

General Lighting Products Catalog:
1986



OSRAM

Technology Brought To Light



Technology Brought To Light

OSRAM is an international lamp manufacturer, with a history of leadership in the development of technologically advanced lighting products. For over 65 years, OSRAM's commitment to innovation has touched every sector of industrial, commercial and residential lighting.

OSRAM offers a wide range of products through authorized distribution outlets in the United States. These innovative products are a direct result of our research and development. Many of them have earned international recognition.

"Technology Brought to Light" is the major reason why we are now one of the world's leading manufacturers of light sources.

OSRAM

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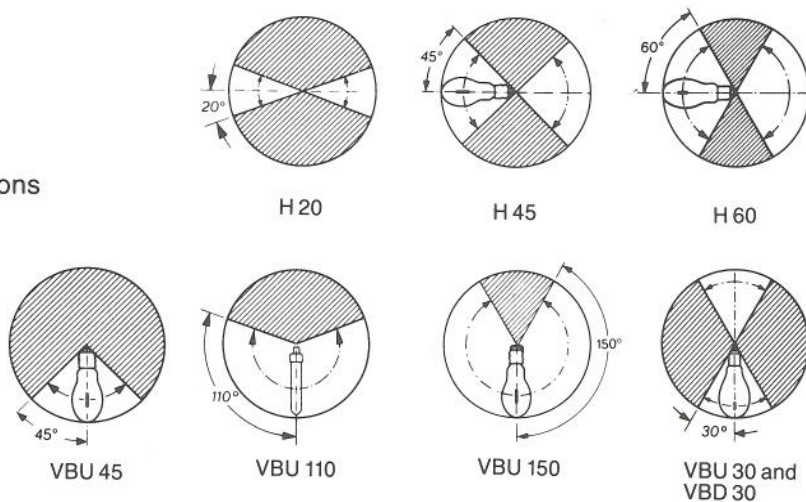
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