$	PL-T 57W/835/4P/A	CFTR57W/GX24q/835	10	7 5/64	16,000	3741	82	4300	14.6	$6.87	3500
			14633-2	$	PL-T 57W/841/4P/A	CFTR57W/GX24q/841	10	7 5/64	16,000	3741	82	4300	14.6	$6.87	4100

For the most current product information, go to the e-catalog on **www.philips.com**
Compact fluorescent symbols and footnotes located on page 59

Philips PL-T
Warranty Period: 18 months*

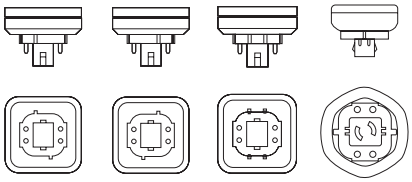
Philips PL-T
Energy Advantage
Warranty Period: 24 months*

* Certain limitations and conditions apply.
See Philips for further warranty details.

PL-T 4-Pin
Energy Advantage

PL-T 4-Pin
Instant-On

PL-T 4-Pin


PL-T 4-Pin GX24q-2 Base
PL-T 4-Pin GX24q-3 Base
PL-T 4-Pin GX24q-4 Base
PL-T 4-Pin GX24q-5 Base

Compact Fluorescent Lamps

PL-L and PL-Q Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Description	Generic Designation	Pkg. Qty.	MOL (In.)	Rated Avg. Life (Hrs.) (230)	Design Lumens (208)	CRI	Brightness (Lumens) (231)	Life (Yrs.) (446)	Energy Cost (445)	Light Appear. (CCT)
PL-L (Long)—Energy Advantage															**FTC REQUIREMENTS**
25	PL-L	2G11	20913-0	$	PL-L 40W/830/XEW/ 4P/IS 25W	FT40W/2G11/RS/830	25	22½	24,000	2470	82	2600	21.9	$3.01	3000
			20914-8	$	PL-L 40W/835/XEW/ 4P/IS 25W	FT40W/2G11/RS/835	25	22½	24,000	2470	82	2600	21.9	$3.01	3500
			40652-0	$	PL-L 40W/835/XEW/ 4P/IS 25W	FT40W/2G11/RS/835	10	22½	24,000	2470	82	2600	21.9	$3.01	3500
			20915-5	$	PL-L 40W/841/XEW/ 4P/IS 25W	FT40W/2G11/RS/841	25	22½	24,000	2470	82	2600	21.9	$3.01	4100
PL-L (Long)															
18	PL-L	2G11	34500-9	$	PL-L 18W/830/4P	FT18W/2G11/830	25	8 15/16	15,000	1125	82	1250	13.7	$2.17	3000
			35932-3	$	PL-L 18W/835/4P	FT18W/2G11/835	25	8 15/16	15,000	1125	82	1250	13.7	$2.17	3500
			34501-7	$	PL-L 18W/841/4P	FT18W/2G11/841	25	8 15/16	15,000	1125	82	1250	13.7	$2.17	4100
24	PL-L	2G11	34505-8	$	PL-L 24W/830/4P	FT24W/2G11/830	25	12 11/16	15,000	1620	82	1800	13.7	$2.89	3000
			35933-1	$	PL-L 24W/835/4P	FT24W/2G11/835	25	12 11/16	15,000	1620	82	1800	13.7	$2.89	3500
			34508-2	$	PL-L 24W/841/4P	FT24W/2G11/841	25	12 11/16	15,000	1620	82	1800	13.7	$2.89	4100
36	PL-L	2G11	34511-6	$	PL-L 36W/830/4P	FT36W/2G11/830	25	16 7/16	15,000	2610	82	2900	13.7	$4.34	3000
			34942-3	$	PL-L 36W/835/4P	FT36W/2G11/835	25	16 7/16	15,000	2610	82	2900	13.7	$4.34	3500
			34513-2	$	PL-L 36W/841/4P	FT36W/2G11/841	25	16 7/16	15,000	2610	82	2900	13.7	$4.34	4100
40	PL-L	2G11	30042-6	$	PL-L 40W/830/4P/RS/IS	FT40W/2G11/RS/830	25	22½	20,000	2970	82	3300	18.3	$4.82	3000
			30043-4	$	PL-L 40W/835/4P/RS/IS	FT40W/2G11/RS/835	25	22½	20,000	2970	82	3300	18.3	$4.82	3500
			30044-2	$	PL-L 40W/841/4P/RS/IS	FT40W/2G11/RS/841	25	22½	20,000	2970	82	3300	18.3	$4.82	4100
50	PL-L	2G11	34747-6	$	PL-L 50W/830/4P/RS	FT50W/2G11/RS/830	25	22½	20,000	3870	82	4300	18.3	$6.02	3000
			34753-4	$	PL-L 50W/835/4P/RS	FT50W/2G11/RS/835	25	22½	20,000	3870	82	4300	18.3	$6.02	3500
			34770-8	$	PL-L 50W/841/4P/RS	FT50W/2G11/RS/841	25	22½	20,000	3870	82	4300	18.3	$6.02	4100
55	PL-L	2G11	13844-6	$	PL-L 55W/950/4P/RS	FT55W/2G11/RS/950	25	21⅜	20,000	3358	91	3650	18.3	$6.62	5000
80	PL-L	2G11	38698-7	$	PL-L 80W/835/4P	FT80W/2G11/835	25	22½	20,000	5400	82	6000	18.3	$9.64	3500
			38699-5	$	PL-L 80W/841/4P	FT80W/2G11/841	25	22½	20,000	5400	82	6000	18.3	$9.64	4100
PL-Q Square Shape—4 Pin															
38	PL-Q	GR10q	15941-8		PL-Q 38W/827/4P	CFS38W/GR10q/827	10	8⅛	10,000	2395	82	2850	9.1	$4.58	2700

For the most current product information, go to the e-catalog on **www.philips.com**
Compact fluorescent symbols and footnotes located on page 59

Philips PL-L Standard
Warranty Period: 24 months*

Philips PL-L Energy Advantage
Warranty Period: 30 months*

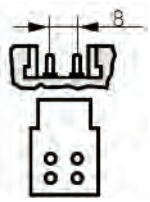
Philips PL-Q
Warranty Period: 12 months*

* Certain limitations and conditions apply. See Philips for further warranty details.

PL-L 2G11

PL-L 2G11 Base

PL-Q



PL-Q GR10q Base

Compact Fluorescent Lamps

Consumer Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Description	Generic Designation	Pkg. Qty.	MOL (In.)	Rated Avg. Life (Hrs.) (230)	Design Lumens (208)	CRI	Brightness (Lumens) (231)	Life (Yrs.) (446)	Energy Cost (445)	Light Appear. (CCT)
Consumer Lamps												**FTC REQUIREMENTS**			
5	PL-S	G23	23021-9	●	PL-S 5W/827/2P/ALTO	14671-2	6	4 5/32	10,000	215	80	250	9.1	$0.60	2700
7	PL-S	G23	23022-7	●	PL-S 7W/827/2P/ALTO	14871-8	6	5 11/32	10,000	340	80	400	9.1	$0.84	2700
9	PL-S	G23	23032-6	●	PL-S 9W/827/2P/ALTO	14867-6	6	6 19/32	10,000	510	80	600	9.1	$1.08	2700
13	PL-S	GX23	23010-2	●	PL-S 13W/827/2P/ALTO	14681-1	6	7 1/64	10,000	675	80	800	9.1	$1.57	2700
			23012-8	●	PL-S 13W/841/2P/ALTO	14685-2	6	7 1/64	10,000	675	80	800	9.1	$1.57	4100
	PL-C	GX23-2	23039-1		PL-C 13W/827/2P USA	38310-9	6	4 5/8	10,000	730	80	860	9.1	$1.57	2700
			23040-9		PL-C 13W/841/2P USA	38313-3	6	4 5/8	10,000	730	80	860	9.1	$1.57	4100
	PL-C	G24q-1	23035-9		PL-C 13W/827/4P	38325-7	6	5 3/16	10,000	665	80	780	9.1	$1.57	2700
			23036-7		PL-C 13W/841/4P	38328-1	6	5 3/16	10,000	665	80	780	9.1	$1.57	4100
18	PL-C	G24q-2	23041-7		PL-C 18W/827/4P	38329-9	6	6	10,000	990	80	1150	9.1	$2.17	2700
	PL-T	GX24q-2	40981-3	●	PL-T 18W/827/4P/ALTO	38437-0	6	4 5/8	12,000	1020	80	1200	9.1	$2.17	2700
26	PL-C	G24q-3	23042-5		PL-C 26W/827/4P	38334-9	6	6 13/16	10,000	1470	80	1710	9.1	$3.13	2700
			23044-1		PL-C 26W/835/4P	38336-4	6	6 13/16	10,000	1470	80	1710	9.1	$3.13	3500
	PL-T	GX24q-3	23045-8	●	PL-T 26W/827/4P/ALTO	38440-4	6	5	12,000	1530	80	1800	11.0	$3.13	2700
			41860-8	● †	PL-T 26W/841/4P/ALTO	26825-0	6	5	12,000	1530	80	1800	11.0	$3.13	4100

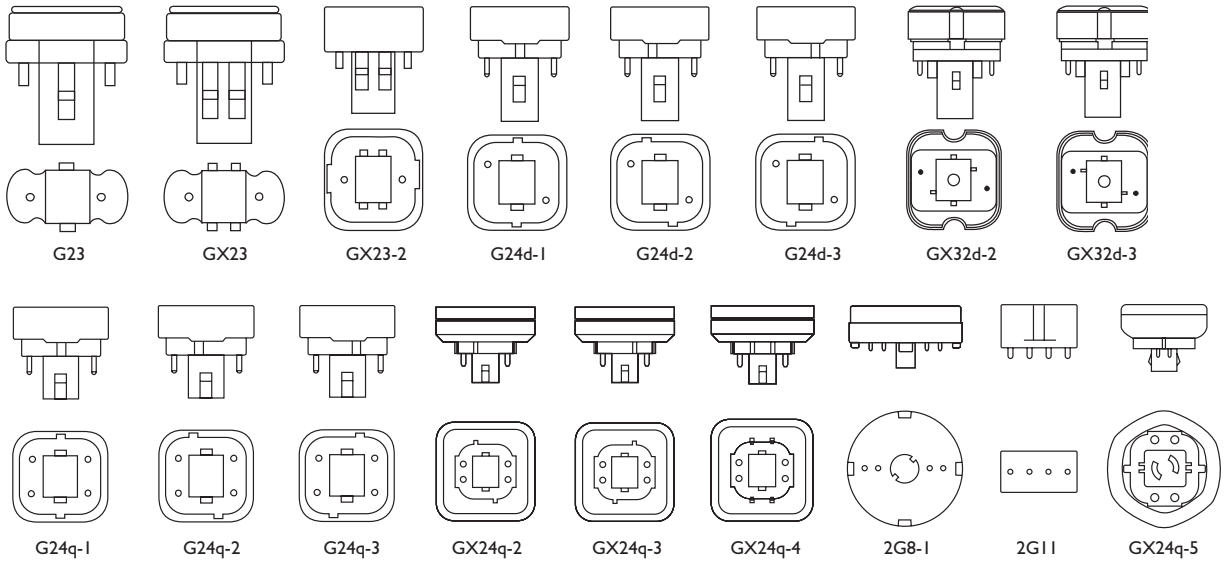
For the most current product information, go to the e-catalog on **www.philips.com**
Compact fluorescent symbols and footnotes located on page 59

PL-S G23 | PL-S GX23 | PL-C 2-Pin | PL-C 4-Pin | PL-T 4-Pin

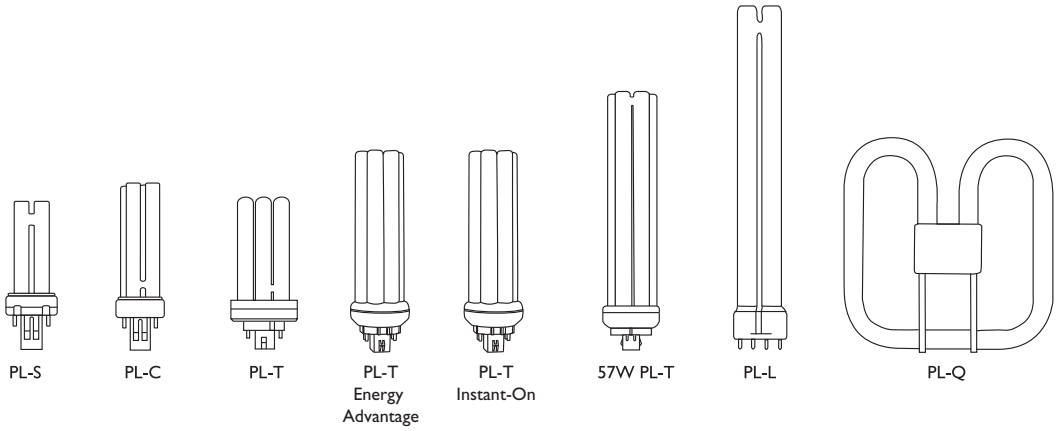
Compact Fluorescent Lamps

PL Base Types and Bulb Shapes

PL Base Types (Not Actual Sizes)



PL Bulb Shapes (Not Actual Sizes)



Symbols and Footnotes

For the most current product information, go to the e-catalog on www.philips.com

Ⓤ Exclusive to Philips Lighting Company

$ Energy Saving Product

● This lamp is better for the environment because of its reduced mercury content. All Philips ALTO lamps give you end-of-life options, which can simplify and reduce your lamp disposal costs, depending on your state and local regulations

■ ENERGY STAR Bulb: As an ENERGY STAR Partner, Philips has determined that this product meets the ENERGY STAR guidelines for energy efficiency

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

Ⓔ This Bulb Meets US Federal Minimum Efficiency Standard

† New since last printing

◇ Designed for instant start operation

T– ENERGY STAR testing in progress

§ "Made-To-Order". Product is not kept in inventory. Minimum quantities will apply

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

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

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

(445) Estimated energy cost is based on 3 hrs/day, 11¢/kWh. Cost depends on rates and use.

(446) Life in years is based on 3 hrs/day.

Compact Fluorescent Lamps

Cross Reference Guide

Philips	Generic Designation	GE	OSI
PL-S			
PL-S 5W/827	CFT5W/G23/827	F5BX/SPX27	CF5DS/827
PL-S 7W/827	CFT7W/G23/827	F7BX/SPX27	CF7DS/827
PL-S 7W/835	CFT7W/G23/835	F7BX/SPX35	CF7DS/835
PL-S 7W/841	CFT7W/G23/841	F7BX/SPX41	CF7DS/841
PL-S 7W/850	CFT7W/G23/850	F7BX/SPX50	CF7DS/850
PL-S 9W/827	CFT9W/G23/827	F9BX/SPX27	CF9DS/827
PL-S 9W/835	CFT9W/G23/835	F9BX/SPX35	CF9DS/835
PL-S 9W/841	CFT9W/G23/841	F9BX/SPX41	CF9DS/841
PL-S 9W/850	CFT9W/G23/850	F9BX/SPX50	CF9DS/850
PL-S 13W/827	CFT13W/GX23/827	F13BX/SPX27	CF13DS/827
PL-S 13W/830	CFT13W/GX23/830	F13BX/SPX30	CF13DS/830
PL-S 13W/835	CFT13W/GX23/835	F13BX/SPX35	CF13DS/835
PL-S 13W/841	CFT13W/GX23/841	F13BX/SPX41	CF13DS/841
PL-S 13W/850	CFT13W/GX23/850	F13BX/SPX50	CF13DS/850
PL-C 2-PIN			
PL-C 13W/827/USA/ALTO	CFQ13W/GX23/827	F13DBX23T4/SPX27	CF13DD/827
PL-C 13W/830/USA/ALTO	CFQ13W/GX23/830	F13DBX23T4/SPX30	CF13DD/830
PL-C 13W/835/USA/ALTO	CFQ13W/GX23/835	F13DBX23T4/SPX35	CF13DD/835
PL-C 13W/841/USA/ALTO	CFQ13W/GX23/841	F13DBX23T4/SPX41	CF13DD/841
PL-C 13W/827/ALTO	CFQ13W/G24d/827	F13DBXT4/SPX27	—
PL-C 13W/830/ALTO	CFQ13W/G24d/830	F13DBXT4/SPX30	—
PL-C 18W/827/ALTO	CFQ18W/G24d/827	F18DBXT4/SPX27	CF18DD/827
PL-C 18W/830/ALTO	CFQ18W/G24d/830	F18DBXT4/SPX30	CF18DD/830
PL-C 18W/835/ALTO	CFQ18W/G24d/835	F18DBXT4/SPX35	CF18DD/835
PL-C 18W/841/ALTO	CFQ18W/G24d/841	F18DBXT4/SPX41	CF18DD/841
PL-C 26W/827/ALTO	CFQ26W/G24d/827	F26DBXT4/SPX27	CF26DD/827
PL-C 26W/830/ALTO	CFQ26W/G24d/830	F26DBXT4/SPX30	CF26DD/830
PL-C 26W/835/ALTO	CFQ26W/G24d/835	F26DBXT4/SPX35	CF26DD/835
PL-C 26W/841/ALTO	CFQ26W/G24d/841	F26DBXT4/SPX41	CF26DD/841
PL-C 2-PIN 15MM			
PL-C 15MM/22W/827	CFQ20W/GX32d/827	—	—
PL-C 15MM/28W/827	CFQ27W/GX32d/827	—	—
PL-C 4-PIN			
PL-C 13W/827/4P/ALTO	CFQ13W/G24q/827	F13DBX/SPX27/4P	CF13DD/E/827
PL-C 13W/830/4P/ALTO	CFQ13W/G24q/830	F13DBX/SPX30/4P	CF13DD/E/830
PL-C 13W/835/4P/ALTO	CFQ13W/G24q/835	F13DBX/SPX35/4P	CF13DD/E/835
PL-C 13W/841/4P/ALTO	CFQ13W/G24q/841	F13DBX/SPX41/4P	CF13DD/E/841
PL-C 18W/827/4P/ALTO	CFQ18W/G24q/827	F18DBX/SPX27/4P	CF18DD/E/827
PL-C 18W/830/4P/ALTO	CFQ18W/G24q/830	F18DBX/SPX30/4P	CF18DD/E/830
PL-C 18W/835/4P/ALTO	CFQ18W/G24q/835	F18DBX/SPX35/4P	CF18DD/E/835
PL-C 18W/841/4P/ALTO	CFQ18W/G24q/841	F18DBX/SPX41/4P	CF18DD/E/841
PL-C 26W/827/4P/ALTO	CFQ26W/G24q/827	F26DBX/SPX27/4P	CF26DD/E/827
PL-C 26W/830/4P/ALTO	CFQ26W/G24q/830	F26DBX/SPX30/4P	CF26DD/E/830
PL-C 26W/835/4P/ALTO	CFQ26W/G24q/835	F26DBX/SPX35/4P	CF26DD/E/835
PL-C 26W/841/4P/ALTO	CFQ26W/G24q/841	F26DBX/SPX41/4P	CF26DD/E/841

Philips	Generic Designation	GE	OSI
PL-L			
PL-L 18W/830	FT18W/2G11/830	F18BX/SPX30	FT18DL/830
PL-L 18W/835	FT18W/2G11/835	F18BX/SPX35	FT18DL/835
PL-L 18W/841	FT18W/2G11/841	F18BX/SPX41	FT18DL/841
PL-L 18W/830	FT18W/2G11/RS/830	F18BX/SPX30/RS	FT18DL/830/RS
PL-L 18W/835	FT18W/2G11/RS/835	F18BX/SPX35/RS	FT18DL/835/RS
PL-L 18W/841	FT18W/2G11/RS/841	F18BX/SPX41/RS	FT18DL/841/RS
PL-L 24W/830	FT24W/2G11/830	F27/24BX/SPX30	FT24DL/830
PL-L 24W/835	FT24W/2G11/835	F27/24BX/SPX35	FT24DL/835
PL-L 24W/841	FT24W/2G11/841	F27/24BX/SPX41	FT24DL/841
PL-L 36W/830	FT36W/2G11/830	F39/36BX/SPX30	FT36DL/830
PL-L 36W/835	FT36W/2G11/835	F39/36BX/SPX35	FT36DL/835
PL-L 36W/841	FT36W/2G11/841	F39/36BX/SPX41	FT36DL/841
PL-L 40W/830/RS/IS	FT40W/2G11/RS/830	F40/30BX/SPX30	FT40DL/830/RS
PL-L 40W/835/RS/IS	FT40W/2G11/RS/835	F40/30BX/SPX35	FT40DL/835/RS
PL-L 40W/841/RS/IS	FT40W/2G11/RS/841	F40/30BX/SPX41	FT40DL/841/RS
PL-L 50W/830/RS	FT50W/2G11/RS/830	F50BX/SPX30/RS	—
PL-L 50W/835/RS	FT50W/2G11/RS/835	F50BX/SPX35/RS	—
PL-L 50W/841/RS	FT50W/2G11/RS/841	F50BX/SPX41/RS	—
PL-L 80W/830	FT80W/2G11/830	—	FT80DL/830
PL-L 80W/835	FT80W/2G11/835	—	FT80DL/835
PL-L 80W/841	FT80W/2G11/841	—	FT80DL/841
PL-T 4-PIN			
PL-T 18W/827/4P/ALTO	CFTR18W/GX24q/827	F18TBX/SPX27/A/4P	CF18DT/E/IN/827
PL-T 18W/830/4P/ALTO	CFTR18W/GX24q/830	F18TBX/SPX30/A/4P	CF18DT/E/IN/830
PL-T 18W/835/4P/ALTO	CFTR18W/GX24q/835	F18TBX/SPX35/A/4P	CF18DT/E/IN/835
EL			
EL/mdT 5W	—	—	—
EL/mdT 9W T2	—	FLE10HT3/2/827	—
EL/mdT 11W	—	—	—
EL/mdT2 13W	—	FLE13HT2/2/827	CF13EL/MINI/827
EL/mdT2 13W 3.5K			CF13EL/MINI/830
EL/mdT2 13W 4.1K	—	—	CF13EL/MINI/841
EL/mdT2 13W 5K	—	—	CF13EL/MINI/850/BL
EL/mdT2 18W	—	FLE20HT3/2/827	CF19EL/MINI/827
EL/mdT2 23W	—	FLE23HT3/2/XL827	CF23EL/MINI/827
EL/mdT 27W	—	—	—
EL/mdT 27W 4K	—	—	—
EL/mdT 27W 5K	—	—	—
EL/mdT2 26W	—	FLE26HT3/2/XL827	—
EL/mdT2 26W 4.1K	—	FLE26HT3/2/841	—
EL/mdT2 26W 5k	—	FLE26HT3/2/6STP	—
EL/mdT 32W	—	FLE29HLX/2XL/827	CF30EL/TWIST/827
EL/mdT 32W 3K	—	—	CF30EL/MINI/835/DAY/B
EL/mdT D2D 14W	—	—	—
EL/dT 42W	—	FLE42HLX/2/XL827	CF40EL/TWIST/827
El/mdT 13W GU24	—	FLE15HT3/2GU24CD	CF13EL/GU24/827/BL
EL/mdT 13W GU24 4.1K		—	—
EL/mdT 18W GU24	—	FLE20HT3/2GU24CD	—
EL/mdT 18W GU24 4.1K	—	—	—
EL/mdT 23W GU24	—	FLE26HT3/2GU24CD	CF23EL/GU24/827/BL
EL/mdT 23W GU24 4.1K	—	—	—

Compact Fluorescent Lamps

Cross Reference Guide

Philips	Generic Designation	GE	OSI
EL			
EL/mCan T2 5W	—	FLE5/2/CAC/827	CF4EL/B15/C/827
EL/Can T2 5W	—	FLE5/2/CAM/827	CF7EL/B15/827
EL/mCan T2 9W	—	FLE9/2/CAC/827	CF9EL/B14/C/830/ADP/BL2
EL/Can T2 9W	—	FLE9/2/CAM/827	—
EL/A FAN 5W	—	—	—
EL/A FAN 9W	—	FLE11/2/A17XL/CD	
EL/A G18 9W	—	—	—
EL/A G25 T3 9W	—	FLE11/2/G25XL	CF9EL/G25/827
EL/A G30 16W	—	—	—
EL/A G40 23W	—	—	—
EL/A SWP 9W	—	FLE11/2/A17XL/CD	CF9EL/A19/827
EL/A SWP 14W	—	FLE15/2/A19XL	CF14EL/A19/827
EL/A SWP 14W BAW	—	FLE11/2TC14BUGCD	CF14EL/A19/Y/BL
EL/A SWP 20W	—	FLE20/2/A19XL	—
EL/O 14W	—	FLE14/2/TC16SWCD	CF14EL/T20/830
EL/A PAR38 23W 2pc	—	FLE26/2/PAR38/XL	CF23EL/PAR38/GL/827
EL/A R20 14W	—	FLE11/2/R20XL827	CF14EL/R20/827
EL/A 15W R30	—	FLE15/2/R30XL827	CF16EL/BR30/827
EL/A R40 23W	—	FLE26/2/R40XL827	CF20EL/BR40/827
EL/A PAR38 23W	—	FLE26/2PAR38XCD	CF23EL/PAR38/827
EL/A R30 EDIM 16W	—	FLE15/2DVR30SWCD	CF15EL/BR30/DIM/827
EL/A R40 EDIM 20W	—	FLE26/2/DV/R40	—
EL/A PAR38 EDIM 20W	—	—	—
Silicone			
EL/A T2 SC 14W	—	—	—
EL/A T2 SC 9W	—	—	—
EL/A T2 SC 5W	—	—	—
EL/mA T2 SC 9W	—	—	—
EL/O SC 18W	—	—	—
EL/mCan T2 SC 5W	—	—	—
EL/Can T2 SC 5W	—	—	—
EL/mCan T2 SC 9W	—	—	—
EL/Can T2 SC 9W	—	—	—
EL/mG16.5 T2 SC 8W	—	—	—
EL/G16.5 T2 SC 8W	—	—	—
Universal			
Universal 14W ALTO	—	—	—
Universal 20W ALTO	—	—	—
Universal 25W ALTO	—	—	—
Helix Twister			
Helix Twister EL/3W 11-23-34	—	FLE32HT3/2D3/BX	CF28EL/3WAY/TWIST/827
Two Piece Circline			
32W Two Piece Circline	—	FEA30CIR/SW/CD	—
40W Two Piece Circline	—	—	—
Genie Pro Pack 6PK			
14W Genie Pro Pack 6PK	—	FLE14TBX/2/SW/CD	—
18W Genie Pro Pack 6PK	—	—	—

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Upgrade to a better white light—Philips High Intensity Discharge lighting solutions.

A new age in outdoor lighting

Lighting plays an important role in transforming the look of an outdoor space. Whether you are looking to create a unique identity for your city, add a sense of safety and security to an outdoor space, or light a local sports stadium, Philips has a solution for you.

Philips MasterColor CDM Elite MW Lamps combine high efficacy with excellent quality white light and long, stable lifetime performance. This lamp is designed with a new socket allowing for more flexible use and enhanced optical efficiency.

Philips Energy Advantage CDM with AllStart Technology is a high-efficiency CDM lighting retrofit solution for existing quartz metal halide systems that provides energy savings without compromising light quality.

MasterColor Elite Ceramic Metal Halide Tubular T6 100W Lamp gives a unique combination of unbeatable light quality and consistent performance over lifetime. This is a compact, energy efficient lamp that provides crisp, sparkling white light.

Current Product	Philips Upgrade Product	Benefit	Page
400W Metal Halide (Quartz Probe Start) (450W System)	MasterColor CDM Elite MW 210W (225W System)	• Approximately 50% in total system energy savings[1] • 20% longer rated average life (24K hours versus 20K hours) • Better CRI and color consistency than standard quartz metal halide	67
175W/250W/440W Metal Halide (Quartz Probe or Pulse Start) Lamp	145W/205W/330W Energy Advantage CDM with AllStart Technology Lamp	• Up to 18% energy savings with a simple lamp change[2] • Longer rated average life[3] • Excellent CRI and color consistency	72
150W MasterColor Ceramic Metal Halide Tubular T6 Lamp	MasterColor Elite Ceramic Metal Halide Tubular T6 Lamp 100W	• Approximately 33% in total system energy savings[4] • 25% longer rated average life (15K hours versus 12K hours) • Excellent lumen maintenance with 90 CRI	66

1) 450W - 225W = 225W / 450W = 50%
2) 145W CDM lamp with AllStart Technology compared to 175W QMH, 205W CDM with AllStart Technology compared to 250W QMH, 330W CDM with AllStart Technology compared to 400W QMH
3) 10,000 hours longer in vertical position and 12,500 hours longer in horizontal position for 145W and 205W lamps compared to 175W and 250W standard Probe Start QMH lamps, 4000 hours more for the 330W compared to 400W standard Probe Start QMH lamps.
4) 100W vs. 150W

High Intensity Discharge Lamps

MasterColor Ceramic Metal Halide Lamps

Mini MasterColor Elite Ceramic Metal Halide Tubular Single-Ended GU6.5 Lamps (391, 392, 396, 397)

Enclosed luminaires only; lifetime color stability within ±200K

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref.	Pkg. Qty.‡	Description (401, 407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
20	T4	GU6.5	40850-0	★	CDM20/TM/830/ GU6.5 ELITE	C156/E	12	G, Clear, FadeBlock	1½	2¼	15,000	1800	1550	85	3000
39	T4	GU6.5	41879-8	★†	CDM35/TM/930/ GU6.5 ELITE	C130/E	12	G, Clear, FadeBlock	1½	2¼	15,000	3900	3300	90	3000
50	T4	GU6.5	41880-6	★†	CDM50/TM/930/ GU6.5 ELITE	C193/E	12	G, Clear, FadeBlock	1½	2¼	15,000	5200	4400	91	3000

Mini MasterColor Ceramic Metal Halide Tubular Single-Ended T3.5 Lamps (391, 392, 396, 397)

Enclosed luminaires only; lifetime color stability within ±200K

22	T3.5	PGJ5	14040-0	★	CDM20/TM/830	C175/E	12	G, Clear, FadeBlock	⅞	1¾	12,000	1650	1155	85	3000
39	T3.5	PGJ5	21139-1	★	CDM35/TM/930	C179/E	12	G, Clear, FadeBlock	⅞	1¾	12,000	3000	2400	90	3000

MasterColor Elite Ceramic Metal Halide Tubular Single-Ended T4 Lamps (391, 392, 396, 397)*

Enclosed luminaires only; lifetime color stability within ±200K

20	T4	G8.5	41046-4	★	CDM Elite 20/TC/830	C156/E	12	G, Clear, FadeBlock	2	3 11/32	15,000	1800	1550	85	3000
39	T4	G8.5	40916-9	★	CDM Elite 35/TC/930	C130/E	12	G, Clear, FadeBlock	2	3 11/32	15,000	4000	3500	90	3000
			42079-4	★†	CDM Elite35/TC/942	C130/E	12	G, Clear, FadeBlock	2	3 11/32	15,000	3700	3200	88	4200
50	T4	G8.5	41415-1	★†	CDM Elite 50/TC/930	C193/E	12	G, Clear, FadeBlock	2	3 11/32	15,000	5400	4750	90	3000
70	T4	G8.5	40917-7	★	CDM Elite 70/TC/930	C139/E	12	G, Clear, FadeBlock	2	3 11/32	15,000	7650	6700	90	3000
			41898-7	★†	CDM Elite70/TC/942	C139/E	12	G, Clear, FadeBlock	2	3 11/32	15,000	7400	6500	90	4200

MasterColor Ceramic Metal Halide Tubular Single-Ended T4 Lamps (391, 392, 396, 397)

Enclosed luminaires only; lifetime color stability within ±200K

39	T4	G8.5	37372-0	★	CDM35/TC/830	C130/E	12	G, Clear, FadeBlock	2	3 11/32	12,000	3300	2300	81	3000
			20883-5	★	CDM35/TC/842	C130/E	12	G, Clear, FadeBlock	2	3 11/32	12,000	3300	2640	85	4200
70	T4	G8.5	37373-8	★	CDM70/TC/830	C139/E	12	G, Clear, FadeBlock	2	3 11/32	12,000	6400	4500	83	3000
			20885-0	★	CDM/70/TC/942	C139/E	12	G, Clear, FadeBlock	2	3 11/32	12,000	5900	3840	90	4200

MasterColor Elite Ceramic Metal Halide Tubular Single-Ended T6 Lamps (391, 392, 396, 397)

Enclosed luminaires only; lifetime color stability within ±200K

20	T6	G12	41047-2	★	CDM Elite 20/T6/830	C156/E	12	G, Clear, FadeBlock	2 7/32	3 5/16	15,000	1800	1550	85	3000
39	T6	G12	40914-4	★	CDM Elite 35/T6/930	C130/E	12	G, Clear, FadeBlock	2 7/32	3 5/16	15,000	4000	3500	90	3000
			42081-0	★†	CDM Elite35/T6/942	C130/E	12	G, Clear, FadeBlock	2 7/32	3 5/16	15,000	3800	3380	88	4200
50	T6	G12	41416-9	★†	CDM Elite 50/T6/930	C193/E	12	G, Clear, FadeBlock	2 7/32	3 5/16	15,000	5400	4750	90	3000
			42144-6	★†	CDM Elite50/T6/942	C193/E	12	G, Clear, FadeBlock	2 7/32	3 5/16	15,000	4900	4300	90	4200
70	T6	G12	40915-1	★	CDM Elite 70/T6/930	C139/E	12	G, Clear, FadeBlock	2 7/32	3 5/16	15,000	7650	6700	90	3000
			41899-5	★†	CDM Elite70/T6/942	C139/E	12	G, Clear, FadeBlock	2 7/32	3 5/16	15,000	7500	6600	90	4200
100	T6	G12	40829-4	★	CDM Elite 100/T6/930	C191/E	12	G, Clear, FadeBlock	2 7/32	4 11/32	15,000	11,000	9680	90	3000

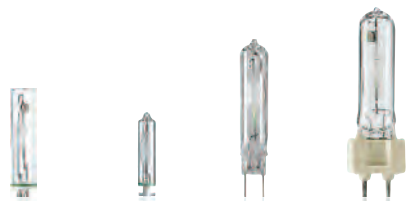
MasterColor Ceramic Metal Halide Tubular Single-Ended T6 Lamps (391, 392, 396, 397)

Enclosed luminaires only; lifetime color stability within ±200K

39	T6	G12	22328-9	★	CDM35/T6/830	C130/E	12	G, Clear, FadeBlock	2 7/32	3 5/16	12,000	3300	2600	81	3000
			20886-8	★	CDM35/T6/842	C130/E	12	G, Clear, FadeBlock	2 7/32	3 5/16	12,000	3300	2800	84	4200
70	T6	G12	22337-0	★	CDM70/T6/830	C139/E	12	G, Clear, FadeBlock	2 7/32	3 5/16	12,000	6600	4950	81	3000
			28137-8	★	CDM70/T6/942	C139/E	12	G, Clear, FadeBlock	2 7/32	3 5/16	12,000	6600	4620	92	4200
150	T6	G12	23272-8	★	CDM150/T6/830	C142/E	12	G, Clear, FadeBlock, also ANSI M102	2 7/32	4 11/32	12,000	14,000	9800	85	3000
			37369-6	★	CDM150/T6/942	C142/E	12	G, Clear, FadeBlock, also ANSI M102	2 7/32	4 11/32	12,000	12,700	8900	96	4200

For the most current product information, go to the e-catalog on **www.philips.com**

HID symbols and footnotes located on page 82



T4 GU6.5 | T3.5 PGJ5 | T4 G8.5 | T6 G12

MasterColor CDM Elite MW (Medium Watt) Ceramic Metal Halide Tubular Single-Ended T9 Lamps (391, 392, 396, 397)

Enclosed luminaires only

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref. or MBCP♦	Pkg. Qty.‡	Description(401,407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
210	T9	PGZ18	22062-4	☐★$	CDM EliteMW 210/T9/930/U/E	C183/E	12	G, Clear, Fadeblock	3½	7½	27,000	24,200	21,735	90	3000
			22063-2	☐★$	CDM EliteMW 210/T9/942/U/E	C183/E	12	G, Clear, Fadeblock	3½	7½	30,000	23,100	20,470	90	4200
315	T9	PGZ18	21831-3	☐★$	CDM EliteMW 315/T9/930/U/E	C182/E	12	G, Clear, Fadeblock	3½	7½	30,000	37,800	34,700	90	3000
			22064-0	☐★$	CDM EliteMW 315/T9/942/U/E	C182/E	12	G, Clear, Fadeblock	3½	7½	30,000	36,200	32,600	90	4200

MasterColor CDM Elite MW (Medium Watt) Ceramic Metal Halide Tubular Single-Ended T12 Lamps (391, 392, 396, 397)

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

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref. or MBCP♦	Pkg. Qty.‡	Description(401,407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
210	T12	PGZX18	23806-3	☐★ $	CDM EliteMW 210/T12/930/U/O	C183/O	12	G, Clear, Fadeblock	3½	7½	20,000	23,100	20,700	90	3000
			23808-9	☐★ $	CDM EliteMW 210/T12/942/U/O	C183/O	12	G, Clear, Fadeblock	3½	7½	20,000	22,100	19,900	90	4200
315	T12	PGZX18	23807-1	☐★ $	CDM EliteMW 315/T12/930/U/O	C182/O	12	G, Clear, Fadeblock	3½	7½	20,000	36,200	32,500	90	3000
			23809-7	☐★ $	CDM EliteMW 315/T12/942/U/O	C182/O	12	G, Clear, Fadeblock	3½	7½	20,000	34,700	31,200	90	4200

MasterColor Ceramic Metal Halide Tubular Double-Ended Lamps (374, 391, 392, 396)

Double-Ended TD6 & TD7 Style; enclosed luminaires only; lifetime color stability within ±200K

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref. or MBCP♦	Pkg. Qty.‡	Description(401,407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
70	TD6	RX7s	23160-5	★	CDM70/TD/830	C139/C85/E	12	G, Clear, FadeBlock, Hor. ± 45°	2¼	4 11/16	15,000	6500	5200	82	3000
150	TD7	RX7s	23167-0	★	CDM150/TD/830	C142/C102/ C81E	12	G, Clear, FadeBlock, Hor. ± 45°	2 19/32	5 7/16	15,000	13,250	11,260	88	3000

MasterColor Integrated PAR Lamps (396, 406)

These lamps may be used in open fixtures; do not use in totally enclosed recessed fixtures

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref. or MBCP♦	Pkg. Qty.‡	Description(401,407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
25	PAR38	Med.	14477-4	☐★●	CDM-i25W/830/ PAR38/10/ALTO	MBCP = 26,000	6	G, PAR Spot 10°	—	5½	15,000	1450	1015	87	3000
			14478-2	☐★●	CDM-i25W/830/ PAR38/25/ALTO	MBCP = 5600	6	G, PAR Flood 25°	—	5½	15,000	1450	1015	87	3000
			14479-0	☐★●	CDM-i25W/830/ PAR38/40/ALTO	MBCP = 2100	6	G, PAR W. Flood 40°	—	5½	15,000	1450	1015	87	3000

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HID symbols and footnotes located on page 82

T9
PGZ18

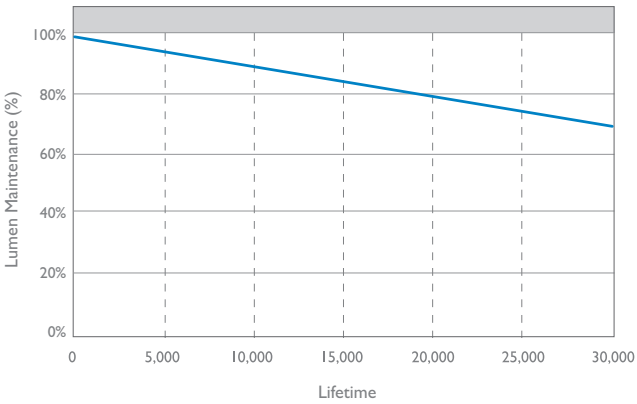
T12
PGZX18

TD
RX7s

PAR38 Integrated
Med.

Maintenance Curve

Philips MasterColor Elite MW 315W Lamps



High Intensity Discharge Lamps

MasterColor Ceramic Metal Halide Lamps

Protected MasterColor Ceramic Metal Halide R111 Lamps (391, 392, 396, 397)

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

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref. or MBCP♦	Pkg. Qty.‡	Description (401, 407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
22	R111	GX8.5	15297-4	▢★	CDM-R111/20W/ 830 10DG	C175/O MBCP=20,000	6	G, R111, N. Spot 10°	—	3¾	9000	750	500	85	3000
39	R111	GX8.5	13554-1	▢★	CDM-R111/35W/ 830 10DG	C130/O MBCP=35,000	6	G, R111, Spot 10°	—	3¾	12,000	1100	720	81	3000
			13556-6	▢★	CDM-R111/35W/ 830 24DG	C130/O MBCP=8500	6	G, R111, N. Flood 24°	—	3¾	12,000	1350	880	81	3000
			13921-2	▢★	CDM-R111/35W/ 830 40DG	C130/O MBCP=4000	6	G, R111, Flood 40°	—	3¾	12,000	1350	880	81	3000
70	R111	GX8.5	14754-6	▢★	CDM-R111/70W/ 830 10DG	C139/O MBCP=50,000	6	G, R111, Spot 10°	—	3¾	12,000	2500	1625	84	3000
			14755-3	▢★	CDM-R111/70W/ 830 24DG	C139/O MBCP=15,000	6	G, R111, N. Flood 24°	—	3¾	12,000	2850	1850	84	3000
			14795-8	▢★	CDM-R111/70W/ 830 40DG	C139/O MBCP=9000	6	G, R111, Flood 40°	—	3¾	12,000	2850	1850	84	3000

Protected MasterColor Elite Ceramic Metal Halide MR16 Lamps (391, 392, 396, 397)

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

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref. or MBCP♦	Pkg. Qty.‡	Description (401, 407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
20	MR16	GX10	42165-1	★†	CDM-MR16/20W/ 830/10D ELITE	C156/O MBCP=13,500	12	G, MR16 Spot 10°	—	2⅝	15,000	1050	880	85	3000
			42166-9	★†	CDM-MR16/20W/ 830/25D ELITE	C156/O MBCP=4500	12	G, MR16 Flood 25°	—	2⅝	15,000	1050	880	85	3000
			42167-7	★†	CDM-MR16/20W/ 830/40D ELITE	C156/O MBCP=2100	12	G, MR16 W. Flood 40°	—	2⅝	15,000	1050	880	85	3000
39	MR16	GX10	41893-9	★†	CDM-MR16/35W/ 930/10D ELITE	C130/O MBCP=18,000	12	G, MR16 Spot 10°	—	2⅝	15,000	2400	2200	90	3000
			41894-7	★†	CDM-MR16/35W/ 930/25D ELITE	C130/O MBCP=8000	12	G, MR16 Flood 25°	—	2⅝	15,000	2400	2200	90	3000
			41895-3	★†	CDM-MR16/35W/ 930/40D ELITE	C130/O MBCP=3900	12	G, MR16 W. Flood 40°	—	2⅝	15,000	2400	2200	90	3000
50	MR16	GX10	41553-9	★†▢	CDM-MR16/50W/ 930/25D ELITE	C193/O MBCP=11,500	12	G, MR16 Flood 25°	—	2⅝	12,000	3500	3200	90	3000
			41554-7	★†▢	CDM-MR16/50W/ 930/40D ELITE	C193/O MBCP=7000	12	G, MR16 W. Flood 40°	—	2⅝	12,000	3500	3200	90	3000

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HID symbols and footnotes located on page 82

R111
GX8.5

MR16
GX10

Protected MasterColor Ceramic Metal Halide PAR Lamps (391, 392, 396)

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

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref.	Pkg. Qty.‡	Description (401, 407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
22	PAR20	Med.	21151-6	★ ●	CDM20/PAR20/ M/SP/3K/ALTO	C156/C175/O MBCP=18,000	12	G, PAR WISO Spot 10° (397)	—	3¾	9000	940	600	81	3000
			21152-4	★ ●	CDM20/PAR20/ M/FL/3K/ALTO	C156/C175/O MBCP=2800	12	G, PAR WISO Flood 30° (397)	—	3¾	9000	980	615	81	3000
	PAR30L	Med.	21149-0	★ ●	CDM20/PAR30L/ M/SP/3K/ALTO	C156/C175/O MBCP=32,000	6	G, PAR WISO Spot 10° (397)	—	4¾	9000	1200	750	81	3000
			21140-9	★ ●	CDM20/PAR30L/ M/FL/3K/ALTO	C156/C175/O MBCP=4625	6	G, PAR WISO Flood 25° (397)	—	4¾	9000	1200	750	81	3000
39	PAR20	Med.	23365-0	★ ●	CDM35/PAR20/ M/SP/3K/ALTO	C130/O MBCP=23,000	12	G, PAR WISO Spot 10° (397)	—	3¾	9000	2000	1300	81	3000
			23364-3	★ ●	CDM35/PAR20/ M/FL/3K/ALTO	C130/O MBCP=5000	12	G, PAR WISO Flood 30° (397)	—	3¾	9000	2000	1300	81	3000
			15140-7	★ ●	CDM35/PAR20/ M/SP/4K/ALTO	C130/O MBCP=21,500	12	G, PAR WISO Spot 10° (397)	—	3¾	6000	1950	1650	92	4000
			15141-5	★ ●	CDM35/PAR20/ M/FL/4K/ALTO	C130/O MBCP=5000	12	G, PAR WISO Flood 30° (397)	—	3¾	6000	1950	1650	92	4000
	PAR30L	Med.	22329-7	★ ●	CDM35/PAR30L/ M/SP/3K/ALTO	C130/O MBCP=44,000	6	G, PAR WISO Spot 10° (397)	—	4¾	11,000	2200	1430	81	3000
			22330-5	★ ●	CDM35/PAR30L/ M/FL/3K/ALTO	C130/O MBCP=9300	6	G, PAR WISO Flood 25° (397)	—	4¾	11,000	2200	1430	81	3000
70	PAR30L	Med.	23224-9	★ ●	CDM70/PAR30L/ M/SP/3K/ALTO	M143/M98/O MBCP=66,000	6	G, PAR WISO Spot 10°	—	4¾	12,000	5000	3050	83	3000
			23221-5	★ ●	CDM70/PAR30L/ M/FL/3K/ALTO	M143/M98/O MBCP=10,000	6	G, PAR WISO Flood 40°	—	4¾	12,000	5000	3050	83	3000
			15142-3	★ ●	CDM70/PAR30L/ M/SP/4K/ALTO	C139/O MBCP=63,000	6	G, PAR WISO Spot 10°	—	4¾	12,000	4300	3010	94	4000
			15143-1	★ ●	CDM70/PAR30L/ M/FL/4K/ALTO	C139/O MBCP=9000	6	G, PAR WISO Flood 40°	—	4¾	12,000	4300	3010	94	4000
	PAR38	Med.	22250-5	★ ●	CDM70/PAR38/ SP/3K/ALTO	M143/M98/O MBCP=42,000	12	G, PAR WISO Spot 15° (399)	—	5⅞	12,500	4100	2870	85	3000
			22249-7	★ ●	CDM70/PAR38/ FL/3K/ALTO	M143/M98/O MBCP=16,000	12	G, PAR WISO Flood 25° (399)	—	5⅞	12,500	4100	2870	85	3000
			28872-0	▢ ★ ●	CDM70/PAR38/ SP/4K/ALTO	M143/M98/O MBCP=40,000	12	G, PAR WISO Spot 15° (399)	—	5⅞	12,500	3700	2590	92	4000
			28873-8	▢ ★ ●	CDM70/PAR38/ FL/4K/ALTO	M143/M98/O MBCP=13,000	12	G, PAR WISO Flood 25° (399)	—	5⅞	12,500	3700	2590	92	4000
100	PAR38	Med.	24477-2	★ ●	CDM100/PAR38/ SP/3K/ALTO	M140/M90/O MBCP=55,000	12	G, PAR WISO Spot 15° (399)	—	5⅞	12,500	6200	4340	85	3000
			24476-4	★ ●	CDM100/PAR38/ FL/3K/ALTO	M140/M90/O MBCP=22,000	12	G, PAR WISO Flood 25° (399)	—	5⅞	12,500	6200	4340	85	3000
			28876-1	▢ ★ ●	CDM100/PAR38/ SP/4K/ALTO	M140/M90/O MBCP=50,000	12	G, PAR WISO Spot 15°(399)	—	5⅞	12,500	5700	3990	92	4000
			28878-7	▢ ★ ●	CDM100/PAR38/ FL/4K/ALTO	M140/M90/O MBCP=19,000	12	G, PAR WISO Flood 25° (399)	—	5⅞	12,500	5700	3990	92	4000

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HID symbols and footnotes located on page 82

PAR20
Med.

PAR30L
Med.

PAR38
Med.

High Intensity Discharge Lamps

MasterColor Ceramic Metal Halide Lamps

Protected MasterColor Ceramic Metal Halide Lamps (391, 392, 396, 399)

ED17P sleeved arc tube; open or enclosed luminaires; lifetime color stability within ±200K; pulse start

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref.	Pkg. Qty.‡	Description (401, 407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
50	ED17P	Med.	42368-1	★†	MHC50/U/MP/3K ELITE	M148/M110/O	12	G, Clear, FadeBlock	3 7/16	5 7/16	16,000	4800	3840	90	3000
			36893-6	★†	MHC50/U/MP/4K/ALTO	M148/M110/O	12	G, Clear, FadeBlock	3 7/16	5 7/16	20,000	3600	2450	92	4000
70	ED17P	Med.	42370-7	★†	MHC70/U/MP/3K ELITE	M143/M98/O	12	G, Clear, FadeBlock	3 7/16	5 7/16	16,000	6700	5360	90	3000
			42369-9	★†	MHC70/C/U/MP/3K ELITE	M143/M98/O	12	G, Coated, FadeBlock	—	5 7/16	16,000	6100	4880	90	3000
			36057-8	★ ●	MHC70/U/MP/4K/ALTO	M143/M98/O	12	G, Clear, FadeBlock	3 7/16	5 7/16	20,000	5800	4060	92	4000
			36059-4	★ ●	MHC70/C/U/MP/4K/ALTO	M143/M98/O	12	G, Coated, FadeBlock	—	5 7/16	20,000	5200	3640	92	4000
100	ED17P	Med.	42367-3	★†	MHC100/U/MP/3K ELITE	M140/M90/O	12	G, Clear, FadeBlock	3 7/16	5 7/16	16,000	10,000	8000	90	3000
			42371-5	★†	MHC100/C/U/MP/3K ELITE	M140/M90/O	12	G, Coated, FadeBlock	—	5 7/16	16,000	9200	7360	90	3000
			36060-2	★ ●	MHC100/U/MP/4K/ALTO	M140/M90/O	12	G, Clear, FadeBlock	3 7/16	5 7/16	20,000	8200	6150	92	4000
			36061-0	★ ●	MHC100/C/U/MP/4K/ALTO	M140/M90/O	12	G, Coated, FadeBlock	—	5 7/16	20,000	7500	5625	92	4000
150	ED17P	Med.	13463-5	★ ●	MHC150/U/MP/3K/ALTO	M142/M102/O	12	G, Clear, FadeBlock	3 7/16	5 7/16	16,000	12,900	9545	85	3000
			13464-3	★ ●	MHC150/C/U/MP/3K/ALTO	M142/M102/O	12	G, Coated, FadeBlock	—	5 7/16	16,000	11,900	8805	85	3000
			37724-2	★ ●	MHC150/U/MP/4K/ALTO	M142/M102/O	12	G, Clear, FadeBlock	3 7/16	5 7/16	20,000	12,000	9000	92	4000
			37726-7	▢ ★ ●	MHC150/C/U/MP/4K/ALTO	M142/M102/O	12	G, Coated, FadeBlock	—	5 7/16	20,000	11,000	8250	92	4000

MasterColor Ceramic Metal Halide ED17, ED28 Lamps (391, 392, 399)

Enclosed luminaires only; lifetime color stability within ±200K; pulse start

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref.	Pkg. Qty.‡	Description (401, 407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
50	ED17	Med.	41949-9	★ ● †	MHC50/U/M/3K ELITE	M148/M110/E	12	G, Clear	3 7/16	5 7/16	16,000	5500	4400	90	3000
			41950-7	★ ● †	MHC50/C/U/M/3K ELITE	M148/M110/E	12	G, Coated	—	5 7/16	16,000	5200	4160	90	3000
			36023-0	▢ ★ ●	MHC50/U/M/4K/ALTO	M148/M110/E	12	G, Clear	3 7/16	5 7/16	20,000	3750	2550	92	4000
			36024-8	▢ ★ ●	MHC50/C/U/M/4K/ALTO	M148/M110/E	12	G, Coated	—	5 7/16	20,000	3600	2450	92	4000
70	ED17	Med.	41947-3	★†	MHC70/U/M/3K ELITE	M143/M98/E	12	G, Clear	3 7/16	5 7/16	16,000	7700	6100	90	3000
			41948-1	★†	MHC70/C/U/M/3K ELITE	M143/M98/E	12	G, Coated	—	5 7/16	16,000	7300	5800	90	3000
			28129-5	★ ●	MHC70/U/M/4K/ALTO	M143/M98/E	12	G, Clear	3 7/16	5 7/16	20,000	5900	4130	92	4000
			28133-7	★ ●	MHC70/C/U/M/4K/ALTO	M143/M98/E	12	G, Coated	—	5 7/16	20,000	5500	3850	92	4000
100	ED17	Med.	41951-5	★†	MHC100/U/M/3K ELITE	M140/M90/E	12	G, Clear	3 7/16	5 7/16	16,000	11,000	9350	85	3000
			41952-3	★†	MHC100/C/U/M/3K ELITE	M140/M90/E	12	G, Coated	—	5 7/16	16,000	10,200	8670	85	3000
			28135-2	★ ●	MHC100/U/M/4K/ALTO	M140/M90/E	12	G, Clear	3 7/16	5 7/16	20,000	9000	6750	92	4000
			28136-0	★ ●	MHC100/C/U/M/4K/ALTO	M140/M90/E	12	G, Coated	—	5 7/16	20,000	8400	6300	92	4000
	ED28	Mog.	36543-7	▢ ★	MHC100/U/ED28/HR/4K	M140/M90/E	12	G, Clear (372, 377, 378)	5	8 5/16	10,000	8500	6800	92	4100
150	ED17	Med.	13022-9	★ ●	MHC150/U/M/3K/ALTO	M142/M102/E	12	G, Clear	3 11/32	5 7/16	16,000	14,000	10,500	85	3000
			13023-7	★ ●	MHC150/C/U/3K/ALTO	M142/M102/E	12	G, Coated	—	5 7/16	16,000	12,500	9375	85	3000
			37720-0	★ ●	MHC150/U/M/4K/ALTO	M142/M102/E	12	G, Clear	3 7/16	5 7/16	20,000	13,000	9750	92	4000
			37721-8	★ ●	MHC150/C/U/M/4K/ALTO	M142/M102/E	12	G, Coated	—	5 7/16	20,000	12,000	9000	92	4000

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HID symbols and footnotes located on page 82

ED17P Med. ED17 Med. ED28 Mog.

High Intensity Discharge Lamps

MasterColor Ceramic Metal Halide, CosmoWhite, Energy Advantage Ceramic Metal Halide Lamps

MasterColor Ceramic Metal Halide Pulse Start ED23.5 Lamps (391, 392, 399)

Enclosed luminaires only; lifetime color stability within ±200K; pulse start

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref.	Pkg. Qty.‡	Description (401, 407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
70	ED23½	Mog.	15492-2	☐■★ ●	CDM70/U/PS/4K ALTO	M143/M98/E	12	G, Clear	5	7¾	24,000	5900	4150	85	4000
100	ED23½	Mog.	15493-0	☐■★ ●	CDM100/U/PS/4K ALTO	M140/M90/E	12	G, Clear	5	7¾	24,000	9000	6750	85	4000
150	ED23½	Mog.	15494-8	☐■★ ●	CDM150/U/PS/4K ALTO	M142/M102/E	12	G, Clear	5	7¾	24,000	13,000	9100	85	4000

CosmoWhite (391, 392, 396, 397)

Enclosed luminaires only; lifetime color stability within ±200K (HOR = Horizontal Operation ± 15°)

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref.	Pkg. Qty.‡	Description (401, 407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
45	T6	PGZ12	41889-7	★☐$†	CPO-T WHITE 45W/728	TBD	12	G, Clear, FadeBlock, Horiz. ±15°	2⅛	5⅛	30,000*	4950	4400	70	2800
60	T6	PGZ12	15731-3	★☐$	CPO-T WHITE 60W/728	C187/E	12	G, Clear, FadeBlock, Horiz. ±15°	2⅛	5⅛	30,000*	7200	6400	70	2800
			41884-8	★☐$†	CPO-T WHITE 60W/840	C187/E	12	G, Clear, FadeBlock, Horiz. ±15°	2⅛	5⅛	16,000	7020	6300	80	4000
90	T6	PGZ12	40604-1	★☐$	CPO-T WHITE 90W/728	C188/E	12	G, Clear, FadeBlock, Horiz. ±15°	2⅜	5⅜	30,000*	10,450	8800	70	2800
			41794-9	★☐$†	CPO-T WHITE 90W/840	C188/E	12	G, Clear, FadeBlock, Horiz. ±15°	2⅜	5⅜	15,000	10,350	9625	80	4000
140	T6	PGZ12	15732-1	★☐$	CPO-T WHITE 140W/728	C189/E	12	G, Clear, FadeBlock, Horiz. ±15°	2⅜	5⅝	30,000*	16,500	14,520	70	2800
			41795-5	★☐$†	CPO-T WHITE 140W/840	C189/E	12	G, Clear, FadeBlock, Horiz. ±15°	2⅜	5⅝	15,000	16,100	15,130	80	4000

Energy Advantage CDM with AllStart Technology ED17 Lamps (391, 392, 396, 397)

Enclosed luminaires only; lifetime color stability within ±200K

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref.	Pkg. Qty.‡	Description (401, 407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
145	ED17	Med.	41106-6	★☐$†	CDM145/U/M/4K/ ED17 EA AllStart	C192/E**	12	G, Clear, Fadeblock	3 7/16	5 7/16	20,000	13,340	10,670	>80	4300
			41320-3	★☐$†	CDM145/C/U/M/4K/ ED17 EA AllStart	C192/E**	12	G, Coated, Fadeblock	—	5 7/16	20,000	12,300	9840	>80	4300

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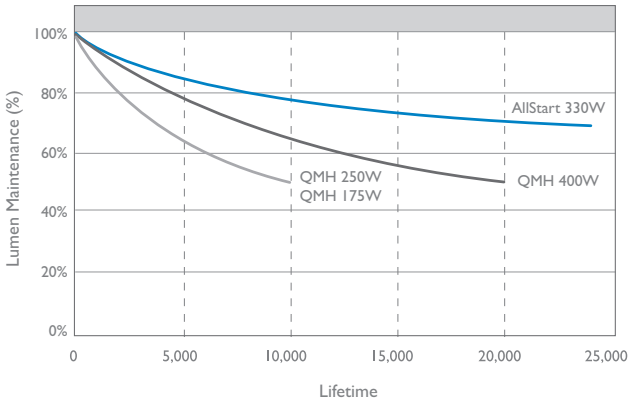
HID symbols and footnotes located on page 82

* 30,000 horizontal application but 20,000 vertical application

** 145W compatible with M57 probe start ballast. Also compatible with M152 pulse start ballasts

Maintenance Curve

Philips Energy Advantage CDM 330W Lamps with AllStart Technology



Energy Advantage Lamp Comparisons

Philips Energy Advantage CDM Lamp with AllStart Technology	Standard Metal Halide Lamp Replacement
145W Energy Advantage CDM Lamp	175W Standard Metal Halide Lamp
205W Energy Advantage CDM Lamp	250W Standard Metal Halide Lamp
260W Energy Advantage CDM Lamp	320W Standard Metal Halide Lamp
330W Energy Advantage CDM Lamp	400W Standard Metal Halide Lamp
860W Energy Advantage CDM Lamp	1000W Standard Metal Halide Lamp

ED23½ Mog.

CosmoWhite T6 PGZ12

ED17 Med.

High Intensity Discharge Lamps

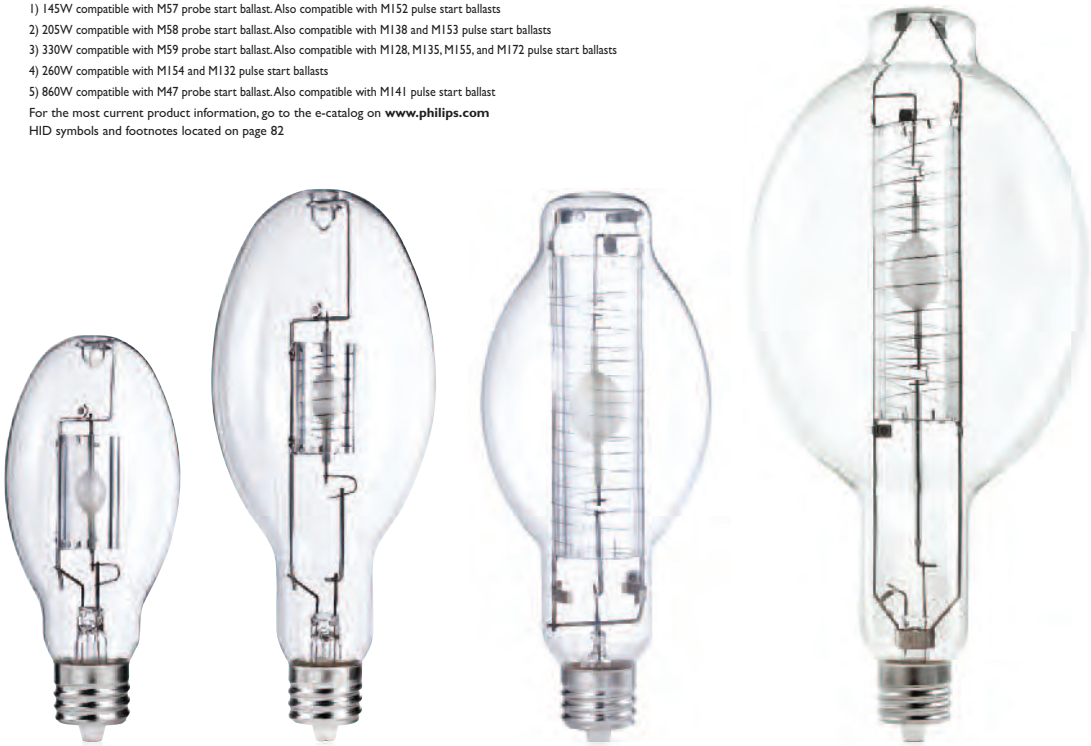
Energy Advantage Ceramic Metal Halide Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref.	Pkg. Qty.‡	Description (401, 407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
Energy Advantage CDM with AllStart Technology (391, 392, 396, 397)[⌘]															
Open or enclosed luminaires; lifetime color stability within ±200K															
145	ED28	EX39 Excl. Mog.	41107-4	★ ☐ $	CDM145/U/O/4K/ ED28 EA AllStart	C192/O[1]	12	G, Clear, Fadeblock	5	8 5/16	20,000	13,775	11,020	87	4000
			41319-5	★ ☐ $	CDM145/C/U/O/4K/ ED28 EA AllStart	C192/O[1]	12	G, Coated, Fadeblock	—	8 5/16	20,000	12,615	10,090	87	4000
205	ED28	EX39 Excl. Mog.	23256-1	★ ☐ $	CDM205/U/O/4K EA AllStart	C184/O[2]	12	G, Clear, Fadeblock	5	8 5/16	20,000	19,500	15,600	85	4100
			23692-7	★ ☐ $	CDM205/C/U/O/4K EA AllStart	C184/O[2]	12	G, Coated, Fadeblock	—	8 5/16	20,000	18,000	14,400	85	4100
260	ED28	EX39 Excl. Mog.	41937-4	★ ☐ $ †	CDM260/U/O/4K EA AllStart	C195/O[4]	12	G, Clear, Fadeblock	5	8 5/16	20,000	27,000	21,600	90	4000
			41936-6	★ ☐ $ †	CDM260/C/U/O/4K EA AllStart	C195/O[4]	12	G, Coated, Fadeblock	—	8 5/16	20,000	25,300	20,300	90	4000
330	ED28	EX39 Excl. Mog.	41105-8	★ ☐ $	CDM330/U/O/4K/ED28 EA AllStart	C185/O[3]	12	G, Clear, Fadeblock	5	8 5/16	20,000	33,000	26,400	90	4000
	ED37	EX39 Excl. Mog.	23259-5	★ ☐ $	CDM330/U/O/4K EA AllStart	C185/O[3]	6	G, Clear, Fadeblock	7	11½	24,000	33,000	24,750	90	4000
			23693-5	★ ☐ $	CDM330/C/U/O/4K EA AllStart	C185/O[3]	6	G, Coated, Fadeblock	—	11½	24,000	31,000	23,250	90	4000
Open or enclosed luminaires; lifetime color stability within ±200K; (V = Vertical Operation ±15°)															
860	BT37	EX39 Excl. Mog.	42178-4	★ ☐ $ †	CDM860/V/O/4K/BT37 EA AllStart	C194/O[5]	6	G, Clear, Fadeblock	7	11½	20,000	82,000	65,000	92	3700
	BT56	EX39 Excl. Mog.	42179-2	★ ☐ $ †	CDM860/V/O/4K/BT56 EA AllStart	C194/O[5]	6	G, Clear, Fadeblock	9½	15⅜	20,000	82,000	65,000	92	3700
Energy Advantage CDM Long Life Lamp with AllStart Technology (391, 392, 396, 397)															
Open or enclosed luminaires; lifetime color stability within ±200K; (V = Vertical Operation ±15°)															
330	ED37	EX39 Excl. Mog.	42177-6	★ ☐ $ †	CDM330/V/O/4K/LL EA AllStart	C185/O[4]	6	G, Clear, Fadeblock	7	11½	36,000	32,950	23,100	90	4000

1) 145W compatible with M57 probe start ballast. Also compatible with M152 pulse start ballasts
2) 205W compatible with M58 probe start ballast. Also compatible with M138 and M153 pulse start ballasts
3) 330W compatible with M59 probe start ballast. Also compatible with M128, M135, M155, and M172 pulse start ballasts
4) 260W compatible with M154 and M132 pulse start ballasts
5) 860W compatible with M47 probe start ballast. Also compatible with M141 pulse start ballast

For the most current product information, go to the e-catalog on **www.philips.com**

HID symbols and footnotes located on page 82



ED28 EX-39 | ED37 EX-39 | BT37 EX-39 | BT56 EX-39

Protected Pulse Start Metal Halide "O" Rated Lamps (372, 374, 391)

Open or enclosed luminaires; pulse start metal halide is designed for operation on only specified ANSI compatible ballasts with metal halide pulse ignitors⌘

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref.	Pkg. Qty.‡	Description(401, 407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
175	ED28	EX39 Excl.Mog.	20755-5	■★	MP175/BU/PS	M152/ M137/O	12	G, Clear, Base Up ± 15° Pulse Start	5	8⁵⁄₁₆	14,000	16,000	11,200	62	3500
250	ED28	EX39 Excl.Mog.	20756-3	■★	MP250/BU/PS	M153/ M138/O	12	G, Clear, Base Up ± 15° Pulse Start	5	8⁵⁄₁₆	14,000	23,000	16,100	62	3800
320	ED37	EX39. Excl.Mog.	13039-3	■★	MP320/BU/PS	M154/ M132/O	6	G, Clear, Base Up ± 15° Pulse Start	7	11½	20,000	29,500	20,650	65	3800
			13040-1	■★	MP320/C/BU/PS	M154/ M132/O	6	G, Coated Base Up ± 15° Pulse Start	—	11½	20,000	27,200	19,040	65	3700
350	ED37	EX39 Excl.Mog.	39101-1	■★	MP350/BU/PS	M131/O	6	G, Clear, Base Up ± 15° Pulse Start	7	11½	20,000	34,000	23,800	64	4000
400	ED37	EX39 Excl.Mog.	13334-8	■★	MP400/BU/PS	M155/M128/ M135/O	6	G, Clear, Base Up ± 15° Pulse Start	7	11½	20,000	40,000	28,000	65	3800
			13335-5	■★	MP400/C/BU/PS	M155/M128/ M135/O	6	G, Coated Base Up ± 15° Pulse Start	—	11½	20,000	36,000	23,400	68	3600
750	BT37	EX39 Excl.Mog.	20757-1	■★	MP750/BU/PS	M149/O	6	G, Clear, Base Up ± 15° Pulse Start	7	11½	12,000	70,000	49,000	70	3800

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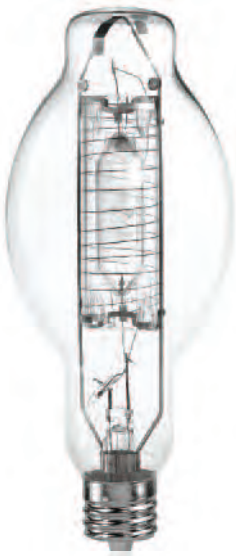
HID symbols and footnotes located on page 82

ED28
EX-39

ED37
EX-39


BT37
EX-39

High Intensity Discharge Lamps

Metal Halide Lamps

Pulse Start Metal Halide Lamps (372, 374, 391)

Enclosed luminaires only unless otherwise noted; base up operation ± 15° unless otherwise noted.

Pulse start metal halide is designed for operation on only specified ANSI compatible ballasts with metal halide pulse ignitors.

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref.	Pkg. Qty.‡	Description (401, 407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
175	ED17	Med.	23249-6	■★	MS175/M/BU/PS	M152/M137/E	12	G, Base Up ±15°, Pulse Start	3 7/16	5 7/16	15,000	17,500	12,250	68	4000
	ED28	Mog.	27662-6	■★	MS175/BU/PS	M152/M137/E	12	G, Base Up ±15°, Pulse Start	5	8 5/16	15,000	16,000	11,200	62	3700
			20751-4	▢■★	MS175/HOR/PS	M152/M137/E	12	G, Clear, Horizontal, Pulse Start	5	8 5/16	11,500	12,800	8960	62	4200
200	ED28	Mog.	23250-4		MS200/BU/PS	M136/E	12	G, Base Up ±15°, Pulse Start	5	8 5/16	15,000	21,000	14,700	68	4000
250	ED28	Mog.	27661-8	■★	MS250/BU/PS	M153/M138/E	12	G, Base Up ± 15°, Pulse Start	5	8 5/16	15,000	23,750	16,625	65	4300
			23280-1	▢■★	MS250/U/PS	M153/M138/E	12	G, Clear, Universal, Pulse Start (385)	5	8 5/16	12,000	22,000	15,400	62	3800
320	ED28	Mog.	38381-0	■★	MS320/U/PS	M154/M132/E	12	G, Clear, Pulse Start (385)	5	8 5/16	20,000	30,000	21,000	62	4100
350	ED37	Mog.	38387-7	■★	MS350/BU/PS	M131/E	6	G, Clear, Base Up ± 15°, Pulse Start	7	11½	20,000	36,000	25,200	62	4000
400	ED28	Mog.	23252-0		MS400/BU/ED28/PS	M155/M128/ M135/E	12	G, Base Up ±15°, Pulse Start	5	8 5/16	20,000	44,000	30,800	68	4000
			23253-8		MS400/HOR/ED28/PS	M155/M128/ M135/E	12	G, Clear, Horizontal, Pulse Start	5	8 5/16	20,000	40,000	28,000	68	4000
	ED37	Mog.	23283-5	■★	MS400/U/PS	M155/M135/ M128/E	6	G, Clear, Universal, Pulse Start (385)	7	11½	15,000	40,000	28,000	62	3800
750	BT37	Mog.	13540-0	■★	MS750/BU/BT37/PS	M149/E	6	G, Clear, Base Up ± 15°, Pulse Start	7	11½	16,000	82,000	61,500	65	4000
			20754-8	▢■★	MS750/HOR/BT37/PS	M149/E	6	G, Clear, Horizontal, Pulse Start	7	11½	12,000	68,000	47,600	65	4000
1000	BT37	Mog.	36019-8	■★	MS1000/BU/BT37/PS	M141/E	6	G, Clear, Base Up ± 15°, Pulse Start	7	11½	15,000	120,000	96,000	65	3700

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HID symbols and footnotes located on page 82

ED17 Med. ED28 Mog. ED37 Mog. BT37 Mog.

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref.	Pkg. Qty.‡	Description(401,407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
Protected Metal Halide "O" Rated Lamps (372, 374, 377)※															
Open or enclosed luminaires															
175	ED28	EX39	28119-6	■★	MP175/BU	M57/O	12	G, Clear, Base Up ±15°	5	8 5/16	10,000	15,000	12,000	65	3800
		Excl.Mog.													
250	ED28	EX39	28124-6	■★	MP250/BU	M58/O	12	G, Clear, Base Up ±15°	5	8 5/16	10,000	22,000	16,500	62	3800
		Excl.Mog.													
360	ED37	EX39	13067-4	■★ $	MP360BU/EW	M165/M59/O	6	G, Clear, Base Up ±15°	7	11½	20,000	34,200	23,940	65	4000
		Excl.Mog.	13068-2	■★ $	MP360/C/BU/EW	M165/M59/O	6	G, Coated, Base Up ±15°	—	11½	20,000	31,700	20,605	68	360
400	ED37	EX39	13332-2	■★	MP400/BU	M59/O	6	G, Clear, Base Up ±15°	7	11½	20,000	38,000	26,600	65	4000
		Excl.Mog.	13333-0	■★	MP400/C/BU	M59/O	6	G, Coated, Base Up ±15°	—	11½	20,000	34,500	22,425	67	3700
1000	BT56	EX39	28118-8	■★	MP1000/BU	M47/O	6	G, Clear, Base Up ±15°	9½	15⅝	12,000	107,000	75,000	65	3900
		Excl.Mog.													
Double-Ended Metal Halide Lamps (374, 387, 393)															
Enclosed luminaires (387)															
1800	TD	PSFc20-6/	31360-1		MHD1800W	—	4	Sports Ltg. Spot Horizontal ± 15°	4¼	14	4500	150,000	—	92	5600
	Special	SFc20-6													

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ED28 EX-39 | ED37 EX-39 | BT56 EX-39 | TD7

High Intensity Discharge Lamps

Metal Halide Lamps, MasterColor Ceramic Metal Halide Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref.	Pkg. Qty.‡	Description (401, 407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
Metal Halide Lamps (372)															
Enclosed luminaires only															
150	BD17	Med.	35462-1	★	MH150/U/M	M107/E	12	G, Clear (385, 400)	3 7/16	5 7/16	10,000	12,500	8500	65	3700
			35463-9	★	MH150/C/U/M	M107/E	12	G, Coated (385, 400)	—	5 7/16	10,000	12,000	7900	65	3400
175	BD17	Med.	31358-5	★	MH175/U/M	M57/E	12	G, Clear (377, 385, 393)	3 7/16	5 7/16	10,000	13,500	9100	65	4000
			31359-3	★	MH175/C/U/M	M57/E	12	G, Coated (377, 385)	—	5 7/16	10,000	13,000	8380	65	3700
	ED28	Mog.	28733-4	★	MH175/U	M57/E	12	G, S, Clear (377, 385, 393)	5	8 5/16	10,000	13,500	8775	65	4000
			28728-4	★	MH175/C/U	M57/E	12	G, S, Coated (374, 377, 385)	—	8 5/16	10,000	13,000	8200	70	3700
250	ED28	Mog.	27484-5	★	MH250/U	M58/E	12	G, S, Clear (377, 385, 393)	5	8 5/16	10,000	20,500	13,500	65	4000
			29169-0	★	MH250/C/U	M58/E	12	G, S, Coated (377, 385, 393)	—	8 5/16	10,000	19,475	12,500	70	3700
400	ED28	Mog.	27862-2	★	MH400/U/ED28	M59/E	12	G, Clear (377, 385, 393)	5	8 5/16	20,000	36,000	24,000	63	4000
	ED37	Mog.	27449-8	)★	MH400/U	M59/E	6	G, S, Clear (377, 385, 393)	7	11½	20,000	39,000	25,350	65	3900
			41520-8	)★	MH400/C/U	M59/E	6	G, S, Coated (377, 385, 393)	—	11½	20,000	38,000	22,800	65	3600
1000	BT37	Mog.	32150-5	★	MH1000/U/BT37	M47/E	6	G, Clear (359, 377, 385, 393)	7	11½	10,000	110,000	71,500	65	3700
	BT56	Mog.	41522-4	)★	MH1000/U	M47/E	6	G, S, Clear (377, 385, 393)	9½	15⅜	12,000	114,000	79,800	65	3900
			41523-2	)★	MH1000/C/U	M47/E	6	G, S, Coated (377, 385, 393)	—	15⅜,	12,000	110,000	77,000	65	3500
1500	BT56	Mog.	13162-3	★	MH1500/U	M48/E	6	G, S, Clear (359, 374, 375, 377, 402)	9½	15⅜	6000	172,000	137,600	60	4000
MasterColor CDM Warm Ceramic Metal Halide Tubular Single-Ended T6 Lamps (391, 392, 396, 397)															
Enclosed luminaires only; lifetime color stability within ±200K															
70	T6	G12	42169-3	★†	CDM-T Warm 70W/925	C139/E	12	G, Clear, FadeBlock	2 7/32	3 15/16	15,000	6500	5650	92	2600
MasterColor CDM Fresh Ceramic Metal Halide Tubular Single-Ended T6 Lamps (391, 392, 396, 397)															
Enclosed luminaires only; lifetime color stability within ±200K															
70	T6	G12	41901-0	★†	CDM-T FRESH 70W/740	C139/E	12	G, Clear, FadeBlock	2 7/32	3 15/16	15,000	6000	5000	70	4000

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Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref.	Pkg. Qty.‡	Description(401,407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
Mini White SON High Pressure Sodium Lamps (360, 376)															
Incandescent color quality, GX12-1 base compact high pressure sodium lamps to be operated on Advance eVision IWSN100CLF and IWSN100CBLS electronic ballast only															
100	T6	GX12-1	13425-4	▢★	SDW-TG 100W/T6/825	S167	12	G	2⅛	4½	10,000	4900	4165	83	2550
White SON High Pressure Sodium Lamps (360, 373, 376, 394)															
Incandescent color quality															
100	T10	PG12	30228-1	▢★	SDW-T 100W/LV	S105	12	G	3⅜	5⅞	10,000	5000	4250	83	2550
Ceramalux High Pressure Sodium Lamps (360, 373)															
Featuring ALTO Lamp Technology															
35	BD17	Med.	40979-7	★	C35S76/M	S76	12	G (376)	3⅜	5⅞	24,000+	2250	2025	21	2100
50	BD17	Med.	40980-5	★	C50S68/M	S68	12	G (376)	3⅜	5⅞	24,000+	4000	3600	21	2100
	ED23½	Mog.	36867-0	★ ●	C50S68/ALTO	S68	12	G, S (376)	5	7¾	24,000+	4000	3600	21	2100
70	BD17	Med.	33192-6	★	C70S62/M	S62	12	G (376)	3⅜	5⅞	24,000+	6300	5850	21	2100
			33214-8	★	C70S62/D/M	S62	12	G (376)	—	5⅞	24,000+	5860	5270	21	2100
	ED23½	Mog.	36869-6	★ ●	C70S62/ALTO	S62	12	G, S (376)	5	7¾	24,000+	6500	5670	21	2100
100	BD17	Med.	34446-5	★	C100S54/M	S54S	12	G (376)	3½	5⅞	24,000+	9500	8550	21	2100
			34448-1	★	C100S54/D/M	S54S	12	G (376)	—	5⅞	24,000+	8800	7920	21	2100
	ED23½	Mog.	36872-0	★ ●	C100S54/ALTO	S54	12	G, S (376)	5	7¾	24,000+	9400	8460	21	2100
			33227-0	★ ●	C100S54/D/ALTO	S54	12	G, S (376)	—	7¾	24,000+	8610	7750	21	2100
150	BD17	Med.	30347-9	★	C150S55/M	S55	12	G (376)	3½	5⅞	24,000+	16,000	14,400	21	2100
			30348-7	★	C150S55/D/M	S55	12	G (376)	—	5⅞	24,000+	15,000	13,500	21	2100
	ED23½	Mog.	36874-6	★ ●	C150S55/ALTO	S55	12	G, S (370, 376)	5	7¾	24,000+	15,800	14,220	21	2100
	ED28	Mog.	36876-1	★ ●	C150S56/ALTO	S56	12	G, S (370, 376)	5	8 15/16	24,000+	15,000	13,950	21	2100
200	ED18	Mog.	36877-9	★ ●	C200S66/ALTO	S66MN-200	12	G, S (376)	5¾	9¾	24,000+	21,400	19,260	21	2100
250	ED18	Mog.	36879-5	★ ●	C250S50/ALTO	S50	12	G, S (376)	5¾	9¾	24,000+	27,000	24,300	21	2100
400	ED18	Mog.	36881-1	★ ●	C400S51/ALTO	S51	12	G, S (376)	5¾	9¾	24,000+	50,000	45,000	21	2100
600	T14	Mog.	23982-2	■★	C600S106	S106	12	G (376)	6⅞	11⅛	24,000+	90,000	81,000	21	2100
1000	ED25	Mog.	36883-7	■★ ●	C1000S52/ALTO	S52XB-1000	6	G, S (359, 362, 376)	8¾	15 1/16	24,000	140,000	126,000	21	2100
	ED37	Mog.	32386-5	■★	C1000S52/ED37	S52	6	G, S (376)	7	11½	24,000	125,000	112,000	21	2100

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High Intensity Discharge Lamps

High Pressure Sodium Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref.	Pkg. Qty.‡	Description (401, 407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
Ceramalux High Pressure Sodium Non-Cycling Lamps (360, 373, 376)															
Featuring ALTO Lamp Technology															
70	ED23½	Mog.	14739-7	★ ●	C70S62/ALTO NC HPS	S62	12	G, S	5	7¾	30,000	6300	5670	21	2100
100	ED23½	Mog.	14740-5	★ ●	C100S54/ALTO NC HPS	S54	12	G, S	5	7¾	30,000	10,000	9000	21	2100
150	ED23½	Mog.	14741-3	★ ●	C150S55/ALTO NC HPS	S55	12	G, S	5	7¾	30,000	16,000	14,400	21	2100
200	ED18	Mog.	15725-5	★ ●	C200S66/ALTO NC HPS	S66	12	G, S	5¾	9¾	30,000	22,000	19,800	21	2100
250	ED18	Mog.	14742-1	★ ●	C250S50/ALTO NC HPS	S50	12	G, S	5¾	9¾	30,000	28,500	25,650	21	2100
400	ED18	Mog.	14743-9	★ ●	C400S51/ALTO NC HPS	S51	12	G, S	5¾	9¾	30,000	50,000	45,000	21	2100
1000	ED25	Mog.	15726-3	★ ●	C1000S52/ALTO NC HPS	S52	6	G, S	8¾	15 1/16	30,000	130,000	117,000	21	2100
Ceramalux High Pressure Sodium Instant Restrike Lamps (360, 373, 376)															
50	ED23½	Mog.	35467-0	■★	C50S68/2	S68	12	G, S	5	7¾	24,000+	3800	3450	21	2100
70	ED23½	Mog.	26541-3	■★	C70S62/2	S62	12	G, S	5	7¾	24,000+	5600	5050	21	2100
100	ED23½	Mog.	26560-3	■★	C100S54/2	S54	12	G, S	5	7¾	24,000+	9100	8190	21	2100
150	ED23½	Mog.	26561-1	■★	C150S55/2	S55	12	G, S	5	7¾	24,000+	15,600	14,000	21	2100
250	ED18	Mog.	37717-6	■★	C250S50/2	S50	12	G, S	5¾	9¾	24,000+	27,500	24,750	21	2100
400	ED18	Mog.	37688-9	■★	C400S51/2	S51	12	G, S	5¾	9¾	24,000+	49,000	44,000	21	2100
1000	ED25	Mog.	20412-3	■★	C1000S52/2	S52	6	G, S	8¾	15 1/16	24,000+	140,000	126,000	21	2100

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High Pressure Sodium—Horticulture Lamps (360, 373)

- Enhanced spectrum Xtreme grow lamp
- Offers 22% more micromols**
- Excellent lumen maintenance at 97% (405)
- Features ALTO Lamp Technology, environmentally responsible lamps

Note: Best practice suggests grow lamps to be replaced at maximum 40% of their rated average life in order to maintain same level of growth-light on plants over time

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref. or MBCP♦	Pkg. Qty.‡	Description (401, 407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
400	T15	Mog.	40487-1	★†	SON-T PIA Grn Pw/400W	S51	12	AGRO (359, 362, 376)	6⅞	11⅛	24,000	58,500	52,650	725	2100
430	ED18	Mog.	31710-7	★	SON AGRO 430W	S145/S51	12	AGRO (389, 396)	5¾	9¾	16,000	54,000	48,600	670	2100
600	T15	Mog.	40488-9	★†	SON-T PIA Grn Pw/600W/230V	S106	12	AGRO (359, 362, 376)	6⅞	11⅛	16,000	88,500	84,100	1150	2100
			40489-7	★†	SON-T PIA Grn Pw/600W/347V	S106	12	AGRO (359, 362, 376)	6⅞	11⅛	16,000	88,000	83,600	1150	2100
			40490-5	★†	SON-T PIA Grn Pw/600W/480V	S106	12	AGRO (359, 362, 376)	6⅞	11⅛	16,000	88,000	83,600	1150	2100
1000	ED25	Mog.	14064-0	■★	C1000S52/AGROLITE XT	S52	6	AGRO (359, 362, 376)	8¾	15 1/16	15,000	146,000	135,780	1850	2100

For the most current product information, go to the e-catalog on **www.philips.com**
HID symbols and footnotes located on page 82

** The micromol value expresses the amount of light particles (photons) between 400 and 700 nm that are sent out by a light source (=Photosynthetic Photon Flux) per second. The amount that the plant absorbs determines the rate of photosynthesis and as a result the rate of plant growth. Therefore, the micromol value is also called "growth-light." In general, an increase of 22% in growth-light means an increase of 22% in plant growth

Low Pressure Sodium Lamps—SOX

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref.	Pkg. Qty.‡	Description (401, 407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
18	T17	D.C. Bay	23404-7	⊔	SOX-E18	L69	12	Clear Base Up ± 110°	5½	8½	18,000	1800	1530	—	1700
35	T17	D.C. Bay	32781-7		SOX35	L70	12	Clear Base Up ± 110°	—	12 3/16	18,000	4550	3870	—	1700
55	T17	D.C. Bay	32151-3		SOX55	L71	12	Clear Base Up ± 110°	9½	16¾	18,000	7800	6630	—	1700
90	T21	D.C. Bay	32152-1		SOX90	L72	12	Clear Horizontal ± 20°	—	20¾	18,000	14,300	12,155	—	1700
135	T21	D.C. Bay	32153-9		SOX135	L73	12	Clear Horizontal ± 20°	—	30½	18,000	22,600	19,210	—	1700
180	T21	D.C. Bay	15116-7		SOX180	L74	6	Clear Horizontal ± 20°	—	44⅛	18,000	32,000	22,400	—	1700

For the most current product information, go to the e-catalog on **www.philips.com**
HID symbols and footnotes located on page 82

High Intensity Discharge Lamps

Mercury Vapor Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	ANSI Code Ballast Ref.	Pkg. Qty.‡	Description (401, 407)	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(351)	Approx. Initial Lumens(352)	Approx. Mean Lumens(353)	CRI	CCT (K)
Mercury Vapor Lamps															
100	A23	Med.	35658-4	★	H38MP-100/DX	H38	24	G (379)	—	5 7/16	24,000+	4300	3700	45	3700
	ED23½	Mog.	33713-9	★	H38JA-100/DX	H38	12	G, S (379)	—	7½	24,000+	4400	3400	45	3700
175	ED28	Mog.	31965-7	★	H39KB-175	H39	12	G, S (355)	5	8 5/16	24,000+	7900	7400	20	6800
	ED28	Mog.	24805-4	★	H39KC-175/DX	H39	12	G, S (379)	—	8 5/16	24,000+	7900	7600	45	3700
250	ED28	Mog.	31985-5	★	H37KB-250	H37	12	G, S (355)	5	8 5/16	24,000+	12,100	10,500	20	6700
	ED28	Mog.	24814-6	★	H37KC-250/DX	H37	12	G, S (379)	—	8 5/16	24,000+	13,000	10,700	45	3700
400	ED37	Mog.	24842-7	★	H33GL-400/DX	H33	6	G, S (379)	—	11½	24,000+	23,000	19,100	45	3700
1000	BT56	Mog.	39707-5	★	H36GW-1000/DX	H36	6	G, S (359, 379)	—	15⅜	24,000+	59,000	54,000	45	3600

Descriptive symbols for Mercury Vapor Lamps:

G—General Lighting

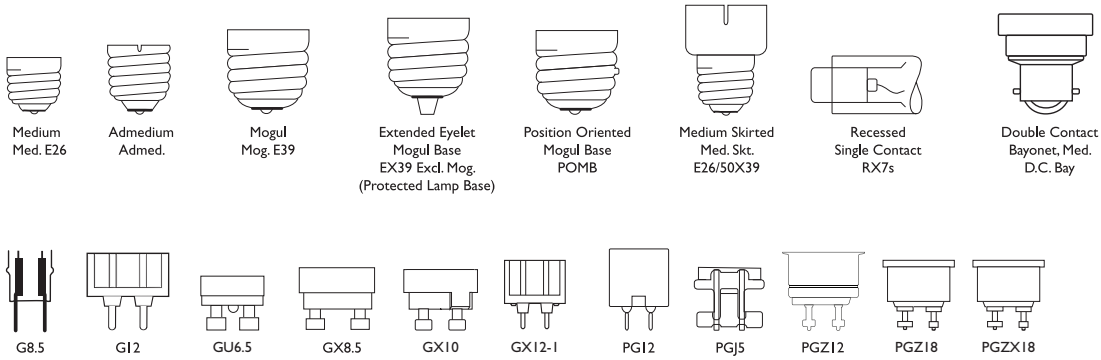
S—Street Lighting

For the most current product information, go to the e-catalog on **www.philips.com**

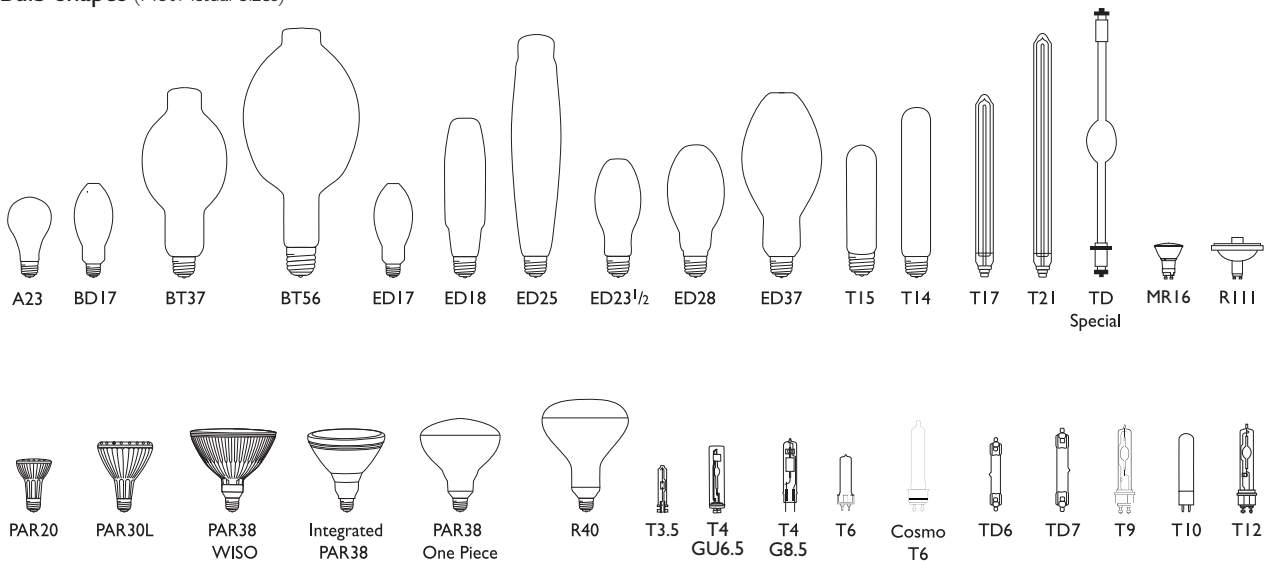
HID symbols and footnotes located on page 82

A23 Med. | ED23½ Mog. | ED28 Mog. | ED37 Mog. | BT56 Mog.

Base Types (Not Actual Sizes)



Bulb Shapes (Not Actual Sizes)



High Intensity Discharge Lamps

Symbols and Footnotes

For the most current product information, go to the e-catalog on www.philips.com

□ Exclusive to Philips Lighting Company

■ Nickel plated brass base

$ Energy Saving Product

▲ Aluminum base

★ Heat resisting glass bulb

♦ Maximum Beam Candlepower

) Can be used in open luminaire, only if operated vertically ± 15°

● This lamp is better for the environment because of its reduced mercury content. All Philips ALTO lamps give you end-of-life options which can simplify and reduce your lamp disposal costs depending on your state and local regulations

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

Ⓔ This Bulb Meets US Federal Minimum Efficiency Standard

† New since last printing

◇ Designed for instant start operation.

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

G = General Lighting

S = Street Lighting

▼ PAR38 (one piece)

⌘ Satisfies the 2005 NEC for use in open luminaries. The 2005 NEC states that luminaires that use a metal halide lamp shall be provided with either a containment barrier that encloses the lamp (historically referred to as an enclosed luminaire) or shall be provided with a means, typically a special lampholder, that will only accept ANSI Type-O metal halide lamp. (Exception—this requirement will not apply to open luminaires with thick-glass parabolic reflector PAR lamps.) For more information regarding use of Type-O, S, and E metal halide systems, please refer to the NEMA white paper on this subject that is freely available at www.nema.org

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

(352) Measured at 100 hrs. life. Approximate lumen values listed are for vertical operation of the lamp.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(385) Rated average life: vertical ±15°. Other positions 75% of vertical life.

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

(389) Operates at rated output on ANSI 430W S145 SON AGRO ballasts.

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

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

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

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

(396) UV filtered design (FadeBlock).

(397) Operate only on thermally protected ballasts.

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

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

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

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

(405) 97% Lumen maintenance at 10% of rated average life. 93% lumen maintenance at 40% of rated average life.

(406) CAUTION: Beware of inadvertent circuit overload in new construction. Because of power factor of 0.57 in the ballast of the lamp, the lamp uses 0.36 amps.

(407) Operating Position is Universal, unless otherwise indicated. See Warnings, Cautions and Operating Instructions for further information.

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for MasterColor Integrated PAR 38 Lamps

Warnings, Cautions and Operating Instructions

R **"WARNING:** These lamps can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available." This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21CFR 1040.30 Canada:SOR/DORS/80-381)

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

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

This lamp contains an arc tube with a filling gas containing less than 41 nCi of Kr-85 and is distributed by Philips Lighting Company, a division of Philips Electronics North America Corporation, Somerset, New Jersey, 08873.

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

LAMP OPERATING INSTRUCTIONS:

1. **RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE.** Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
2. At high lighting levels or when illuminating light-sensitive materials the use of an extra UV filter is recommended.
3. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
4. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock, and color appearance may vary between individual lamps.
5. Lamps may require up to 10 minutes to re-light if there is a power interruption.
6. Do not operate with an additional ballast, since a ballast is integrated in the lamp itself.
7. **Do not use in totally enclosed recessed fixtures.**
8. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
9. Lamp should not be used with dimmers.
10. Protect lamp, lamp socket and wiring against moisture, corrosive atmosphere and excessive heat. Lamp should be used in dry locations only.

These lamps may be used in open fixtures.

Hg—LAMP CONTAINS MERCURY
Manage in Accord with Disposal Laws
See: www.lamprecycle.org or 1-800-555-0050

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for MasterColor (Elite) Ceramic Metal Halide Lamps: Single Ended CDM-T G12, CDM-T Warm G12, CDM-T Fresh G12, CDM-TC G8.5, CDM-Tm GU6.5 and CDM-Tm PGJ5 (Universal); Double-Ended CDM-TD RX7 (Horizontal ± 45°, Enclosed Fixtures Only)

Warnings, Cautions and Operating Instructions

R **"WARNING:** These lamps can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available." This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21CFR 1040.30 Canada:SOR/DORS/80-381)

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

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

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

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

LAMP OPERATING INSTRUCTIONS:

1. **RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE.** Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
2. Use only in fully enclosed fixtures capable of withstanding particles of glass having temperatures up to 1000°C. Lens/diffuser material must be heat resistant. Consult fixture manufacturer regarding the suitability of the fixture for this lamp.
3. Do not operate a fixture with a missing or broken lens/diffuser. At high lighting levels or when illuminating light-sensitive materials the use of an extra UV filter is recommended.
4. Operate lamp only within specified limits of operating position.
5. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards. When inserting a new CDM-Tm lamp, twist the lamp 45° clock-wise in the holder to ensure proper electrical and mechanical connection.
6. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
   A. Operate lamp only within specified limits of operation.
   B. For total supply load refer to ballast manufacturers electrical data.
   C. Operate CDM-T (G12 base) lamps only on thermally protected ballasts.
   D. Operate CDM-TC lamps (G8.5 base) and CDM-Tm (PGJ5 and GU6.5 base) only on thermally protected electronic ballasts.
   E. Operate CDM-T (G12 base) 39W/842, CDM-T Fresh (G12 Base), CDM-T Warm (G12 Base) and CDM-T (G12 base) Elite only on thermally protected electronic ballasts.
7. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
8. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
9. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
10. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock and color appearance may vary between individual lamps.
11. Lamps may require 4–8 minutes (10–15 minutes for CDM-Tm) to re-light if there is a power interruption.
12. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for MasterColor CDM Elite Medium Watt Ceramic Metal Halide Tubular Single-Ended T9 and T12 Lamps

Warnings, Cautions and Operating Instructions

R **"WARNING:** These lamps can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available." This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA: 21CFR 1040.30 Canada:SOR/DORS/80-381)

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

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

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

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

LAMP OPERATING INSTRUCTIONS:

1. **RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE.** Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
2. If the lamp is marked on the base with /E, use only in enclosed fixture capable of withstanding particles of glass having temperatures up to 1000°C. If the lamp is marked on the base with /O, lamp should retain all the glass particles should inner arc tube rupture occur.
3. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
4. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer:
   A. Operate lamp only within specified limits of operation.
   B. For total supply load refer to ballast manufacturers electrical data.
   C. All Pulse Start lamps require a socket rated to withstand a 4,000 volt pulse.
5. Periodically inspect the outer envelope. **Replace any lamps that show scratches, cracks or damage.**
6. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
7. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
8. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock, and color appearance may vary between individual lamps.
9. Lamps may require 10 minutes to re-light if there is a power interruption.
10. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
11. Use this lamp only in fixtures that contain a Pulse Start metal halide ballast and are specifically designed for use with Pulse Start metal halide lamps.
12. If a lamp is shipped individually by itself, please pack the lamp with sufficient cushioning materials to prevent damage to the internal structure of the lamp. Failure to pack an individual lamp properly could lead to short life and early failure.

Until the lamp has achieved at least 10 hours of operation, the lamp should never be turned OFF sooner than 2 minutes, including during installation test. In case that this has happened, you have to wait 1 hour before switching on again. Failure to comply with this requirement may lead to ignition problems.

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Energy Advantage Ceramic Metal Halide lamps with AllStart Technology, ED17 Lamps (Enclosed Fixtures); Energy Advantage CMH lamps with AllStart Technology (Open or Enclosed Fixtures); Energy Advantage CDM Long Life Lamp with AllStart Technology (Open or Enclosed Fixtures)

Warnings, Cautions and Operating Instructions

R **"WARNING:** These lamps can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available." This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21CFR 1040.30 Canada:SOR/DORS/80-381)

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

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

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

This lamp contains an arc tube with a filling gas containing less than 65 nCi Kr-85 and is distributed by Philips Lighting Company, a division of Philips Electronics North America Corporation, Somerset, New Jersey, 08873.

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

LAMP OPERATING INSTRUCTIONS:

1. **RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE.** Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
2. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
3. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
   A. Operate lamp only within specified limits of operation.
   B. For total supply load refer to ballast manufacturers electrical data.
   C. These lamps can be used in both Probe Start and Pulse Start Magnetic ballast. Reference the technical data sheet for proper ANSI ballast code compatibility. Do not operate lamps on electronic ballasts.
   D. All Pulse Start mogul based lamps require a socket rated to withstand a 4000 volt pulse.
4. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage
5. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
6. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
7. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock, and color appearance may vary between individual lamps.
8. Lamps may require 10 to 15 minutes to re-light if there is a power interruption. Less than 10 minutes on pulse start ballasts.
9. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Protected MasterColor Ceramic Metal Halide PAR, MasterColor Ceramic Metal Halide MR16 Elite, and CDM-R111 Lamps (Open or Enclosed Fixtures)

Warnings, Cautions and Operating Instructions

R "**WARNING:** These lamps can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available." This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21CFR 1040.30 Canada: SOR/DORS/80-381)

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

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

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

LAMP OPERATING INSTRUCTIONS:

1. **RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE.** Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
2. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
3. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
   A. Operate lamp only within specified limits of operation.
   B. For total supply load refer to ballast manufacturers electrical data.
   C. Operate PAR20 3000K and PAR30L 3000K lamps only on thermally protected ballast.
   D. Operate 20W PAR20 3000K and 20W PAR30L 3000K lamps only on thermally protected electronic ballast.
   E. Operate PAR20 4000K and PAR30L 4000K lamps only on thermally protected electronic ballast.
   F. Operate CDM-R111 lamps only on thermally protected electronic ballast.
   G. Operate CDM PAR30L Elite and CDM MR16 Elite lamps only on thermally protected electronic ballast.
4. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
5. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
6. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
7. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock, and color appearance may vary between individual lamps.
8. Lamps may require up to 10 minutes (4–8 minutes for CDM-R111) to re-light if there is a power interruption.
9. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
10. For proper installation and removal, lamp should be handled by the sides of the reflector and not by the aluminum front anti-glare cap.

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for MasterColor Ceramic Metal Halide Lamps ED17 and ED28 (Enclosed Fixtures); Protected MasterColor Ceramic Metal Halide Lamps ED17P (Open or Enclosed Fixtures)

Warnings, Cautions and Operating Instructions

R "**WARNING:** These lamps can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available." This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21CFR 1040.30 Canada:SOR/DORS/80-381)

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

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

Use ED17 and ED28 lamps in enclosed luminaires ONLY that are capable of withstanding particles of glass having temperatures up to 1000°C. ED17P types are designed to retain all the glass particles should an arc tube rupture occur.

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

LAMP OPERATING INSTRUCTIONS:

1. **RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE.** Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
2. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
3. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
   A. Operate lamp only within specified limits of operation.
   B. For total supply load refer to ballast manufacturers electrical data.
4. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
5. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
6. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
7. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock and color appearance may vary between individual lamps.
8. Lamps may require 4 to 8 minutes to re-light if there is a power interruption.
9. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.

High Intensity Discharge Lamps

Warnings, Cautions and Operating Instructions

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Philips MasterColor Ceramic Metal Halide Pulse Start ED 23½ Lamps featuring ALTO Lamp Technology (For Enclosed Fixtures Only)

Warnings, Cautions and Operating Instructions

R **"WARNING:** These lamps can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available." This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21CFR 1040.30 Canada:SOR/DORS/80-381)

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

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

This lamp contains an arc tube with a filling gas containing not less than 25nCi of Kr-85 and is distributed by Philips Lighting Company, a division of Philips Electronics North America Corporation, Somerset, New Jersey, 08873.

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

LAMP OPERATING INSTRUCTIONS:

1. **RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE.** Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
2. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
3. **Use only in an enclosed fixture capable of withstanding particles of glass having temperatures up to 1000°C.**
4. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
   A. Operate lamp only within specified limits of operation.
   B. For total supply load refer to ballast manufacturers electrical data.
   C. All Pulse Start lamps require a socket rated to withstand a 4000 Volt pulse.
5. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
6. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
7. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
8. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock, and color appearance may vary between individual lamps.
9. Lamps may require 10 to 15 minutes to re-light if there is a power interruption.
10. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
11. Use this lamp only in a fixture that contains a Pulse Start metal halide ballast and is specifically designed for use with Pulse Start metal halide lamps.

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS CosmoWhite Lamp (For Enclosed Fixtures Only)

Warnings, Cautions and Operating Instructions

R **"WARNING:** These lamps can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available." This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21CFR 1040.30 Canada:SOR/DORS/80-381)

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

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

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

LAMP OPERATING INSTRUCTIONS:

1. **RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE.** Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
2. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
3. **Use only in an enclosed fixture capable of withstanding particles of glass having temperatures up to 1000°C.**
4. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
   A. Operate lamp only within specified limits of operation.
   B. For total supply load refer to ballast manufacturer's electrical data.
   C. All CosmoWhite lamps require a PGZ12 socket rated to withstand a 5000 Volt pulse.
5. Periodically inspect the outer envelope. Replace any broken lamps and lamps that show scratches, cracks or damage immediately.
6. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
7. Protect lamp, lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
8. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock, and color appearance may vary between individual lamps.
9. Lamps may require 10 to 15 minutes to re-light if there is a power interruption.
10. Take care in handling and disposing of lamps. Don't break the outer bulb of an end of life lamp. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
11. Use this lamp only in a fixture that contains an Advance CosmoWhite electronic low frequency square wave ballast.
12. When inserting a new lamp, hold it by the quartz bulb, not by the metal lamp base; twist the lamp 45° clockwise in the lamp holder to ensure proper electrical and mechanical connection.
13. Store the lamps in cool and dry conditions to prevent the oxidation of the exterior metal parts.
14. Consult your Philips Lighting or Advance representative if you have any questions.

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Pulse Start Metal Halide Lamps (Base Up Operation ±15° Unless Otherwise Noted; Enclosed Fixtures Only)

Warnings, Cautions and Operating Instructions

R **"WARNING:** These lamps can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available."This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21CFR 1040.30 Canada: SOR/DORS/80-381)

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

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

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

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

LAMP OPERATING INSTRUCTIONS:

1. Turn off lamps at least once a week for at least 15 minutes in systems which are operating on a continuous basis (24 hours/day-7days/week). FAILURE TO TURN OFF LAMPS FOR THE MINIMUM RECOMMENDED TIME MAY INCREASE THE POSSIBILITY OF AN INNER ARC-TUBE RUPTURE.
2. **RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE.** Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
3. **Use only in an enclosed fixture capable of withstanding particles of glass having temperatures up to 1000°C, unless otherwise noted.**
4. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
5. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
   A. Operate lamp only within specified limits of operation.
   B. For total supply load refer to ballast manufacturers electrical data.
   C. All Pulse Start mogul based lamps require a socket rated to withstand a 4000 volt pulse.
6. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
7. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
8. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
9. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock and color appearance may vary between individual lamps.
10. Lamps may require 2 to 4 minutes to relight if there is a power interruption.
11. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
12. Use this lamp only in fixtures that contain a Pulse Start metal halide ballast and are specifically designed for use with Pulse Start metal halide lamps.

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Protected Pulse Start Metal Halide Lamps (Base Up Operation ±15° Unless Noted; Open or Enclosed Fixtures)

Warnings, Cautions and Operating Instructions

R **"WARNING:** These lamps can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available."This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21CFR 1040.30 Canada:SOR/DORS/80-381)

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

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

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

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

LAMP OPERATING INSTRUCTIONS:

1. **RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE.** Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
2. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
3. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
   A. Operate lamp only within specified limits of operation.
   B. For total supply load refer to ballast manufacturers electrical data.
   C. All Pulse Start mogul based lamps require a socket rated to withstand a 4000 volt pulse.
4. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
5. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
6. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
7. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock and color appearance may vary between individual lamps.
8. Lamps may require 2 to 4 minutes to re-light if there is a power interruption.
9. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
10. Use this lamp only in fixtures that contain a Pulse Start metal halide ballast and are specifically designed for use with Pulse Start metal halide lamps.

High Intensity Discharge Lamps

Warnings, Cautions and Operating Instructions

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Protected Metal Halide Lamps (Base Up Operation ± 15° Unless Noted; Open or Enclosed Fixtures)

Warnings, Cautions and Operating Instructions

R **"WARNING:** These lamps can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available." This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA: 21CFR 1040.30 Canada: SOR/DORS/80-381)

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

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

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

The following operating instructions are recommended to minimize these occurrences.

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

LAMP OPERATING INSTRUCTIONS:

1. **RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE.** Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
2. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
3. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
   A. Operate lamp only within specified limits of operation.
   B. For total supply load refer to ballast manufacturers electrical data.
4. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
5. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
6. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
7. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock and color appearance may vary between individual lamps.
8. Lamps may require 10 to 20 minutes to re-light if there is a power interruption.
9. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
10. Do not use this lamp:
    A. In a fixture that contains a Pulse Start metal halide ballast.
    B. In a fixture that is specifically designed for use with Pulse Start metal halide lamps. **Operation of these lamps on Pulse Start Metal Halide systems may increase the chance of an outer bulb rupture and pieces of extremely hot glass might be discharged into the surrounding environment.**

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

Warnings, Cautions and Operating Instructions

R **"WARNING:** These lamps can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available." This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA: 21CFR 1040.30 Canada:SOR/DORS/80-381)

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

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

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

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

LAMP OPERATING INSTRUCTIONS:

1. Turn off lamps at least once a week for at least 15 minutes in systems which are operating on a continuous basis (24 hours/day-7days/week). FAILURE TO TURN OFF LAMPS FOR THE MINIMUM RECOMMENDED TIME MAY INCREASE THE POSSIBILITY OF AN INNER ARC-TUBE RUPTURE.
2. **RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE.** Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
3. **Use only in an enclosed fixture capable of withstanding particles of glass having temperatures up to 1000°C.**
4. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
5. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
   A. Operate lamp only within specified limits of operation.
   B. For total supply load refer to ballast manufacturers electrical data.
6. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
7. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
8. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
9. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock and color appearance may vary between individual lamps.
10. Lamps may require 10 to 20 minutes to re-light if there is a power interruption.
11. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
12. Do not use this lamp:
    A. In a fixture that contains a Pulse Start metal halide ballast.
    B. In a fixture that is specifically designed for use with Pulse Start metal halide lamps. **Operation of these lamps on Pulse Start Metal Halide systems may increase the chance of an outer bulb rupture and pieces of extremely hot glass might be discharged into the surrounding environment.**

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

Warnings, Cautions and Operating Instructions

WARNING: These lamps must be operated in fixtures designed for use with High Pressure Sodium lamps. The fixture wattage rating must match the wattage indicated on the outer glass bulb. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb may cause glass to fly if the glass is struck.

CAUTION: Operating the lamp improperly may result in **PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

1. If the outer glass bulb is broken, shut off power immediately and remove the lamp after it has cooled.
2. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
   A. Operate lamp only within specified limits of operation.
   B. For total supply load refer to ballast manufacturers electrical data.
   C. Operate Mini WhiteSON lamps only on approved electronic ballasts.
3. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
4. Replace the lamp if the outer glass bulb has been scratched, cracked or damaged in any way.
5. If a lamp bulb support is used, be sure to insulate the support electrically so as to avoid possible decomposition of the bulb glass.
6. Do not use this lamp in a fixture which redirects a substantial portion of the energy toward the arc tube and its immediate vicinity, as this may lead to very early lamp failure.
7. Take care in handling and disposing of lamps. If arc tube is broken, avoid skin contact with any of the contents or fragments.
8. The arc tube of this lamp contains sodium and mercury. Dispose of in accordance with federal, state and local requirements.
9. It is possible that the light color will suddenly change. After some time the lamp will regain its old color.
10. In order to prevent damage to the ballast, the lamp should be replaced as quickly as possible at the end of its lifetime (lamp color turns yellow, lamp flickers and fails to start).
11. For Mini WhiteSON lamps, after 10,000 hours of burning the light color will become yellow. The lamp must then be replaced.
12. For WhiteSON lamps, after 7,500 hours of burning the light color will become yellow. The lamp must then be replaced.

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

Warnings, Cautions and Operating Instructions

WARNING: These lamps must be operated in fixtures designed for use with High Pressure Sodium lamps. The fixture wattage rating must match the wattage indicated on the outer glass bulb. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb may cause glass to fly if the glass is struck.

CAUTION: Operating the lamp improperly may result in **PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

1. If the outer glass bulb is broken, shut off power immediately and remove the lamp after it has cooled.
2. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
   A. Operate lamp only within specified limits of operation.
   B. For total supply load refer to ballast manufacturers electrical data.
3. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
4. Replace the lamp if the outer glass bulb has been scratched, cracked or damaged in any way.
5. If a lamp bulb support is used, be sure to insulate the support electrically so as to avoid possible decomposition of the bulb glass.
6. Do not use this lamp in a fixture which redirects a substantial portion of the energy toward the arc tube and its immediate vicinity, as this may lead to very early lamp failure.
7. Take care in handling and disposing of lamps. If arc tube is broken, avoid skin contact with any of the contents or fragments.
8. The arc tube of this lamp contains sodium and mercury. Dispose of in accordance with federal, state and local requirements.

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Low Pressure Sodium Lamps—SOX

Warnings, Cautions and Operating Instructions

WARNING: These lamps must be operated in fixtures designed for use with Low Pressure Sodium lamps. The fixture wattage rating must match the wattage indicated on the outer glass bulb. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter.

CAUTION: Operating the lamp improperly and not following operating instructions may result in **PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

1. If the outer glass bulb is broken, shut off power immediately and remove the lamp after it has cooled.
2. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
   A. Operate lamp only within specified limits of operation.
   B. For total supply load refer to ballast manufacturers electrical data.
3. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
4. Replace the lamp if the outer glass bulb has been scratched, cracked or damaged in any way.
5. Take care in handling and disposing of lamps. If arc tube is broken, avoid skin contact with any of the contents or fragments.
6. The arc tube of this lamp contains sodium. Sodium can generate a high degree of heat when exposed to water. Dispose of in accordance with federal, state and local requirements.

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS for Mercury Vapor Lamps

Warnings, Cautions and Operating Instructions

R**"WARNING:** This lamp can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available." This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21CFR 1040.30 Canada:SOR/DORS/80-381)

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

GOOD LAMP PRACTICES:

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

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

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

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

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

Philips		OSI		GE	
Ordering Code	ANSI Code	Order Code	ANSI	Description	ANSI
CDM20/TM/830/GU6.5 ELITE	C156/E	MC20TF/U/GU6.5/830	C156/E	CMH20T/U830GU6.5	C156/M156/E
CDM35/TM/930/GU6.5 ELITE	C130/E	MC39TF/U/GU6.5/830	C130/E	CMH39ULR930GU6.5	C130/M130/E
CDM50/TM/930/GU6.5 ELITE	C193/E				
CDM20/TM/830	C175/E				
CDM35/TM/930	C179/E				
CDM Elite 20/TC/830	C156/E	MC20TC/U/G8.5/830PB	C156/E	CMH20TCU830/G8.5	C156/M156/E
CDM Elite 35/TC/930	C130/E			CMH39/930G8.5ULR	C130/M130/E
CDM Elite35/TC/842	C130/E				
CDM Elite 50/TC/930	C193/E				
CDM Elite 70/TC/930	C139/E			CMH70U930G8.5ULR	C139/M139/E
CDM Elite70/TC/942	C139/E				
CDM35/TC/830	C130/E	MC39TC/U/G8.5/830PB	C130/E	CMH39TCU830/G8.5	C130/M130/E
CDM35/TC/842	C130/E			CMH39TCU942/G8.5	C130/M130/E
CDM70/TC/830	C139/E	MC70TC/U/G8.5/930PB	C139/E	CMH70TCU830G8.5	C139/M139/E
CDM/70/TC/942	C139/E			CMH70TCU942/G8.5	C139/M139/E
CDM Elite 20/T6/830	C156/E				
CDM Elite 35/T6/930	C130/E	MC39T6/U/G12/930	C130/E	CMH39U930G12ULR	C130/M130/E
CDM Elite35/T6/842	C130/E				
CDM Elite 50/T6/930	C193/E				
CDM Elite50/T6/942	C193/E				
CDM Elite 70/T6/930	C139/E	MC70T6/U/G12/930PB	C139/E	CMH70U930G12ULR	C139/M139/E
CDM Elite70/T6/942	C139/E				
CDM Elite 100/T6/930	C191/E	MC100T6/U/G12/830	C191/E		
CDM35/T6/830	C130/E	MC39T6/U/G12/830PB	C130/E	CMH39TUVCU830G12	C130/M130/E
CDM35/T6/842	C130/E	MC39T6/U/G12/940PB	C130/E	CMH39T/U/942/G12	C130/M130/E
CDM70/T6/830	C139/E	MC70T6/U/G12/830PB	C139/E	CMH70TU/830/G12	C139/M139/E
CDM70/T6/942	C139/E	MC70T6/U/G12/940PB	C139/E	CMH70TU/942/G12	C139/M139/E
CDM150/T6/830	C142/E	MC150T7.5/U/G12/830	C142/E	CMH150TU/830/G12	C142/M102/E
CDM150/T6/942	C142/E	MC150T7.5/U/G12/940PB	C142/E	CMH150TU/942/G12	C142/M102/E
CDM70/TD/830	C139/C85/E	MC70T6/DE/830PB	C139/E	CMH70/TD/830RX7S	M85/M139/E
CDM150/TD/830	C142/C102/C81E	MC150T7.5/DE/830PB	C102/E	CMH150TD830RX7S	M81/M142/E
CDM EliteMW/210/T9/930/U/E	C183/E				
CDM EliteMW/210/T9/942/U/E	C183/E				
CDM EliteMW/315/T9/930/U/E	C182/E				
CDM EliteMW/315/T9/942/U/E	C182/E				
CDM EliteMW 210/T12/930/U/O	C183/O				
CDM EliteMW 210/T12/942/U/O	C183/O				
CDM EliteMW 315/T12/930/U/O	C182/O				
CDM EliteMW 315/T12/942/U/O	C182/O				
CPO-T WHITE 45W/728					
CPO-T WHITE 60W/728	C187/E				
CPO-T WHITE 90W/728	C188/E				
CPO-T WHITE 140W/728	C189/E				
CPO-T WHITE 60W/840	C187/E				
CPO-T WHITE 90W/840	C188/E				
CPO-T WHITE 140W/840	C189/E				
CDM-i25W/830/PAR38/10/ALTO		MCP24EL/PAR38/U/830/SP10/ECO		CMHi23P38SP/ECO	
CDM-i25W/830/PAR38/25/ALTO		MCP24EL/PAR38/U/830/NFL25/ECO		CMHi23P38FL/ECO	
CDM-i25W/830/PAR38/40/ALTO		MCP24EL/PAR38/U/830/FL40/ECO		CMHi23P38WFL/ECO	
CDM-R111/20W/830 10DG	C175/O				
CDM-R111/35W/830 10DG	C130/O				
CDM-R111/35W/830 24DG	C130/O				
CDM-R111/35W/830 40DG	C130/O				
CDM-R111/70W/830 10DG	C139/O				
CDM-R111/70W/830 24DG	C139/O				
CDM-R111/70W/830 40DG	C139/O				

High Intensity Discharge Lamps

Cross Reference Guide

Philips		OSI		GE	
Ordering Code	ANSI Code	Order Code	ANSI	Description	
CDM-MR16/20W/830/10D ELITE	C156/O			CMH20MR16/830/SP	C156/M156/O
CDM-MR16/20W/830/25D ELITE	C156/O			CMH20MR16/830/FL	C156/M156/O
CDM-MR16/20W/830/40D ELITE	C156/O			CMH20MR16/830WFL	C156/M156/O
CDM-MR16/35W/930/10D ELITE	C130/O			CMH39MR16UL93/SP	C130/M130/O
CDM-MR16/35W/930/25D ELITE	C130/O			CMH39MR16UL93/FL	C130/M130/O
CDM-MR16/35W/930/40D ELITE	C130/O			CMH39MR16UL93/WFL	C130/M130/O
CDM-MR16/35W/930/10D ELITE	C130/O			CMH39MR16/930/SP	C130/M130/O
CDM-MR16/35W/930/25D ELITE	C130/O			CMH39MR16/930/FL	C130/M130/O
CDM-MR16/35W/930/40D ELITE	C130/O			CMH39MR16/930WFL	C130/M130/O
CDM-MR16/50W/930/25D ELITE	C193/O				
CDM-MR16/50W/930/40D ELITE	C193/O				
CDM20/PAR20/M/SP/3K/ALTO	C156/C175/O	MCP20PAR20/U/830/SP10/ECO PB	M156/O	CMH20PAR20/SP	C156/M156/O
CDM20/PAR20/M/FL/3K/ALTO	C156/C175/O	MCP20PAR20/U/830/FL/ECO PB	M156/O	CMH20PAR20/FL	C156/M156/O
CDM20/PAR30L/M/SP/3K/ALTO	C156/C175/O	MCP20PAR30LN/U/830/SP/ECOPB	M156/O	CMH20PAR30/SP10	C156/M156/O
CDM20/PAR30L/M/FL/3K/ALTO	C156/C175/O	MCP20PAR30LN/U/830/FL/ECOPB	M156/O	CMH20PAR30/FL25	C156/M156/O
CDM35/PAR20/M/SP/3K/ALTO	C130/O	MCP39PAR20/U/830/SPPB	M130/O	CMH39UPAR20SP10	C130/M130/O
CDM35/PAR20/M/FL/3K/ALTO	C130/O	MCP39PAR20/U/830/FLPB	M130/O	CMH39UPAR20FL25	C130/M130/O
CDM35/PAR20/M/SP/4K/ALTO	C130/O	MCP39PAR20/U/940/SP	M130/O	CMH39PAR20/NSP4K	C130/M130/O
CDM35/PAR20/M/FL/4K/ALTO	C130/O	MCP39PAR20/U/940/FL	M130/O	CMH39PAR20/FL4K	C130/M130/O
CDM35/PAR30L/M/SP/3K/ALTO	C130/O	MCP39PAR30LN/U/830/SP/ECOPB	M130/O	CMH39/PAR30LSP10	C130/M130/O
CDM35/PAR30L/M/FL/3K/ALTO	C130/O	MCP39PAR30LN/U/830/FL/ECOPB	M130/O	CMH39PAR30L/FL25	C130/M130/O
CDM70/PAR30L/M/SP/3K/ALTO	M143/M98/O	MCP70PAR30LN/U/930/SP/ECOPB	M139/O	CMH70PAR30L830SP	C139/M98/O
CDM70/PAR30L/M/FL/3K/ALTO	M143/M98/O	MCP70PAR30LN/U/930/FL/ECOPB	M139/O	CMH70PAR30L830FL	C139/M98/O
CDM70/PAR30L/M/SP/4K/ALTO	C139/O	MCP70PAR30LN/U/940/SP/ECO	M139/O		
CDM70/PAR30L/M/FL/4K/ALTO	C139/O	MCP70PAR30LN/U/940/FL/ECO	M139/O		
CDM70/PAR38/SP/3K/ALTO	M143/M98/O	MCP70PAR38/U/830/SP/ECOPB	M139/O	CMH70PAR38SP/ECO	C98/M139/M143/O
CDM70/PAR38/FL/3K/ALTO	M143/M98/O	MCP70PAR38/U/830/FL/ECOPB	M139/O	CMH70PAR38FL/ECO	C98/M139/M143/O
CDM70/PAR38/SP/4K/ALTO	M143/M98/O				
CDM70/PAR38/FL/4K/ALTO	M143/M98/O				
CDM100/PAR38/SP/3K/ALTO	M140/M90/O	MCP100PAR38/U/830/SP/ECOPB	M90/O	CMH100PAR38SPECO	C90/M90/M140/O
CDM100/PAR38/FL/3K/ALTO	M140/M90/O	MCP100PAR38/U/830/FL/ECOPB	M90/O	CMH100PAR38FLECO	C90/M90/M140/O
CDM100/PAR38/SP/4K/ALTO	M140/M90/O				
CDM100/PAR38/FL/4K/ALTO	M140/M90/O				
MHC50/U/MP/3K ELITE	M148/M110/O	MCP50/U/MED/830PB	C110/O		
MHC50/U/MP/4K/ALTO	M148/M110/O				
MHC70/U/MP/3K ELITE	M143/M98/O	MCP70/U/MED/830PB	C98/O	CMH70U830MED/O	M143/M98/C98/O
MHC70/C/U/MP/3K ELITE	M143/M98/O	MCP70/C/U/MED/830PB	C98/O	CMH70CU830MED/O	M143/M98/C98/O
MHC70/U/MP/4K/ALTO	M143/M98/O	MCP70/U/MED/940PB	C98/O	CMH70U942MED/O	M143/M98/C98/O
MHC70/C/U/MP/4K/ALTO	M143/M98/O	MCP70/C/U/MED/940PB	C98/O	CMH70CU942MED/O	M143/M98/C98/O
MHC100/U/MP/3K ELITE	M140/M90/O	MCP100/U/MED/830PB	C90/O		
MHC100/C/U/MP/3K ELITE	M140/M90/O	MCP100/C/U/MED/830PB	C90/O		
MHC100/U/MP/4K/ALTO	M140/M90/O	MCP100/U/MED/940PB	C90/O		
MHC100/C/U/MP/4K/ALTO	M140/M90/O	MCP100/C/U/MED/940PB	C90/O		
MHC150/U/MP/3K/ALTO	M142/M102/O	MCP150/U/MED/830PB	C102/O	CMH150U830MED/O	C102/M142/O
MHC150/C/U/MP/3K/ALTO	M142/M102/O	MCP150/C/U/MED/830PB	C102/O	CMH150CU830MED/O	C102/M142/O
MHC150/U/MP/4K/ALTO	M142/M102/O			CMH150U942MED/O	C102/M142/O
MHC150/C/U/MP/4K/ALTO	M142/M102/O			CMH150CU942MED/O	C102/M142/O
MHC50/U/M/3K ELITE	C148/C110/E				
MHC50/C/U/M/3K ELITE	C148/C110/E				
MHC50/U/M/4K/ALTO	M148/M110/E				
MHC50/C/U/M/4K/ALTO	M148/M110/E				
MHC70/U/M/3K ELITE	C143/C98/E	MC70/U/MED/830	C98/E	CMH70/U/830/MED	M139/M98/C98/E
MHC70/C/U/M/3K ELITE	C143/C98/E	MC70/C/U/MED/830	C98/E	CMH70/C/U/830MED	M139/M98/C98/E
MHC70/U/M/4K/ALTO	M143/M98/E	MC70/U/MED/940	C98/E		
MHC70/C/U/M/4K/ALTO	M143/M98/E	MC70/C/U/MED/940	C98/E		
MHC100/U/M/3K ELITE	C140/C90/E	MC100/U/MED/830	C90/E	CMH100/U/830/MED	C90/M90/M140/E

High Intensity Discharge Lamps

Cross Reference Guide

Philips		OSI		GE	
Ordering Code	**ANSI Code**	**Order Code**	**ANSI**	**Description**	
MHC100/C/U/M/3K ELITE	C140/C90/E	MC100/C/U/MED/830	C90/E	CMH100/C/U830MED	C90/M90/M140/E
MHC100/U/M/4K/ALTO	M140/M90/E	MC100/U/MED/940	C90/E		
MHC100/C/U/M/4K/ALTO	M140/M90/E	MC100/C/U/MED/940	C90/E		
MHC100/U/ED28/HR/4K	M140/M90/E				
MHC150/U/M/3K/ALTO	M142/M102/E	MC150/U/MED/830	C102/E		
MHC150/C/U/3K/ALTO	M142/M102/E	MC150/C/U/MED/830	C102/E		
MHC150/U/M/4K/ALTO	M142/M102/E	MC150/U/MED/940	C102/E		
MHC150/C/U/M/4K/ALTO	M142/M102/E	MC150/C/U/MED/940	C102/E		
CDM70/U/PS/4K ALTO	M143/M98/E				
CDM100/U/PS/4K ALTO	M140/M90/E	MC100/U/ET23.5/942	C90/E		
CDM150/U/PS/4K ALTO	M142/M102/E	MC150/U/ET23.5/942	C102/E		
CDM145/U/M/4K/ED17 EA AllStart	C192/E				
CDM145/C/U/M/4K/ED17 EA AllStart	C192/E				
CDM145/U/O/4K/ED28 EA AllStart	C192/O				
CDM145/C/U/O/4K/ED28 EA AllStart	C192/O				
CDM205/U/O/4K EA AllStart	C184/O				
CDM205/C/U/O/4K EA AllStart	C184/O				
CDM260/U/O/4K EA AllStart	C195/O				
CDM260/C/U/O/4K EA AllStart	C195/O				
CDM330/U/O/4K/ED28 EA AllStart	C185/O				
CDM330/U/O/4K EA AllStart	C185/O				
CDM330/C/U/O/4K EA AllStart	C185/O				
CDM860/V/O/4K/EA BT37	C194/O				
CDM860/V/O/4K/EA BT56	C194/O				
CDM330/V/O/4K EA AllStart XL	C185/O				
MP175/BU/PS	M152/M137/O			MPR175/VBU/PA/O	M137/O
MP250/BU/PS	M153/M138/O	MP250/PS/BU-ONLY	M153/O	MPR250/VBU/PA/O	M138/O
MP320/BU/PS	M154/M132/O			MPR320/VBU/XHOPA	M132/M154/O
MP320/C/BU/PS	M154/M132/O			MPR320C/VBUXHOPA	M132/M154/O
MP350/BU/PS	M131/O	MP350/400/PS/BU-ONLY	M131/O	MPR350/VBU/PA	M131/O
MP400/BU/PS	M155/M128/M135/O	MP350/400/PS/BU-ONLY	M155/O	MPR400/VBU/XHOPA	M135/M155/O
MP400/C/BU/PS	M155/M128/M135/O	MP350/400/C/PS/BU-ONLY	M155/O	MPR400C/VBUXHOPA	M135/M155/O
MP750/BU/PS	M149/O				
MH70/U/M/PS	M98/E	M70/U/MED	M98/E	MVR70/U/MED	M98/E
MH100/U/M/PS	M90/E	M100/U/MED	M90/E	MVR100/U/MED	M90/E
MH150/U/M/PS	M102/E	M150/U/MED	M102/E	MVR150/U/MED	M102/E
MS175/M/BU/PS	M152/M137/E	MS175/PS/BU-ONLY/MED	M152/E	MVR175/VBU/MEDPA	M137/M152/E
MS175/BU/PS	M152/M137/E	MS175/PS/BU-ONLY	M152/E	MVR175/VBU/PA	M137/M152/E
MS175/HOR/PS	M152/M137/E				
MS200/BU/PS	M136/E	MS200/PS/BU-ONLY/BT28	M136/E		
MS250/U/PS	M153/M138/E	M250/PS/U	M153/E	MVR250/U/PA	M138/M153/E
MS250/BU/PS	M153/M138/E	MS250/PS/BU-ONLY	M153/E	MVR250/VBU/PA	M138/M153/E
MS320/U/PS	M154/M132/E	MS320/PS/BU-HOR	M154/E	MVR320/VBU/HO/PA	M132/M154/E
MS350/BU/PS	M131/E			MVR350VBUXHOPA/E	M131/E
MS400/BU/ED28/PS	M155/M128/M135/E	MS400/PS/BU-ONLY/BT28	M155/E	MVR400/VBUED28PA	M135/M155/E
MS400/HOR/ED28/PS	M155/M128/M135/E			MVR400/HOR/ED28/PA	M135/M155/E
MS400/U/PS	M155/M135/M128/E			MVR400/HOR/PA	M135/M155/E
MS750/BU/BT37/PS	M149/E	MS750/PS/BU-HOR/BT37	M149/E	MVR750/VBU/PA	M149/E
MS750/HOR/BT37/PS	M149/E	MS750/PS/BU-HOR/BT37	M149/E		
MS1000/BU/BT37/PS	M141/E	M1000/PS/U/BT37	M141/E	MVR1000U/BT37/PA	M141/E

High Intensity Discharge Lamps

Cross Reference Guide

Philips		OSI		GE	
Ordering Code	ANSI Code	Order Code	ANSI	Description	
MP175/BU	M57/O	MP175/BU-ONLY	M57/O	MPR175/VBU/O	M57/O
MP250/BU	M58/O	MP250/BU-ONLY	M58/O	MPR250/VBU/O	M58/O
MP360BU/EW	M165/M59/O	MSP360/SS/BU-ONLY	M59/O	MPR360VBUWM/HO/O	M59/O
MP360/C/BU/EW	M165/M59/O	MSP360/C/SS/BU-ONLY	M59/O	MPR360CVBUWMHO/O	M59/O
MP400/BU	M59/O	MP400/BU-ONLY	M59/O	MPR400/VBU/HO/O	M59/O
MP400/C/BU	M59/O	MP400/C/BU-ONLY	M59/O	MPR400C/VBU/HO/O	M59/O
MP1000/BU	M47/O	MP1000/BU-ONLY	M47/O	MPR1000/VBU/HO/O	M47/O
MH150/U/M	M107/E				
MH150/C/U/M	M107/E				
MH175/U/M	M57/E	M175/U/MED	M57/E	MVR175/U/MED	M57/E
MH175/C/U/M	M57/E	M175/C/U/MED	M57/E	MVR175/C/U/MED	M57/E
MH175/U	M57/E	M175/U	M57/E	MVR175/U	M57/E
MH175/C/U	M57/E	M175/C/U	M57/E	MVR175/C/U	M57/E
MH250/U	M58/E	M250/U	M58/E	MVR250/U	M58/E
MH250/C/U	M58/E	M250/C/U	M58/E	MVR250/C/U	M58/E
MH400/U/ED28	M59/E	M400/U/BT28	M59/E	MVR400/U/ED28	M59/E
MH400/U	M59/E	M400/U	M59/S	MVR400/U	M59/S
MH400/C/U	M59/E	M400/C/U	M59/S	MVR400/C/U	M59/S
MH1000/U/BT37	M47/E	M1000/U/BT37	M47/E	MVR1000/U/BT37	M47/E
MH1000/U	M47/E	M1000/U	M47/S	MVR1000/U	M47/S
MH1000/C/U	M47/E	M1000/C/U	M47/S	MVR1000/C/U	M47/S
MH1500/U	M48/E			MVR1500/U/SPORTS	M48/E
CDM-T FRESH 70W/740	C139/E				
CDM-T Warm 70W/925	C139/E				
SDW-T 100W/LV	S105				
SDW-TG 100W/T6/825	S167				
C35S76/M	S76	LU35/MED	S76	LU35/MED/ECO	S76/O
C50S68/M	S68	LU50/MED	S68	LU50/MED/ECO	S68/O
C50S68/ALTO	S68	LU50/ECO	S68	LU50/H/ECO	S68/O
C70S62/M	S62	LU70/MED	S62	LU70/MED/ECO	S62/O
C70S62/D/M	S62	LU70/D/MED	S62	LU70/D/MED/ECO	S62/O
C70S62/ALTO	S62	LU70/ECO	S62	LU70/H/ECO	S62/O
C100S54/M	S54S	LU100/MED	S54	LU100/MED/ECO	S54/O
C100S54/D/M	S54S	LU100/D/MED	S54	LU100/D/MED/ECO	S54/O
C100S54/ALTO	S54	LU100/ECO	S54	LU100/H/ECO	S54/O
C100S54/D/ALTO	S54	LU100/D	S54	LU100/D/H/ECO	S54/O
C150S55/M	S55	LU150/55/MED	S55	LU150/MED/ECO	S55/O
C150S55/D/M	S55	LU150/55/D/MED	S55	LU150/D/MED/ECO	S55/O
C150S55/ALTO	S55	LU150/55/ECO	S55	LU150/55/H/ECO	S55/O
C150S56/ALTO	S56	LU150/100	S56	LU150/100(ED28)	S56/O
C200S66/ALTO	S66MN-200	LU200/ECO	S66	LU200/H/ECO	S66/O
C250S50/ALTO	S50	LU250/ECO	S50	LU250/H/ECO	S50/O
C400S51/ALTO	S51	LU400/ECO	S51	LU400/H/ECO	S51/O
C600S106	S106	LU600 SUPER	S106	LU600/T	S106/O
C1000S52/ALTO	S52XB-1000	LU1000/ECO	S52	LU1000/ECO	S52/O
C1000S52/ED37	S52				
C70S62/ALTO NC HPS	S62	LU70/PLUS/ECO	S62	LU70/ECO/NC	S62/O
C100S54/ALTO NC HPS	S54	LU100/PLUS/ECO	S54	LU100/ECO/NC	S54/O
C150S55/ALTO NC HPS	S55	LU150/55/PLUS/ECO	S55	LU150/55/ECO/NC	S55/O
C200S66/ALTO NC HPS	S66	LU200/PLUS/ECO	S66	LU200/ECO/NC	S66/O
C250S50/ALTO NC HPS	S50	LU250/PLUS/ECO	S50	LU250/ECO/NC	S50/O
C400S51/ALTO NC HPS	S51	LU400/PLUS/ECO	S51	LU400/ECO/NC	S51/O
C1000S52/ALTO NC HPS	S52	LU1000/PLUS	S52		

Philips		OSI		GE	
Ordering Code	ANSI Code	Order Code	ANSI	Description	
C50S68/2	S68				
C70S62/2	S62	LU70/SBY	S62	LU70/SBY/XL	S62/O
C100S54/2	S54	LU100/SBY	S54	LU100/SBY/XL	S54/O
C150S55/2	S55	LU150/55/SBY	S55	LU150/55/SBY/XL	S55/O
C250S50/2	S50	LU250/SBY	S50	LU250/SBY/XL	S50/O
C400S51/2	S51	LU400/SBY	S51	LU400/SBY/XL	S51/O
C1000S52/2	S52	LU1000/SBY	S52	LU1000/SBY/XL	S52/O
SON AGRO 430W	S145/S51				
SON-T PIA Grn Pw/400W	S51	400W PLANTASTAR	S51	LU400/XOPSL/T/40	
SON-T PIA Grn Pw/600W/230V	S106	600W PLANTASTAR	S106	LU600/XOPSL/T/40	
SON-T PIA Grn Pw/600W/347V	S106				
SON-T PIA Grn Pw/600W/480V	S106				
C1000S52/AGROLITE XT	S52	LU1000/PLANTASTAR	S52		
GreenPower CDM-TP 315/T12/930/U/O	C182/O				
SOX-E18	L69	SOX18	L69		
SOX35	L70	SOX35	L70		
SOX55	L71	SOX55	L71		
SOX90	L72	SOX90	L72		
SOX135	L73	SOX135	L73		
SOX180	L74	SOX180	L74RF		
H38JA-100/DX	H38	H38JA-100/DX	H38	HR100DX38	
H38MP-100/DX	H38				
H39KB-175	H39	H39KB-175	H39	HR175A39	
H39KC-175/DX	H39	H39KC-175/DX	H39	HR175DX39	
H37KC-250/DX	H37	H37KC-250/DX	H37	HR250DX37	
H33GL-400/DX	H33	H33GL-400/DX	H33	HR400DX33	

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ALUline Pro III Lamps
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Twistline GU10 Lamps
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Double-Ended Linear Lamps
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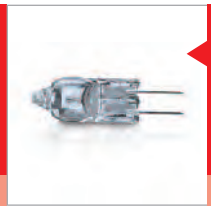
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Philips Halogen Lamps are designed to provide visual appeal, highlight merchandise and save on energy costs.

Put people and merchandise in the best light

The Philips Halogen lamp family is perfect for retail lighting. Halogen lamps provide bright, white light and help save on energy and maintenance costs.

Halogen Energy Advantage IR Plus Lamps provide the most enhanced features of our halogen lamp line. The double-ended burner with an IR coating optimizes lumen output. Therefore, you can use a lower wattage lamp to achieve energy savings and also get a longer rated average life than standard halogen equivalents.

Halogená Energy Advantage Lamps provide increased energy saving when compared to standard incandescent lamps and last longer.

EcoVantage Lamps are an elegant, energy saving alternative to ordinary household incandescent light. EcoVantage lamps are fully dimmable and meet the requirement of EISA 2007* legislation.

* Complies with the Energy Independence and Security Act of 2007 (Public Law 110-140). Section 321—Efficient Light Bulbs.

Current Product	Philips Upgrade Product	Benefit	Page
60W PAR38 Halogen	Energy Advantage Halogen PAR38 IR Plus 39W	• High quality light brings out colors and textures • High performance IR coating on a double-ended quartz burner • Increased uniform beam intensity without hot spots	102
75W R20 Incandescent	Halogená Energy Advantage R20 40W	• Save 35W and 47% energy saving[1] • Complies with EISA 2007 (Energy Independence and Security Act of 2007) efficiency standards for 2012–2014	100
60W A19 Incandescent	EcoVantage Natural Light 43W	• Provides light similar to natural daylight • Saves 28% in energy costs when replacing a 60W incandescent[1] • Complies with EISA 2007 (Energy Independence and Security Act of 2007) efficiency standards for 2012–2014	98

1) 75W - 40W = 35W / 75W = 47%. When compared to a 75-Watt standard incandescent A19 rated at 570 lumens, the 40-Watt EcoVantage A19 rated at 570 lumens provides 47% energy savings.
2) 60W - 43W = 17W / 60W = 28%. When compared to a 60-Watt standard incandescent A19 rated at 680 lumens, the 43-Watt EcoVantage A19 rated at 630 lumens provides 28% energy savings.

Halogen Lamps

EcoVantage Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP♦	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
EcoVantage A-Shape (97, 103)													**FTC REQUIREMENTS**			
29	A19	Med.	40983-9	$	29A19/EV	120	12	White	C, CC-8	4 7/16	1000	—	400	0.9	$3.49	2810
			42600-7	$†	29A19/EV	120	24	White	C, CC-8	4 7/16	1000	—	400	0.9	$3.49	2810
			41050-6	$	29A19/EV/CL	120	12	Clear	C, CC-8	4 7/16	1000	—	400	0.9	$3.49	2790
43	A19	Med.	40984-7	$	43A19/EV	120	12	White	C, CC-8	4 7/16	1000	—	750	0.9	$5.18	2920
			42603-1	$†	43A19/EV	120	24	White	C, CC-8	4 7/16	1000	—	750	0.9	$5.18	2920
			41049-8	$	43A19/EV/CL	120	12	Clear	C, CC-8	4 7/16	1000	—	750	0.9	$5.18	2920
			22695-1	$	43A19/EV/NTL	120	12	Natural Light	C, CC-8	4 7/16	1100	—	600	1.0	$5.18	2930
53	A19	Med.	22696-9	$	53A19/EV/NTL	120	12	Natural Light	C, CC-8	4 7/16	1100	—	790	1.0	$6.38	2960
72	A19	Med.	40982-1	$	72A19/EV	120	12	White	C, CC-8	4 7/16	1000	—	1490	0.9	$8.67	3000
			42604-9	$†	72A19/EV	120	24	White	C, CC-8	4 7/16	1000	—	1490	0.9	$8.67	3000
			41048-0	$	72A19/EV/CL	120	12	Clear	C, CC-8	4 7/16	1000	—	1490	0.9	$8.67	2990
			22699-3	$	72A19/EV/NTL	120	12	Natural Light	C, CC-8	4 7/16	1100	—	1170	1.0	$8.67	3070
EcoVantage Decorative Blister-Carded																
25	B11	Cand.	42411-9	(97)*$†	25B11/E12/EV/CL	120	12	Clear, Blister Card	C, CC-8	3 13/16	2750	—	280	2.5	$3.01	2900
			42415-0	(97)*$†	25B11/E12/EV/FR	120	12	Frost, Blister Card	C, CC-8	3 13/16	2200	—	280	2.0	$3.01	2900
		Med.	42427-5	(97)*$†	25B11/E26/EV/CL	120	12	Clear, Blister Card	C, CC-8	3 11/16	2200	—	280	2.0	$3.01	2900
	BA11	Cand.	42409-3	(97)*$†	25BA11/E12/EV/CL	120	12	Clear, Blister Card	C, CC-8	4	2750	—	280	2.0	$3.01	2900
			42413-5	(97)*$†	25BA11/E12/EV/FR	120	12	Frost, Blister Card	C, CC-8	4	2200	—	280	2.0	$3.01	2900
		Med.	42425-9	(97)*$†	25BA11/E26/EV/CL	120	12	Clear, Blister Card	C, CC-8	3 7/8	2200	—	280	2.0	$3.01	2900
	G16½	Cand.	42086-9	(97)*$†	BC25G16½C/EV/CL	120	12	Clear, Blister Card	C, CC-8	2 13/16	2200		270	2.0	$3.01	2700
			42087-7	(97)*$†	BC25G16½C/EV/W	120	12	White, Blister Card	C, CC-8	2 13/16	2200		270	2.0	$3.01	2700
40	B11	Cand.	42412-7	(97)*$†	40B11/E12/EV/CL	120	12	Clear, Blister Card	C, CC-8	3 13/16	2750	—	540	2.5	$4.82	2900
			42416-8	(97)*$†	40B11/E12/EV/FR	120	12	Frost, Blister Card	C, CC-8	3 13/16	2200	—	540	2.0	$4.82	2900
		Med.	42428-3	(97)*$†	40B11/E26/EV/CL	120	12	Clear, Blister Card	C, CC-8	3 11/16	2200	—	540	2.0	$4.82	2900
	BA11	Cand.	42410-1	(97)*$†	40BA11/E12/EV/CL	120	12	Clear, Blister Card	C, CC-8	4	2750	—	540	2.5	$4.82	2900
			42414-3	(97)*$†	40BA11/E12/EV/FR	120	12	Frost, Blister Card	C, CC-8	4	2200	—	540	2.0	$4.82	2900
		Med.	42426-7	(97)*$†	40BA11/E26/EV/CL	120	12	Clear, Blister Card	C, CC-8	3 7/8	2200	—	540	2.0	$4.82	2900
72	F15	Med.	42385-5	(88,103) $†	BC72F15/EV/CL	120	4	Clear, Blister Card	C, CC-8	4 7/8	1000	—	1490	0.9	$8.67	3000

For the most current product information, go to the e-catalog on **www.philips.com**

Halogen symbols and footnotes located on page 109

A19 White Med. | A19 Clear Med. | A19 Natural Light Med. | B11 Cand. | B11 Med. | BA11 Cand. | BA11 Med. | BA11 Med. | G16.5 Cand. | F15 Med.

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP◆	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
EcoVantage Decorative Boxed (97)													**FTC REQUIREMENTS**			
25	G25	Med.	42423-4	$†	25G25/EV/CL	120	12	Clear	C, CC-8	4 7/16	2200	—	280	2.0	$3.01	2800
			42424-2	$†	25G25/EV/W	120	12	White	C, CC-8	4 7/16	2200	—	255	2.0	$3.01	2800
40	G25	Med.	42084-4	$†	40G25/EV/CL	120	12	Clear	C, CC-8	4 7/16	2200	—	550	2.0	$4.82	2800
			42085-1	$†	40G25/EV/W	120	12	White	C, CC-8	4 7/16	2200	—	500	2.0	$4.82	2800
EcoVantage Reflectors (97)																
40	R20	Med.	42117-2	$ Ⓔ †	40R20/EV/FL	120	6	Flood	C, CC-8	3 15/16	2750	—	570	2.5	$4.82	2700
	BR30	Med.	42106-5	$ Ⓔ †	40BR30/EV/FL	120	5	Flood	C, CC-8	5 3/8	2750	—	590	2.5	$4.82	2710
	BR40	Med.	42116-4	$ Ⓔ †	40BR40/EV/FL	120	4	Flood	C, CC-8	6 1/2	2750	—	605	2.5	$4.82	2730
50	BR30	Med.	42118-0	$ Ⓔ †	50BR30/EV/FL	120	5	Flood	C, CC-8	5 3/8	2750		730	2.5	$6.02	2900
70	BR40	Med.	42119-8	(104)$ Ⓔ †	70BR40/EV/FL	120	4	Flood	C, CC-8	6 1/2	2750		1225	2.5	$8.43	2900
EcoVantage Halogen Pro PAR20 Lamps (82, 86)																
39	PAR20	Med.	42512-4	$†	39PAR20/EVP/SP10	120	15	Spot 10°	C,CC-8	3 3/8	1100	3840	500	1.0	$4.70	2900
			42520-7	$†	39PAR20/EVP/FL25	120	15	Flood 25°	C,CC-8	3 3/8	1100	865	500	1.0	$4.70	2900
EcoVantage Halogen Pro PAR30S Lamps (82, 86)																
39	PAR30S	Med.	42891-2	$†	39PAR30S/EVP/SP10	120	15	Spot 10°	C, CC-8	3 3/8	1100	6300	530	1.0	$4.70	2900
			42896-0	$†	39PAR30S/EVP/FL25	120	15	Flood 25°	C, CC-8	3 3/8	1100	1870	530	1.0	$4.70	2900
53	PAR30S	Med.	42888-8	$Ⓔ † (104)	53PAR30S/EVP/SP10	120	15	Spot 10°	C, CC-8	3 3/8	1100	10,000	920	1.0	$6.38	2860
			42890-4	$Ⓔ † (104)	53PAR30S/EVP/FL25	120	15	Flood 25°	C, CC-8	3 3/8	1100	3100	920	1.0	$6.38	2860
			42898-6	$Ⓔ † (104)	53PAR30S/EVP/WFL40	120	15	Wide Flood 40°	C, CC-8	3 3/8	1100	1400	920	1.0	$6.38	2860
EcoVantage Halogen Pro PAR30L Lamps (82, 86)																
39	PAR30L	Med.	42887-0	$†	39PAR30L/EVP/FL25	120	15	Flood 25°	C, CC-8	4 1/2	1100	1870	520	1.0	$4.70	2900
53	PAR30L	Med.	42892-0	$Ⓔ † (104)	53PAR30L/EVP/FL25	120	15	Flood 25°	C, CC-8	4 1/2	1100	3100	920	1.0	$6.38	2860
			42895-2	$Ⓔ † (104)	53PAR30L/EVP/WFL40	120	15	Wide Flood 40°	C, CC-8	4 1/2	1100	1400	920	1.0	$6.38	2860
EcoVantage Halogen Pro PAR38 Lamps (82, 86)																
39	PAR38	Med.Skt.	42886-2	$†	39PAR38/EVP/SP10	120	12	Spot 10°	C, CC-8	5 5/16	1100	7000	570	1.0	$4.70	2900
			42884-7	$†	39PAR38/EVP/FL25	120	12	Flood 25°	C, CC-8	5 5/16	1100	1900	570	1.0	$4.70	2900
53	PAR38	Med.Skt.	42889-6	$ Ⓔ † (104)	53PAR38/EVP/SP10	120	12	Spot 10°	C, CC-8	5 5/16	1100	11,000	920	1.0	$6.38	2860
			42885-4	$ Ⓔ † (104)	53PAR38/EVP/FL25	120	12	Flood 25°	C, CC-8	5 5/16	1100	3250	920	1.0	$6.38	2860
72	PAR38	Med.Skt.	42894-6	$ Ⓔ † (104)	72PAR38/EVP/SP10	120	12	Spot 10°	C, CC-8	5 5/16	1100	16,000	1350	1.0	$8.67	2880
			42893-8	$ Ⓔ † (104)	72PAR38/EVP/FL25	120	12	Flood 25°	C, CC-8	5 5/16	1100	4500	1350	1.0	$8.67	2880

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Halogen symbols and footnotes located on page 109

Halogen Lamps

Halogená and Halogen PAR Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP♦	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
Halogená Decorative Blister-Carded (96)													**FTC REQUIREMENTS**			
25	F10½	Cand.	14450-1		BC25F10½C/HAL/CL	120	12	Clear, Blister Card	C, CC-8	4⅜	3000	—	300	2.7	$3.01	2900
		Med.	14453-5		BC25F10½/HAL/CL TP	120	12	Clear, Blister Card	C, CC-8	4⅜	3000	—	300	2.7	$3.01	2900
40	F10½	Cand.	14451-9		BC40F10½C/HAL/CL	120	12	Clear, Blister Card	C, CC-8	4⅜	3000	—	540	2.7	$4.82	2900
		Med.	14454-3		BC40F10½/HAL/CL TP	120	12	Clear, Blister Card	C, CC-8	4⅜	3000	—	540	2.7	$4.82	2900
60	F15	Med.	38551-8		BC60F15/HAL/POST TOP	120	4	Clear, Blister Card	C, CC-8	4 13/16	3000	—	1000	2.7	$7.23	2900
Halogená Energy Advantage Pro Packs (97, 102)																
40	R20	Med.	22236-4	$ Ⓔ	40R20/HEA/FL	120	12	Flood	C, CC-8	3 15/16	3000	—	550	2.7	$4.82	2700
	BR30	Med.	21359-5	$ Ⓔ	40BR30/HEA/FL	120	12	Flood	C, CC-8	5⅜	3000	—	570	2.7	$4.82	2700
	BR40	Med.	22238-0	$ Ⓔ	40BR40/HEA/FL	120	12	Flood	C, CC-8	6½	3000	—	590	2.7	$4.82	2730
70	BR40	Med.	22997-1	(104) $ Ⓔ	70BR40/HEA/FL	120	12	Flood	C, CC-8	6½	3000	—	1285	2.7	$8.43	2810
Halogen PAR16 Lamps (82, 86)																
45	PAR16	Med.	26335-0		45PAR16/HAL/SP10	120	15	Spot 10°	C, CC-8	3½	3000	3850	420	2.7	$5.42	2900
			26345-9		45PAR16/HAL/FL27	120	15	Flood 27°	C, CC-8	3½	3000	1275	420	2.7	$5.42	2800
60	PAR16	Med.	33004-3		60PAR16/HAL/SP10	120	15	Spot 10°	C, CC-8	3½	3000	5075	580	2.7	$7.23	2900
			33006-8		60PAR16/HAL/FL27	120	15	Flood 27°	C, CC-8	3½	3000	1900	580	2.7	$7.23	2900
Halogen PAR16 Lamps 130V (82, 86)																
45	PAR16	Med.	26348-3		45PAR16/HAL/FL27	130	15	Flood 27°	C, CC-8	3½	2500	1275	450	4.6	$5.42	2900
								Ratings @ 120V=40W			5000	1040	340			
60	PAR16	Med.	33007-6		60PAR16/HAL/FL27	130	15	Flood 27°	C, CC-8	3½	3000	1900	580	5.5	$7.23	2900
								Ratings @ 120V=53W			6000	1440	450			

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Halogen symbols and footnotes located on page 109

F10½ Cand. | F10½ Med. | F15 Med. | R20 Med. | BR30 Med. | BR40 Med. | PAR16 Med.

Halogen Lamps

PAR20 Electronic and Energy Advantage Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP◆	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
PAR20 Electronic Lamps (82, 86)													**FTC REQUIREMENTS**			
20	PAR20	Med.	40494-7	$ ▢	20PAR20E/SP10	120	12	Spot 10°	C, C-8	3⅜	5000	6600	220	4.6	$2.41	2900
		Med.	15216-5	$ ▢	20PAR20E/FL25	120	12	Flood 25°	C, C-8	3⅜	5000	1200	220	4.6	$2.41	2900
Energy Advantage IR Plus (IRC+) Halogen PAR30 Long Neck Lamps (82, 86)																
50	PAR30L	Med.	23799-0	$ © (104)	50PAR30L/IRC+/SP10	120	15	Spot 10°	C, CC-8	4⁷⁄₁₆	4400	12,000	900	4.0	$6.02	2750
			23429-4	$ © (104)	50PAR30L/IRC+/FL25	120	15	Flood 25°	C, CC-8	4⁷⁄₁₆	4400	3500	900	4.0	$6.02	2750
			23800-6	$ © (104)	50PAR30L/IRC+/WFL40	120	15	Wide Flood 40°	C, CC-8	4⁷⁄₁₆	4400	1600	900	4.0	$6.02	2750
Energy Advantage IR Plus (IRC+) Halogen PAR30 Short Neck Lamps (82, 86)																
39	PAR30S	Med.	23853-5		39PAR30S/IRC+/SP10	120	15	Spot 10°	C, CC-8	3⅝	4400	11,000	650	4.0	$4.70	2800
			23854-3		39PAR30S/IRC+/FL25	120	15	Flood 25°	C, CC-8	3⅝	4400	2200	650	4.0	$4.70	2800
50	PAR30S	Med.	14499-7	$ © † (104)	50PAR30S/IRC+/SP10	120	15	Spot 10°	C, CC-8	3⅝	4400	12,000	950	4.0	$6.02	2740
			14500-3	$ © † (104)	50PAR30S/IRC+/FL25	120	15	Flood 25°	C, CC-8	3⅝	4400	3850	950	4.0	$6.02	2740
			14501-1	$ © † (104)	50PAR30S/IRC+/WFL40	120	15	Wide Flood 40°	C, CC-8	3⅝	4400	1420	950	4.0	$6.02	2740
55	PAR30S	Med.	23855-0	$ © (104)	55PAR30S/IRC+/SP10	120	15	Spot 10°	C, CC-8	3⅝	4400	13,000	1020	4.0	$6.62	2760
			23856-8	$ © (104)	55PAR30S/IRC+/FL25	120	15	Flood 25°	C, CC-8	3⅝	4400	3300	1020	4.0	$6.62	2760
			23857-6	$ © (104)	55PAR30S/IRC+/ WFL40	120	15	Wide Flood 40°	C, CC-8	3⅝	4400	1500	1020	4.0	$6.62	2760
Energy Advantage IR Economy (IRCE) Halogen PAR30 Short Neck Lamps (82, 86)																
40	PAR30S	Med.	23751-1	$ © † (104)	40PAR30S/IRCE/SP10	120	15	Spot 10°	C, CC-8	3⅝	3000	8100	640	2.7	$4.82	2770
			23729-7	$ © † (104)	40PAR30S/IRCE/FL25	120	15	Flood 25°	C, CC-8	3⅝	3000	2100	640	2.7	$4.82	2770
50	PAR30S	Med.	23730-5	$ © † (104)	50PAR30S/IRCE/SP10	120	15	Spot 10°	C, CC-8	3⅝	3000	10,000	850	2.7	$6.02	2710
			23731-3	$ © † (104)	50PAR30S/IRCE/FL25	120	15	Flood 25°	C, CC-8	3⅝	3000	3000	850	2.7	$6.02	2710

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Halogen symbols and footnotes located on page 109

PAR20
Med.

PAR20 Electronic
Med.

PAR30L
Med.

PAR30S
Med.

Halogen Lamps

PAR36 and Energy Advantage Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP♦	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
Halogen PAR36 Lamps (82, 86)													**FTC REQUIREMENTS**			
11	PAR36	MP	15683-6		11PAR36Q/FL30	12	6	PAR, Flood	C, C-6	2¾	2000	—	60	1.8	$1.32	3000
			41718-8	†	11PAR36Q/FL30	12	12	PAR, Flood	C, C-6	2¾	2000	—	60	1.8	$1.32	3000
25	PAR36	MP	42204-8	†	25PAR36Q/FL30	12	12	PAR, Flood	C, C-6	2¾	2000	—	270	1.8	$3.01	3000
36	PAR36	MP	41525-7	†	36PAR36Q/FL30	12	6	PAR, Flood	C, C-6	2¾	4000	—	450	3.7	$4.34	3000
50	PAR36	MP	22859-3	†	50PAR36/NSP	12	12	PAR, Narrow Spot	C, C-6	2¾	2000	—	650	1.8	$6.02	3000
			41524-0	†	50PAR36Q/FL30	12	6	PAR, Flood	C, C-6	2¾	4000	—	650	3.7	$6.02	3000
			29603-8	†	50PAR36/WFL	12	12	PAR, Wide Flood	C, C-6	2¾	2000	—	650	1.8	$6.02	3000
Energy Advantage IR Plus (IRC+) Halogen PAR38 (82, 86)																
39	PAR38	Med.Skt.	23844-4	$	39PAR38/IRC+/SP10	120	12	Spot 10°	C, CC-8	5⅝	4400	11,000	680	4.0	$4.70	2800
			23845-1	$	39PAR38/IRC+/FL25	120	12	Flood 25°	C, CC-8	5⅝	4400	2500	680	4.0	$4.70	2800
50	PAR38	Med.Skt.	14505-2	$ Ⓔ (104)	50PAR38/IRC+/SP10	120	12	Spot 10°	C, CC-8	5⅝	4400	15,500	950	4.0	$6.02	2760
	Dioptic		14506-0	$ Ⓔ (104)	50PAR38/IRC+/FL25	120	12	Flood 25°	C, CC-8	5⅝	4400	4000	950	4.0	$6.02	2760
	Reflector															
55	PAR38	Med.Skt.	23847-7	$ Ⓔ (104)	55PAR38/IRC+/SP10	120	12	Spot 10°	C, CC-8	5⅝	4400	16,500	1100	4.0	$6.62	2700
			23865-9	$ Ⓔ (104)	55PAR38/IRC+/FL25	120	12	Flood 25°	C, CC-8	5⅝	4400	4100	1100	4.0	$6.62	2700
			23849-3	$ Ⓔ (104)	55PAR38/IRC+/WFL40	120	12	Wide Flood 40°	C, CC-8	5⅝	4400	1800	1100	4.0	$6.62	2700
70	PAR38	Med.Skt.	13861-0	$ Ⓔ (104)	70PAR38/IRC+/SP10	120	12	Spot 10°	C, CC-8	5⅝	4400	17,800	1500	4.0	$8.43	2860
			13862-8	$ Ⓔ (104)	70PAR38/IRC+/FL25	120	12	Flood 25°	C, CC-8	5⅝	4400	6170	1500	4.0	$8.43	2860
			13863-6	$ Ⓔ (104)	70PAR38/IRC+/WFL40	120	12	Wide Flood 40°	C, CC-8	5⅝	4400	2320	1500	4.0	$8.43	2860
83	PAR38	Med.Skt.	23850-1	$ Ⓔ (104)	83PAR38/IRC+/SP10	120	12	Spot 10°	C, CC-8	5⅝	4400	25,000	1750	4.0	$10.00	2730
	Dioptic		23851-9	$ Ⓔ (104)	83PAR38/IRC+FL25	120	12	Flood 25°	C, CC-8	5⅝	4400	7000	1750	4.0	$10.00	2730
	Reflector		23852-7	$ Ⓔ (104)	83PAR38/IRC+/WFL40	120	12	Wide Flood 40°	C, CC-8	5⅝	4400	3000	1750	4.0	$10.00	2730
100	PAR38	Med.Skt.	13876-8	$ Ⓔ (104)	100PAR38/IRC+/SP10	120	12	Spot 10°	C, CC-8	5⅝	4400	26,400	2150	4.0	$12.05	2830
	Dioptic		13877-6	$ Ⓔ (104)	100PAR38/IRC+/FL25	120	12	Flood 25°	C, CC-8	5⅝	4400	8500	2150	4.0	$12.05	2830
	Reflector		13878-4	$ Ⓔ (104)	100PAR38/IRC+/WFL40	120	12	Wide Flood 40°	C, CC-8	5⅝	4400	3500	2150	4.0	$12.05	2830

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PAR36
MP

Energy Advantage IR PAR38
Med. Skt.

Halogen Lamps

Energy Advantage and Mini Reflector Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP♦	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
Energy Advantage IR Economy (IRCE) Halogen PAR38 (82, 86)													**FTC REQUIREMENTS**			
40	PAR38	Med.Skt.	42673-4	$ © † (104)	40PAR38/IRCE/SP10	120	12	Spot 10°	C, CC-8	5 5/16	3000	9000	640	2.7	$4.82	2700
			42674-2	$ © † (104)	40PAR38/IRCE/FL25	120	12	Flood 25°	C, CC-8	5 5/16	3000	2300	640	2.7	$4.82	2700
50	PAR38	Med.Skt.	23733-9	$ © † (104)	50PAR38/IRCE/SP10	120	12	Spot 10°	C, CC-8	5 5/16	3000	11,000	850	2.7	$6.02	2700
			23734-7	$ © † (104)	50PAR38/IRCE/FL25	120	12	Flood 25°	C, CC-8	5 5/16	3000	3000	850	2.7	$6.02	2700
60	PAR38	Med.Skt.	23739-6	$ © † (104)	60PAR38/IRCE/SP10	120	12	Spot 10°	C, CC-8	5 5/16	3000	13,500	1070	2.7	$7.23	2750
			23744-6	$ © † (104)	60PAR38/IRCE/FL25	120	12	Flood 25°	C, CC-8	5 5/16	3000	3800	1070	2.7	$7.23	2850
Halogen MRC11 Blister-Carded (92)																
20	MRC11	GU4	41930-9	†	BC20MRC11/FL30 FTD	12	12	Blister Card, Flood 30°	C, CC-8	1 5/8	2000	500	230	1.8	$2.41	2800
Halogen MRC11 (Formerly BrilliantLine Pro) (92)																
20	MRC11	GU4	37822-4		20MRC11/FL30 PRO FTD	12	50	Flood 30°	C, CC-8	1 5/8	4000	690	320	3.7	$2.41	3100
Halogen MRC11 Landscape (92)																
10	MRC11	GU4	41722-0	†	10MRC11/FL30/LAND/TP	12	6	Flood 30°	C, CC-8	1 5/8	2000	550	230	1.8	$1.20	2750
20	MRC11	GU4	15676-0		20MRC11/FL30/LAND/TP	12	6	Flood 30°	C, CC-8	1 5/8	2000	500	230	1.8	$2.41	2800
Halogen MRC16 Display Lamps Blister-Carded (Formerly AccentLine) Dichroic Reflector With Lens (92)																
20	MRC16	GU5.3	41931-7	†	BC20MRC16/FL36 BAB	12	12	Blister Card, Flood 36°	C, C-8	1 7/8	3000	550	240	2.7	$2.41	3000
			41568-7	†	BC20MRC16/FL36	12	18	Blister Card, Flood 36°	C, C-8	1 7/8	3000	—	200	2.7	$2.41	3000
35	MRC16	GU5.3	41932-5	†	BC35MRC16/FL36 FMW	12	12	Blister Card, Flood 36°	C, C-8	1 7/8	3000	1000	540	2.7	$4.22	3000
50	MRC16	GU5.3	41563-8	†	BC50MRC16/SP10 EXT	12	12	Blister Card, Spot 10°	C, C-8	1 7/8	3000	8800	790	2.7	$6.02	3000
			41580-2	†	BC50MRC16/SP10	12	18	Blister Card, Spot 10°	C, C-8	1 7/8	3000	—	600	2.7	$6.02	2800
			41933-3	†	BC50MRC16/FL36 EXN	12	12	Blister Card, Flood 36°	C, C-8	1 7/8	3000	1600	850	2.7	$6.02	3000
			41580-2	†	BC50MRC16/FL	12	18	Blister Card, Flood 36°	C, C-8	1 7/8	2000	1200	400	1.8	$6.02	2800
Halogen MRC16 Display Lamps Blister-Carded Reflector With Lens (92)																
20	MRC16	GU5.3	41568-7	†	BC20MRC16/FL36	12	18	Blister Card, Flood 36°	C, C-8	1 7/8	3000	—	200	2.7	$2.41	3000

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Halogen symbols and footnotes located on page 109

Energy Advantage IR PAR38 Med. Skt.

MRC11 GU4

MRC16 GU5.3

Halogen Lamps

Mini Reflector Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP♦	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
Halogen MRC16 Landscape Lamps Blister-Carded (Formerly AccentLine) Dichroic Reflector With Lens (92)														**FTC REQUIREMENTS**		
20	MRC16	GU5.3	15677-8		BC20MRC16/FL36/LAND	12	6	Blister Card, Flood 36°	C, C-8	1¾	3000	—	240	2.7	$2.41	3000
35	MRC16	GU5.3	15678-6		BC35MRC16/FL36/LAND	12	6	Blister Card, Flood 36°	C, C-8	1¾	3000	—	400	2.7	$4.22	3000
50	MRC16	GU5.3	15679-4		BC50MRC16/FL36/LAND	12	6	Blister Card, Flood 36°	C, C-8	1¾	3000	—	600	2.7	$6.02	3000
Halogen MR (Formerly AccentLine) (91)																
20	MR16	GU5.3	37802-6		20MR16/SP10 ESX	12	50	Spot 10°	C, C-8	1⅞	3000	3400	240	2.7	$2.41	3100
			37803-4		20MR16/FL36 BAB	12	50	Flood 36°	C, C-8	1⅞	3000	550	240	2.7	$2.41	3100
35	MR16	GU5.3	14056-6		35MR16/FL36	12	50	Flood 36°	C, C-8	1⅞	3000	1000	540	2.7	$4.22	3000
50	MR16	GU5.3	37804-2		50MR16/SP10 EXT	12	50	Spot 10°	C, C-8	1⅞	3000	8800	790	2.7	$6.02	3100
			37807-5		50MR16/NFL24 EXZ	12	50	Narrow Flood 24°	C, C-8	1⅞	3000	2500	800	2.7	$6.02	3100
			37805-9		50MR16/FL36 EXN	12	50	Flood 36°	C, C-8	1⅞	3000	1600	850	2.7	$6.02	3100
Halogen MR Long Life (Formerly BrilliantLine Pro and Continuum Color)																
20	MRC16	GU5.3	37814-1	(92)	20MRC16/SP10 ESX	12	50	Spot 10°	C, C-8	1⅞	6000	5000	310	5.5	$2.41	3100
			37815-8	(92)	20MRC16/FL36 BAB	12	50	Flood 36°	C, C-8	1⅞	6000	780	320	5.5	$2.41	3100
35	MRC16	GU5.3	14054-1	(92)	35MRC16/SP10	12	50	Spot 10°	C, C-8	1⅞	6000	8000	680	5.5	$4.22	3100
			14052-5	(92)	35MRC16/NFL24	12	50	Narrow Flood 24°	C, C-8	1⅞	6000	3100	690	5.5	$4.22	3100
			14053-3	(92)	35MRC16/FL36	12	50	Flood 36°	C, C-8	1⅞	6000	1500	710	5.5	$4.22	3100
50	MRC16	GU5.3	37817-4	(92)	50MRC16/NFL24 EXZ	12	50	Narrow Flood 24°	C, C-8	1⅞	6000	4400	960	5.5	$6.02	3100
			37818-2	(92)	50MRC16/FL36 EXN	12	50	Flood 36°	C, C-8	1⅞	6000	2200	970	5.5	$6.02	3100
75	MR16	GU5.3	37808-3	(91)	75MR16/SP10 EYF	12	50	Spot 10°	C, C-8	1⅞	6000	14,000	1320	5.5	$9.03	3100
			37809-1	(91)	75MR16/FL36 EYC	12	50	Flood 36°	C, C-8	1⅞	6000	2500	1410	5.5	$9.03	3100
Halogen MR Energy Advantage IR (Formerly MasterLine ES IRC) (92)																
20	MRC16	GU5.3	20258-0	$	20MRC16/IRC/ALU/SP8	12	20	Spot 8°	C, C-8	1⅞	5000	6000	320	4.6	$2.41	3100
			20259-8	$	20MRC16/IRC/ALU/FL36	12	20	Flood 36°	C, C-8	1⅞	5000	925	325	4.6	$2.41	3100
30	MRC16	GU5.3	20261-4	$	30MRC16/IRC/ALU/NFL24	12	20	Narrow Flood 24°	C, C-8	1⅞	5000	3000	570	4.6	$3.61	3100
			20262-2	$	30MRC16/IRC/ALU/FL36	12	20	Flood 36°	C, C-8	1⅞	5000	1500	580	4.6	$3.61	3100
35	MRC16	GU5.3	20263-0	$	35MRC16/IRC/ALU/SP8	12	20	Spot 8°	C, C-8	1⅞	5000	12,500	720	4.6	$4.22	3100
			21030-2	$	35MRC16/IRC/NFL24	12	20	Narrow Flood 24°	C, C-8	1⅞	5000	4400	780	4.6	$4.22	3000
			20267-1	$	35MRC16/IRC/ALU/NFL24	12	20	Narrow Flood 24°	C, C-8	1⅞	5000	4000	730	4.6	$4.22	3100
			20268-9	$	35MRC16/IRC/ALU/FL36	12	20	Flood 36°	C, C-8	1⅞	5000	2000	740	4.6	$4.22	3000
			20269-7	$	35MRC16/IRC/ALU/WFL60	12	20	Wide Flood 60°	C, C-8	1⅞	5000	975	750	4.6	$4.22	3100
45	MRC16	GU5.3	20271-3	$	45MRC16/IRC/SP8	12	20	Spot 8°	C, C-8	1⅞	5000	14,000	1030	4.6	$5.42	3100
			20272-1	$	45MRC16/IRC/NFL24	12	20	Narrow Flood 24°	C, C-8	1⅞	5000	5400	1040	4.6	$5.42	3100
			20273-9	$	45MRC16/IRC/FL36	12	20	Flood 36°	C, C-8	1⅞	5000	2600	1050	4.6	$5.42	3100
			20274-7	$	45MRC16/IRC/WFL60	12	20	Wide Flood 60°	C, C-8	1⅞	5000	1250	1180	4.6	$5.42	3100

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MRC16
GU5.3

MR16
GU5.3

Halogen Lamps

Mini Reflector, ALR, ALUline PRO III, Twistline and Linear Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP♦	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
													FTC REQUIREMENTS			
Halogen MR Aluminum (Formerly Continuum Pro) (92)																
50	MRC16	GU5.3	13982-4		50 MRC16/FL36/A	12	50	Flood 36°	C, C-8	1⅞	5000	2100	950	4.6	$6.02	3100
Closed Aluminum Reflector (ALR) Lamps Aluminum Reflector With Lens (92)																
20	37mm	BA15d	32840-1		20ALR12/NSP6 GBD Clear	12	50	Clear, Narrow Spot 6°	C, C-8	1½	2000	7000	250	1.8	$2.41	3000
			34002-6		20ALR12/SP18 GBE Frost	12	50	Frost, Spot 18°	C, C-8	1½	2000	1500	250	1.8	$2.41	3000
			34003-4		20ALR12/FL32 GBF Frost	12	50	Frost, Flood 32°	C, C-8	1½	2000	750	250	1.8	$2.41	3000
50	56mm	B15d	34091-9		50ALR18/NFL25 GBK Frost	12	50	Frost, Narrow Flood 25°	C, C-8	2¼	2000	2500	820	1.8	$6.02	3000
ALUline PRO 111																
50	ALU Pro 111	G53	13396-6		ALU111MM 50W G53 12V 8D	12	6	Spot 8°	C, C-8	2³⁄₆₄	3000	23,000	950	2.7	$6.02	3000
			13397-4		ALU111MM 50W G53 12V 24D	12	6	Flood 24°	C, C-8	2³⁄₆₄	3000	4000	950	2.7	$6.02	3000
75	ALU Pro 111	G53	13398-2		ALU111MM 75W G53 12V 8D	12	6	Spot 8°	C, C-8	2³⁄₆₄	3000	30,000	1575	2.7	$9.03	3000
Twistline GU10 Blister-Carded (98)																
25	Twistline	GU10	41693-3	†	BC25TWISTLINE GU10/FL25	120	6	Blister Card, Flood 25°	C, C-6	2	2000	345	160	1.8	$3.01	2700
35	Twistline	GU10	41573-7	†	BC35TWISTLINE GU10/FL25	120	6	Blister Card, Flood 25°	C, C-6	2	2000	480	265	1.8	$4.22	2750
			41825-1	$ †	BC35GU10/HES/FL	120	6	Blister Card, Flood 25°	C, C-6	2	1500	800	410	1.4	$4.22	3000
50	Twistline	GU10	41579-4	†	BC50GU10/HAL/TL	120	6	Blister Card, Flood 25°	C, C-6	2	2000	700	430	1.8	$6.02	2800
			41574-5	†	BC50TWISTLINE GU10/FL25	120	6	Blister Card, Flood 25°	C, C-6	2	2000	700	430	1.8	$6.02	2800
Halogen Single-Ended Linear Lamps Blister-Carded (95)																
50	T4	Mini-Can	41555-4	†	BC50Q/CL	120	12	Blister Card	C, CC-8	2¾	1000	—	500	0.9	$6.02	2700
75	T4	Mini-Can	41556-2	†	BC75Q/CL	120	12	Blister Card	C, CC-8	3	1000	—	1050	0.9	$9.03	2700
			41886-3	$ †	BC75T4Q/HES/MC	120	12	Blister Card	C, CC-8	2¹³⁄₁₆	1500	—	1500	1.4	$9.03	3000
100	T4	Mini-Can	41633-9	†	BC100Q/CL ESN	120	12	Blister Card	C, CC-8	2¹³⁄₁₆	1000	—	1600	0.9	$12.05	2700
150	T4	Mini-Can	41634-7	†	BC150Q/CL ETG	120	12	Blister Card	C, CC-8	3	1000	—	2800	0.9	$18.07	2700

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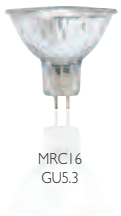

MRC16
GU5.3

MR16
GU5.3

37mm ALR
BA15d

56mm ALR
B15d

ALU Pro 111
G53

Twistline
GU10

T4
Mini Can

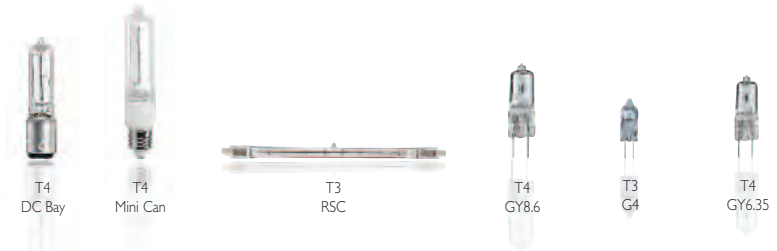
Halogen Lamps

Linear and Capsule Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP♦	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
Halogen Single-Ended Linear Lamps (95)																**FTC REQUIREMENTS**
100	T4	D.C. Bay	44278-0		100Q/CL/DC ESR	120	12	Clear	C, CC-8	2 7/16	1000	—	1600	0.9	$12.05	2700
150	T4	Mini-Can	20049-3		150Q/CL	130	12	Clear	C, CC-8	3	1000	—	2800	0.9	$18.07	2700
250	T4	Mini-Can	14668-8		250Q/CL EHT	120	12	Clear	C, CC-8	3 1/8	1000	—	5000	0.9	$30.11	2850
			14667-0		250Q/CL	130	12	Clear	C, CC-8	3 1/8	1000	—	5000	0.9	$30.11	2850
Halogen Double-Ended Linear Lamp Blister-Carded (99)																
100	T3	RSC	41560-4	†	BC100T3Q/CL	120	12	Blister Card	C, C-8	3 1/8	2000	—	1600	1.8	$12.05	2900
150	T3	RSC	41561-2	†	BC150T3Q/CL	120	12	Blister Card	C, C-8	3 1/8	2000	—	2400	1.8	$18.07	2900
			41575-2	†	BC150T3Q/CL LONG	120	12	Blister Card	C, C-8	4 5/8	1500	—	2400	1.4	$18.07	2900
			41885-5	$ †	BC150T3Q/HES/CL	120	6	Blister Card	C, C-8	4 5/8	1500	—	2850	1.4	$18.07	3000
300	T3	RSC	20355-4		BC300T3Q/CL	120	12	Blister Card	C, C-8	4 5/8	2000	—	5200	1.8	$36.14	2900
			41571-1	†	BC300T3Q/CL/TP	120	12	Blister Card	C, C-8	4 5/8	2000	—	5200	1.8	$36.14	2900
500	T3	RSC	41572-9	†	BC500T3Q/CL/TP	120	12	Blister Card	C, C-8	4 5/8	2000	—	9500	1.8	$60.23	2900
Halogen Double-Ended Linear Lamp (99)																
300	T3	RSC	39282-9		300T3Q/CL EHM	120	12	Clear	C, C-8	4 5/8	2000	—	5200	1.8	$36.14	2900
500	T3	RSC	13223-3		500T3Q/CL	125 130	12	Clear	C, C-8	4 5/8	2000	—	9200	1.8	$60.23	2850
			20010-5		500T3Q/CL FCL	120	12	Clear	C, C-8	4 5/8	2000	—	9500	1.8	$60.23	2900
1000	T3	RSC	41972-1	†	1000T3Q/CL	240	12	Clear	C, C-8	7 7/16	2000	—	21,500	1.8	$120.45	2,950
1500	T3	RSC	41996-9	†	1500T3Q/CL	277	12	Clear	C, C-8	10	2000	—	33,000	1.8	$180.68	2,950
Halogen Mains-Voltage Capsule Lamp Blister-Carded (95)																
35	T4	GY8.6	41632-1	†	BC35W/T4/120V/CAPSULE	120	12	Blister Card	C. CC2V	1 13/16	2500	—	400	2.3	$4.22	3000
50	T4	GY8.6	41631-3	†	BC50W/T4/120V/CAPSULE	120	12	Blister Card	C, C-8	2 1/4	2500	—	600	2.3	$6.02	3000
75	T4	GY8.6	41667-7	†	BC75W/T4/120V/CAPSULE	120	12	Blister Card	C, C-8	2 1/4	2000	—	1200	1.8	$9.03	3000
			41870-7	$ †	BC75T4Q/HES/CAP	120	12	Blister Card	C, C-8	2 1/4	1500	—	1550	1.4	$9.03	3000
100	T4	GY8.6	41668-5	†	BC100W/T4/120V/CAPSULE	120	12	Blister Card	C, C-8	2 1/4	2500	—	1650	2.3	$12.05	3000
Halogen Low-Voltage Capsule Lamp Blister-Carded (95)																
10	T3	G4	41567-9	†	BC10W/T3/12V	12	12	Blister Card	C, C-8	1 1/4	2000	—	100	1.8	$1.20	3000
20	T3	G4	41566-1	†	BC20W/T3/12V	12	12	Blister Card	C, C-8	1 1/4	2000	—	250	1.8	$2.41	3000
30	T4	GY6.35	41882-2	$ †	BC30T4/HES/12V	12	12	Blister Card	C, C-8	1 3/4	4000	—	750	3.7	$3.61	3000
50	T4	GY6.35	41559-6	†	BC50W/T4/12V	12	12	Blister Card	C, C-8	1 3/4	2000	—	700	1.8	$6.02	3000
75	T4	GY6.35	41558-8	†	BC75W/T4/12V	12	12	Blister Card	C, C-8	1 3/4	2000	—	1100	1.8	$9.03	2800

For the most current product information, go to the e-catalog on **www.philips.com**

Halogen symbols and footnotes located on page 109



Halogen Lamps

Capsule Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP♦	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
Halogen Low-Voltage Landscape Capsule Lamp Blister-Carded (95)													FTC REQUIREMENTS			
10	T3	G4	41567-9	†	BC10W/T3/LAND/TP	12	12	Blister Card	C, C-8	1¼	2000	—	100	1.8	$1.20	3000
20	T3	G4	41720-4	†	BC20W/T3/LAND/TP	12	12	Blister Card	C, C-8	1¼	2000	—	250	1.8	$2.41	3000
50	T4	GY6.35	41710-5	†	BC50W/T4/12V	12	48	Blister Card	C, C-8	1¼	2000	—	465	1.8	$6.02	2800
Halogen Low-Voltage Capsule Lamp																
All Lamps Contain UV Block and are Low Pressure (95)																
10	T3	G4	23262-9		10W/T3/12V	12	100	Capsule Type 13284	C, C-8	1¼	2000	—	140	1.8	$1.20	2850
20	T3	G4	23264-5		20W/T3/12V	12	100	Capsule Type 13078	C, C-8	1¼	2000	—	320	1.8	$2.41	3000
35	T4	GY6.35	29553-5		35W/T4/12V	12	100	Capsule Type 13103	C, C-8	1¾	2000	—	600	1.8	$4.22	3000
50	T4	GY6.35	23265-2		50W/T4/12V	12	100	Capsule Type 13079	C, C-8	1¾	2000	—	800	1.8	$6.02	2800

For the most current product information, go to the e-catalog on **www.philips.com**

Halogen symbols and footnotes located on page 109

T3
G4

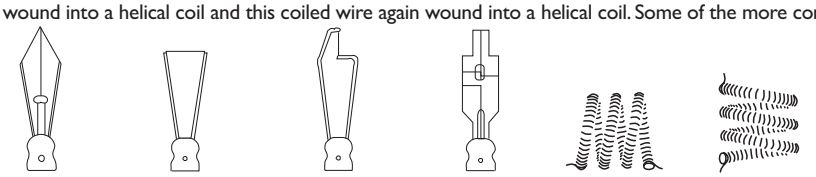
T4
GY6.35

Halogen Lamps

Filament Designations, Base Types and Bulb Shapes

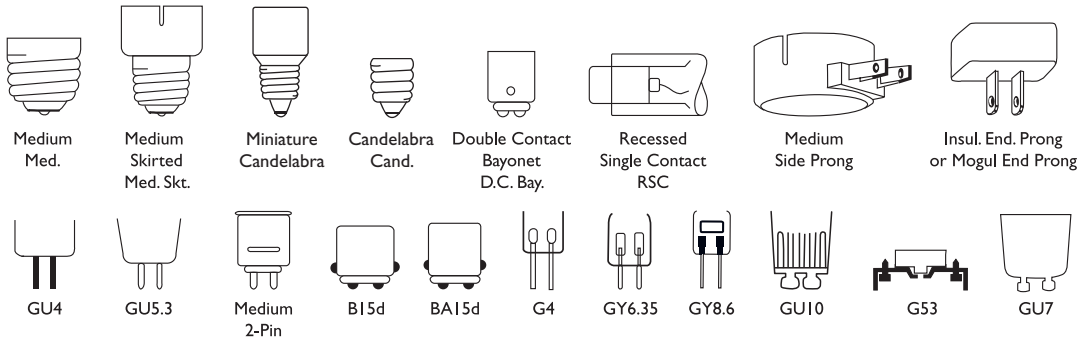
Filament Designations (Not Actual Sizes)

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



C-2V CC-2V | C-6 CC-6 | C-8 CC-8 | 2CC-8 | CC-6 | CC-8

Base Types (Not Actual Sizes)



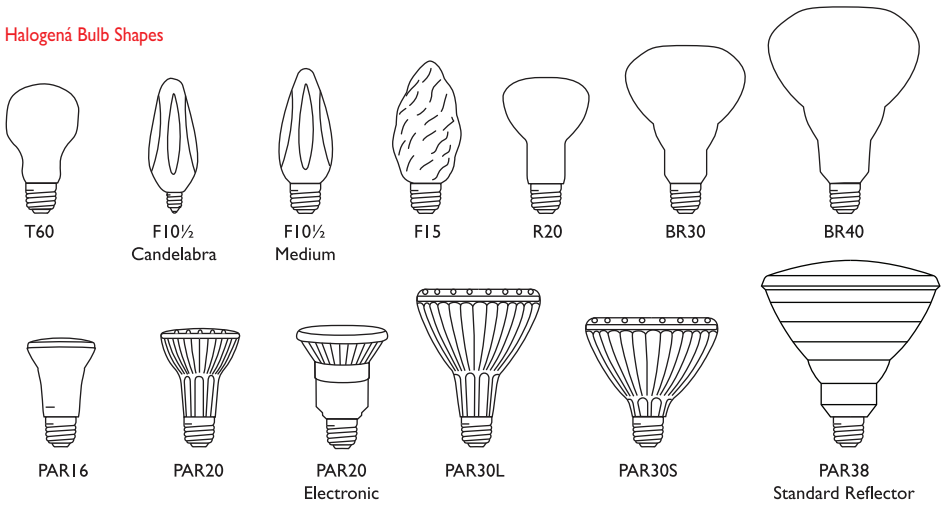
Medium Med. | Medium Skirted Med. Skt. | Miniature Candelabra | Candelabra Cand. | Double Contact Bayonet D.C. Bay. | Recessed Single Contact RSC | Medium Side Prong | Insul. End. Prong or Mogul End Prong

GU4 | GU5.3 | Medium 2-Pin | B15d | BA15d | G4 | GY6.35 | GY8.6 | GU10 | G53 | GU7

Bulb Shapes (Not Actual Sizes)

The size and shape of a bulb is designated by a letter or letters followed by a number. The letter indicates the shape of the bulb while the number indicates the diameter of the bulb in eighths of an inch. For example, "T10" indicates a tubular shaped bulb having a diameter of 10/8 or 1¼ inches. The following illustrations show some of the more popular bulb shapes and sizes.

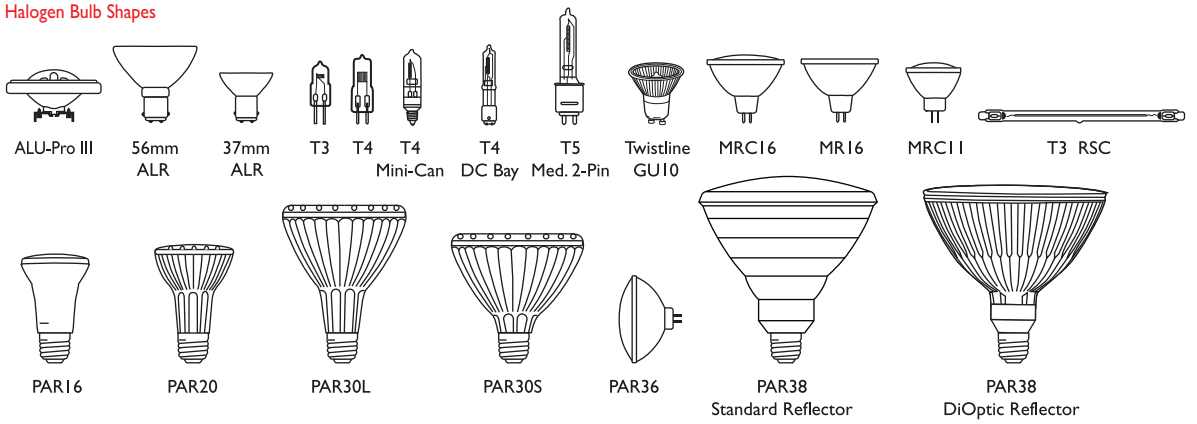
Halogená Bulb Shapes



T60 | F10½ Candelabra | F10½ Medium | F15 | R20 | BR30 | BR40

PAR16 | PAR20 | PAR20 Electronic | PAR30L | PAR30S | PAR38 Standard Reflector

Halogen Bulb Shapes



ALU-Pro III | 56mm ALR | 37mm ALR | T3 | T4 | T4 Mini-Can | T4 DC Bay | T5 Med. 2-Pin | Twistline GU10 | MRC16 | MR16 | MRC11 | T3 RSC

PAR16 | PAR20 | PAR30L | PAR30S | PAR36 | PAR38 Standard Reflector | PAR38 DiOptic Reflector

For the most current product information, go to the e-catalog on www.philips.com

Ⓤ Exclusive to Philips Lighting Company

$ Energy Saving Product

♦ Maximum Beam Candlepower

Ⓔ This Bulb Meets US Federal Minimum Efficiency Standards

† New since last printing

* Two Lamp Carded Pack

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

(82) CAUTION: To avoid deterioration of lampholder by heat, use only heat resistant lampholders or fixtures listed by a nationally recognized electrical testing organization for use with reflector or PAR lamps.

(86) PAR Halogen Caution Notice: Before using bulb, see operating instructions on inside flap. Adherence to the operating instructions will reduce the risk of personal injury or fire. The filament capsule contained inside this glass bulb is pressurized, operates at high temperature and could unexpectedly shatter. Should the outer bulb break, particles of extremely hot glass could be discharged into the fixture and/or the surrounding environment, thereby creating a risk of personal injury or fire. **Operating Instructions:** Before replacing, turn off power and let lamp cool to avoid electrical shock or burn.

— For indoor or outdoor use. A weather-protected fixture is recommended for wet locations.
— Suitable for use in open fixtures.
— Do not exceed the maximum wattage rating of the fixture.
— Do not use if outer glass is scratched or broken since it may break during operation or removal.
— If outer glass breaks the lamp may continue to light, however, immediately discontinue use.
— Due to the heat that radiates from the bulb, do not use in close proximity to combustible materials or objects susceptible to drying or fading.
— Manage in accord with disposal laws.

(88) OPERATING INSTRUCTIONS: Before replacing, turn off power and let lamp cool to avoid electrical shock or burn. Do not allow hot bulb to come in contact with liquid or metal parts of the fixture as glass may shatter. Suitable for use in open fixtures. Do not exceed the maximum wattage rating of the fixture. Do not use if outer glass is scratched or broken since it may break during operation or removal. If outer glass breaks the lamp may continue to light, however, immediately discontinue use. Due to the heat that radiates from the bulb, do not use in close proximity to combustible materials or objects susceptible to drying or fading. Manage in accord with disposal laws.

CAUTION: Before using bulb, see operating instructions. Adherence to the operating instructions will reduce the risk of personal injury or fire. The filament capsule contained inside this glass bulb is pressurized, operates at high temperature and could unexpectedly shatter. Should the outer bulb break, particles of extremely hot glass could be discharged into the fixture and/or the surrounding environment, thereby creating a risk of personal injury or fire.

(91) CAUTION: Do not touch inner capsule with bare hands. Fingerprints may result in shorter life. Remove fingerprints with alcohol. **THIS LAMP IS PRESSURIZED AND COULD SHATTER** so to avoid injury and to avoid exposure to ultraviolet radiation, use only in fixtures that provide a protective shield of tempered glass. Provide adequate ventilation to ensure that seal temperature does not exceed 350°C and use only in fixtures rated for the wattage stated on this package. To avoid risks of burns or other injury, turn power off and allow lamp to fully cool before attempting to replace. Socket condition may affect lamp life. Inspect and replace socket if deterioration has occurred.

(92) CAUTION: THIS LAMP IS PRESSURIZED AND COULD SHATTER. Should the outer bulb break, particles of extremely hot glass could be discharged into the fixture and/or the surrounding environment, thereby creating a risk of personal injury or fire. Provide adequate ventilation to ensure that seal temperature does not exceed 350°C and use only in fixtures rated for the wattage stated on this package. To avoid risks of burns or other injury, turn power off and allow lamp to fully cool before attempting to replace. Socket condition may affect lamp life. Inspect and replace socket if deterioration has occurred.

(93) Rated average life is the length of operation (in hours) at which point an average of 50% of the lamps will still be operational and 50% will not.

(95) NOTICE: Do not touch bulb with bare hands. Fingerprints may result in shorter life. Remove fingerprints with alcohol.

CAUTION: THIS LAMP IS PRESSURIZED AND COULD SHATTER so to avoid injury and to avoid exposure to ultraviolet radiation, use only in fixtures that provide a protective shield of tempered glass. Provide adequate ventilation to ensure that seal temperature does not exceed 350° C and use only in fixtures rated for the wattage stated on this package. To avoid risks of burns or other injury, turn power off and allow lamp to fully cool before attempting to replace. Socket condition may affect lamp life. Inspect and replace socket if deterioration has occurred.

(96) Operating Instructions: Do not use lamp in close proximity to combustible materials. If used outdoors, use in an enclosed fixture only. If used indoors, no additional shield is required. Can be operated in all positions.

CAUTION: Read operating instructions before use. If outer glass breaks, turn power off immediately and avoid touching any metal components. To avoid potential burn and electrical shock during lamp replacement, always turn power off and let lamp cool before replacing bulb.

(97) Operating Instructions: Before replacing, turn off power and let lamp cool to avoid electrical shock or burn. For indoor use only. Do not allow hot bulb to come in contact with liquid or metal parts of the fixture as glass may shatter. Do not exceed the maximum wattage rating of the fixture. Do not use if outer glass is scratched or broken since it may break during operation or removal. If outer glass breaks the lamp may continue to light, however, immediately discontinue use. Due to the heat that radiates from the bulb, do not use in close proximity to combustible materials or objects susceptible to drying or fading. Manage in accord with disposal laws.

CAUTION: Adherence to the operating instructions will reduce the risk of personal injury or fire. The filament capsule contained inside this glass bulb is pressurized, operates at high temperature and could unexpectedly shatter. Should the outer bulb break, particles of extremely hot glass could be discharged into the fixture and/or the surrounding environment, thereby creating a risk of personal injury or fire.

(98) NOTICE: This twistline has a GU10 base and may be used in fixtures that have either GU10 or GZ10 sockets. **Operating Instructions:** Do not use in close proximity to combustible materials or objects adversely affected by drying or fading. Can be operated in all positions.

CAUTION: THIS LAMP IS PRESSURIZED AND COULD SHATTER so to avoid injury and to avoid exposure to ultraviolet radiation, this lamp should be used in a fixture that provides a protective shield of tempered glass. If outer glass breaks, immediately discontinue use. Always turn power off and let lamp cool before removal to avoid potential burn or electric shock.

(99) WARNING: BULB OPERATES AT VERY HIGH TEMPERATURES AND MUST BE USED PROPERLY TO AVOID/REDUCE RISK OF FIRE. Do not use bulbs greater than 300 watts in indoor residential fixtures. Use only in fixtures specifying this bulb type and that meet revised UL 153 standard for tungsten-halogen torchiere lamps. Bulb is pressurized and could shatter and should only be used in fixtures that provide a protective shield of tempered glass. To avoid exposure to ultraviolet radiation which could cause skin and eye irritation use only in fixtures that provide a protective shield of tempered glass.

NOTICE: Do not touch bulb with bare hands. Fingerprints may result in reduced performance unless they are removed with alcohol. When operating, bulb is hot. To avoid risks of burns or injury, turn power off and allow bulb to cool before replacing. Socket conditions may affect bulb life. Inspect and replace socket if deterioration has occurred. Provide adequate ventilation to ensure that seal temperature does not exceed 350°C. **TO AVOID/REDUCE RISK OF FIRE, DO NOT USE NEAR COMBUSTIBLE MATERIALS.**

(102) Complies with CEC-140-2008-001, Part 1605.2 State Standards for Federally Regulated Appliances, Table K-3. For more information go to www.energy.ca.gov/siting/title20/.

(103) Complies with the Energy Independence and Security Act of 2007 (Public Law 110-140). Section 321—Efficient Light Bulbs.

(104) Complies with the Energy Independence and Security Act of 2007 (Public Law 110-140), Section 322—Incandescent Reflector Lamp Efficiency Standards.

(445) Estimated energy cost is based on 3 hrs/day, 11¢/kWh. Cost depends on rates and use.

(446) Life in years is based on 3 hrs/day.

Halogen and Incandescent Replacement Guide

General Service Incandescent Lamps affected by EISA Section 321*

Banned by Legislation		Professional and Consumer Replacement	
Product Number	Ordering Code	Product Number	Ordering Code
13254-8	100A/W 12/4	40982-1	72A19/EV
13255-5	100A/W/TP 24/4	40982-1	72A19/EV
13423-9	100G25/W/LL 12/1	—	—
13560-8	75A/NTL 12/4	22696-9	53A19/EV/NTL
13561-6	100A/NTL 12/4	22699-3	72A19/EV/NTL
13684-6	100A	40982-1	72A19/EV
13996-3	75A/CL 120/1 PRO	41048-0	72A19/EV/CL
13997-1	75A 120/1 PRO	40982-1	72A19/EV
13998-9	100A/CL 120/1 PRO	41048-0	72A19/EV/CL
13999-7	100A 120/1 PRO	40982-1	72A19/EV
14297-5	200/99IF	—	—
14997-0	75A/W 12/4	40982-1	72A19/EV
15000-3	75A-67A/99/EW	40982-1	72A19/EV
15001-1	100A-90A/99EW	40982-1	72A19/EV
15002-9	150A-135A/99/EW	—	—
15008-6	100A/CL/LL 12/2	41048-0	72A19/EV/CL
15009-4	150A/CL/LL 12/1 TP	—	—
15129-0	75A/NTL/2X 12/4	22696-9	53A19/EV/NTL
15130-8	100A/NTL/2X 12/4	22699-3	72A19/EV/NTL
16739-5	75A/WL 24/4	40982-1	72A19/EV
16740-3	100A/WL 24/4	40982-1	72A19/EV
16801-3	75A/CL/LL 12/2	41048-0	72A19/EV/CL
16844-3	100F20/POSTLT/CL/LL 6/1	42385-5	BC72F15/EV/CL
16850-0	100G30/W/LL 6/1	—	—
16862-5	100A/WL 12/4	40982-1	72A19/EV
16866-6	150A/WL 12/1	—	—
16879-9	75A/WL 12/4	40982-1	72A19/EV
21386-8	BC70BT15/HAL/W	40982-1	72A19/EV
21443-7	38A/W/TP 12/4	40984-7	43A19/EV
21444-5	38A/CL	41050-6	29A19/EV/CL
21446-0	38A/CL/LL 12-2 WP TP	41050-6	29A19/EV/CL
21447-8	38A/WL/TP 12/4	40983-9	29A19/EV
21452-8	57A/CL/LL/TP 12/2	41049-8	43A19/EV/CL
21453-6	71A/W/TP 24/4	40982-1	72A19/EV
21454-4	71A	40982-1	72A19/EV
21455-1	71A/CL/LL 120V 12/2 WP TP	41048-0	72A19/EV/CL
21459-3	95A	40982-1	72A19/EV
21460-1	95A/W 24/4	40982-1	72A19/EV
21461-9	95A/WL 24/4	40982-1	72A19/EV
21463-5	57A/CL	40984-7	43A19/EV
21466-8	57A	40984-7	43A19/EV
21469-2	71A	40982-1	72A19/EV
21470-0	71A/CL	41048-0	72A19/EV/CL
21473-4	95A/CL	41048-0	72A19/EV/CL
21474-2	95A	40982-1	72A19/EV
21497-3	57A 12/4	40984-7	43A19/EV
21498-1	57A/W/TP 12/4	40984-7	43A19/EV
21499-9	57A/WL 12/4 TP	40984-7	43A19/EV
21501-2	71A/W/TP 12/4	40982-1	72A19/EV

* EISA Section 321 refers to energy efficiency standards for general service incandescent lamps.

Halogen and Incandescent Replacement Guide

General Service Incandescent Lamps affected by EISA Section 321*

Banned by Legislation		Professional and Consumer Replacement	
Product Number	Ordering Code	Product Number	Ordering Code
21502-0	71A/WL 24/4	40982-1	72A19/EV
21503-8	71A/WL /TP 12/4	40982-1	72A19/EV
21504-6	95A/W/TP 12/4	40982-1	72A19/EV
21818-0	95A/WL 12/4	40982-1	72A19/EV
22240-6	75A-67A/EW	40982-1	72A19/EV
22241-4	75A-67A/EW	40982-1	72A19/EV
22243-0	100A-90A/EW	40982-1	72A19/EV
22244-8	100A-90A/EW	40982-1	72A19/EV
22430-3	100A23	—	—
22979-9	100A/99	40982-1	72A19/EV
23415-3	75A 120V 24-2LP/SL W/P	40982-1	72A19/EV
24135-6	75A/WL	40982-1	72A19/EV
24927-6	BC75BT15/HAL/W	40982-1	72A19/EV
24931-8	BC100BT15/HAL/W	40982-1	72A19/EV
26836-7	135A25/35	—	—
27069-4	150A	—	—
27083-5	75A 12/4	40982-1	72A19/EV
28171-7	100A21	—	—
28172-5	150A23	—	—
28173-3	150	—	—
28174-1	150PS25/99	—	—
28175-8	150A-135A/EW	—	—
31305-6	75A21	—	—
37406-6	75A/99	40982-1	72A19/EV
37411-6	100A21/35	—	—
37417-3	150A/99	—	—
37460-3	100A21/99	—	—
37472-8	75A	40982-1	72A19/EV
37473-6	75A	40982-1	72A19/EV
37474-4	100A	40982-1	72A19/EV
37476-9	100A	40982-1	72A19/EV
37485-0	75A/W 12/4	40982-1	72A19/EV
37486-8	75A/W/TP 24/4	40982-1	72A19/EV
37525-3	75A/CL	41048-0	72A19/EV/CL
37527-9	100A/CL	41048-0	72A19/EV/CL
40948-2	57A/W/TP	40984-7	43A19/EV

* EISA Section 321 refers to energy efficiency standards for general service incandescent lamps.

Halogen and Incandescent Replacement Guide

Incandescent Reflector Lamps Affected by EISA Section 322 & DOE Rulemaking*

Banned by Legislation		Professional Replacement		Consumer Replacement	
Product #	Ordering Code	Product #	Ordering Code	Product #	Ordering Code
13401-5	45PAR38/HAL/FL/LL	23845-1	39PAR38/IRC+/FL25	41942-4	39PAR38/EV/FL25
13402-3	90PAR38/HAL/FL/LL	13862-8	70PAR38/IRC+/FL25	41940-8	72PAR38/EV/FL25
13403-1	90PAR38/HAL/FL/LL	13862-8	70PAR38/IRC+/FL25	41940-8	72PAR38/EV/FL25
13404-9	45PAR38/HAL/SP/LL	23844-4	39PAR38/IRC+/SP10	41943-2	39PAR38/EV/SP10
13405-6	90PAR38/HAL/SP/LL	13861-0	70PAR38/IRC+/SP10	41938-2	72PAR38/EV/SP10
13407-2	50PAR30L/HAL/FL/LL	23429-4	50PAR30L/IRC+/FL25	41974-7	39PAR30L/EV/FL25
13408-0	75PAR30L/HAL/FL/LL	23429-4	50PAR30L/IRC+/FL25	41954-9	53PAR30L/EV/FL25
13409-8	75PAR30L/HAL/SP/LL	23799-0	50PAR30L/IRC+/SP10	41956-4	53PAR30L/EV/SP10
13410-6	50PAR20/HAL/FL/LL	15216-5	20PAR20E/HAL/FL25	41986-1	39PAR20/EV/FL25
13411-4	50PAR20/HAL/SP/LL	15216-5	20PAR20E/HAL/FL25	41973-9	39PAR20/EV/SP10
13467-6	75PAR30S/HAL/FL25	23856-8	55PAR30S/IRC+/FL25	42143-8	53PAR30S/EV/FL25
13846-1	50PAR20/HAL/SP10	40494-7	20PAR20E/HAL/SP10	41973-9	39PAR20/EV/SP10
13848-7	75PAR30L/HAL/SP10	23799-0	50PAR30L/IRC+/SP10	41956-4	53PAR30L/EV/SP10
13849-5	75PAR30S/HAL/SP10	23855-0	55PAR30S/IRC+/SP10	42112-3	53PAR30S/EV/SP10
13853-7	50PAR30S/IRC/HAL/SP10	23853-5	39PAR30S/IRC+/SP10	42112-3	53PAR30S/EV/SP10
13854-5	50PAR30S/IRC/HAL/FL25	23854-3	39PAR30S/IRC+/FL25	42143-8	53PAR30S/EV/FL25
13855-2	50PAR30S/IRC/HAL/WFL40	23854-3	39PAR30S/IRC+/FL25	—	—
13856-0	45PAR38/IRC/HAL/FL25	23845-1	39PAR38/IRC+/FL25	41942-4	39PAR38/EV/FL25
13857-8	45PAR38/IRC/HAL/WFL40	23849-3	55PAR38/IRC+/WFL40	—	—
13858-6	55PAR38/IRC/HAL/SP10	14505-2	50PAR38/IRC+/SP10	41945-7	53PAR38/EV/SP10
13859-4	55PAR38/IRC/HAL/FL25	14506-0	50PAR38/IRC+/FL25	41944-0	53PAR38/EV/FL25
13860-2	55PAR38/IRC/HAL/WFL40	14507-8	50PAR38/IRC/WFL40	—	—
13864-4	90PAR38/IRC/HAL/SP10	13861-0	70PAR38/IRC+/SP10	—	—
13865-1	90PAR38/IRC/HAL/FL25	13862-8	70PAR38/IRC+/FL25	42498-5	83PAR38/EV/FL25/LL
13866-9	90PAR38/IRC/HAL/WFL40	13863-6	70PAR38/IRC+/WFL40	—	—
13873-5	60PAR38/IRC/HAL/SP10	23847-7	55PAR38/IRC+/SP10	41938-2	72PAR38/EV/SP10
13874-3	60PAR38/IRC/HAL/FL25	23865-9	55PAR38/IRC+/FL25	41940-8	72PAR38/EV/FL25
13875-0	60PAR38/IRC/HAL/WFL40	23849-3	55PAR38/IRC+/WFL40	—	—
13879-2	60PAR38/IRC/HAL/FL25	23865-9	55PAR38/IRC+/FL25	41940-8	72PAR38/EV/FL25
13918-8	60PAR38/IRC/HAL/WFL40	23849-3	55PAR38/IRC+/WFL40	—	—
13919-6	45PAR38/IRC/HAL/SP10	23844-4	39PAR38/IRC+/SP10	41943-2	39PAR38/EV/SP10
13920-4	60PAR38/IRC/HAL/SP10	23847-7	55PAR38/IRC+/SP10	41938-2	72PAR38/EV/SP10
14022-8	60PAR38/HAL/FL/LL	23845-1	39PAR38/IRC+/FL25	42128-9	39PAR38/EV/FL25/LL
14482-4	60PAR38/HAL/SP10	23844-4	39PAR38/IRC+/SP10	41944-0	53PAR38/EV/FL25
14483-2	60PAR38/HAL/FL25	23845-1	39PAR38/IRC+/FL25	41945-7	53PAR38/EV/SP10
14484-0	60PAR38/HAL/WFL40	23849-3	55PAR38/IRC+/WFL40	—	—
14485-7	75PAR38/HAL/SP10	23847-7	55PAR38/IRC+/SP10	41945-7	53PAR38/EV/SP10
14486-5	75PAR38/HAL/FL25	23865-9	55PAR38/IRC+/FL25	41944-0	53PAR38/EV/FL25
14487-3	90PAR38/HAL/WFL40	13863-6	70PAR38/IRC+/WFL40	—	—
14488-1	60PAR38/HAL/SP10	23844-4	39PAR38/IRC+/SP10	41944-0	53PAR38/EV/FL25
14489-9	60PAR38/HAL/FL25	23845-1	39PAR38/IRC+/FL25	41945-7	53PAR38/EV/SP10
14490-7	60PAR38/HAL/FL25	23845-1	39PAR38/IRC+/FL25	41945-7	53PAR38/EV/SP10
14491-5	60PAR38/HAL/WFL40	23849-3	55PAR38/IRC+/WFL40	—	—
14493-1	75PAR38/HAL/SP10	23847-7	55PAR38/IRC+/SP10	41945-7	53PAR38/EV/SP10
14494-9	75PAR38/HAL/FL25	23865-9	55PAR38/IRC+/FL25	41944-0	53PAR38/EV/FL25
14495-5	90PAR38/HAL/WFL40	13863-6	70PAR38/IRC+/WFL40	—	—
14496-3	40PAR30S/IRC/HAL/SP10	23853-5	39PAR30S/IRC+/SP10	42111-5	39PAR30S/EV/SP10
14497-1	40PAR30S/IRC/HAL/FL25	23854-3	39PAR30S/IRC+/FL25	42110-7	39PAR30S/EV/FL25
14498-9	40PAR30S/IRC/HAL/WFL40	23854-3	39PAR30S/IRC+/FL25	42110-7	39PAR30S/EV/FL25
14499-7	50PAR30S/IRC+/SP10	23853-5	39PAR30S/IRC+/SP10	42112-3	53PAR30S/EV/SP10
14500-3	50PAR30S/IRC+/FL25	23854-3	39PAR30S/IRC+/FL25	42143-8	53PAR30S/EV/FL25
14501-1	50PAR30S/IRC+/WFL40	23854-3	39PAR30S/IRC+/FL25	—	—
14502-9	40PAR38/IRC/HAL/SP10	23844-4	39PAR38/IRC+/SP10	41943-2	39PAR38/EV/SP10
14503-7	40PAR38/IRC/HAL/FL25	23845-1	39PAR38/IRC+/FL25	41942-4	39PAR38/EV/FL25
14504-5	40PAR38/IRC/HAL/WFL40	23845-1	39PAR38/IRC+/FL25	41942-4	39PAR38/EV/FL25
14507-8	50PAR38/IRC/HAL/WFL40	23849-3	55PAR38/IRC+/WFL40	—	—
14720-7	75PAR38/NLP/FL	23865-9	55PAR38/IRC+/FL25	41944-0	53PAR38/EV/FL25
14989-8	60PAR30S/IRC/HAL/WFL40	23857-6	55PAR30S/IRC+/WFL40	—	—
15004-5	60PAR30S/IRC/HAL/SP10	23855-0	55PAR30S/IRC+/SP10	42112-3	53PAR30S/EV/SP10

* EISA Section 322 & DOE Rulemaking refers to energy efficiency standards for incandescent reflector lamps.

Halogen and Incandescent Replacement Guide

Incandescent Reflector Lamps affected by EISA Section 322 & DOE Rulemaking*

Banned by Legislation		Professional Replacement		Consumer Replacement	
Product #	Ordering Code	Product #	Ordering Code	Product #	Ordering Code
15007-8	60PAR30S/IRC/HAL/FL25	23856-8	55PAR30S/IRC+/FL25	42143-8	53PAR30S/EV/FL25
15879-0	60BR30/HAL/FL	21359-5	40BR30/HEA/FL	42118-0	50BR30/EV/FL
20231-7	45PAR38/HAL/FL25	23845-1	39PAR38/IRC+/FL25	41942-4	39PAR38/EV/FL25
20234-1	90PAR38/HAL/FL25	13862-8	70PAR38/IRC+/FL25	41940-8	72PAR38/EV/FL25
20257-2	60BR30/HAL/NLP/FL	—	—	—	—
20573-2	60BR40/HAL/NLP/FL	—	—	—	—
20579-9	60BR30/HAL/FL/LL	21359-5	40BR30/HEA/FL	42118-0	50BR30/EV/FL
20580-7	60BR40/HAL/FL/LL	22238-0	40BR40/HEA/FL	42116-4	40BR40/EV/FL
22486-5	60K19/DL	—	—	—	—
22906-2	50PAR20/HAL/SP10	40494-7	20PAR20E/HAL/SP10	41973-9	39PAR20/EV/SP10
22911-2	50PAR20/HAL/FL25	15216-5	20PAR20E/HAL/FL25	41986-1	39PAR20/EV/FL25
22921-1	50PAR20/HAL/FL25	15216-5	20PAR20E/HAL/FL25	41986-1	39PAR20/EV/FL25
22922-9	50PAR30L/HAL/SP10	23799-0	50PAR30L/IRC+/SP10	42303-8	39PAR30L/EV/SP10
22923-7	50PAR30L/HAL/WSP16	23799-0	50PAR30L/IRC+/SP10	42303-8	39PAR30L/EV/SP10
22925-2	50PAR30L/HAL/FL25	23429-4	50PAR30L/IRC+/FL25	41942-4	39PAR38/EV/FL25
22926-0	50PAR30L/HAL/FL25	23429-4	50PAR30L/IRC+/FL25	41942-4	39PAR38/EV/FL25
22927-8	50PAR30L/HAL/WFL40	23800-6	50PAR30L/IRC+/WFL40	—	—
22928-6	50PAR30L/HAL/WFL40	23800-6	50PAR30L/IRC+/WFL40	—	—
22930-2	75PAR30L/HAL/SP10	23799-0	50PAR30L/IRC+/SP10	41956-4	53PAR30L/EV/SP10
22934-4	75PAR30L/HAL/WSP16	23799-0	50PAR30L/IRC+/SP10	41956-4	53PAR30L/EV/SP10
22941-9	75PAR30L/HAL/FL25	23429-4	50PAR30L/IRC+/FL25	41954-9	53PAR30L/EV/FL25
22943-5	75PAR30L/HAL/FL25	23429-4	50PAR30L/IRC+/FL25	41954-9	53PAR30L/EV/FL25
22944-3	75PAR30L/HAL/WFL40	23800-6	50PAR30L/IRC+/WFL40	—	—
22945-0	75PAR30L/HAL/WFL40	23800-6	50PAR30L/IRC+/WFL40	—	—
22946-8	45PAR38/HAL/SP10	23844-4	39PAR38/IRC+/SP10	41943-2	39PAR38/EV/SP10
22947-6	45PAR38/HAL/SP10	23844-4	39PAR38/IRC+/SP10	41943-2	39PAR38/EV/SP10
22949-2	45PAR38/HAL/FL25	23845-1	39PAR38/IRC+/FL25	41942-4	39PAR38/EV/FL25
23069-8	90PAR38/HAL/SP10	13861-0	70PAR38/IRC+/SP10	41938-2	72PAR38/EV/SP10
23650-5	90PAR38/HAL/SP10	13861-0	70PAR38/IRC+/SP10	41938-2	72PAR38/EV/SP10
23651-3	90PAR38/HAL/FL25	13862-8	70PAR38/IRC+/FL25	41940-8	72PAR38/EV/FL25
26349-1	50PAR30S/HAL/SP10	23853-5	39PAR30S/IRC+/SP10	—	—
26357-4	50PAR30S/HAL/SP10	23853-5	39PAR30S/IRC+/SP10	—	—
26358-2	50PAR30S/HAL/FL25	23854-3	39PAR30S/IRC+/FL25	—	—
26362-4	50PAR30S/HAL/FL25	23854-3	39PAR30S/IRC+/FL25	—	—
26364-0	50PAR30S/HAL/WFL40	23854-3	39PAR30S/IRC+/FL25	—	—
26384-8	50PAR30S/HAL/WFL40	23854-3	39PAR30S/IRC+/FL25	—	—
26877-1	90PAR38/HAL/FL	13862-8	70PAR38/IRC+/FL25	41940-8	72PAR38/EV/FL25
26883-9	45PAR38/HAL/FL	23845-1	39PAR38/IRC+/FL25	41942-4	39PAR38/EV/FL25
27429-0	90PAR38/HAL/FL	13862-8	70PAR38/IRC+/FL25	41946-5	72PAR38/EV/FL25
28479-4	75PAR30S/HAL/SP10	23855-0	55PAR30S/IRC+/SP10	42112-3	53PAR30S/EV/SP10
28488-5	75PAR30S/HAL/FL25	23856-8	55PAR30S/IRC+/FL25	42143-8	53PAR30S/EV/FL25
28491-9	75PAR30S/HAL/WFL40	23857-6	55PAR30S/IRC+/WFL40	—	—
28492-7	75PAR30S/HAL/WFL40	23857-6	55PAR30S/IRC+/WFL40	—	—
30728-0	40K19/DL	—	—	—	—
35751-7	60PAR30S/HAL/SP10	23855-0	55PAR30S/IRC+/SP10	42112-3	53PAR30S/EV/SP10
35752-5	60PAR30S/HAL/SP10	23855-0	55PAR30S/IRC+/SP10	42112-3	53PAR30S/EV/SP10
35753-3	60PAR30S/HAL/FL25	23856-8	55PAR30S/IRC+/FL25	42143-8	53PAR30S/EV/FL25
35758-2	60PAR30S/HAL/WFL40	23857-6	55PAR30S/IRC+/WFL40	—	—
35762-4	60PAR30S/HAL/WFL40	23857-6	55PAR30S/IRC+/WFL40	—	—
35788-9	60PAR30S/HAL/FL25	23856-8	55PAR30S/IRC+/FL25	42143-8	53PAR30S/EV/FL25
38849-6	60BR30/HAL/FL	21359-5	40BR30/HEA/FL	42118-0	50BR30/EV/FL
38875-1	60BR30/HAL/SP	—	—	—	—
38884-3	60PAR38/HAL/2FL	—	—	—	—
38886-8	90PAR38/HAL/2FL	—	—	—	—
38887-6	60PAR38/HAL/3FL	38890-0	90PAR38/HAL/3FL	—	—
38925-4	90PAR38/HAL/FL	13862-8	70PAR38/IRC+/FL25	41941-6	72PAR38/EV/FL25
39174-8	60BR40/HAL/FL	22238-0	40BR40/HEA/FL	42116-4	40BR40/EV/FL

* EISA Section 322 & DOE Rulemaking refers to energy efficiency standards for incandescent reflector lamps.

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Create a brighter standard

Dramatically changing the look of a room can be as easy as changing a light bulb.

Natural Light Lamps help you see things the way they should be. Natural Light's distinctive blue coating reduces dull light effects to provide light that is more vibrant and natural.

DuraMax Long Life Lamps reduce the hassle of replacing light bulbs every few months, since all DuraMax products last longer than standard incandescent light bulbs.

Philips family of Specialty Incandescents provide the perfect light for accent and display lighting as well as general lighting in a variety of applications. From tubular shapes and appliance bulbs, to colored lamps for special effects, this family of lamps is ideal for professional and consumer applications.

Current Product	Philips Upgrade Product	Benefit	Page
Incandescent A19	Natural Light A19	• Vibrant light similar to natural daylight • Distinctive blue coating reduces dull light effects	119
40W R20 Incandescent	DuraMax R20 Flood	• Long life lighting reduces the hassle of replacing bulbs • Soft, white accent light is suited for indoor track, recessed and pendant fixtures	117

Incandescent Lamps

DuraMax Long Life

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP*	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
DuraMax Long Life Soft White																	**FTC REQUIREMENTS**
15	A15	Med.	16860-9	▲	15A/WL 12/2	120	24	Soft White Long Life	B, C-9		3½	3000		115	2.7	$1.81	
25	A19	Med.	16868-2	▲	25A/WL 12/2	120	24	Soft White Long Life	C, CC-6		4 7/16	3000		235	2.7	$3.01	
30	A21	3 Ct. Med.	16947-4	(8)▲	30/100A/WL 12/1	120	12	Soft White Long Life 3-Way	C, 2CC-8		5 5/16	1750		270	1.6	$3.61	2600
70														840		$8.43	2710
100														1110		$12.05	2680
40	A19	Med. ++	16737-9	▲	40A/WL 24/4	120	96	Soft White Long Life	C, CC-6		4 7/16	1500		465	1.4	$4.82	2650
50	A21	3 Ct. Med.	16948-2	(8)▲	50/150A/WL 12/1	120	12	Soft White Long Life 3-Way	C, 2CC-8		5 5/16	1750		465	1.6	$6.02	2720
100														1165		$12.05	2810
150														1665		$18.07	2780
50	A21	3 Ct. Med.	16949-0	(8)▲	50/250A/WL 12/1	120	12	Soft White Long Life	C, 2CC-8		5 5/16	1750		420	1.6	$6.02	2730
200														2235		$24.09	2860
250														2715		$30.11	2820
60	A19	Med. ++	16874-0	▲	60A/WL 12/4	120	48	Soft White Long Life	C, CC-6		4 7/16	1500		830	1.4	$7.23	2750
200	A21	Med.	16867-4	▲	200A/WL 6/1	120	6	Soft White Long Life	C, CC-8		5 5/16	1500		3100	1.4	$24.09	
DuraMax Long Life Globes																	
25	G25	Med.	16748-6	▲	25G25/W/LL 12/1	120	12	White Long Life Globe	C, CC-6		4 7/16	2000		210	1.8	$3.01	2600
			16887-2	▲	25G25/CL/LL 12/1	120	12	Clear Long Life Globe	C, CC-6		4 7/16	2000		235	1.8	$3.01	2500
			16901-1	▲	25G25/CL/LL 4/3	120	12	Clear Long Life Globe	C, CC-6		4 7/16	2000		235	1.8	$3.01	2500
			16902-9	▲	25G25/W/LL 4/3	120	12	White Long Life Globe	C, CC-6		4 7/16	2000		210	1.8	$3.01	2600
40	G25	Med.	16903-7	▲	40G25/CL/LL 4/3	120	12	Clear Long Life Globe	C, CC-6		4 7/16	2000		460	1.8	$4.82	2550
			16904-5	▲	40G25/W/LL 4/3	120	12	White Long Life Globe	C, CC-6		4 7/16	2000		415	1.8	$4.82	2600
			16746-0	▲	40G25/W/LL 12/1	120	12	White Long Life Globe	C, CC-6		4 7/16	2000		415	1.8	$4.82	2600
			16747-8	▲	40G25/CL/LL 12/1	120	12	Clear Long Life Globe	C, CC-6		4 7/16	2000		460	1.8	$4.82	2550
	G40	Med.	16857-5	▲	40G40/CL/LL 6/1	120	6	Clear Long Life Globe	C, C-9		6 15/16	3000		372	2.7	$4.82	
			16858-3	▲	40G40/W/LL 6/1	120	6	White Long Life Globe	C, C-9		6 15/16	3000		335	2.7	$4.82	
60	G25	Med.	16749-4	▲	60G25/W/LL 12/1	120	12	White Long Life Globe	C, CC-6		4 7/16	2000		665	1.8	$7.23	2670
			16896-2	▲	60G25/CL/LL 12/1	120	12	Clear Long Life Globe	C, CC-6		4 7/16	2000		705	1.8	$7.23	2670
			16899-6	▲	60G25/CL/LL 4/3	120	12	Clear Long Life Globe	C, CC-6		4 7/16	2000		705	1.8	$7.23	2670
			16900-3	▲	60G25/W/LL 4/3	120	12	White Long Life Globe	C, CC-6		4 7/16	2000		665	1.8	$7.23	2670
	G30	Med.	16849-2	▲	60G30/W/LL 6/1	120	6	White Long Life Globe	C, C-9		5½	3000		550	2.7	$7.23	2650
	G40	Med.	16851-8	▲	60G40/W/LL 6/1	120	6	White Long Life Globe	C, C-9		6 15/16	3000		595	2.7	$7.23	2550
			16852-6	▲	60G40/CL/LL 6/1	120	6	Clear Long Life Globe	C, C-9		6 15/16	3000		665	2.7	$7.23	2550
100	G40	Med.	16853-4	▲	100G40/W/LL 6/1	120	6	White Long Life Globe	C, C-9		6 15/16	3000		985	2.7	$12.05	

For the most current product information, go to the e-catalog on **www.philips.com**

Incandescent symbols and footnotes located on page 132

Incandescent Lamps

DuraMax Long Life

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP♦	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
DuraMax Long Life Reflectors (87)																	**FTC REQUIREMENTS**
30	R20	Med.	16753-6	▲	30R20/LL 12/1	120	12	Frost Long Life Reflector	C, CC-6		3 15/16	2500	350	205	2.3	$3.61	2550
45	R20	Med.	20323-2	▲	45R20/LL 12/1	120	12	Long Life Reflector Flood	C, CC-6		3 15/16	2500		385	2.3	$5.42	
	BR30	Med.	16751-0	▲	45BR30/FL55/LL 12/1	120	12	Long Life Reflector Flood	C, CC-6		5 3/8	2500		330	2.3	$5.42	2600
65	BR30	Med.	16768-4	▲	65BR30/FL55/LL 12/1	120	12	Long Life Reflector Flood	C, CC-6		5 3/8	2500	510	610	2.3	$7.83	2690
			16769-2	▲	65BR30/SP20/LL 12/1	120	12	Long Life Reflector Spot	C, CC-6		5 3/8	2500	530	620	2.3	$7.83	2710
	BR40	Med.	16741-1	▲	65BR/FL60/LL 8/1	120	8	Long Life Reflector Flood	C, CC-6		6 1/2	2500	500	625	2.3	$7.83	2740
DuraMax Long Life Sparkling Clear																	
40	A19	Med. ++	16797-2	▲	40A/CL/LL 12/2	120	24	Clear Long Life	C, CC-6		4 7/16	1500		460	1.4	$4.82	2670
60	A19	Med. ++	16794-0	▲	60A/CL/LL 12/2	120	24	Clear Long Life	C, CC-6		4 7/16	1500		865	1.4	$7.23	2760
200	A23	Med.	16798-0	▲	200A/CL/LL 6/1	120	6	Clear Long Life	C, CC-8		6 5/16	1500		3400	1.4	$24.09	
DuraMax Long Life Fan Lights																	
40	A15	Med.	16934-2	▲ *	BC40A15/FAN/ CL/LL 6/2	120	12	Clear Long Life Fan	C, C-9		3 1/2	2000		395	1.8	$4.82	2700
			16935-9	▲ *	BC40A15/FAN/ W/LL 6/2	120	12	White Long Life Fan	C, C-9		3 1/2	2000		365	1.8	$4.82	2700
60	A15	Med.	16945-8	▲ *	BC60A15/FAN/ W/LL 6/2	120	12	White Long Life Fan	C, C-9		3 1/2	2000		570	1.8	$7.23	2500
			16946-6	▲ *	BC60A15/FAN/ CL/LL 6/2	120	12	Clear Long Life Fan	C, C-9		3 1/2	2000		630	1.8	$7.23	2700
DuraMax Long Life Decoratives (12)																	
15	BA9	Cand.	16811-2	▲ *	BC15BA9C/CL/LL 6/2	120	12	Clear Long Life Bent Tip	B, C-7A		4 3/16	2000		110	1.8	$1.81	
	F10	Cand.	16830-2	▲ *	BC15F10C/CL/LL 6/2	120	12	Clear Long Life Flame	B, C-7A		3 1/16	2000		95	1.8	$1.81	2450
25	BA9	Cand.	16719-7	▲	BC25BA9C/CL/LL 6/4	120	24	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 3/16	2000		150	1.8	$3.01	
			16806-2	▲ *	BC25BA9C/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 3/16	2000		150	1.8	$3.01	
			16810-4	▲ *	BC25BA9C/F/LL 6/2	120	12	Frost Long Life Bent Tip	C, CC-2V, C-7A		4 3/16	2000		145	1.8	$3.01	
	BA9½	Med.	16819-5	▲ *	BC25BA9½/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 1/16	2000		150	1.8	$3.01	
	B10½	Cand.	16824-5	▲ *	BC25B10½C/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, C-7A		4 1/16	2000		150	1.8	$3.01	
	CA8	Cand.	13568-1	▲ *	BC25CA8C/CL/LL 6/2	120	12	Clear Petite Long Life Bent Tip	C, CC-2V		3 1/2	2000		220	1.8	$3.01	2550

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Incandescent symbols and footnotes located on page 132

R20 Med. | BR30 Med. | BR40 Med. | A15 Med. | A19 Med. | A23 Med. | BA9 Cand. | F10 Cand. | BA9½ Med. | B10½ Cand. | CA8 Cand.

Incandescent Lamps

DuraMax Long Life

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP*	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
DuraMax Long Life Decoratives Continued (12)																	**FTC REQUIREMENTS**
25	F10	Cand.	16832-8	▲ *	BC25F10C/CL/LL 6/2	120	12	Clear Long Life Flame	B, C-7A		3 1/16	2000		105	1.8	$3.01	2500
	F15	Med.	16833-6	▲ *	BC25F15/CL/LL 6/2	120	12	Clear Long Life Flame	B, C-9		4½	2000		150	1.8	$3.01	
			16839-3	▲ *	BC25F15/IR/LL 6/2	120	12	Iridescent Long Life Flame	C, C-9		4½	2000		150	1.8	$3.01	
	G16½	Cand.	16845-0	▲ *	BC25G16½C/CL/LL 6/2	120	12	Clear Long Life Globe	B, C-7A		3	2000		200	1.8	$3.01	2500
			16847-6	▲ *	BC25G16½C/W/LL 6/2	120	12	White Long Life Globe	B, C-7A		3	2000		165	1.8	$3.01	2400
		Med.	13535-0	▲ *	BC25G16½/CL/LL 6/2	120	12	Clear Long Life Globe	C, CC-2V		2¾	2000		180	1.8	$3.01	2500
			13534-3	▲ *	BC25G16½/W/LL 6/2	120	12	White Long Life Globe	C, CC-2V		2¾	2000		160	1.8	$3.01	2400
40	BA9	Cand.	16720-5	▲	BC40BA9C/CL/LL 6/4	120	24	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 3/16	2000		300	1.8	$4.82	
			16807-0	▲ *	BC40BA9C/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 3/16	2000		300	1.8	$4.82	
			16809-6	▲ *	BC40BA9C/F/LL 6/2	120	12	Frost Long Life Bent Tip	C, CC-2V, C-7A		4 3/16	2000		295	1.8	$4.82	
	BA9½	Med.	16760-1	▲	BC40BA9½/CL/LL 6/4	120	24	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 1/16	2000		300	1.8	$4.82	
			16820-3	▲ *	BC40BA9½/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 1/16	2000		300	1.8	$4.82	
	B10½	Cand.	16825-2	▲ *	BC40B10½C/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, CC-2V		4 1/16	2000		300	1.8	$4.82	
	B13	Med.	16828-6	▲ *	BC40B13/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, C-7A		4 1/16	2000		300	1.8	$4.82	
	F15	Med.	16835-1	▲ *	BC40F15/CL/LL 6/2	120	12	Clear Long Life Flame	C, C-9		4½	2000		385	1.8	$4.82	
			16837-7	▲ *	BC40F15/IR/LL 6/2	120	12	Iridescent Long Life Flame	C, C-9		4½	2000		370	1.8	$4.82	
			16838-5	▲ *	BC40F15/W/LL 6/2	120	12	White Long Life Flame	C, C-9		4½	2000		300	1.8	$4.82	
	G16½	Cand.	16846-8	▲ *	BC40G16½C/CL/LL 6/2	120	12	Clear Long Life Globe	C, CC-2V, C-7A		3	2000		300	1.8	$4.82	2550
			16848-4	▲ *	BC40G16½C/W/LL 6/2	120	12	White Long Life Globe	C, CC-2V, C-7A		3	2000		245	1.8	$4.82	2550
		Med.	13537-6	▲ *	BC40G16½/CL/LL 6/2	120	12	Clear Long Life Globe	C, CC-2V		2¾	2000		300	1.8	$4.82	2550
			13536-8	▲ *	BC40G16½/W/LL 6/2	120	12	White Long Life Globe	C, CC-2V		2¾	2000		270	1.8	$4.82	2550
60	BA9	Cand.	16808-8	▲ *	BC60BA9C/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 3/16	2000		550	1.8	$7.23	
			16721-3	▲	BC60BA9C/CL/LL 6/4	120	24	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 3/16	2000		550	1.8	$7.23	
			16805-4	▲ *	BC60BA9C/F/LL 6/2	120	12	Frost Long Life Bent Tip	C, CC-2V, C-7A		4 1/16	2000		545	1.8	$7.23	
	BA9½	Med.	16822-9	▲ *	BC60BA9½/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 1/16	2000		505	1.8	$7.23	2590
	B10½	Cand.	16826-0	▲ *	BC60B10½C/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, CC-2V		4 1/16	2000		550	1.8	$7.23	
	F15	Med.	16842-7	▲ *	BC60F15/CL/LL 6/2	120	12	Clear Long Life Flame	C, C-9		4½	2000		660	1.8	$7.23	2700
	G16½	Cand.	16699-0	▲ *	BC60G16½C/CL/LL 6/2	120	12	Clear Long Life Globe	C, CC-2V		3	2000		540	1.8	$7.23	2700

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Incandescent symbols and footnotes located on page 132

BA9 Cand. | F10 Cand. | BA9½ Med. | B10½ Cand. | CA8 Cand. | B13 Med. | F15 Med. | G16½ Cand. | G16½ Med.

Incandescent Lamps

Natural Light

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP♦	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
Natural Light Standard																	**FTC REQUIREMENTS**
40	A19	Med.	13558-2	▲	40A/NTL 12/4	120	48	Natural Light Standard	C, CC-6		4 7/16	1000		370	0.9	$4.82	2980
60	A19	Med.	13559-0	▲	60A/NTL 12/4	120	48	Natural Light Standard	C, CC-6		4 7/16	1000		640	0.9	$7.23	2790
Natural Light 3-Way																	
50	A21	3 Ct. Med.	13564-0	(8)▲	50/150A/NTL 12/1	120	12	Natural Light 3-Way	C, 2CC-6		5 5/16	1200		490	1.1	$6.02	2590
100														1250		$12.05	3100
150														1740		$18.07	3050
Natural Light Globe																	
40	G25	Med.	13563-3	▲	40G25/NTL 6/1	120	6	Natural Light Globe	C, CC-6		4 7/16	1500		320	1.4	$4.82	
Natural Light Fan																	
40	A15	Med.	13565-7	▲ *	BC40A15/FAN/NTL 6/2	120	12	Natural Light Fan	C, C-9		3½	1500		340	1.4	$4.82	3200
Natural Light Reflector																	
65	BR30	Med.	13785-1	(87)▲	65BR30/FL/NTL 12/1	120	12	Natural Light Reflector	C, CC-6		5⅜	2000		535	1.8	$7.83	2730
Natural Light Decorative																	
40	B10½	Cand.	14125-9	(12)▲ *	BC40B10½C/NTL 6/2	120	12	Natural Light Decorative	C, CC-2V, C-7A		4 1/16	2000		270	1.8	$4.82	
	B13	Med.	14127-5	(12)▲ *	BC40B13/NTL 6/2	120	12	Natural Light Decorative	C, C-7A, C-7A		4 1/16	2000		270	1.8	$4.82	

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Incandescent symbols and footnotes located on page 132

Natural Light A19 | Natural Light A21 3-Way | Natural Light G25 | Natural Light A15 | Natural Light BR30 | Natural Light B10½ | Natural Light B13

Incandescent Lamps

Incandescent Lamps by Wattage

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP*	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
															FTC REQUIREMENTS		
1.5	T3	Cand.	41666-9	▲† *	BC1.5T3	4.5	24	Clear Flashlight	B, C-6		2	30		17	0.0	$0.18	
4	C7	Cand.	25706-3	▲ *	BC4C7 12/2	120	24	Clear Night Light	B, C-7A		2⅛	3000		16	2.7	$0.48	
			24741-1	▲	BC4C7/4 12/4	120	48	Clear Night Light	B, C-7A		2⅛	3000		16	2.7	$0.48	
			25708-9	▲ *	BC4C7/W 12/2	120	24	White Night Light	B, C-7A		2⅛	3000		14	2.7	$0.48	
			41542-2	▲†	BC4C7/4	120	48	Clear Night Light	B, C-7A		2⅛	3000		16	2.7	$0.48	
	T5	Wedge	41605-7	†	BC4T5/G/TP	12	24	Transparent Green Landscape	B, C-2R		1½	300			0.3	$0.48	
			41607-3	†	BC4T5/A/TP	12	24	Transparent Amber Landscape	B, C-2R		1½	300			0.3	$0.48	
			41604-0	†	BC4T5/R/TP	12	24	Transparent Red Landscape	B, C-2R		1½	300			0.3	$0.48	
			41606-5	†	BC4T5/B/TP	12	24	Transparent Blue Landscape	B, C-2R		1½	300			0.3	$0.48	
6	S6	Cand.	24835-1		6S6	120-130	48	Clear Indicator	B, C-7A		1⅞	1500		39	1.4	$0.72	
			41609-9	▲†	BC6S6	12	24	Clear Indicator Light	B, C-2V		2	1500		50	1.4	$0.72	
			41669-3	▲†	BC6S6	120	24	Clear Indicator Light	B, C-7A		2	1500		40	1.4	$0.72	
7	C7	Cand.	37378-7	▲	7C7	120-130	24	Clear Indicator	B, C-7A		2⅛	3000		45	2.7	$0.84	
			25714-7	▲ *	BC7C7/W 12/2	120	24	White Night Light	B, C-7A		2⅛	3000		35	2.7	$0.84	
			41546-3	▲†	BC7C7/4	120	96	Clear Night Light	B, C-7A		2⅛	3000		45	2.7	$0.84	
			41547-1	▲†	BC7C7/W	120	48	White Night Light	B, C-7A		2⅛	3000		35	2.7	$0.84	
7.5	S11	Med.	41544-8	▲†	BC7½S11	120-130	12	Clear Night Light	B, C-7A		2¼	1400		45	1.3	$0.90	
			41545-5	▲†	BC7½S11	120	6	White Night Light	B, C-7A		2¼	1400		35	1.3	$0.90	
10	S11	Inter.	41529-9	▲†	BC10S11N	120	12	Clear Appliance	B, C-7A/ CC-2V		3	1500			1.4	$1.20	
11	S8	S.C. Bay	41665-1	†	BC118/SC/TP	12	24	Clear Landscape	B, C-2R		2	700		180	0.6	$1.32	
	S14	Med.	41672-7	†	BC11S14/F 130V 6/1PK	130	6		B, C-9		3½	3000		70	2.7	$1.32	
			41664-4	†	BC11S14/CL 130V 6/1PK	130	6	Clear Sign	B, C-9		3½	3000		70	2.7	$1.32	
			13830-5		11S14 120/130V 24/1	120-130	24		B, C-9		3½	3000		75	2.7	$1.32	
13	S8	S.C. Bay	41671-9	† *	BC93 12V 12/2	12	24	Clear Miniature	B, C-6		2	700			0.6	$1.57	
15	A15	Med.	14587-0	▲	15A15/CL	120-130	60	Clear	B, C-9	2⅜	3½	2500		110	2.3	$1.81	
			16860-9	▲	15A/WL 12/2	120	24	Soft White Long Life	B, C-9		3½	3000		115	2.7	$1.81	
	T6	Cand.	23582-0	▲	15T6	120	24	Clear Switchboard	B, C-7A		3 1/16	2000		110	1.8	$1.81	
			24815-3	(63)▲	15T6	140-150	24	Clear Switchboard	B, C-7A		3 1/16	2000		100	1.8	$1.81	
			41610-7	(63)▲†	BC15T6	140-150	24	Exit Sign	B, C-7A		3	2000		100	1.8	$1.81	
			41611-5	▲†	BC15T6C/TP	120	12	Clear Showcase	B, C-7A		3	1500		110	1.4	$1.81	
	T7	Cand.	41612-3	(4)†	BC15T7C	120	6	Clear Showcase	B, C-7A		2¼	1000		110	0.9	$1.81	
		Inter.	41613-1	(4)▲†	BC15T7N 120V	120	6	Clear Appliance	B, C-7A		2¼	1000		100	0.9	$1.81	
	T10	Med.	41584-4	▲†	BC15T10 6/1	120	6	Clear Showcase	B, C-9		5⅝	2500		120			
20	T6½	Inter.	24853-4		20T6½IF	120	24	Frost Exit Sign	B, C-8		5½	5000		150	4.6	$2.41	
			41626-3	†	BC20T6½N/CL	120	6	Clear Exist Sign	B, C-8		5½	3000		160	2.7	$2.41	

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Incandescent Lamps by Wattage (Continued)

FTC REQUIREMENTS

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP*	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
25	A15	Med.	41533-1	▲†	BC25A15/IF 12/1	120	12	Frost Appliance	B, C-9		3½	1000		210	0.9	$3.01	
	A19	Med.	14421-2	▲	25A/TG 6/1	120	6	Transparent Green	B, C-9		3 15/16	3000			2.7	$3.01	
			14422-0	▲	25A/TR 6/1	120	6	Transparent Red	B, C-9		3 15/16	3000			2.7	$3.01	
			14423-8	▲	25A/TY 6/1	120	6	Transparent Yellow	B, C-9		3 15/16	3000			2.7	$3.01	
			14420-4	▲	25A/TB 6/1	120	6	Transparent Blue	B, C-9		3 15/16	3000			2.7	$3.01	
			37386-0	▲	25A/RS	120-130	120	Frost Rough Service	R, C-9		3 15/16	1000		235	0.9	$3.01	
	R14	Inter.	24828-6	■	R14N	120	24	Mini Refl. Lt. Fr. Actual Bulb Dia. 1¾"	C, CC-2V		2⅝	1500		200	1.4	$3.01	2800
			41537-2	■†	BC25R14N	120	6	Mini Refl. Lt. Fr.	C, CC-2V		3½	1500		150	1.4	$3.01	2800
	S11	Inter.	41670-1	†	BC25S11N	120	12	Clear Appliance	B, C-7A		2	500		220	0.5	$3.01	
	T6½	Inter.	41628-9	†	BC25T6½	120-130	6	Clear Appliance	B, C-8		6	1000		220	0.9	$3.01	
	T7	Inter.	41627-1	†	BC25T7N	120	6	Clear Appliance	B, C-7A		2¼	1000		200	0.9	$3.01	
	T10	Med.	13812-3	▲	25T10/IF 24/1	120-130	24	Frost Showcase	B, C-8		5⅝	1000		255	0.9	$3.01	
			41585-1	▲†	BC25T10/TP 6/1	120	6	Clear Showcase	B, C-8		5⅝	1000		250	0.9	$3.01	
			13813-1	▲	25T10 24/1	120-130	24	Clear Showcase	B, C-8		5⅝	1000		260	0.9	$3.01	
30	R20	Med.	22078-0	(87)▲	30R20 12/1	130	12	Lt. Frost Reflector	C, CC-6		3 5/16	2000		205	1.8	$3.61	
			16753-6	(87)▲	30R20/LL 12/1	120	12	Frost Long Life Reflector	C, CC-6		3 5/16	2500	335	205	2.3	$3.61	
30	A21	3 Ct. Med.	36662-5	(8)▲	30/100A/W 12/1	120	12	Soft White 3-Way	C, 2CC-8		5 5/16	1200		265	1.1	$8.43	2570
70														820		$12.05	2680
100														1090		$4.10	2650

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Incandescent Lamps

Incandescent Lamps by Wattage (Continued)

FTC REQUIREMENTS

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP*	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
40	A15	Med.	29999-0	▲	BC40A15/CL/LL	120	12	Clear Long Life Appliance	C, C-9		3½	1750		400	1.6	$4.82	
			41676-8	▲†	BC40A15/LL	120	60	Clear Long Life Appliance	C, C-9		3½	1750		400	1.6	$4.82	
			16934-2	▲	BC40A15/FAN/CL/LL 6/2	120	12	Clear Long Life Fan	C, C-9		3½	2000		395	1.8	$4.82	
			16935-9	▲	BC40A15/FAN/W/LL 6/2	120	12	White Long Life Fan	C, C-9		3½	2000		365	1.8	$4.82	
			13565-7	▲	BC40A15/FAN/NTL 6/2	120	12	Natural Light Fan	C, C-9		3½	1500		340	1.4	$4.82	
	A19	Med. ++	27081-9	▲	40A 12/4	120	48	Frost	C, CC-6		4 7/16	1500		455	1.4	$4.82	2660
			16797-2	▲	40A/CL/LL 12/2	120	24	Clear Long Life	C, CC-6		4 7/16	1500		460	1.4	$4.82	2670
			16737-9	▲	40A/WL 24/4	120	96	Soft White Long Life	C, CC-6		4 7/16	1500		465	1.4	$4.82	2650
			16869-0	▲	40A/WL 12/4	120	48	Soft White Long Life	C, CC-6		4 7/16	1500		450	1.4	$4.82	2690
			13558-2	▲	40A/NTL 12/4	120	48	Natural Light Standard	C, CC-6		4 7/16	1000		370	0.9	$4.82	2980
			37465-2	▲	40A	120	48	Frost	C, CC-6		4 7/16	1500		455	1.4	$4.82	2660
			37466-0	▲	40A	130	48	Frost	C, CC-6		4 7/16	1500		495	1.4	$4.82	2630
								Ratings @ 120V = 34W				3000		370	2.7	$4.22	2720
			37399-3	▲	40A/CL	120-130	48	Clear, Ratings @ 130V = 43W	C, CC-6	3⅛	4 7/16	750		500	1.4	$4.82	2670
								Ratings @ 120V = 38W				1500		435	2.3	$4.46	2750
	R14	Inter.	41539-8	†	BC40R14N 6/1	120	6	Light Fr. Mini. Refl.	C, CC-2V		2⅝	1500		250	1.4	$4.82	
		Med.	41538-0	†	BC-40R14/SP	120	6	Surge Proof Light Mini. Refl.	C, CC-2V		2⅝	1500		250	1.4	$4.82	
	R16	Med.	41540-6	†	BC40R16/SP 6/1	120	6	Surge Proof Light Mini. Refl.	C, CC-2V		3⅜	1500		250	1.4	$4.82	
	S11	Inter.	41541-4	▲†	BC40S11/NTP 16/1	120	16	Clear High Intensity	C, CC-2V		2¼	500		440	0.5	$4.82	
	T6½	Inter.	41629-7	†	BC40T6-1/2	120	6	Clear Appliance	B, C-8		5½	1000		350	0.9	$4.82	
	T8	Inter.	41625-5	†	BC40T8N	130	6	Clear Appliance	C, C-7A		2¾	1000		400	0.9	$4.82	
	T10	Med.	41673-5	▲†	BC40T10/IF/TP 6/1	120	6	Frost Showcase	B, C-8		5⅝	1000		250	0.9	$4.82	
			13814-9	▲	40T10/IF 24/1	120-130	24	Frost Showcase	B, C-8		5⅝	1000		435	0.9	$4.82	
			41586-9	▲†	BC40T10/TP 6/1	120	6	Clear Showcase	B, C-8		5⅝	1000		435	0.9	$4.82	
			13815-6	▲	40T10 24/1	120-130	24	Clear Showcase	B, C-8		5⅝	1000		440	0.9	$4.82	
45	BR30	Med.	16751-0	(87)▲	45BR30/FL55/LL 12/1	120	12	Long Life Reflector Flood	C, CC-6		5⅜	2500		330	2.3	$5.42	2600
	R20	Med.	20323-2	(87)▲	45R20/LL 12/1	120	12	Long Life Reflector Flood	C, CC-6		3 15/16	2500		385	2.3	$5.42	
			20322-4	(87)▲	45R20 12/1	130	12	Reflector Flood	C, CC-6		3 15/16	2000		380	1.8	$5.42	
			20324-0	(87)	45R20 12/1 PRO	130	12	ProPack Reflector Flood	C, CC-6		3 15/16	2000		380	1.8	$5.42	
50	A19	Med.	21952-7	▲	50A19/31	120	120	Clear Commercial Oven	B, C-9	2½	3 15/16	1000		500	0.9	$6.02	
			37403-3	▲	50A/RS	120-130	120	Frost Rough Service	B, RC-9		3 15/16	1000		500	0.9	$6.02	
			41526-5	†	50A/RV	12	6	Marine	C, C-6		4¼	1000		875	0.9	$6.02	
			24572-0	▲	50A/RS	250	120	Frost Rough Service	C, RC-9		3 15/16	1000		355	0.9	$6.02	
			14977-3	(66)▲	50A/RS/TF	120-130	120	Frost Rough Service Silicone Coated	B, C-17A		3 15/16	1000			0.9	$6.02	
	ER30	Med.	14355-2	(87) $ ▲	50ER30	120-130	24	Elliptical Reflector	C, CC-6		6⅜	2000		430	1.8	$6.02	2710

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Incandescent Lamps by Wattage (Continued)

FTC REQUIREMENTS

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP*	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
50	R20	Med.	41531-5	(19,87)▲†	50R20/Agro 12/1	120	12	Agro-Lite Plant Light	C, CC-6		3 15/16	2000			1.8	$6.02	
50	A21	3 Ct. Med.	13564-0	(8)▲	50/150A/NTL 12/1	120	12	Natural Light Reflector	C,2CC-6		5 5/16	1200		395	1.1	$6.02	2590
100														1115		$12.05	3100
150														1510		$18.07	3050
			16948-2	(8)▲	50/150A/WL 12/1	120	12	Soft White Long Life 3-Way	C, 2CC-8		5 5/16	1750		460	1.6	$6.02	2720
														1165		$12.05	2810
														1660		$18.07	2780
			32359-2	(8) ▢▲	50/150A/DL 12/1	120	12	Director 3-Way	C, 2CC-8		5 5/16	1200		520	1.1	$6.02	2670
														1320		$12.05	2780
														1840		$18.07	2740
52	A19	Med.	22237-2	▲✔	60A-52A/EW	120	48	Frost Econ-o-watt	C, CC-6		4 7/16	1000		700	0.9	$6.26	2760
			14999-6	$ ▲	60A-52A/99/EW	120-130	48	Frost Econ-o-watt Ext. Service	C, CC-6		4 7/16	2000		650	0.9	$6.26	2700
								Ratings @ 130V = 60W				1000		855	0.9	$7.23	2780
60	A15	Med.	16945-8	▲	BC60A15/FAN/W/ LL 6/2	120	12	White Long Life Fan	C, C-9		3 1/2	2000		570	1.8	$7.23	
			16946-6	▲	BC60A15/FAN/CL/LL 6/2	120	12	Clear Long Life Fan	C, C-9		3 1/2	2000		630	1.8	$7.23	
	A19	Med. ++	16794-0	▲	60A/CL/LL 12/2	120	24	Clear Long Life	C, CC-6		4 7/16	1500		865	1.4	$7.23	2760
			16874-0	▲	60A/WL 12/4	120	48	Soft White Long Life	C, CC-6		4 7/16	1500		830	1.4	$7.23	2750
		Med.	13559-0	▲	60A/NTL 12/4	120	48	Natural Light Standard	C, CC-6		4 7/16	1000		640	0.9	$7.23	2790
		Med. ++	27082-7	▲✔	60A 12/4	120	48	Frost	C, CC-6		4 7/16	1000		890	0.9	$7.23	2760
			37469-4	▲✔	60A	120	48	Frost	C, CC-6		4 7/16	1000		840	0.9	$7.23	2790
			37471-0	▲✔	60A	130	48	Frost	C, CC-6		4 7/16	1000		855	0.9	$7.23	2780
								Ratings @ 120V =51W				2000		650	1.8	$6.14	2700
		Med.	14979-9	(66)▲	60A/TF	120	120	Frost Silicone Coated	C, CC-6		4 7/16	1000			0.9	$7.23	
		Med. ++	22246-3	▲✔	60A/99	130	48	Frost Extended Service	C, CC-6		4 7/16	2500		720	2.3	$7.23	2670
								Ratings @ 120V =51W				5000		540	4.6	$6.14	2590
			37522-0	▲	60A/CL	130	48	Clear	C, CC-6	3 1/8	4 7/16	500		965	0.5	$7.23	2820
								Ratings @ 120V =51W				1000		730	0.9	$6.14	2740
		Med.	41534-9	▲†	60A/AGRO 12/1	120	12	Agro-Lite Plant Light	C, C-9		4 7/16	1000			0.9	$7.23	
			41543-0	▲†	BC60A/CL/GDO 6/2	120	6	Garage Door Opener	C,C-9		4 7/16	3500		630	3.2	$7.23	
		Med. ++	37483-5	▲✔	60A/W 12/4	120	48	Soft White	C, CC-6		4 7/16	1000		860	0.9	$7.23	2770
			37484-3	▲	60A/W/TP 24/4	120	96	Soft White Tray-Pak	C, CC-6		4 7/16	1000		860	0.9	$7.23	2770
			34822-7	▢▲	60A/STP/PK 12/2	120	24	Pink Softone Pastel	C, CC-6		4 3/16	1000		795	0.9	$7.23	2610
			41581-0	▢ ▲†✔	60A/YL 12/2	120	24	Bug-A-Way Yellow Longer Life	C, CC-6		4 7/16	1350			1.2	$7.23	
			22248-9	▢	60A19/35	130	48	Frost Industrial Service	C, C-9		4 7/16	1750		540	1.6	$7.23	2590
								Ratings @ 120V = 51W				3500		395	3.2	$6.14	2500
	T10	Med.	13811-5	▲	60T10/64IF 24/1	120	24	Frost	B, C-8		5 5/8	1000		515	0.9	$7.23	2630
			13810-7	▲	60T10/64 24/1	120	24	Clear	B, C-8		5 5/8	1000		520	0.9	$7.23	2620

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PAR36
M.P.

A15
Med.

A19
Med.

T10
Med.

Incandescent Lamps

Incandescent Lamps by Wattage (Continued)

FTC REQUIREMENTS

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP*	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
65	BR30	Med.	24876-5	(87)▲✔	65BR30/FL55 12/1	120	12	Reflector Flood	C, CC-6		5⅜	2000		620	1.8	$7.83	2710
			24884-9	(87)▲✔	65BR30/FL55	130	12	Reflector Flood	C, CC-6		5⅜	2000		605	1.8	$7.83	2780
			20190-5	(87)▲	65BR30/FL55/TG 12/1	120	12	TuffGuard Coated Reflector Fl.	C, CC-6		5⅜	2000		635	1.8	$7.83	2710
			13785-1	(87)▲	65BR30/FL/NTL 12/1	120	12	Natural Light Reflector	C, CC-6		5⅜	2000		535	1.8	$7.83	2730
			14007-9	(87)	65BR30/FL 12/1 PRO	130	12	ProPack Reflector	C, CC-6		5⅜	2000		605	1.8	$7.83	2640
			29380-3		65BR30/FL55 SP 12/1	120	12	Surge Proof Reflector	C, CC-6		5⅜	3000		585	2.7	$7.83	2660
	BR40	Med.	22537-5	(87)▲	65BR/FL60	130	24	Reflector Flood	C, CC-6		6½	2000		565	1.8	$7.83	2710
			14008-7	(87)	65BR40/FL 12/1 PRO	130	12	ProPack Reflector	C, CC-6		6½	2000		565	1.8	$7.83	2710
			16741-1	(87)▲	65BR/FL60/LL 8/1	120	8	Long Life Reflector Flood	C, CC-6		6½	2500	500	625	2.3	$7.83	2740
			38913-0	(87)▲	65BR/FL60 24/1	120	24	Long Life Reflector Flood	C, CC-6		6½	2000	500	620	1.8	$7.83	2710
75	A19	Med.	41532-3	▲†	75A/BLB	120	6	Black Light	C-9		4¼	1000			0.9	$9.03	
			29360-5	▲	75A/RS/VS	120-130	12	Frost Rough & Vib. Svc.	R, C-9	2½	3 15/16	1000		712	0.9	$9.03	
								Ratings @ 120V =70W				1700		660	1.6	$8.43	
	A21	Med.	41527-3	(66)▲†	75A/RH/TF 12/1	120-130	12	Frost Silicone Coated Tough Bulb	C, RC-9		5 5/16	1000		1000	0.9	$9.03	2800
			20470-1	▲	75A/RH 12/1	120-130	12	Frost Rough House	C, RC-9		5 5/16	1000		750	0.9	$9.03	
								Ratings @ 120V =70W				1700		730	1.6	$8.43	
	BR30	Med.	24903-7	(66,87)▲	75BR30/FL/TF	120	12	Frost Silicone Coated Reflector	C, CC-6		5 5/16	2000			1.8	$9.03	
			41528-1	(87)▲†	75BR30/AGRO 6/1	120	6	Agro-Lite Plant Light	C, CC-6		5⅜	2000		700	1.8	$9.03	
			24902-9	(87)▲	75BR30/PK 8/1	120	8	Pink	C, CC-6		5⅜	2000		555	1.8	$9.03	2120
100	A21	Med.	14981-5	(66)▲	100A21/TF	120	120	Frost Silicone Coated	C, CC-8		5 5/16	750			0.7	$12.05	
			24661-1	▲	100A	277	120	Frost Mine	C, C-9		5 5/16	1000		1070	0.9	$12.05	
			14400-6	(43, 64)▲	100A/1SBIF	120	120	Frost Silvered Bowl	C, C-9		5 5/16	1000		1150	0.9	$12.05	
			14971-6	(66)▲	100A/RS/TF	120-130	60	Frost Silicone Coated Rough Service	C, RC-9		5 5/16	1000			0.9	$12.05	
			27550-3	▲	100A/RS	250	60	Frost Rough Service	C, RC-9		5 5/16	1000		1030	0.9	$12.05	
			15927-7		100A/RS/VS/BR/TG	120-130	60	TuffGuard Frost Rough & Vibration Svc.	C, RC-9		5 5/16	1000		1230	0.9	$12.05	
								Ratings @ 120V =94W				1700		945	1.6	$11.32	
	BR38	Med.	38532-8	(29, 82)	100PAR/1/B 6/1	120	6	Blue BR38	C, CC-6		5 5/16	2000			1.8	$12.05	
			38530-2	(29, 82)	100PAR/1/G 6/1	120	6	Green BR38	C, CC-6		5 5/16	2000			1.8	$12.05	
			38529-4	(29, 82)	100PAR/1R 6/1	120	6	Red BR38	C, CC-6		5 5/16	2000			1.8	$12.05	
			38766-2	(29, 82)	100PAR/1/Y 6/1	120	6	Yellow BR38	C, CC-6		5 5/16	2000			1.8	$12.05	
	PAR38	Med. Skt.	14550-8	(29, 82)	100PAR38/HEAT/CL	120	12	Clear PAR Infrared	C, C-9		5 5/16	5000			4.6	$12.05	
100	PS25	3 Ct. Mog.	36734-2	(8)▲	100/300/W 12/1	120	12	Soft White 3-Way	C, 2CC-6		6 13/16	1200		1320	1.1	$12.05	
200														3300		$24.09	
300														4620		$36.14	

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BR30 Med. | BR40 Med. | A19 Med. | A21 Med. | BR38 Med. | PAR38 Med. Skt. | PS25 3 Ct. Mog

Incandescent Lamps by Wattage (Continued)

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP♦	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
														FTC REQUIREMENTS			
116	A21	Med.+	22483-2	(12)	116A21/TS	120	120	Traffic Signal Clear	C, C-9	2 7/16	4 7/16	8000		1180	7.3	$13.97	
			22485-7	(12)	116A21/TS	130	120	Traffic Signal Clear	C, C-9	2 7/16	4 7/16	8000		1180	7.3	$13.97	
120	BR40	Med.	41530-7	(87)▲†	120BR/Agro 6/1	120	6	Agro-Lite Plant Light	C, CC-6		6½	2000			1.8	$14.45	
125	BR40	Med.	15930-1	(27,87,89) ▲	125BR40/1/TG 4/1	120	4	TuffGuard Coated Clear Reflector Infrared	C, C-9		6½	5000			4.6	$15.06	
			41675-0	(27,87,89) ▲†	125BR40/1	120	4	Clear Infrared	C, C-9		6½	5000			4.6	$15.06	
150	A21	Med.	27003-3	▲✔	150A	120	48	Frost	C, C-9		5 5/16	750		2620	0.7	$18.07	2840
			37418-1	(82)▲	150A/CL	120-130	60	Clear, Ratings @ 130V = 158W Ratings @120V=139W	C, CC-8	3⅞	5 5/16	750 1275		2770 2120	0.7 1.2	$18.07 $16.74	2870 2780
			14969-0	(66)▲	150A21/RS/TF	120-130	60	High-Temp. Coating	C, RC-9		5 5/16	1000			0.9	$18.07	
			27578-4	▲	150A21/RS/BR	120-130	60	Frost Rough & Vibration Service Ratings @120V=141W	C, RC-9		5 5/16	1000 1700		2205 1915	0.9 1.6	$18.07 $16.98	
			27588-3	▲	150A/35/RS/BR	120-130	60	Frost Industrial Rough Service Ratings @120V=141W	C, RC-9	3¾	5 15/16	3500 5900		1640 1425	3.2 5.4	$18.07 $16.98	
	A25	Med.	14961-7	(14,66) ⊍	150A25/35/TF	120	60	Frost Silicone Coated Ind. Svc.	C, C-9		6 15/16	3500			3.2	$18.07	
	BR38	Med.	38568-2		150BR38/5FL	130	12	Flood Anti-Vibration	C, C-11V		5½	5000		965	4.6	$18.07	2550
175	PAR38	Med. Skt.	14551-6	(27,89)	175PAR38/HEAT/CL	120	12	Clear Infrared	C, C-9		5 5/16	5000			4.6	$21.08	
200	A21	Med.	16867-4	▲	200A/WL 6/1	120	6	Soft White Long Life	C, CC-2V		5 5/16	1500		3100	1.4	$24.09	
	A23	Med.	16798-0	▲	200A/CL/LL 6/1	120	6	Clear Long Life	C, CC-8		6 5/16	1500		3400	1.4	$24.09	
			36289-7	▲	200A	120	60	Frost	C, CC-8		6 5/16	750		3800	0.7	$24.09	
			36291-3	▲	200A	130	60	Frost Ratings @120V=176W	C, CC-2V		6 5/16	750 2120		3600 2700	0.7 1.9	$24.09 $21.20	
			37427-2	▲	200A/CL	120-130	60	Clear	C, CC-2V	4⅝	6 5/16	750		3600	0.7	$24.09	
			28176-6	▲	200A/99	120-130	60	Frost Extended Service Ratings @120V=187W	C, CC-2V		6 5/16	2500 4250		3250 2830	2.3 3.9	$24.09 $22.52	
	PS30	Med.	14298-3	(66)▲	200/TF	120-130	60	Frost Silicone Coated	C, C-9		8 1/16	750		2980	0.7	$24.09	
			14304-0	▲	200PS30/23	120-130	60	Frost Ratings @120V=177W	C, C-9		8 1/16	1000 2830		2800 2130	0.9 2.6	$24.09 $21.32	
			14305-7	(66)▲	200PS30/RS/TF	120-130	60	Frost Rough Service Silicone Coated	C, C-9		8 1/16	1000 2830		2715 2065	0.9	$24.09	
			14302-4	▲	200PS30/RS	250	60	Clear Rough Service	C, C-9		8 1/16	1000		2600	0.9	$24.09	
			14300-8		200/35/TF	120	60	Frost Silicone Coated Ind. Svc.	C, C-9		8 1/16	3500		2570	3.2	$24.09	

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A21
Med.

BR40
Med.

A23
Med.

BR38
Med.

PAR38
Med. Skt.

Incandescent Lamps

Incandescent Lamps by Wattage (Continued)

FTC REQUIREMENTS

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP*	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
250	BR40	Med.	41674-3	(27, 87)▲†	250BR40/1 4/1	120	4	Clear Reflector Infrared	C, C-9		6½	5000			4.6	$30.11	
			20205-1	(27, 87)▲	250BR40/1/TG 4/1	120	4	TuffGuard Coated Clr. Ref. Infrared	C, C-9		6½	5000			4.6	$30.11	
	PAR38	Med. Skt.	37432-2	(53, 82)▽	K250PAR38/FL	120-130	12	PAR Floodlight (Krypton)	C, CC-6		5 5/16	4000	5000	3100	3.7	$30.11	
	R40	Med.	41583-6	(27,87,89) $▲†	250R40/HR 4/1	120	4	Red Bowl Heat Ray	C, C-9		6⅞	5000			4.6	$30.11	
			15932-7	(27,87,89) $▲	250R40/HR/TG 4/1	120	4	TuffGuard Ctd. Red Bowl Heat Ray	C, C-9		6⅞	5000			4.6	$30.11	
300	BR40	Med.	14343-8	(87)$ ▲	300BR/FL	120-130	24	Reflector Flood	C, CC-11		6½	2000		2480	1.8	$36.14	
	PS25	Med.	28177-4	▲	300M/IF	120-130	60	Frost Ratings @120V=282W	C, CC-8		6 15/16	750 1280		6230 5471	0.7 1.2	$36.14 $33.97	
			38941-1	▲	300M/IF	120	6	Frost	C, CC-8		6 15/16	750		6300	0.7	$36.14	
			13391-8	▲	300M	120-130	12	Clear Ratings @120V=265W	C, CC-8	5¼	6 15/16	750 2120		6280 4625	0.7 1.9	$36.14 $31.92	
			35009-0	▲	300M/99IF	130	60	Frost Extended Service Ratings @120V=265W	C, CC-8		6 15/16	2500 7130		506 4044	2.3 6.5	$36.14 $31.92	
	PS30	Med.	14307-3	▲	300M/PS30IF	120-130	60	Frost Ratings @120V=265W	C, C-9		8 1/16	750 2120		5000 3800	0.7 1.9	$36.14 $31.92	
	PS35	Mog.	14309-9		300/99IF	120-130	24	Frost Extended Service Ratings @120V=265W	C, C-9		9⅜	1000 2830		4500 3420	0.9 2.6	$36.14 $31.92	
			14321-4		300/99	120-130	24	Clear Extended Service Ratings @120V=265W	C, C-9		9⅜	2500 7134		4600 3495	2.3 6.5	$36.14 $31.92	
			14316-4		300/IF	120-130	12	Frost Ratings @120V=265W	C, C-9		9⅜	1000 2854		4600 3495	0.9 2.6	$36.14 $31.92	
			14314-9		300	120-130	24	Clear Ratings @120V=265W	C, C-9	7	9⅜	1000 2854		4600 3495	0.9 2.6	$36.14 $31.92	
	R40	Med.	14432-9	■	300R/FL/1	12	24	Reflector Flood Frost	C, C-2V		6¾	2000		2960	1.8	$36.14	
		Mog.	14433-7	(31,37,51, 53)▲	300R/3FL	120-130	24	Reflector Flood	CC-11		7¼	2000		3600	1.8	$36.14	
500	PS35	Mog.	14407-1		500	120-130	24	Clear Ratings @120V=442W	C, C-9	7	9⅜	1000 2830		8900 6755	0.9 2.6	$60.23 $53.24	
			14313-1		500/IF	120-130	24	Frost Ratings @120V=442W	C, C-9		9⅜	1000 2830		8700 6600	0.9 2.6	$60.23 $53.24	
	R40	Med.	14430-3	(31,37,51, 53)■	500R/3FL/2S	130	24	Swimming Pool Ratings @120V=442W	C, C-7A		6¾	2000 5707		6120 4669	1.8 5.2	$60.23 $53.24	
		Mog.	14434-5	(51,53)	500R/3FL	120-130	24	Frost Reflector Flood	CC-11		7¼	2000		5000	1.8	$60.23	
			14435-2	(51,53)	500R/3FL	250	24	Frost Reflector Fl. Special Svc.	C, C-7A		7¼	2000		4700	1.8	$60.23	

For the most current product information, go to the e-catalog on **www.philips.com**
Incandescent symbols and footnotes located on page 132

BR40
Med.

PAR38
Med. Skt.

R40
Med.

PS25
Med.

PS30
Med.

PS35
Mog.

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP♦	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
Incandescent Lamps by Wattage (Continued)																	**FTC REQUIREMENTS**
620	PS40	Mog. Pf.	14323-0		620PS40P	120	24	Code Beacon	C, C-7A	5 11/16	10 11/16	3000		9000	2.7	$74.68	
Decoratives, Blister-Carded (12)																	
15	F10	Cand.	16830-2	▲	BC15F10C/CL/LL 6/2	120	12	Clear Long Life Flame	B, C-7A		3 1/16	2000		95	1.8	$1.81	2450
	BA9	Cand.	16811-2	▲	BC15BA9C/CL/LL 6/2	120	12	Clear Long Life Bent Tip	B, CC-2V, C-7A		4 3/16	2000		110	1.8	$1.81	
25	BA9	Cand.	16719-7	▲	BC25BA9C/CL/LL 6/4	120	24	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 3/16	2000		150	1.8	$3.01	
			16806-2	▲	BC25BA9C/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 3/16	2000		150	1.8	$3.01	
			16810-4	▲	BC25BA9C/F/LL 6/2	120	12	Frost Long Life Bent Tip	C, CC-2V, C-7A		4 3/16	2000		145	1.8	$3.01	
			13823-0	▲	BC25BA9C/CL 6/1 TP	120	6	Clear Bent Tip	C, CC-2V, C-7A		4 3/16	2000			1.8	$3.01	
	BA9½	Med.	16819-5	▲	BC25BA9½/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 1/16	2000		150	1.8	$3.01	
	B10½	Cand.	16824-5	▲	BC25B10½C/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, CC-2V, C-7A		4 1/16	2000		150	1.8	$3.01	
	CA8	Cand.	13568-1	▲	BC25CA8C/CL/LL 6/2	120	12	Clear Petite Long Life Bent Tip	C, CC-2V		3½	2000		220	1.8	$3.01	2550
	F10	Cand.	16832-8	▲	BC25F10C/CL/LL 6/2	120	12	Clear Long Life Flame	B, C-7A		3 1/16	2000		105	1.8	$3.01	2500
	F15	Med.	16833-6	▲	BC25F15/CL/LL 6/2	120	12	Clear Long Life Flame	B, C-9		4½	2000		150	1.8	$3.01	
			16839-3	▲	BC25F15/IR/LL 6/2	120	12	Iridescent Long Life Flame	C, C-9		4½	2000		150	1.8	$3.01	
	G16½	Cand.	16845-0	▲	BC25G16½C/CL/LL 6/2	120	12	Clear Long Life Globe	B, C-7A		3	2000		200	1.8	$3.01	2500
			16847-6	▲	BC25G16½C/W/LL 6/2	120	12	White Long Life Globe	B, C-7A		3	2000		165	1.8	$3.01	2500
		Med.	13535-0	▲	BC25G16½/CL/LL 6/2	120	12	Clear Long Life Globe	C, CC-2V		2¾	2000		180	1.8	$3.01	2500
			13534-3	▲	BC25G16½/W/LL 6/2	120	12	White Long Life Globe	C, CC-2V		2¾	2000		160	1.8	$3.01	2400
40	BA9	Cand.	16720-5	▲	BC40BA9C/CL/LL 6/4	120	24	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 3/16	2000		300	1.8	$4.82	
			16807-0	▲	BC40BA9C/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 3/16	2000		300	1.8	$4.82	
			16809-6	▲	BC40BA9C/F/LL 6/2	120	12	Frost Long Life Bent Tip	C, CC-2V, C-7A		4 3/16	2000		295	1.8	$4.82	
	BA9½	Med.	16760-1	▲	BC40BA9½/CL/LL 6/4	120	24	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 1/16	2000		300	1.8	$4.82	
			16820-3	▲	BC40BA9½/CL/LL	120	12	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 1/16	2000		300	1.8	$4.82	
	B10½	Cand.	16825-2	▲	BC40B10½C/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, CC-2V		4 1/16	2000		300	1.8	$4.82	
			14125-9	▲	BC40B10½C/NTL 6/2	120	12	Natural Light Blunt Tip	C, CC-2V, C-7A		4 1/16	2000		270	1.8	$4.82	

For the most current product information, go to the e-catalog on **www.philips.com**

Incandescent symbols and footnotes located on page 132

Incandescent Lamps

Decoratives

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP*	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
Decoratives, Blister-Carded (Continued) (12)																	**FTC REQUIREMENTS**
40	B13	Med.	16828-6	▲	BC40B13/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, C-7A		4 1/16	2000		300	1.8	$4.82	
			14127-5	▲	BC40B13/NTL 6/2	120	12	Natural Light Blunt Tip	C, CC-2V, C-7A		4 1/16	2000		270	1.8	$4.82	
	F15	Med.	16835-1	▲	BC40F15/CL/LL 6/2	120	12	Clear Long Life Flame	C, C-9		4½	2000		385	1.8	$4.82	
			16837-7	▲	BC40F15/IR/LL 6/2	120	12	Iridescent Long Life Flame	C, C-9		4½	2000		370	1.8	$4.82	
			16838-5	▲	BC40F15/W/LL 6/2	120	12	White Long Life Flame	C, C-9		4½	2000		300	1.8	$4.82	
	G16½	Cand.	16846-8	▲	BC40G16½C/CL/LL 6/2	120	12	Clear Long Life Globe	C, CC-2V, C-7A		3	2000		300	1.8	$4.82	2550
			16848-4	▲	BC40G16½C/W/LL 6/2	120	12	White Long Life Globe	C, CC-2V, C-7A		3	2000		245	1.8	$4.82	2550
		Med.	13537-6	▲	BC40G16½/CL/LL 6/2	120	12	Clear Long Life Globe	C, CC-2V, C-7A		2¾	2000		300	1.8	$4.82	2550
			13536-8	▲	BC40G16½/W/LL 6/2	120	12	White Long Life Globe	C, CC-2V, C-7A		2¾	2000		270	1.8	$4.82	2550
60	BA9	Cand.	16808-8	▲	BC60BA9C/CL/ 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 3/16	2000		550	1.8	$7.23	
			16721-3	▲	BC60BA9C/CL/LL 6/4	120	24	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 3/16	2000		550	1.8	$7.23	
			16805-4	▲	BC60BA9C/F/LL 6/2	120	12	Frost Long Life Bent Tip	C, CC-2V, C-7A		4 3/16	2000		545	1.8	$7.23	
	BA9½	Med.	16822-9	▲	BC60BA9½/CL/LL 6/2	120	12	Clear Long Life Bent Tip	C, CC-2V, C-7A		4 1/16	2000		505	1.8	$7.23	2590
	B10½	Cand.	16826-0	▲	BC60B10½C/CL/LL 6/2	120	12	Clear Long Life Blunt Tip	C, CC-2V		4 1/16	2000		550	1.8	$7.23	
	F15	Med.	16842-7	▲	BC60F15/CL/LL 6/2	120	12	Clear Long Life Flame	C, C-9		4½	2000		660	1.8	$7.23	2700
	G16½	Cand.	16699-0	▲	BC60G16½C/CL/LL 6/2	120	12	Clear Long Life Globe	C, CC-2V		3	2000		540	1.8	$7.23	2700
Decoratives, Boxed (12)																	
40	BA9	Cand.	31093-8	▲	40BA9C/4M	120	25	Clear Bent Tip	C, C-7A, CC-2V		4 3/16	4000		270	3.7	$4.82	
60	BA9	Cand.	31095-3	▲	60BA9C/4M	120	25	Clear Bent Tip	C, C-7A, CC-2V		4 3/16	4000		530	3.7	$7.23	

For the most current product information, go to the e-catalog on **www.philips.com**

Incandescent symbols and footnotes located on page 132

B13 Med. | F15 Med. | G16½ Cand. | G16½ Med. | BA9 Cand. | BA9½ Med. | B10½ Cand.

Decoratives, All Others

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Ordering Code	Volts	Pkg. Qty.‡	Description	Class Filament	LCL (In.)	MOL (In.)	Rated Avg. Life (Hrs.)(93)	Approx. MBCP♦	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
														FTC REQUIREMENTS			
25	G25	Med.	16887-2	▲	25G25/CL/LL 12/1	120	12	Clear Long Life Globe	C, CC-6		4 7/16	2000		235	1.8	$3.01	2500
			16748-6	▲	25G25/W/LL 12/1	120	12	White Long Life Globe	C, CC-6		4 7/16	2000		210	1.8	$3.01	2600
			16901-1	▲	25G25/CL/LL 4/3	120	12	Clear Long Life Globe	C, CC-6		4 7/16	2000		235	1.8	$3.01	
			16902-9	▲	25G25/W/LL 4/3	120	12	White Long Life Globe	C, CC-6		4 7/16	2000		210	1.8	$3.01	
40	G25	Med.	16747-8	▲	40G25/CL/LL 12/1	120	12	Clear Long Life Globe	C, CC-6		4 7/16	2000		460	1.8	$4.82	2550
			16746-0	▲	40G25/W/LL 12/1	120	12	White Long Life Globe	C, CC-6		4 7/16	2000		415	1.8	$4.82	2600
			16903-7	▲	40G25/CL/LL 4/3	120	12	Clear Long Life Globe	C, CC-6		4 7/16	2000		460	1.8	$4.82	2550
			16904-5	▲	40G25/W/LL 4/3	120	12	White Long Life Globe	C, CC-6		4 7/16	2000		415	1.8	$4.82	2600
			13563-3	▲	40G25/NTL 6/1	120	12	Natural Light Globe	C, CC-6		4 7/16	1500		320	1.4	$4.82	
	G40	Med.	16857-5	▲	40G40/CL/LL 6/1	120	6	Clear Long Life Globe	C, C-9		6 15/16	3000		372	2.7	$4.82	
			16858-3	▲	40G40/W/LL 6/1	120	6	White Long Life Globe	C, C-9		6 15/16	3000		335	2.7	$4.82	
60	G25	Med.	16896-2	▲	60G25/CL/LL 12/1	120	12	Clear Long Life Globe	C, CC-6		4 7/16	2000		705	1.8	$7.23	2670
			16749-4	▲	60G25/W/LL 12/1	120	12	White Long Life Globe	C, CC-6		4 7/16	2000		665	1.8	$7.23	2670
			16899-6	▲	60G25/CL/LL 4/3	120	12	Clear Long Life Globe	C, CC-6		4 7/16	2000		705	1.8	$7.23	2670
			16900-3	▲	60G25W/LL 4/3	120	12	White Long Life Globe	C, CC-6		4 7/16	2000		665	1.8	$7.23	2670
	G30	Med.	16849-2	▲	60G30/W/LL 6/1	120	6	White Long Life Globe	C, C-9		5 1/2	3000		550	2.7	$7.23	2650
	G40	Med.	16851-8	▲	60G40/W/LL 6/1	120	6	White Long Life Globe	C, C-9		6 15/16	3000		595	2.7	$7.23	2550
			16852-6	▲	60G40/CL/LL 6/1	120	6	Clear Long Life Globe	C, C-9		6 15/16	3000		665	2.7	$7.23	2550
100	G40	Med.	16853-4	▲	100G40/W/LL 6/1	120	6	White Long Life Globe	C, C-9		6 15/16	3000		985	2.7	$12.05	2550

For the most current product information, go to the e-catalog on **www.philips.com**
Incandescent symbols and footnotes located on page 132

Incandescent Lamps

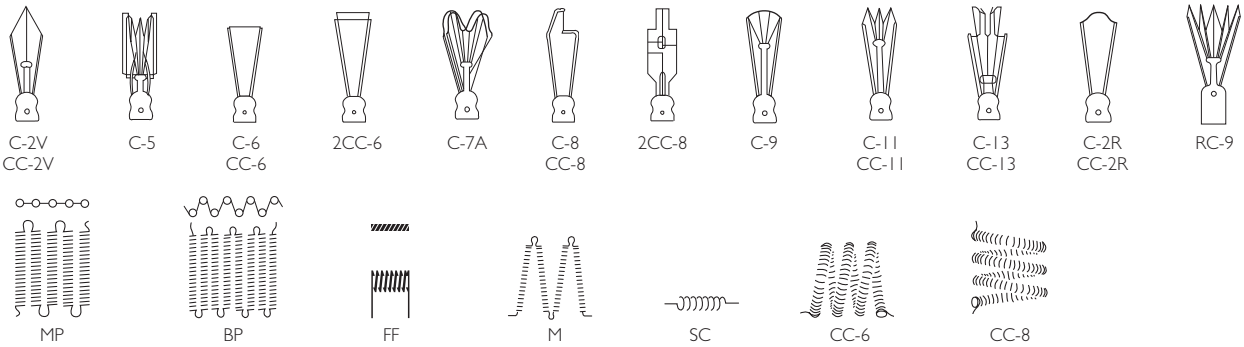
TuffGuard Incandescent Coated Lamps

Watts	Bulb	Base	Product Number	Symbols, Footnotes	Description	Volts	Pkg. Qty.‡	Rated Avg. Life (Hrs.)(93)	Availability	Lumens	Life Years (446)	Energy Cost (445)	Color Temp. (K)
TuffGuard Incandescent Coated Lamps													**FTC REQUIREMENTS**
65	BR30	Med.	20190-5	(87) ▲ ✔	65BR30/FL55/TG 120V 12/1	120	12	2000	Made to Order		1.8	$7.83	
75	A19	Med.	15933-5	▲	75A/TG 130V 48/1	120	48	750	Stocked		0.7	$9.03	
			20192-1	▲	75A/RS/V/TG	120–130	12	1000	Stocked		0.9	$9.03	
100	A21	Med.	15927-7		100A/RS/VS/BR/TG 120/130V 60/1	120	60	1000	Stocked		0.9	$12.05	
125	BR40	Med.	15930-1	(27,87,89)	125BR40/1/TG 120V 4/1	120	4	5000	Stocked		4.6	$15.06	
250	R40	Med.	15932-7	(27,87,89)	250R40/HR/TG 120V 4/1	120	4	5000	Stocked		4.6	$30.11	
	BR40	Med.	20205-1	(27,87)	250BR40/1/TG 120V 4/1	120	4	5000	Stocked		4.6	$30.11	

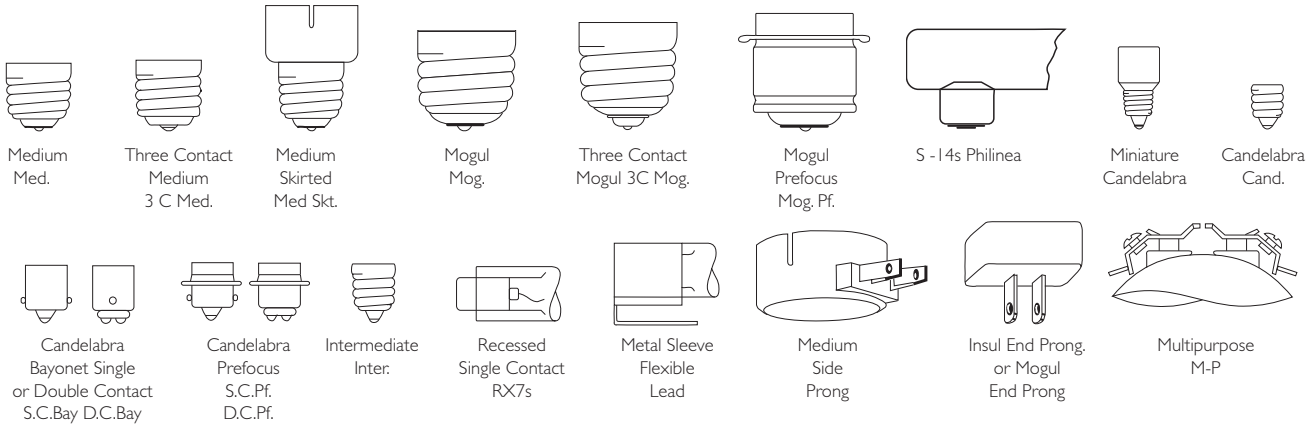
For the most current product information, go to the e-catalog on **www.philips.com**
Incandescent symbols and footnotes located on page 132

Filament Designations (Not Actual Sizes)

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

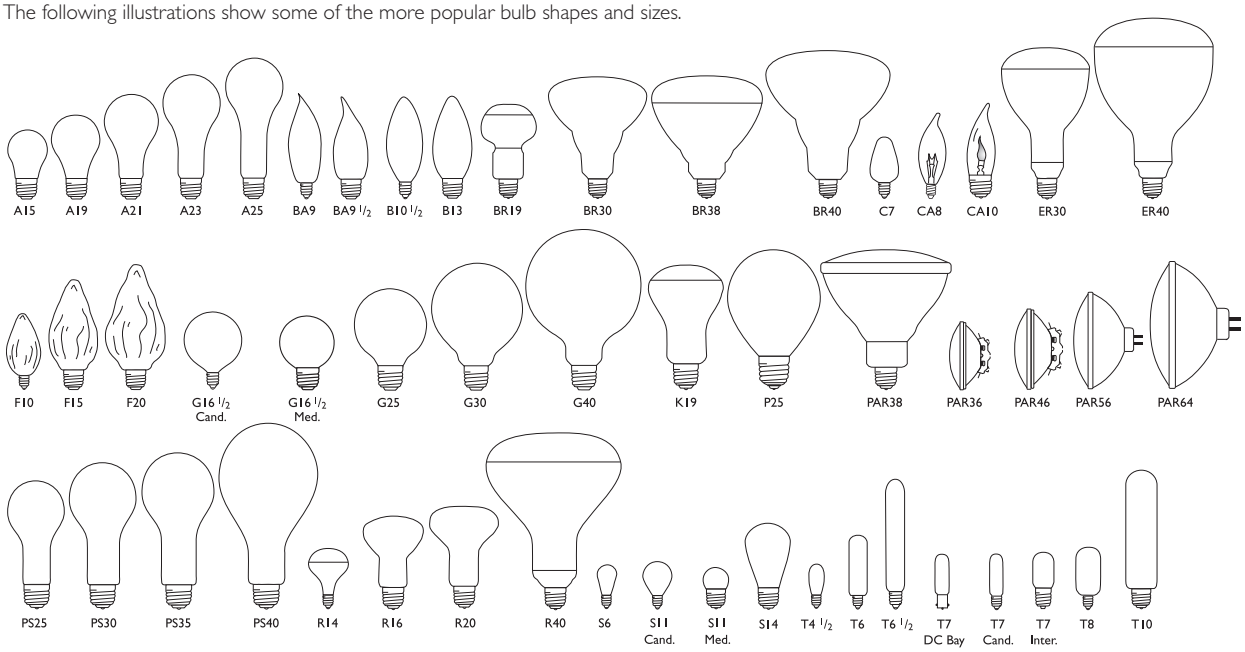


Base Types (Not Actual Sizes)



Bulb Shapes (Not Actual Sizes)

The size and shape of a bulb is designated by a letter or letters followed by a number. The letter indicates the shape of the bulb while the number indicates the diameter of the bulb in eighths of an inch. For example, "T10" indicates a tubular shaped bulb having a diameter of 10/8 or 1¼ inches. The following illustrations show some of the more popular bulb shapes and sizes.



Incandescent Lamps

Symbols and Footnotes

For the most current product information, go to the e-catalog on www.philips.com

□ Exclusive to Philips Lighting Company

■ Nickel plated brass base

$ Energy Saving Product

▲ Aluminum base

★ Heat resisting glass bulb

♦ Maximum Beam Candlepower

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

© This Bulb Meets US Federal Minimum Efficiency Standard

† New since last printing

* Two Lamp Carded Pack

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

✔ Consider the compact fluorescent lamps listed on pages 52–69 or the energy saving halogen listed on pages 102–105 for energy savings

G = General Lighting

S = Street Lighting

▼ PAR38 (one piece)

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

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

(4) Average laboratory life is 200 hours for vacuum cleaner and 600 hours for sewing machine service. Design life 1000 hours.

(8) Operate base down.

(12) Operate base down to horizontal.

(14) Operate base up.

(18) Base is medium left hand thread.

(19) May not give satisfactory performance if any accessory equipment is attached to or touches the glass bulb.

(27) Average laboratory life in excess of 5000 hours. In-service life depends upon service conditions.

(29) Suitable for indoor and outdoor service.

(31) Operate only in porcelain sockets.

(37) Should not be used in equipment where the base temperature will exceed 500°F.

(43) Unless otherwise noted, may be operated in any position, but lumen maintenance is best when operated vertically base up.

(46) Stippled, rounded cover.

(51) Light output is maintained best when operated within 45° of vertically base up.

(53) The bulb, though made of heat-resistant glass, may break if moisture falls on it. Not recommended for use in enclosed, close-fitting housings.

(63) Design volts 145.

(64) For use only in equipment specially designed to maintain bulb and base temperature within safe limits.

(66) Silicone Coating reduces lumen output from Standard Values less than 3%.

(82) CAUTION: To avoid deterioration of lampholder by heat, use only heat resistant lampholders or fixtures listed by a nationally recognized electrical testing organization for use with reflector or PAR lamps.

(87) Do not allow hot bulb to come in contact with liquid or metal parts of the fixture, as glass may shatter. Do not use outdoors. Do not operate in close proximity to flammable materials or those adversely affected by heat or drying. Operate only in heat resistant sockets.

(89) CAUTION: Do not operate in close proximity to flammable materials or those adversely affected by heat or drying. Operate only in heat resistant sockets.

WARNING: Use carefully. May cause serious burns. Do not use over insensitive skin areas or in the presence of poor circulation. The unattended use of infrared heat by children or incapacitated persons may be dangerous.

—Lamp should not be placed closer than 18" to the surface being irradiated.

—Do not use for therapeutic or topical applications unless recommended by a physician.

—For food warming, use only lamps with heat resisting glass.

(93) Rated average life is the length of operation (in hours) at which point an average of 50% of the lamps will still be operational and 50% will not.

WARNING: For indoor use only.

(445) Estimated energy cost is based on 3 hrs/day, 11¢/kWh. Cost depends on rates and use.

(446) Life in years is based on 3 hrs/day.

Halogen and Incandescent Replacement Guide

General Service Incandescent Lamps Affected by EISA Section 321*

Banned by Legislation		Professional and Consumer Replacement	
Product Number	Ordering Code	Product Number	Ordering Code
13254-8	100A/W 12/4	40982-1	72A19/EV
13255-5	100A/W/TP 24/4	40982-1	72A19/EV
13423-9	100G25/W/LL 12/1	—	—
13560-8	75A/NTL 12/4	22696-9	53A19/EV/NTL
13561-6	100A/NTL 12/4	22699-3	72A19/EV/NTL
13684-6	100A	40982-1	72A19/EV
13996-3	75A/CL 120/1 PRO	41048-0	72A19/EV/CL
13997-1	75A 120/1 PRO	40982-1	72A19/EV
13998-9	100A/CL 120/1 PRO	41048-0	72A19/EV/CL
13999-7	100A 120/1 PRO	40982-1	72A19/EV
14297-5	200/99IF	—	—
14997-0	75A/W 12/4	40982-1	72A19/EV
15000-3	75A-67A/99/EW	40982-1	72A19/EV
15001-1	100A-90A/99EW	40982-1	72A19/EV
15002-9	150A-135A/99/EW	—	—
15008-6	100A/CL/LL 12/2	41048-0	72A19/EV/CL
15009-4	150A/CL/LL 12/1 TP	—	—
15129-0	75A/NTL/2X 12/4	22696-9	53A19/EV/NTL
15130-8	100A/NTL/2X 12/4	22699-3	72A19/EV/NTL
16739-5	75A/WL 24/4	40982-1	72A19/EV
16740-3	100A/WL 24/4		
16801-3	75A/CL/LL 12/2	41048-0	72A19/EV/CL
16844-3	100F20/POSTLT/CL/LL 6/1		
16850-0	100G30/W/LL 6/1	—	—
16862-5	100A/WL 12/4		
16866-6	150A/WL 12/1	—	—
16879-9	75A/WL 12/4		
21386-8	BC70BT15/HAL/W	40982-1	72A19/EV
21443-7	38A/W/TP 12/4		
21444-5	38A/CL	41050-6	29A19/EV/CL
21446-0	38A/CL/LL 12-2 WP TP		
21447-8	38A/WL/TP 12/4	40983-9	29A19/EV
21452-8	57A/CL/LL/TP 12/2		
21453-6	71A/W/TP 24/4	40982-1	72A19/EV
21454-4	71A		
21455-1	71A/CL/LL 120V 12/2 WP TP	41048-0	72A19/EV/CL
21459-3	95A		
21460-1	95A/W 24/4	40982-1	72A19/EV
21461-9	95A/WL 24/4		
21463-5	57A/CL	40984-7	43A19/EV
21466-8	57A		
21469-2	71A	40982-1	72A19/EV
21470-0	71A/CL		
21473-4	95A/CL	41048-0	72A19/EV/CL
21474-2	95A		
21497-3	57A 12/4	40984-7	43A19/EV
21498-1	57A/W/TP 12/4		
21499-9	57A/WL 12/4 TP	40984-7	43A19/EV
21501-2	71A/W/TP 12/4		

* EISA Section 321 refers to energy efficiency standards for general service incandescent lamps.

Halogen and Incandescent Replacement Guide

General Service Incandescent Lamps Affected by EISA Section 321*

Banned by Legislation		Professional and Consumer Replacement	
Product Number	Ordering Code	Product Number	Ordering Code
21502-0	71A/WL 24/4	40982-1	72A19/EV
21503-8	71A/WL /TP 12/4	40982-1	72A19/EV
21504-6	95A/W/TP 12/4	40982-1	72A19/EV
21818-0	95A/WL 12/4	40982-1	72A19/EV
22240-6	75A-67A/EW	40982-1	72A19/EV
22241-4	75A-67A/EW	40982-1	72A19/EV
22243-0	100A-90A/EW	40982-1	72A19/EV
22244-8	100A-90A/EW	40982-1	72A19/EV
22430-3	100A23	—	—
22979-9	100A/99	40982-1	72A19/EV
23415-3	75A 120V 24-2LP/SL W/P	40982-1	72A19/EV
24135-6	75A/WL	40982-1	72A19/EV
24927-6	BC75BT15/HAL/W	40982-1	72A19/EV
24931-8	BC100BT15/HAL/W	40982-1	72A19/EV
26836-7	135A25/35	—	—
27069-4	150A	—	—
27083-5	75A 12/4	40982-1	72A19/EV
28171-7	100A21	—	—
28172-5	150A23	—	—
28173-3	150	—	—
28174-1	150PS25/99	—	—
28175-8	150A-135A/EW	—	—
31305-6	75A21	—	—
37406-6	75A/99	40982-1	72A19/EV
37411-6	100A21/35	—	—
37417-3	150A/99	—	—
37460-3	100A21/99	—	—
37472-8	75A	40982-1	72A19/EV
37473-6	75A	40982-1	72A19/EV
37474-4	100A	40982-1	72A19/EV
37476-9	100A	40982-1	72A19/EV
37485-0	75A/W 12/4	40982-1	72A19/EV
37486-8	75A/W/TP 24/4	40982-1	72A19/EV
37525-3	75A/CL	41048-0	72A19/EV/CL
37527-9	100A/CL	41048-0	72A19/EV/CL
40948-2	57A/W/TP	40984-7	43A19/EV

* EISA Section 321 refers to energy efficiency standards for general service incandescent lamps.

Halogen and Incandescent Replacement Guide

Incandescent Reflector Lamps Affected by EISA Section 322 & DOE Rulemaking*

Banned by Legislation		Professional Replacement		Consumer Replacement	
Product #	Ordering Code	Product #	Ordering Code	Product #	Ordering Code
13401-5	45PAR38/HAL/FL/LL	23845-1	39PAR38/IRC+/FL25	41942-4	39PAR38/EV/FL25
13402-3	90PAR38/HAL/FL/LL	13862-8	70PAR38/IRC+/FL25	41940-8	72PAR38/EV/FL25
13403-1	90PAR38/HAL/FL/LL	13862-8	70PAR38/IRC+/FL25	41940-8	72PAR38/EV/FL25
13404-9	45PAR38/HAL/SP/LL	23844-4	39PAR38/IRC+/SP10	41943-2	39PAR38/EV/SP10
13405-6	90PAR38/HAL/SP/LL	13861-0	70PAR38/IRC+/SP10	41938-2	72PAR38/EV/SP10
13407-2	50PAR30L/HAL/FL/LL	23429-4	50PAR30L/IRC+/FL25	41974-7	39PAR30L/EV/FL25
13408-0	75PAR30L/HAL/FL/LL	23429-4	50PAR30L/IRC+/FL25	41954-9	53PAR30L/EV/FL25
13409-8	75PAR30L/HAL/SP/LL	23799-0	50PAR30L/IRC+/SP10	41956-4	53PAR30L/EV/SP10
13410-6	50PAR20/HAL/FL/LL	15216-5	20PAR20E/HAL/FL25	41986-1	39PAR20/EV/FL25
13411-4	50PAR20/HAL/SP/LL	15216-5	20PAR20E/HAL/FL25	41973-9	39PAR20/EV/SP10
13467-6	75PAR30S/HAL/FL25	23856-8	55PAR30S/IRC+/FL25	42143-8	53PAR30S/EV/FL25
13846-1	50PAR20/HAL/SP10	40494-7	20PAR20E/HAL/SP10	41973-9	39PAR20/EV/SP10
13848-7	75PAR30L/HAL/SP10	23799-0	50PAR30L/IRC+/SP10	41956-4	53PAR30L/EV/SP10
13849-5	75PAR30S/HAL/SP10	23855-0	55PAR30S/IRC+/SP10	42112-3	53PAR30S/EV/SP10
13853-7	50PAR30S/IRC/HAL/SP10	23853-5	39PAR30S/IRC+/SP10	42112-3	53PAR30S/EV/SP10
13854-5	50PAR30S/IRC/HAL/FL25	23854-3	39PAR30S/IRC+/FL25	42143-8	53PAR30S/EV/FL25
13855-2	50PAR30S/IRC/HAL/WFL40	23854-3	39PAR30S/IRC+/FL25	—	—
13856-0	45PAR38/IRC/HAL/FL25	23845-1	39PAR38/IRC+/FL25	41942-4	39PAR38/EV/FL25
13857-8	45PAR38/IRC/HAL/WFL40	23849-3	55PAR38/IRC+/WFL40	—	—
13858-6	55PAR38/IRC/HAL/SP10	14505-2	50PAR38/IRC+/SP10	41945-7	53PAR38/EV/SP10
13859-4	55PAR38/IRC/HAL/FL25	14506-0	50PAR38/IRC+/FL25	41944-0	53PAR38/EV/FL25
13860-2	55PAR38/IRC/HAL/WFL40	14507-8	50PAR38/IRC/WFL40	—	—
13864-4	90PAR38/IRC/HAL/SP10	13861-0	70PAR38/IRC+/SP10	—	—
13865-1	90PAR38/IRC/HAL/FL25	13862-8	70PAR38/IRC+/FL25	42498-5	83PAR38/EV/FL25/LL
13866-9	90PAR38/IRC/HAL/WFL40	13863-6	70PAR38/IRC+/WFL40	—	—
13873-5	60PAR38/IRC/HAL/SP10	23847-7	55PAR38/IRC+/SP10	41938-2	72PAR38/EV/SP10
13874-3	60PAR38/IRC/HAL/FL25	23865-9	55PAR38/IRC+/FL25	41940-8	72PAR38/EV/FL25
13875-0	60PAR38/IRC/HAL/WFL40	23849-3	55PAR38/IRC+/WFL40	—	—
13879-2	60PAR38/IRC/HAL/FL25	23865-9	55PAR38/IRC+/FL25	41940-8	72PAR38/EV/FL25
13918-8	60PAR38/IRC/HAL/WFL40	23849-3	55PAR38/IRC+/WFL40	—	—
13919-6	45PAR38/IRC/HAL/SP10	23844-4	39PAR38/IRC+/SP10	41943-2	39PAR38/EV/SP10
13920-4	60PAR38/IRC/HAL/SP10	23847-7	55PAR38/IRC+/SP10	41938-2	72PAR38/EV/SP10
14022-8	60PAR38/HAL/FL/LL	23845-1	39PAR38/IRC+/FL25	42128-9	39PAR38/EV/FL25/LL
14482-4	60PAR38/HAL/SP10	23844-4	39PAR38/IRC+/SP10	41944-0	53PAR38/EV/FL25
14483-2	60PAR38/HAL/FL25	23845-1	39PAR38/IRC+/FL25	41945-7	53PAR38/EV/SP10
14484-0	60PAR38/HAL/WFL40	23849-3	55PAR38/IRC+/WFL40	—	—
14485-7	75PAR38/HAL/SP10	23847-7	55PAR38/IRC+/SP10	41945-7	53PAR38/EV/SP10
14486-5	75PAR38/HAL/FL25	23865-9	55PAR38/IRC+/FL25	41944-0	53PAR38/EV/FL25
14487-3	90PAR38/HAL/WFL40	13863-6	70PAR38/IRC+/WFL40	—	—
14488-1	60PAR38/HAL/SP10	23844-4	39PAR38/IRC+/SP10	41944-0	53PAR38/EV/FL25
14489-9	60PAR38/HAL/FL25	23845-1	39PAR38/IRC+/FL25	41945-7	53PAR38/EV/SP10
14490-7	60PAR38/HAL/FL25	23845-1	39PAR38/IRC+/FL25	41945-7	53PAR38/EV/SP10
14491-5	60PAR38/HAL/WFL40	23849-3	55PAR38/IRC+/WFL40	—	—
14493-1	75PAR38/HAL/SP10	23847-7	55PAR38/IRC+/SP10	41945-7	53PAR38/EV/SP10
14494-9	75PAR38/HAL/FL25	23865-9	55PAR38/IRC+/FL25	41944-0	53PAR38/EV/FL25
14495-5	90PAR38/HAL/WFL40	13863-6	70PAR38/IRC+/WFL40	—	—
14496-3	40PAR30S/IRC/HAL/SP10	23853-5	39PAR30S/IRC+/SP10	42111-5	39PAR30S/EV/SP10
14497-1	40PAR30S/IRC/HAL/FL25	23854-3	39PAR30S/IRC+/FL25	42110-7	39PAR30S/EV/FL25
14498-9	40PAR30S/IRC/HAL/WFL40	23854-3	39PAR30S/IRC+/FL25	42110-7	39PAR30S/EV/FL25
14499-7	50PAR30S/IRC+/SP10	23853-5	39PAR30S/IRC+/SP10	42112-3	53PAR30S/EV/SP10
14500-3	50PAR30S/IRC+/FL25	23854-3	39PAR30S/IRC+/FL25	42143-8	53PAR30S/EV/FL25
14501-1	50PAR30S/IRC+/WFL40	23854-3	39PAR30S/IRC+/FL25	—	—
14502-9	40PAR38/IRC/HAL/SP10	23844-4	39PAR38/IRC+/SP10	41943-2	39PAR38/EV/SP10
14503-7	40PAR38/IRC/HAL/FL25	23845-1	39PAR38/IRC+/FL25	41942-4	39PAR38/EV/FL25
14504-5	40PAR38/IRC/HAL/WFL40	23845-1	39PAR38/IRC+/FL25	41942-4	39PAR38/EV/FL25
14507-8	50PAR38/IRC/HAL/WFL40	23849-3	55PAR38/IRC+/WFL40	—	—
14720-7	75PAR38/NLP/FL	23865-9	55PAR38/IRC+/FL25	41944-0	53PAR38/EV/FL25
14989-8	60PAR30S/IRC/HAL/WFL40	23857-6	55PAR30S/IRC+/WFL40	—	—
15004-5	60PAR30S/IRC/HAL/SP10	23855-0	55PAR30S/IRC+/SP10	42112-3	53PAR30S/EV/SP10

* EISA Section 322 & DOE Rulemaking refers to energy efficiency standards for incandescent reflector lamps.

Halogen and Incandescent Replacement Guide

Incandescent Reflector Lamps Affected by EISA Section 322 & DOE Rulemaking*

Banned by Legislation		Professional Replacement		Consumer Replacement	
Product #	Ordering Code	Product #	Ordering Code	Product #	Ordering Code
15007-8	60PAR30S/IRC/HAL/FL25	23856-8	55PAR30S/IRC+/FL25	42143-8	53PAR30S/EV/FL25
15879-0	60BR30/HAL/FL	21359-5	40BR30/HEA/FL	42118-0	50BR30/EV/FL
20231-7	45PAR38/HAL/FL25	23845-1	39PAR38/IRC+/FL25	41942-4	39PAR38/EV/FL25
20234-1	90PAR38/HAL/FL25	13862-8	70PAR38/IRC+/FL25	41940-8	72PAR38/EV/FL25
20257-2	60BR30/HAL/NLP/FL	—	—	—	—
20573-2	60BR40/HAL/NLP/FL	—	—	—	—
20579-9	60BR30/HAL/FL/LL	21359-5	40BR30/HEA/FL	42118-0	50BR30/EV/FL
20580-7	60BR40/HAL/FL/LL	22238-0	40BR40/HEA/FL	42116-4	40BR40/EV/FL
22486-5	60K19/DL	—	—	—	—
22906-2	50PAR20/HAL/SP10	40494-7	20PAR20E/HAL/SP10	41973-9	39PAR20/EV/SP10
22911-2	50PAR20/HAL/FL25	15216-5	20PAR20E/HAL/FL25	41986-1	39PAR20/EV/FL25
22921-1	50PAR20/HAL/FL25	15216-5	20PAR20E/HAL/FL25	41986-1	39PAR20/EV/FL25
22922-9	50PAR30L/HAL/SP10	23799-0	50PAR30L/IRC+/SP10	42303-8	39PAR30L/EV/SP10
22923-7	50PAR30L/HAL/WSP16	23799-0	50PAR30L/IRC+/SP10	42303-8	39PAR30L/EV/SP10
22925-2	50PAR30L/HAL/FL25	23429-4	50PAR30L/IRC+/FL25	41942-4	39PAR38/EV/FL25
22926-0	50PAR30L/HAL/FL25	23429-4	50PAR30L/IRC+/FL25	41942-4	39PAR38/EV/FL25
22927-8	50PAR30L/HAL/WFL40	23800-6	50PAR30L/IRC+/WFL40	—	—
22928-6	50PAR30L/HAL/WFL40	23800-6	50PAR30L/IRC+/WFL40	—	—
22930-2	75PAR30L/HAL/SP10	23799-0	50PAR30L/IRC+/SP10	41956-4	53PAR30L/EV/SP10
22934-4	75PAR30L/HAL/WSP16	23799-0	50PAR30L/IRC+/SP10	41956-4	53PAR30L/EV/SP10
22941-9	75PAR30L/HAL/FL25	23429-4	50PAR30L/IRC+/FL25	41954-9	53PAR30L/EV/FL25
22943-5	75PAR30L/HAL/FL25	23429-4	50PAR30L/IRC+/FL25	41954-9	53PAR30L/EV/FL25
22944-3	75PAR30L/HAL/WFL40	23800-6	50PAR30L/IRC+/WFL40	—	—
22945-0	75PAR30L/HAL/WFL40	23800-6	50PAR30L/IRC+/WFL40	—	—
22946-8	45PAR38/HAL/SP10	23844-4	39PAR38/IRC+/SP10	41943-2	39PAR38/EV/SP10
22947-6	45PAR38/HAL/SP10	23844-4	39PAR38/IRC+/SP10	41943-2	39PAR38/EV/SP10
22949-2	45PAR38/HAL/FL25	23845-1	39PAR38/IRC+/FL25	41942-4	39PAR38/EV/FL25
23069-8	90PAR38/HAL/SP10	13861-0	70PAR38/IRC+/SP10	41938-2	72PAR38/EV/SP10
23650-5	90PAR38/HAL/SP10	13861-0	70PAR38/IRC+/SP10	41938-2	72PAR38/EV/SP10
23651-3	90PAR38/HAL/FL25	13862-8	70PAR38/IRC+/FL25	41940-8	72PAR38/EV/FL25
26349-1	50PAR30S/HAL/SP10	23853-5	39PAR30S/IRC+/SP10	—	—
26357-4	50PAR30S/HAL/SP10	23853-5	39PAR30S/IRC+/SP10	—	—
26358-2	50PAR30S/HAL/FL25	23854-3	39PAR30S/IRC+/FL25	—	—
26362-4	50PAR30S/HAL/FL25	23854-3	39PAR30S/IRC+/FL25	—	—
26364-0	50PAR30S/HAL/WFL40	23854-3	39PAR30S/IRC+/FL25	—	—
26384-8	50PAR30S/HAL/WFL40	23854-3	39PAR30S/IRC+/FL25	—	—
26877-1	90PAR38/HAL/FL	13862-8	70PAR38/IRC+/FL25	41940-8	72PAR38/EV/FL25
26883-9	45PAR38/HAL/FL	23845-1	39PAR38/IRC+/FL25	41942-4	39PAR38/EV/FL25
27429-0	90PAR38/HAL/FL	13862-8	70PAR38/IRC+/FL25	41946-5	72PAR38/EV/FL25
28479-4	75PAR30S/HAL/SP10	23855-0	55PAR30S/IRC+/SP10	42112-3	53PAR30S/EV/SP10
28488-5	75PAR30S/HAL/FL25	23856-8	55PAR30S/IRC+/FL25	42143-8	53PAR30S/EV/FL25
28491-9	75PAR30S/HAL/WFL40	23857-6	55PAR30S/IRC+/WFL40	—	—
28492-7	75PAR30S/HAL/WFL40	23857-6	55PAR30S/IRC+/WFL40	—	—
30728-0	40K19/DL	—	—	—	—
35751-7	60PAR30S/HAL/SP10	23855-0	55PAR30S/IRC+/SP10	42112-3	53PAR30S/EV/SP10
35752-5	60PAR30S/HAL/SP10	23855-0	55PAR30S/IRC+/SP10	42112-3	53PAR30S/EV/SP10
35753-3	60PAR30S/HAL/FL25	23856-8	55PAR30S/IRC+/FL25	42143-8	53PAR30S/EV/FL25
35758-2	60PAR30S/HAL/WFL40	23857-6	55PAR30S/IRC+/WFL40	—	—
35762-4	60PAR30S/HAL/WFL40	23857-6	55PAR30S/IRC+/WFL40	—	—
35788-9	60PAR30S/HAL/FL25	23856-8	55PAR30S/IRC+/FL25	42143-8	53PAR30S/EV/FL25
38849-6	60BR30/HAL/FL	21359-5	40BR30/HEA/FL	42118-0	50BR30/EV/FL
38875-1	60BR30/HAL/SP	—	—	—	—
38884-3	60PAR38/HAL/2FL	—	—	—	—
38886-8	90PAR38/HAL/2FL	—	—	—	—
38887-6	60PAR38/HAL/3FL	38890-0	90PAR38/HAL/3FL	—	—
38925-4	90PAR38/HAL/FL	13862-8	70PAR38/IRC+/FL25	41941-6	72PAR38/EV/FL25
39174-8	60BR40/HAL/FL	22238-0	40BR40/HEA/FL	42116-4	40BR40/EV/FL

* EISA Section 322 & DOE Rulemaking refers to energy efficiency standards for incandescent reflector lamps.

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Philips FastFit Lamps feature a rear loading base system which enables easy lamp replacement.

Reliable, high quality lamps provide ultimate performance

Philips HPL+ Lamps with P3 technology enable flexible burning positions to ensure accurate aiming and supply of light wherever it is needed. HPL+ lamps are now designed to last longer, making them ideal for theater, studio and event lighting.

Philips FastFit is a new lamp concept for Single Ended MSR Gold and Halogen Hi-Brite lamp types. The rear load base system enables easy lamp replacement and adjustments in seconds in difficult stage conditions. The overall lamp length is reduced making more compact and lighter fixture designs possible.

Philips Germicidal T5 Sterilamp featuring ALTO Lamp Technology uses UV technology, which allows for the emission of UVC† energy to disinfect water, therefore the Philips Germicidal T5 Sterilamp is a cost effective and environmentally responsible disinfection alternative to chemical treatment of waste water.

† UVC is a band of ultraviolet radiation with wavelengths shorter than 280 nanometers.

	HPL+ Lamps	MSR Hot Restrike Lamps	FastFit Lamps	TUV Amalgam XPT System	Germicidal T5 Sterilamp
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Specialty Lamps

Photo Projection Lamps

ANSI Code	Product Number	Pkg. Qty.	Volts	Avg. Watts (Amps)	Bulb	Base	Rated Avg. Life (Hrs.)*	Coil Type	LCL (In.)	LCL (mm.)	MOL (In.)	MOL (mm.)	Rated Approx. Lumens	Color Temp (K)	Operating Position
Photo Projection Lamps															
BRL	31627-3	24	12	50	T3.5	G6.35	50	C-6	1 3/50	30	1 73/100	44.0	1500	3400	BDTH
DDL	31509-3	24	20	150	MR16	GX5.3	500	CC-6	—	—	1 3/4	44.5	—	3150	BDTH
DZA	28117-0	100	10.8	30	T5	G5.3	1000	—	—	—	1 17/20	47.0	570	3100	BDTH
EFN	31502-8	50	12	75	MR16	GZ6.35	50	C-6	—	—	1 13/20	42.0	—	3350	BDTH
EFP	31488-0	50	12	100	MR16	GZ6.35	50	C-6	—	—	1 13/20	42.0	—	3350	BDTH
EFR	31490-6	50	15	150	MR16	GZ6.35	50	C-6	—	—	1 13/20	42.0	—	3350	BDTH
EFP/5H	13163-1	50	12	100	MR16	GZ6.35	500				1 3/5	42.0	580	3400	ANY
EFR/5H	13656-4	50	15	150	MR16	GZ6.35	500				1 3/5	42.0	720	3400	ANY
EHJ	31758-6	100	24	250	T4	G6.35	50	C-6F	1 3/10	33	2 17/100	55.0	9400	3400	BD
EHJ-X	23175-3	200	24	250	T4	G6.35	50	C-6F	1 3/10	33	2 17/100	55.0	10,000	3400	BD
EJA	44142-8	24	21	150	MR16	GX5.3	40	CC-6	—	—	1 17/20	44.5	—	3350	BDTH
EJL	31508-5	24	24	200	MR16	GX5.3	50	CC-6	—	—	1 17/20	44.5	—	3400	BDTH
EJM	23942-6	24	21	150	MR16	GX5.3	40	CC-6	—	—	1 3/4	44.5	—	3400	BDTH
EKE	31592-9	24	21	150	MR16	GX5.3	200	CC-6	—	—	1 3/4	44.5	—	3400	BDTH
ELC	23103-5	24	24	250	MR16	GX5.3	50	CC-6	—	—	1 3/4	44.5	—	3400	BDTH
ELC/5H	38166-5	24	24	250	MR16	GX5.3	500	CC-6	—	—	1 3/4	44.5	—	3400	BDTH
ELC/10H	13658-0	24	24	250	MR16	GX5.3	1000	CC-6	—	—	1 3/4	45.0	—	3400	BDTH
ELD	31618-2	24	21	150	MR16	GX5.3	40	CC-6	—	—	1 17/20	44.5	—	3350	BDTH
ELH	31619-0	24	120	300	MR16	GY5.3	35	CC-8	—	—	1 17/20	44.5	—	3350	BDTH
ENH	31621-6	24	120	250	MR16	GV5.3	175	CC-8	—	—	1 3/4	44.5	—	3250	BDTH
EPZ/DJT	31496-3	50	13.8	50	MR16	GX5.3	1000							3150	BDTH
ESA/FHD	26126-3	100	6	10	T2.5	G4	100	C-6	7/8	19.6	1 3/50	30.0	200	3200	ANY
ESB	25678-4	100	6	20	T3	G4	100	C-6	7/8	19.5	1 3/8	31.0	420	3200	ANY
EVA	25676-8	100	12	100	T3.5	GY6.35	1000	C-6F	1 3/50	30	1 73/100	44.0	2500	3200	ANY
EVC	31884-0	24	24	250	T5	G6.35	300	C-6F	1 3/10	33	2 9/25	57.0	8400	3200	ANY
EVD-X	23177-9	24	36	400	T6	G6.35	50	C-6F	1 21/50	36.1	2 9/25	59.9	16,625	3400	BDTH
EYB	23257-9	24	82	360	T5	G5.3	75	CC-8	1 1/4	31	2 1/4	57.0	10,000	3250	BDTH
FCR	26101-6	100	12	100	T3.5	GY6.35	50	C-6F	1 3/50	30	1 73/100	44.0	3400	3400	BDTH
FCS	20607-8	200	24	150	T4	G6.35	50	C-6F	1 3/50	30	2	50.8	5200	3400	BDTH
FCS-X	23174-6	100	24	150	T4	G6.35	50	C-6F	1 3/50	30	2	50.8	6000	3400	BDTH
FJX	31499-7	50	13.8	30	MR16	GX5.3	500	C-8	—	—	1 7/8	44.9	—	3150	ANY
FLW	20492-5	24	24	300	T6	GY6.3	50	C-6F	1 3/10	33	2 7/10	55.0	10,450	3400	BD±15°
JCR	24923-5	24	15	150	MR16	GZ6.35	500	C-8	—	—	1 13/20	42.0	—	—	BDTH
5761	25713-9	100	6	30	T3.5	G4	100	C-6F	7/8	19.6	1 3/8	31.0	765	3200	ANY
6605	25684-2	100	6	10	T3	G4	2000	C-6	7/8	19.5	1 3/8	30.0	150	2700	ANY
13117	37614-5	50	17	150	MR16	GX5.3	1000	CC-6	—	—	1 17/20	47.0	—	3200	ANY
13165	44295-4	50	14	35	MR11	GZ4	50	—	—	—	1 1/2	38.0	—	—	BD±130°
13298	16094-5	50	10	52	MR11	GZ4	20	CC-8	—	—	1 7/8	44.9	—	—	HORIZ.±40°
13528	31504-4	360	6	15	MR11	GZ4	500	C-6	—	—	1 1/2	38.0	—	—	BD±105°
13865	26423-4	50	12	75	MR11	G5.3	50	—	—	—	1 57/100	40.0	—	—	BD±105°
14623	15881-6	100	17	95	T4	GY6.35	2000	C-8	—	—	1 97/100	50.0	2150	3000	ANY

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ANSI Code	Product Number	Watts	Description	Volts	Base	MOL (In.)	LCL (In.)	Mean Lumens	Rated Avg. Life (Hrs.)*	Filament	Color Temp (K)	Envelope Finish
Stage/Studio/TV Lamps												
BTL	31891-5	500		120	Med. Pf.	4½	2 29/50	11,000	500	C-13D	3050	Clear
BTN	20481-8	750		120	Med. Pf.	4½	2 3/16	17,600	500	C-13D	3050	Clear
CYV	31892-3	1000		120	Mog. Bipost	7¾	5	28,500	200	C-13D	3200	Clear
CYX	31893-1	2000		120	Mog. Bipost	8½	5	59,000	300	C-13D	3200	Clear
DWT	38295-2	1000	1000T6Q/CL	120	R7s	5⅝		23,400	2000	CC-8	3000	Clear
EGT	31896-4	1000		120	Med. Bipost	5½	2½	28,500	250	C-13D	3200	Clear
FEL	26979-5	1000	1000Q/CL	120	Med. 2-Pin	4	2⅜	27,500	300	CC-8	3200	Clear
FRK	14952-6	650	6638P	120	GY9.5	1⅞		17,500	200	C-13D	3200	Clear
GKV	36372-1	600	6986P	230	G9.5	4½	2⅜	15,000	400	C-13D	3200	Clear
GKV	27287-2	600	6986P	240	G9.5	3 3/10	2⅜	15,000	300	Bi-Plane	3200	Clear
GLA	29432-2	575	6992P	115	G9.5	4	2⅜	13,000	1500	C-13D	3100	Clear
GLB	36373-9	575	6991P	230	G9.5	4	2⅜	13,000	1500	C-13D	3100	Clear
GLB	27289-8	600	6991P	240	G9.5	4	2⅜	13,000	1500	Bi-Plane	3100	Clear
GLC	28739-1	575	6989P	115	G9.5	4	2⅜	15,500	400	C-13D	3200	Clear
GLD	13420-5	750	6981P	115	G9.5	4	2⅜	18,600	300	C-13D	3200	Clear
6980Z	38296-0	1200	6980Z	80	G22	5½	2½	37,500	200	C-13D	3250	Clear
7002Y	38297-8	1000	7002Y 115V	115	G22	6	2½	29,000	250	Bi-Plane	3200	Clear
7015 TXO	15179-5	750	7015 TXO	100	GX9.5	3¾	1 5/8	18,600	300	C-13	3200	Clear

* Rated Average Life is the length of operation (in hours) at which point 50% of a large sample of lamps will still be operational and 50% will not

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

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Specialty Lamps

High Volt SSTV Halogen Lamps

ANSI Code	Product Number	Watts	Description	Volts	Base	MOL (In.)	LCL (In.)	Mean Lumens	Rated Avg. Life (Hrs.)*	Filament	Color Temp (K)	Burning Position	Pkg. Qty.	Monoplane Equiv. LIF	LIF
High Volt SSTV Halogen Lamps															
Single-Ended															
FSL	25813-7	300	6872P	230	GY9.5	3⅓	1⅝	7800	180	M	3200	ANY	10	CP/81	
GCV/GVH	25796-4	500	6820P	230	GY9.5	3½	1⅝	11,000	360	Bi-Plane	3000	BDTH	10	T/25	T/18
FRH	25806-1	500	6873P	230	GY9.5	3⅓	1⅝	13,500	180	M	3200	ANY	10	CP/82	
7389	14104-4	500	7389	230	GY9.5	3	1 15/32	14,000	75	Bi-Plane	3200	BDTH	10	A1/224	
GKV	36372-1	600	6986P	230	G9.5	4	2⅜	15,000	300	Bi-Plane	3200	ANY	10		
6998P	14103-6	650	6998P	230	GX9.5	4⅜	2⅛	13,000	750	Bi-Plane	3000	ANY	10	T 21	
GCK/GCT	25794-9	650	6823P	230	GY9.5	3½	1⅝	14,500	600	Bi-Plane	3050	BDTH	10	T/27	T/26
FKH	25820-2	650	6993Z	230	G22	5½	2½	16,500	120	Bi-Plane	3200	BDTH	10	CP/68	CP/39
6982P	13421-3	800	6982P	230	G9.5	4⅛	2⅜	20,000	200	Bi-Plane	3200	ANY	10		
6982P	27284-9	800	6982P	240	G9.5	4	2⅜	20,000	200	Bi-Plane	3200	ANY	10		
FEP	14107-7	1000	6983P	230	G9.5	4	2⅜	26,000	250	Bi-Plane	3200	ANY	10	CP/77	
FVA	14108-5	1000	6995P	230	GX9.5	4⅓	2⅛	25,000	240	Bi-Plane	3200	BDTH	10	CP/70	CP/24
FKD	25803-8	1000	6996C	230	P28s	5	2⅛	21,000	900	Bi-Plane	3050	BDTH	10	T/20	T/14
7002Y	13041-9	1000	7002Y	230	G22	5½	2½	29,000	250	Bi-Plane	3200	ANY	10		
FKJ	14247-1	1000	6995Z	230	G22	5½	2⅛	25,000	240	Bi-Plane	3200	ANY	10	T/20	
FWP	25804-6	1000	6996P	230	GX9.5	4	2⅛	21,000	900	Bi-Plane	3050	ANY	10	T/19	
FWR	27336-7	1000	6996P	240	GX9.5	4	2⅛	21,000	900	Bi-Plane	3050	ANY	10	T/19	
FWS	14105-1	1200	6897P	230	GX9.5	4¾	2⅝	27,600	400	Bi-Plane	3000	ANY	10	T/29	
6800C	27250-0	500	6800C	240	P28	5⅛	2½	9500	900	Bi-Plane	2950	ANY	10	T/24	T17
6894Y	14106-9	2500	6894Y	230	G22	6⅞	3½	67,500	350	Bi-Plane	3200	ANY	10	CP/91	
6963Z	29093-2	5000	6963Z	230	G38	11	6½	132,500	400	Bi-Plane	3200	ANY	1	CP/85	CP/29
7009Z	22399-0	1200	7009Z	80	G22	6	72½	36,000	200	Bi-Plane	3250	BDTH	10	—	—
6893P	14107-7	1000	6893P	230	GX9.5	4	2⅜	26,000	250	CC-8	3200	ANY	10	—	—
6897P	14105-1	1200	6897P	230	GX9.5	4¾	2⅝	27,600	400	C-13D	3000	ANY	10	—	—
6984P	27286-4	1000	6984P	230	GX9.5	4 3/10	2½	22,500	180	Bi-Plane	3200		10	CP/63	
6895P	27223-7	1200	6895P	230	GX9.5	4 7/10	2¾	30,000	240	Bi-Plane	3200		10	CP/90	
FVC	27290-6	650	6993P	230	GX9.5	4 3/10	2½	16,500	120	Bi-Plane	3200		10	CP/67	CP/23
FTM	27293-0	2000	6994P	230	GY16	5 7/10	2¾	50,000	450	Bi-Plane	3200		10	CP/72	CP/43
FKK/FKP	27301-1	2000	6994Z	230	G38	8 3/10	5	50,000	480	Bi-Plane	3200		10	CP/73	CP/41
6994Y	27297-1	2000	6994Y	230	G22	6 3/10	3	50,000	480	Bi-Plane	3200		10	CP/75	CP/55
FRL	27245-0	650	6638P	230	GY9.5	3⅝	1⅝	16,500	180	Bi-Plane	3200	ANY	10	CP/89	
FRM	27246-8	650	6638P	240	GY9.5	3½	1⅝	16,500	180	Bi-Plane	3200	ANY	10	CP/89	
FEP	27285-6	1000	6983P	240	G9.5	4⅛	2⅜	26,000	180		3200	ANY	10	CP/77	
FVB	27307-8	1000	6995P	240	GX9.5	4⅓	2⅛	25,000	240	Bi-Plane	3200	ANY	10	CP/70	CP/24
FKJ	27333-4	1000	6995Z	240	G22	5½	2½	25,000	240	Bi-Plane	3200	ANY	10	CP/71	CP/40
FTL	27294-8	2000	6994P	240	GY16	5⅞	2⅞	50,000	450	Bi-Plane	3200		10	CP/72	CP/43
GAB	27303-7	1000	6995I/BP	230	GY9.5	3⅞	1⅝	25,000	250	Bi-Plane	3200		10		
GCW/GCJ	27254-2	500	3820P	240	GY9.5	3½	1⅝	11,000	360	Bi-Plane	3000	ANY	10	T/25	T/18
FSK	16668-6	300	6872P	240	GY9.5	3½	1⅝	7050	150		3200	ANY	10	CP/81	
FRJ	27261-7	500	6873P	240	GY9.5	3½	1⅝	13,500	150		3200	ANY	10	CP/82	
6874P	27263-3	300	6874P	240	GY9.5	3⅛	1⅝	5100	2000		2950	ANY	10	M/38	
6877P	27266-6	500	6877P	240	GY9.5	3⅞	1⅝	10,000	2000		2950	ANY	10	M/40	

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High Volt SSTV Halogen Lamps Continued

Single-Ended

ANSI Code	Product Number	Watts	Description	Volts	Base	MOL (In.)	LCL (In.)	Mean Lumens	Rated Avg. Life (Hrs.)*	Filament	Color Temp (K)	Burning Position	Pkg. Qty.	Monoplane Equiv. LIF	LIF
6975Z	27281-5	2000	6975Z	240	G22	6⅜	3½	50,000	400	Bi-Plane	3200		10	CP/92	
GAD	27304-5	1000	6995I/BP	240	GY9.5	3⅞	1⅞	25,000	250	Bi-Plane	3200		10		
7002Y	15620-8	1000	7002Y	240	G22	5½	2½	29,000	250	Bi-Plane	3200	ANY	10	T19	
FKK/FKP	27302-9	2000	6994Z	240	G38	8⅞	5	50,000	480	Bi-Plane	3200		10	CP/73	CP/41

HPL SSTV Lamps

HPL

ANSI Code	Product Number	Watts	Description	Volts	Base	MOL (In.)	LCL (In.)	Mean Lumens	Rated Avg. Life (Hrs.)*	Filament	Color Temp (K)	Envelope Finish
HPL 575 115V	39170-6	575	7007	115	Heat Sink	4	2⅜	16,520	300	Bi-Plane	3250	Clear
HPL 575 230V	14564-9	575	7007	230	Heat Sink	4	2⅜	14,900	400	Bi-Plane	3200	Clear
HPL 575 240V	27343-3	575	7007	240	Heat Sink	4	2⅜	14,900	400	Bi-Plane	3200	Clear
HPL 575LL 115V	39167-2	575	7007 LL	115	Heat Sink	4	2⅜	12,360	2000	Bi-Plane	3050	Clear
HPL 575LL 230V	14565-6	575	7007 LL	230	Heat Sink	4	2⅜	11,760	1500	Bi-Plane	3050	Clear
HPL 575LL 240V	27345-8	575	7007 LL	240	Heat Sink	4	2⅜	11,760	1500	Bi-Plane	3050	Clear
HPL 750 115V	39171-4	750	7008	115	Heat Sink	4	2⅜	21,900	300	Bi-Plane	3250	Clear
HPL 750 230V	14566-4	750	7008	230	Heat Sink	4	2⅜	19,750	300	Bi-Plane	3200	Clear
HPL 750 240V	27346-6	750	7008	240	Heat Sink	4	2⅜	19,750	300	Bi-Plane	3200	Clear

Double-Ended

ANSI Code	Product Number	Watts	Description	Volts	Base	MOL (In.)	LL (In.)	LCL (In.)	Mean Lumens	Rated Avg. Life (Hrs.)*	Filament (2)	Color Temp (K)	Burning Position	Pkg. Qty.	LIF	Monoplane Equiv. LIF
EME(1)(2)	31349-4	800	13477 R	230	R7s	4⅝	2⅛	—	23,600	150	C-8	3200	HORIZ. ±15°	10	P2/11	
EME(1)(2)	27231-0	800	13477R	240	R7s	4⅝	2⅛		24,400	150	Single Coil	3200	p15	10	P 2/11	
13704R	27085-0	1000	13704R	230	R7s	3⅝	1⅛	—	26,600	150	C-8	3200	ANY	10	P 2/35	
7786R	27072-8	1000	7786R	230	R7s	4⅝	2⅜	—	30,000	300	C-8	3200	HORIZ. ±15°			
7786R	27355-7	1000	7786R	240	R7s	4⅝	2⅜	—	30,000	300	Single Coil	3200	p15	10	P 2/20	
EKM(1)(2)	29089-0	1000	13989R	230	R7s	7⅞	—	—	26,000	200	Single Coil	3200	ANY	10	P 2/7	
EKM(1)(2)	27237-7	1000	13989R	240	R7s	7⅞	—	—	26,000	200	Single Coil	3200	ANY	10	P 2/7	
6358R	27493-6	1250	6358R	230	R7s				33,750	200	Single Coil	3200	p15	10	P 2/12	
6358R	27243-5	1250	6358R	240	R7s				33,750	200	Single Coil	3200	p15	10	P 2/12	
7775R/16	25841-8	625	7775R/16	230	R7s				16,250	150	Single Coil	3200	p15	10	P 2/10	
FDG	27363-1	1000	PF801 R	230	R7s				34,000	15		3400	ANY	10	P 1/12	
DXX	27230-2	800	13162R	240	R7s				21,600	75		3200	p15	50	P 2/13	

1) These lamp types must be operated with a separate rapid acting High Breaking-Capacity fuse, either 415V AC or 500V DC working in accordance with the supply in use as per end of table.
2) C.C.=coiled coil, S.C.=single coil
* Rated Average Life is the length of operation (in hours) at which point 50% of a large sample of lamps will still be operational and 50% will not

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Specialty Lamps

MSR Lamps

Description	Product Number	Watts	Volts	Lamp Current (Amps)	Initial Lumens	Rated Avg. Life (Hrs.)*	Arc Length (mm)	CRI	Color Temp (K)	Base
MSR Lamps Single-Ended Gas Discharge										
Hot Restrike[1,2]										
MSR 125 HR	24497-0	125	80	1.90	9400	200	4	92	6000	GZX9.5
MSR 200 HR	24499-6	200	70	3.30	15,000	200	5	92	6000	GZY9.5
MSR 250 HR	24518-3	250	96	2.60	20,000	750	5	90	6000	GZY9.5
MSR 400 HR	24504-3	400	70	6.90	32,000	1000	6	92	6000	GZZ9.5
MSR 575 HR	28727-6	575	95	6.95	49,000	1000	7	90	6000	G22
MSR 1200 HR	24582-9	1200	100	13.80	110,000	1000	10	95	6000	G38
MSR 2500 HR	24581-1	2500	115	25.60	240,000	500	14	95	6000	G38
MSR 4000 HR	24589-4	4000	200	27.50	380,000	500	20	91	6000	G38
MSR 6000 HR	36042-0	6000	125	55.00	570,000	300	24	95	6000	GY38
MSR 12,000 HR	39071-6	12,000	160	84.00	1,200,000	300	30	95	6000	GY38
MSR 18,000 HR	21823-0	18,000	225	77.60	1,650,000	300	35	90	6000	GX51
Standard[1]										
MSR 400	24507-6	400	70	6.90	32,000	1000	6	95	5900	GX9.5
MSR 575/2 10H	28707-8	575	95	6.95	49,000	1000	7	70	7200	GX9.5
MSR 700	24542-3	700	72	12.00	55,000	1000	7	75	5900	G22
MSR 700/2	24543-1	700	72	11.00	55,000	1000	8	80	7200	G22
MSR 1200	24551-4	1200	100	13.80	110,000	800	10	80	5900	G22
MSR 1200/2	24556-3	1200	90	13.80	110,000	800	10	85	7200	G22
Short Arc[1]										
MSR 400 SA	24500-1	400	54	8.40	30,000	750	3	75	5600	GY9.5
MSR 700 SA	24502-7	700	72	11.00	55,000	750	4	80	5600	GY9.5
MSR 1200 SA	28687-2	1200	100	13.80	96,000	750	7	80	6000	GY22
MSR 1200 SA/SE Gold	24576-1	1200	93	15.00	93,000	750	7	80	6000	PGJ41
MSR 2000 SA	24541-5	1800	110	21.50	174,000	750	7	89	6000	GY22
MSR Lamps Double-Ended Gas Discharge [1]										
MSR 1800 DE	22058-2	1800		20.00	145,000	750	10	85	6000	SFC 15.5-6

1) Based on cycle 3.5 hours on/0.5 hour off, nominal wattage. Shorter life at short cycle operation.
2) Lamps must be used in fixtures designed for hot restrike.
* Rated Average Life is the length of operation (in hours) at which point 50% of a large sample of lamps will still be operational and 50% will not

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MSR 125 HR, MSR 200 HR MSR 250 HR, MSR 400 HR | MSR 575 HR | MSR 1200 HR | MSR 2500 HR MSR 4000 HR | MSR 6000 HR MSR 12,000 HR | MSR 18,000 HR | MSR 400 SA MSR 700 SA | MSR 1200 SA MSR 2000 SA | MSR 1800DE

Specialty Lamps

MSR, MSD, MHD and MSI Lamps

Description	Product Number	Watts	Volts	Lamp Current (Amps)	Initial Lumens	Rated Avg. Life (Hrs.)*	Arc Length (mm.)	CRI	Color Temp (K)	Base	MOL (mm)
MSR SA/DE Gold (Double-Ended) Lamps											
MSR Gold 575 SA/2 DE	24501-9	575	94	7.1	42,000	750	5	75	7500	SFC 11	92
MSR Gold 700 SA/2 DE	28713-6	700	70	11.5	56,000	750	4	75	7500	SFC 10-4	136
MSR Gold 1200 SA/DE	28714-4	1200	100	13.6	110,000	750	7	85	6000	SFC 10-4	136
MSR Gold 1200 SA/2 DE	28725-0	1200	207	13.6	103,000	750	7	85	7500	SFC 10-4	136
MSR Gold 1510 SA/DE	28716-9	1500	207	13.5	140,000	750	7	88	6000	SFC 10-4	136
MSD Lamps (1)											
MSD 150/2	24516-7	150	96	1.85	10,500	3000	5	62	8500	G12	—
MSD 200	24511-8	200	70	3.40	13,500	2000	5	80	6000	GY9.5	—
MSD 250	24514-2	250	90	3.00	18,000	3000	5	75	6700	GY9.5	—
MSD 250/2 30H	24515-9	250	90	3.00	18,000	3000	5	70	8500	GY9.5	—
MSD 575	24519-1	575	95	6.95	43,000	3000	8	75	6000	GX9.5	—
MSD 575 HR (2)	24547-2	575	95	6.95	46,000	2000	8	75	6000	G22	—
MSD 700	24553-0	700	72	11.00	50,500	3000	10	75	6000	G22	—
MSD 1200	24558-9	1200	115	13.80	92,000	3000	14	80	6000	G22	—
MHD Lamps (1)											
MHD 1800	31360-1	1800	120	17.30	155,000	4000	25	90	5600	SFC20-6	—
MSI Lamps											
MSI 575 HR/2	21824-8	575	—	7.00	47,000	750	7	80	7800	SFC10-4	138
MSI 575 HR	39072-4	575	—	7.00	49,000	750	7	80	6000	SFC10-4	138

1) These lamp types must be operated with a separate rapid acting High Breaking-Capacity fuse, either 415V AC or 500V DC working in accordance with the supply in use as per end of table.
2) C.C.=coiled coil, S.C.=single
* Rated Average Life is the length of operation (in hours) at which point 50% of a large sample of lamps will still be operational and 50% will not
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MSR SA/DE GOLD Lamps SFC 10-4 Base

MSR Gold Fastfit Lamp PGJX28 Base

MSR Gold Fastfit Lamp PGJX50 Base

MSD Lamp GY9.5 Base

MSD Lamp GX9.5 Base

MSD Lamp G22 Base

MSI Lamp SFC10-4 Base

Specialty Lamps

FastFit and Platinum Lamps

Description	Product Number	Watts	Volts	Lamp Current (Amps)	Initial Lumens	Rated Avg. Life (Hrs.)*	Arc Length (mm.)	CRI	Color Temp (K)	Base	MOL (mm)
FastFit Lamps											
Gas Discharge											
MSR Gold 300/2 Mini FastFit	28717-7	300	96	3.80	23,000	750	5.0	80	8300	PGJX28	126.0
MSD Gold 300/2 MiniFastFit	24538-1	300	96	3.80	21,000	2000	5.0	70	8600	PGJX28	126.0
MSR Gold 400 MiniFastFit	24896-3	400	55	7.20	26,000	750	3.0	60	6700	PGJX28	111.0
MSR Gold 575/2 Mini FastFit	28720-1	575	57	10.20	38,600	750	3.5	70	7500	PGJX28	112.0
MSR Gold 700/2 Mini FastFit	28692-2	700	69	10.20	47,000	750	5.0	75	7200	PGJX28	112.0
MSR Gold 700 Mini FastFit	27709-5	700	69	10.90	50,000	750	4.0	73	6000	PGJX28	116.0
MSR Gold 700 FastFit	28691-4	700	207	10.20	50,000	750	4.0	80	6000	PGJX50	111.0
MSR Gold 700/2 FastFit	24562-1	700	72	10.20	50,000	750	4.0	75	7500	PGJX50	111.0
MSR Gold 1200 FastFit	28688-0	1200	207	15.00	95,000	750	5.0	80	6000	PGJX50	128.0
MSR Gold 1500 FastFit	28697-1	1500	198	15.30	120,000	750	6.0	80	6000	PGJX50	128.0
MSR Gold 2000/2 FastFit	24560-5	2000	110	19.00	160,000	750	8.0	88	7500	PGJX50	134.0
MSR Gold 2000 SA FastFit	24573-8	2000	110	19.00	165,000	750	8.0	80	6000	PGJX50	134.0
MSR Gold 2500/2 FastFit	28701-1	2500	135	19.53	193,000	750	9.5	85	7200	PGJX50	153.0
Fast Fit Hi-Brite Halogen											
Hi-Brite 750 FastFit	20161-6	750	80	9.50	22,500	300		100	3250	PGJX50	125.0
Hi-Brite 1200 FastFit	20162-4	1200	80	15.00	36,000	200		100	3250	PGJX50	140.0
7019G 750W PGJ X50	22907-0	750	115	6.52	20,500	300	9.5 x 9.0	100	3200	PGJX50	140.0
7018G 800W PGJ X50	22909-6	800	230	3.48	20,000	200	9.0 x 12.5	100	3200	PGJX50	140.0
7021G/LL 575W/115	27166-8	575	115	5.11	12,400	1500	9.0 x 9.5	100	3000	PGJX50	140.0
7024G 600W PGJ X50	27716-0	600	230		12,000	1500		100	2900	PGJX50	140.0
Platinum Lamps											
MSD Platinum 5R	24988-8	150–190	75		7950	2000	1.0	75	8000		57.1
MSD Platinum 15R	27608-9	264–300	75		13,500	1500	1.3	75	8000		66.4
MSR Platinum 35	24597-7	800	67		54,500	750	3.0	73	7750	PGJX36	116.0

* Rated Average Life is the length of operation (in hours) at which point 50% of a large sample of lamps will still be operational and 50% will not

For the most current product information, go to the e-catalog on **www.philips.com**

MSR Gold Fastfit Lamp
PGJX28 Base

MSR Gold Fastfit Lamp
PGJX50 Base

MSD Platinum Lamps

Hi-Brite Fastfit Lamp
PGJX50 Base

Specialty Lamps

Sealed Beam, Ceramic ST, Short Arc and Fluorescent Lamps with Super Actinic Radiation

Product Number	Watts	Description	Volts	Base	Diam. (In.)	Diam. (mm)	MOL (In.)	MOL (mm)	Lumens	Rated Avg. Life (Hrs.)*	Color Temp. (K)	Burning Position	Beam Shape
Sealed Beam													
27357-3	300	300PAR56/NSP	240	Mog. End	7	178	5	127		2000	3000	Universal	Narrow Spot
27356-5	300	300PAR56/MFL	240	Mog. End	7	178	5	127		2000	3000	Universal	Med. Flood
27358-1	300	300PAR56/WFL	240	Mog. End	7	178	5	127		2000	3000	Universal	Wide Flood
35619-6	500	500PAR56Q/NSP	120	Mog. End	7	179	5	127	88,000	4000	2950	Universal	Narrow Spot
35621-2	500	500PAR56Q/MFL	120	Mog. End	7	179	5	127	43,000	4000	2950	Universal	Med. Flood
35620-4	500	500PAR56Q/WFL	120	Mog. End	7	179	5	127	22,500	4000	2950	Universal	Wide Flood
27360-7	1000	1000PAR64/VNSP	240	Mog. End	8	204	6	150		300	3200	Universal	Very Narrow Spot
27361-5	1000	1000PAR64/NSP	240	Mog. End	8	204	6	150		300	3200	Universal	Narrow Spot
27362-3	1000	1000PAR64/MFL	240	Mog. End	8	204	6	150		300	3200	Universal	Med. Flood

Description	Product Number	Watts	Volts	Lamp Current (Amps)	Initial Lumens	Rated Avg. Life (Hrs.)*	Arc Length (mm)	CRI	Color Temp (K)	Base
Ceramic ST Lamps										
Ceramic ST 250HR	24517-5	250	100	2.6	23,000	4000	8	90	3200	GZY9.5

Product Number	Description	Watts	Volts	Lumens	Base	LCL (In.)	MOL (In.)
Short Arc Lamps(1)							
31644-8	SAH250B	250	42	10,000	Med. Pf.	3.0	6
38278-8	CDM-SA/R 150W/942	150	96	—	G12	2.2	4
36039-6	CDM-SA/T 150W/942	150	96	14,000	G12	2.2	4

Product Number	Description	Watts	Current Amps	Bulb	Nom. Length (mm)	(In.)
Fluorescent Lamps with Super Actinic Radiation—Medium BiPin Base						
30808-0	TL140W/03	140	1.46	T12	1514	60

1) DC operation only—should be operated on a control circuit which supplies direct current to the lamp.

* Rated Average Life is the length of operation (in hours) at which point 50% of a large sample of lamps will still be operational and 50% will not

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

For the most current product information, go to the e-catalog on **www.philips.com**

PAR56
Mog. End Base

Ceramic ST 250 HR
GZY9.5 Base

Ceramic ST 250
Mini FastFit
PGJX28 Base

SAH 250 B

TL
TLK

Specialty Lamps

UVA 365nm Peak Lamps

Product Number	Ordering Code	Watts	Description	Nom. Length (In.)	Bulb	Base	Rated Avg. Life (Hrs.)*	UVA Watts
UVA 365nm Peak Lamps(1)								
15765-1	PL-S 9W/10/2P (Lead Free)	9	UVA Lamp	6½	PL-S	G23	9000	
13034-4	PL-L 18W/10	18	UVA Lamp	9	PL-L	2G11	5000	3.4
23293-4	PL-L 36W/10/4P	36		15⅛	PL-L	2G11	2000	
28504-9	PL-L 36W/10/4P SECURA	36	UVA Lamp		PL-L		2000	
24675-1	TLK 40W/10R	40	UVA Reflector Lamp	24	T12	Med. Bipin	3000	7.4
42156-0	TL 60W/10R	60	UVA Reflector Lamp	48	T12	Med. Bipin	1000	15.8
42153-7	TL 80W/10R	80	UVA Reflector Lamp	60	T12	Med. Bipin	1000	20.5
42154-5	TL 100W/10R	100	UVA Reflector Lamp	70	T12	Med. Bipin	1000	26.6
21513-7	Actinic BL 8W/10	8	UVA Lamp	20	T5	Min. Bipin	3000	
21517-8	Actinic BL 30W/10	30	UVA Lamp	24	T8	Med. Bipin	2000	
39153-2	Actinic BL 40W/10	40	UVA Lamp	48	T12	Med. Bipin	9000	9.0
21518-6	Actinic BL 15W/10 SECURA	15	UVA Lamp	18	T8	G13	8000	3.0
13036-9	Actinic BL TL-D 15W/10	15	UVA Lamp	18	T8	Med. Bipin	5000	3.1
28670-8	Actinic BL TL-D 18W/10	18	UVA Lamp	24	T8	G13	13,000	5.0
28671-6	MASTER Actinic BL TL-D 18W/10	18	UVA Lamp	24	T8	G13	13,000	5.1
28386-1	MASTER Actinic BL TL-D 15W/10	15	UVA Lamp	18	T8	G13	8000	3.9
28578-3	MASTER Actinic BL TL-D 15W/10 Secura	15	UVA Lamp	18	T8	G13	8000	3.15
28573-4	MASTER Actinic BL PL-L 36W/10/4P	36	UVA Lamp		PL-L			
28672-4	Actinic BL TL-DK 36W/10	36	UVA Lamp	24	T8	G13	9000	8.8

* Rated Average Life is the length of operation (in hours) at which point 50% of a large sample of lamps will still be operational and 50% will not

1) For graphic arts, lacquer curing and insect trap applications

For the most current product information, go to the e-catalog on **www.philips.com**

PL-S UVA Lamp | PL-L UVA Lamp | T12 Black Light Med. Base | TLK UVA Reflector Lamp | T8 Actinic UVA Lamp Med. Bipin | T12 Actinic UVA Lamp Med. Bipin

Product Number	Description	Watts (1)	UV-C Watts (2)(4)	Bulb	Base	Rated Avg. Life (Hrs.)*	Nom. Length (In.)	Volts
Germicidal Sterilamp 254nm Lamps								
Hot Cathode								
36371-3	TUV 4T5	4	0.9	T5(3)	Min. Bipin	6000	6	
24485-5	TUV 6T5	6	1.5	T5(3)	Min. Bipin	9000	9	
29930-5	TUV 8T5	8	2.4	T5(3)	Min. Bipin	11,000	12(3)	
30864-3	TUV 15T8	15	4.7	T8	Med. Bipin	8000	18(3)	
11250-8	TUV 16T5	15	4.0	T5(3)	Med. Bipin	11,000	12	
13340-5	TUV 17T8	17	4.5	T8	Med. Bipin	9000	25(3)	
29268-0	TUV 25T8	25	7.0	T8	Med. Bipin	8000	18(3)	
36016-4	TUV 30T8	30	11.2	T8	Med. Bipin	8000	36(3)	
26269-1	TUV 36W	36	15.3	T8	Med. Bipin	8000	48(3)	
37634-3	TUV 55W HO	55	17.5	T8	Med. Bipin	8000	48(3)	
29090-8	TUV 75W HO	75	26.0	T8	Med. Bipin	8000	48(3)	
Amalgam XPT Lamps								
24262-8	TUV 130W XPT	140	48.0(4)	T6	4PSE	12,000	33.14	67
24261-0	TUV 180W XPT	180	60.0(4)	T6	4PSE	12,000	40.63	90
24260-2	TUV 200W XPT	200	66.0(4)	T6	4PSE	12,000	45.16	94
24258-6	TUV 325W XPT HO	325	110.0(4)	T6	4PSE	12,000	62.28	160
Amalgam XPT Lamp Driver								
24266-9	TUV 130W XPTdriver							
24264-4	TUV 200W XPTdriver							
24263-6	TUV 325W XPT HO driver							
Amalgam Dynapower Lamps								
21256-3	TUV 230W XPT	230	78.0	T8	4-Pin	12,000		
21258-9	TUV 335W XPT	335	100.0	T10	4-Pin	12,000		
15792-5	TUV 260W XPT DIM	260	87.0	T10	4-Pin	12,000		
Dynapower Driver								
27885-3	Philips Dynapower							

* Rated Average Life is the length of operation (in hours) at which point 50% of a large sample of lamps will still be operational and 50% will not
1) Wattages shown are for operation from a transformer or ballast, currently standard, under specified test conditions
2) 100 Hour
3) Approximate overall length including two standard lamp holders.
4) UVC 100 Hour on HF gear
For the most current product information, go to the e-catalog on **www.philips.com**

T5 Hot Cathode Lamp Min. Bipin

T8 Hot Cathode Lamp Med. Bipin

T10 4-Pin Amalgam Lamp

TUV Amalgam XPT System

Specialty Lamps

Germicidal Sterilamp 254nm Lamps

Product Number	Description	Watts (1)	UV-C Watts (2)(3)	Bulb	Base	Rated Avg. Life (Hrs.)*	Nom. Length (In.)	Volts
Germicidal Sterilamp 254nm Lamps								
Twin Tube PL-S / PL-L Hot Cathode								
38186-3	PL-S 5W/TUV	5	1.0	PL-S	G23	8000	4	
32512-6	PL-S 9W/TUV	9	2.3	PL-S	G23	9000	6½	
21064-1	PL-L 18W/TUV	18	5.5	PL-L	2G11	9000	8 15/16	
13726-5	PL-L 35W/TUV	35	11.0	PL-L	2G11	9000	8 15/16	
26585-0	PL-L 36W/TUV	36	12.0	PL-L	2G11	9000	16 7/16	
29464-5	PL-L 55W/TUV	55	17.0	PL-L	2G11	9000	22½	
13035-1	PL-L 60W/TUV	60	19.0	PL-L	2G11	9000	16 7/16	
13725-7	PL-L 95W/TUV	95	27.0	PL-L	2G11	9000	22½	
28566-8	TUV PL-S 9W/4P	9	2.2	PL-S	2G7	9000	6⅜	
28563-5	TUV PL-S 11W/4P	11	3.5	PL-S	2G7	9000	8⅜	
28565-0	TUV PL-S 11W/2P	11	3.2	PL-S	G23	9000	9 3/10	
13502-0	TUV PL-S 13W/2P	13	3.4	PL-S	GX23	9000	7	
15127-1	TUV PL-L 24W/4P	24	7.0	PL-L	2G11	9000	12⅜	

* Rated Average Life is the length of operation (in hours) at which point 50% of a large sample of lamps will still be operational and 50% will not

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

2) 100 Hour

3) UVC 100 Hour on HF gear

For the most current product information, go to the e-catalog on **www.philips.com**

PL-S Twin Tube
G23 Base

PL-L Hot Cathode
2G11 Base

Product Number	Description	Watts (1)	UV-C Watts (2)(3)	Bulb	Base	Rated Avg. Life (Hrs.)*	Nom. Length (In.)
TUV T5							
38542-7	TUV 11W 4P SE	11	2.6	T5	4-Pin	9000	10
38541-9	TUV 16W 4P SE	16	4.0	T5	4-Pin	9000	13
23061-5	TUV 20W 4P SE	20	6.0	T5	4-Pin	11,000	17
13341-3	TUV 25W 4P SE	25	8.0	T5	4-Pin	9000	20
29267-2	TUV 36T5 SP	40(4)	14.0	T5	Single Pin	9000	34
36209-5	TUV 36T5 4P SE	40(4)	14.0	T5	4-Pin	9000	34
13389-2	TUV 36T5 HO 4P SE	75	23.0	T5	4-Pin	9000	34
29269-8	TUV 64T5 SP	75	29.0	T5	Single Pin	9000	62
15782-6	TUV 64T5 2P SE ALTO	75	29.0	T5	Bipin	9000	62
38303-4	TUV 64T5 4P SE IS	75	29.0	T5	4-Pin	9000	62
36217-8	TUV 64T5 4P SE	75	29.0	T5	4-Pin	9000	62
39200-1	TUV 64T5 HO 4P SE	140	45.0	T5	4-Pin	9000	62

* Rated Average Life is the length of operation (in hours) at which point 50% of a large sample of lamps will still be operational and 50% will not

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

2) 100 Hour

3) UVC 100 Hour on HF gear

4) Wattage shown is for lamp operating current of 420 ma. Wattage will vary at other operating currents as follows: 120 ma. — 17 watts; 200 ma. — 25 watts; 300 ma. — 32 watts.

For the most current product information, go to the e-catalog on **www.philips.com**

Slimline T5
TUV
4-Pin

Slimline T5
TUV
Single Pin

Slimline T5
TUV
Bipin

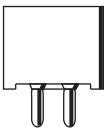
Specialty Lamps

Base Types and Bulb Shapes

Base Types (Not Actual Sizes)

PG22-6.35
DIN: 49751
iec: 7004-48

RX7s
DIN: 49750
IEC: 7004-92
ANSI: Recessed single contact base
C8.61-1990
sheet 1-770-1



G5.3
IEC: 7004-73-2
ANSI: Miniature 2-pin
C81.61-1990
sheet 1-20-1

BA 15s
DIN: 49720
IEC: 7004-11A
ANSI: Single contact candelabra bayonet base
C81.61-1990
sheet 1-20-1

BA15d
DIN: 49720
IEC: 7004-11A
ANSI: Candelabra bayonet base double contact
C81.61-1990
sheet 1-20-1

B15d
DIN: 49721
IEC: 7004-11

B22d/22
IEC: 7004-10

G3.9
ANSI:
C81.61-1990
sheet 1-300-1

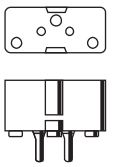
G4
IEC: 7004-72

GX5.3
(Round pin)
IEC: 7004-73
ANSI:
C61.61-1990
sheet 1-321-1

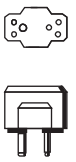
G6.35
GX6.35
GY6.35
IEC: 7004-59
ANSI: C81.61-1990
sheet 1-340-1

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

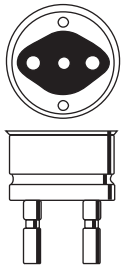
GZ4
IEC: 7004-67



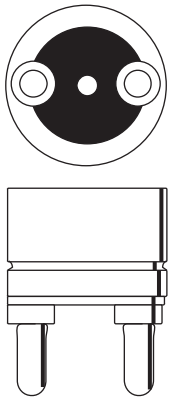
GX9.5
DIN: 49638
IEC: 7004-70A



GY9.5
IEC: 7004-70B
ANSI: C81.61-1990
sheet 1-369-1



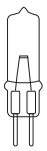
G22
IEC: 7004-75
ANSI: Medium bipost
C81.61-1990
sheet 1-466-1



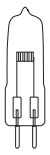
G38
IEC: 7004-76
ANSI: Mogul bipost
C81.61-1990
sheet 1-519-1

Bulb Shapes (Not Actual Sizes)

T-2.5
T-3

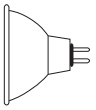


T-3.5
T-4
T-4.5

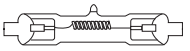


T-5
T-6

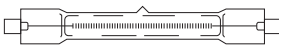
G-7



MR-11
MR-13
MR-16



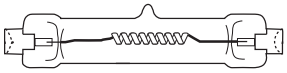
R7s



RX7s

Base Types and Bulb Shapes (Not Actual Sizes)

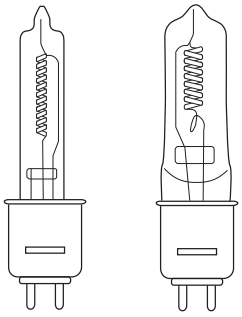
Double-Ended Tungsten Halogen lamps
3⅛, 3¾, 4⅜, 4 11/16, 5⅝ and 6⅝ MOL
R7 Base



DWT, EME

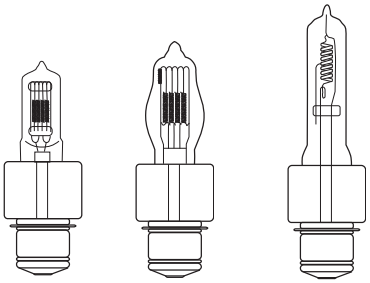
EKM, FDG, DXX

Medium 2-Pin
Tungsten Halogen Lamps (G9.5)



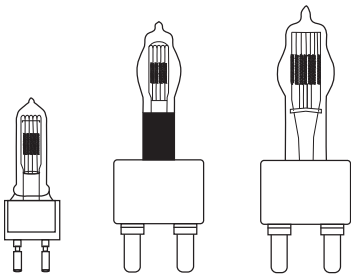
GLA FEL

Medium Prefocus Lamps with 2 3/16" L.C.L. (P28s)
Medium Prefocus Lamps with 3½" L.C.L. (P28s)



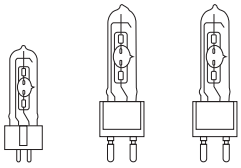
BTL BTN 6800C FKD

Medium Bipost Lamps with 2½" L.C.L. (G22)
Medium Bipost Lamps with 5" and 6½" L.C.L. (G38)



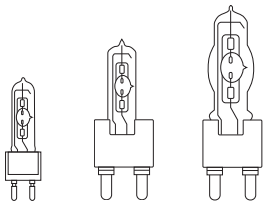
EGT CYV CYX FKK (5" LCL)

MSR Lamps
(Medium Source Rare Earth Lamps)



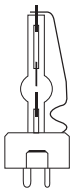
MSR 400 MSR 700 MSR 1200

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



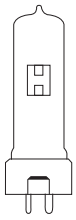
MSR 575/HR MSR 1200/HR MSR 2500/HR

MSR Short Arc Lamps



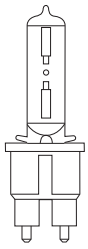
MSR 400W SA

MSD Lamps

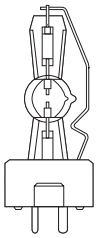


MSD 200W/2

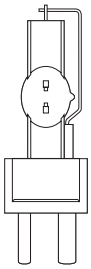
MHD Lamps



MHD 1800



MSR 400 SA/MSR 700 SA



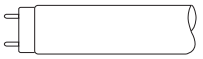
MSR 1200 SA/MSR 2000 SA

Specialty Lamps

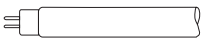
Base Types and Bulb Shapes

Specialty Bulb Shapes (Not Actual Sizes)

T12 Medium Bipin



T8 Medium Bipin

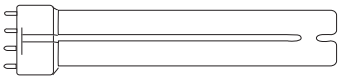


T5 Miniature Bipin

Hot Cathode Sterilamp

Cold Cathode and Slimline Sterilamp

Slimline Sterilamp



PL-L

PL-S

XPT

Xtra

Accent Lighting
Concentrated light on a subject which highlights it and causes it to stand out from its surrounding. Depending on degree of drama desired, accent light should minimally be 10x the general light or ambient light.

Accommodation
The involuntary muscular process by which the eye changes focus from one distance to another.

Adaptation
The involuntary process by which the visual system changes its sensitivity, depending on the luminances prevailing in the visual field. The process involves both the iris and the light sensitive cells of the retina.

AlInGaP
The preferred LED (Light Emitting Diode) chip technology containing Aluminum, Indium, Gallium, and Phosphorous to produce red, orange and amber-colors.

ALTO Lamp Technology
Philips ALTO Lamp Technology is widely recognized as a leading low-mercury solution for fluorescent lighting. This technology uses capsule dosing to precisely control the amount of mercury in each ALTO lamp. Long-life ALTO lamps further reduce the need to replace lamps and, as a result, decrease the amount of mercury used over life of any lighting installation.

Ballast
The ballast is an electrical device that performs two basic functions: 1) provides the starting voltage and 2) limits the current to sustain lamp operation.

Ballast types for fluorescent lamps:

Instant Start: Instant start electronic ballasts are the most popular type of electronic ballast today because they provide maximum energy savings and they start lamps without delay or flashing. Since they do not provide lamp electrode heating, instant start ballasts consume less energy than comparable rapid start, program rapid start or programmed start ballasts. As a result, they provide the most energy efficient solution to fluorescent lamp ballasting. The instant start ballast uses 1.5 to 2 watts less energy per lamp than the rapid start alternative.

Instant-start electronic ballasts provide a high initial voltage (typically 600V for F32T8 lamps) to start the lamp. This high voltage is required to initiate discharge between the unheated electrodes of the lamp. However, the cold electrodes of lamps operated by an instant start ballast may deteriorate more quickly than the warmed electrodes of lamps operated by a rapid start, program rapid start or programmed start ballast. Lamps operated by instant start ballasts will typically withstand 10–15K switch cycles. Instant start ballasts are typically wired in *parallel*. This means that if one lamp fails, the other lamps in the circuit will remain lit.

Rapid Start: Rapid start ballasts have a separate set of windings which provide a low voltage (approx. 3.5 volts) to the electrodes for one second prior to lamp ignition. A starting voltage somewhat lower than that of instant ballast (typically 450–550V for F32T8 lamps) is applied, striking an electrical arc inside the lamp. Most rapid start electronic ballasts continue to heat the electrode even after the lamp has started, which results in a power loss of 1.5 to 2 watts per lamp. Lamps operated by a rapid start electronic ballast will typically withstand 15–20K switch cycles. Rapid start ballasts are typically wired in *series*. This means that if one lamp fails, all other lamps in the circuit will extinguish.

Programmed Start: Programmed start (PS) electronic ballasts provide maximum lamp life in frequent starting conditions (up to 50,000 starts). PS ballasts use a custom integrated circuit (IC) which monitors lamp and ballast conditions to ensure optimal system lighting performance. Like Program rapid start ballasts, PS ballasts also precisely heat the lamp cathodes. However, PS ballasts heat the lamp cathodes to 700°C prior to lamp ignition. This puts the least amount of stress on the lamp electrodes, resulting in maximum lamp life regardless of the number of lamp starts. Programmed start ballasts are typically wired in *series*.

Ballast types for HID lamps:

Reactor: Single coil, very efficient, but poor voltage regulation to the lamp.

Constant Wattage Autotransformer (CWA): Employing two coils, the ballast is less efficient then reactor types, but have better voltage regulation. Most popular type in use.

Magnetically Regulated (Mag Reg) or Regulated Lag (Reg Lag): Three coils make for very effective voltage regulation but also not very efficient.

Electronic: Allows for both high efficiency and the best voltage regulation.

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

Bin
In LEDs, the systematic dividing of distribution of performance parameters (Flux, Color or CCT, and Vf) in to smaller groups that meet aesthetic requirements of the assembly.

Binning
The separation of LEDs subsequent to a production run for full manufactured, distribution in terms of color, flux and forward voltage.

Candela (cd) (Luminous Intensity)
The intensity base unit for light. Intensity is the luminous flux emitted from a point per unit solid angle into a particular direction, regardless of distance.

Candlepower (cp)
Luminous intensity expressed in candelas.

Chip
A very small square of semi-conducting material. Also known as a die, it is the active light-emitting component of an LED.

Color Rendering Index (CRI)
A method for describing the effect of a light source on the color appearance of objects, compared to a reference source of the same color temperature (CCT). The highest CRI attainable is 100. Originally based on an eight standardized color comparisons, it was later extended to fourteen colors.

Color Temperature or Correlated Color Temperature (CCT)
The color temperature of a light emitter refers to the temperature to which one would have to heat a "blackbody" source (Planckian radiator) to produce light of similar overall appearance or chromaticity. A low color temperature implies warmer color (more yellow/red) light while high color temperature implies a cooler light (more blue). The standard unit for color temperature measurement is expressed in Kelvin (K).

Die–Chip
Heart of the LED

Diode
A two-electrode device with an anode and a cathode that passes current in only one direction. It may be designed as an electron tube or as a semiconductor device.

Driver
Electronics used to power illumination sources. Ballast.

Field Angle
The field angle defines the light pattern around the beam's central axis for which the luminous intensity is 10% that of the maximum luminous intensity.

Footcandle
The unit of measure for the density of light on a surface unique to the USA. One footcandle is equal to one lumen per foot (lm/ft^2). One footcandle = 10.674 lux.

General Lighting (Ambient Lighting)
Lighting designed to deliver a predominately uniform level of light throughout an area.

Glare
Glare is an interference with visual perception caused by an uncomfortably bright light source or reflection within one's field of view; a form of visual noise. In its simplest form, glare (unwanted light) is a consequence of the human eye to adapt to different light levels. In the case of glare, the eye adapts to the high level of the glare source, which makes it difficult to perceive details in the now too dark work area.

Direct Glare: Glare resulting from high luminances in the visual environment that are directly visible from a viewers position; such as an insufficiently shielded luminaire.

Reflected Glare or Veiling Reflection: A reflection of incident light that partially or totally obscures the details to be seen on a surface by reducing the contrast.

Discomfort Glare: Glare which is distracting or uncomfortable (subjective), which interferes with the perception of visual information, but which does not significantly reduce visual performance.

Disability Glare: The effect of light which significantly reduces visual performance and perception; such as car high beams in your face on a dark country road.

Illuminance
The total density of visible light—from all directions — illuminating, falling on or incident to, a surface. Standard unit of measure for illuminance is LUX (lx) which is lumens per square meter (lm/m^2). See Footcandle.

Additional Information

Glossary

InGaN
The preferred LED (Light Emitting Diode) semiconductor technology containing Indium, Gallium, and Nitrogen to produce green, blue and white-colored LED light sources.

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

Inverse Square Law
This law says that the measured flux density from a light source decreases along any line from the source. It falls off in proportion to the square of the relative distance traversed. Thus the illuminance measurement 2 feet from the light source will be ¼ of the measurement 1 foot from the source—not ½.

Kelvin
The Kelvin unit is the basis of all temperature measurement. In lighting, Kelvin is the unit of measure for Color Temperature used to indicate the overall color of the light produced from a source.
See Color Temperature.

Kilowatt Hour (kWh)
The measure of electrical energy from which electricity billing is determined. For example, at the rate of $0.11 per kWh, a 100 watt lamp operating for 2000 hours will cost $22.00 (100 x 2000/1000 = 200 kWh x .11 = $22.00)

LED Driver
See 'Driver'

Light
Radiant energy that stimulates the sense of sight. The "visible" part of the electromagnetic spectrum from 380–770 nm. Light is the energy which allows us to see.

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.

Lumen (lm)
SI unit of luminous flux. Photometrically, it is the luminous flux emitted within a unit solid angle (lsr) by a point source having a uniform luminous intensity of 1 cd. —or— The SI unit for measuring the flux of light being produced by a light source or received by a surface.

Luminaire (light fixture)
A complete lighting unit which consists of lamp(s), ballast(s)—if applicable—as well as mechanism for light distribution, lamp protection and alignment and connection to power.

Luminaire Efficacy
The ratio of luminous flux emitted by the fixture to that emitted by the lamp(s) within the fixture. Expressed as a percentage.

Luminance (The physical measure of brightness)
Luminance is the amount of visible light leaving a point on a surface in a given direction. The light leaving the surface can be due to reflection, transmission and/or emission. Standard unit of luminance is candela per square meter (cd/m^2).

Luminous Efficacy
The expression of efficiency in converting power (watts) into light (lumens). Expressed as lumens per watt or l/w.

Luminous Exitance
Refers to the total amount of visible light leaving a surface in all directions. Unit for luminous exitance is lumens per square meter (lm/m^2)

Packaged LED
Consists of the die, a lead frame, which houses the die, the encapsulation epoxy that protectively surrounds the die, and also disperses the light.

Parallel (LED)
Electrical condition where LEDs operate under the same voltage being provided by a driver.

Photocell
A transducer used to detect and measure light and other radiations.

Photometry
Photometry is the science of measuring visible light in units that are weighted according to the sensitivity of the human eye known as the Visual Wavelength ($V\lambda$) factor. Photometric theory does not address how we perceive colors.

Radiometry
Radiometry is the science of quantifying the phenomena of electromagnetic radiation. In our context, we are interested in light, the limited range of electromagnetic radiation that is visible to the human eye, sometimes extended to the areas of infrared and ultraviolet.

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

Series (LED)
Electrical condition where LEDs operate under the same current being provided by a driver.

Task Lighting
Lighting designed for a specific visible operation which requires higher light levels; most often characterized by proximity to that task.

Transformer
An electrical device by which alternating current of one voltage is changed to another voltage

Voltage
A measure of electromotive force or simply said, the pressure of electricity. This is analogous to pressure in a water line. In this catalog, voltage refers to supply voltage required by the lamp (incandescent) or operating voltage required by the arc tube (discharge lamps).

Watt
Unit used to measure electric power consumed by a lamp or any electrical device.

Lamp Listing Sequence
Lamps are listed in wattage sequence except for special groupings such as Street Lighting, Tungsten Halogen, High Intensity and Silicone Coated Lamps.

Ordering Code
The complete information shown in the ordering code column together with the voltage, if applicable, should be used when placing orders. In a number of instances a lamp type may be available in different kinds of packaging such as 2 or 4 lamp wrappers. Some small lamp types which are generally multiple packed on a platform with an overwrap are also packaged as a blister-carded item for the retail market. Each of these items is shown as a separate listing. To identify them, additional information is included with the ordering code. The following examples illustrate this:

Ordering Code	BC-7T7/W 12/2
Pkg. Qty.*	12cds
Explanation	Carded pack—2 lamps per card. The number shown under "Pkg. Qty" is the number of cards per min. shipping case.
Ordering Code	60T/SW 12/4
Pkg. Qty.	48
Explanation	12-4 lamp wrappers = 48 lamps per min. shipping case.
Ordering Code	50/150T/WL/TP 96/1
Pkg. Qty.	96
Explanation	96-1 lamp wrappers = 96 lamps per min. shipping case.

* Quantity shown is minimum shipping container. Refer to Net Price Schedule for number of lamps required for qualification as a standard case.

Voltage
Lamps listed are available only in the voltage shown. Lamps listed in range voltages such as 115–125 or 230–250 are intended for use on circuits normally varying within these voltage limits and are designed for an average voltage suitable for operation on such circuits. Lamps intended for operation in range voltages have a design volt center as follows, unless otherwise noted by a footnote:

Range Voltage	Design Voltage
115–125	120
120–125	120
120–130	125
125–130	130
230–250	240

Class of Lamp
Incandescent lamps are classified as type B or type C. The type B lamp is one in which the filament operates in a vacuum. The type C lamp is one in which the filament operates in an atmosphere of inert gas. For gas-filled lamps which can be operated in any position, the lumen maintenance is best when lamps are operated base up. For the vacuum type lamps which have no restrictions on operating position, the lumen maintenance is the same in all operating positions.

Lamp Dimensions
Bulb designations consist of a letter or letters to indicate shape and a number to indicate the approximate diameter in eighths of an inch.

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

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

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

All Screw Bases: Bottom base contact

Medium and Mogul Prefocus: Top of base pin

Medium Bipost: Bottom of bulb

Bayonet Candelabra and Medium Bayonet: Top of base pins

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

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

Inches to Metric Conversion
To calculate the metric equivalent of inches in millimeters (mm) use the following formula:
inches x 25.4001 = millimeters

Operating Position
Lamps may be operated in any position unless otherwise indicated.

Base Pin Position for Bayonet Candelabra-Based Lamps
When lamps are based with a bayonet candelabra base, the plane of the base pins will be approximately at right angles to the plane of the filament, unless otherwise indicated.

SC or DC Prefocus Based Lamps
The plane containing the base axis and the major locking eyelet, which is the eyelet equidistant from the two other eyelets, will be at right angles to the plane of the filament or lead wires unless otherwise indicated. The letter (A) shown in the Base column after SC or DC Pref. based lamps indicates that the distance from the bottom of base contact or contacts to the bottom of the collar is .406". In the case of DC Pref. based lamps, the letter (A) also indicates that the plane containing the base axis and contacts is at right angles to the plane containing the base axis and the major locking eyelet.

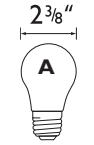
Additional Information

Measuring Lamps and Understanding Ordering Codes

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.

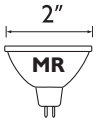


A19 Lamp

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

T10 Lamp

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



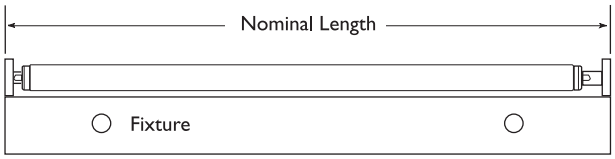
MR16 Lamp

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

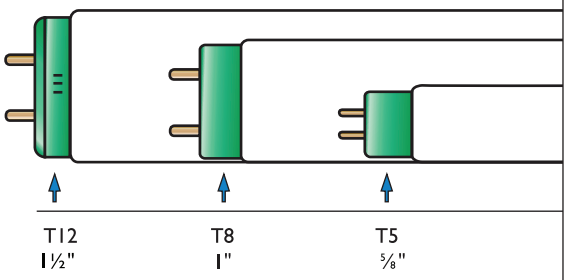
ED37 Lamp

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.



Understanding Ordering Codes

Typical ordering codes can be understood with the examples below:

Incandescent ordering code: BC15BA9C/CL/LL

BC = Blister Carded Package
15 = Lamp Wattage
BA9 = Lamp Type
C = Candelabra Base (Blank = Medium)
CL = Clear (W = White, etc.)
LL = Long Life (Blank = Standard)

Halogen ordering code: 45PAR38/HAL/SP10

45 = Lamp Wattage
PAR38 = Lamp Type
Hal = Halogen
SP = Spot Lamp
10 = Beam Spread in Degrees

CFL ordering code: PL-C 13W/827/4P/ALTO

PL-C = Lamp Type
13W = Lamp Wattage
827 = Lamp Color
4P = Base has 4-Pins
ALTO = Low Mercury Content

Fluorescent ordering code: F32T8/ADV841/ALTO

F = Fluorescent
32 = Nominal Lamp Wattage
T8 = 1" Diameter Tube
ADV = Advantage
841 = CRI of 80+ and Color Temp. of 4100K
ALTO = Low Mercury Content

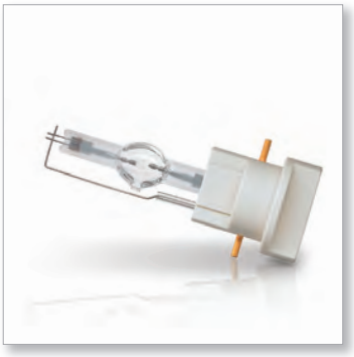
HID ordering code: MS320/C/U/PS

MS = High Output Arc Tube
320 = Lamp Wattage
C = Coated
U = Universal Burning Position
PS = Pulse Start

Notes

Notes

Notes



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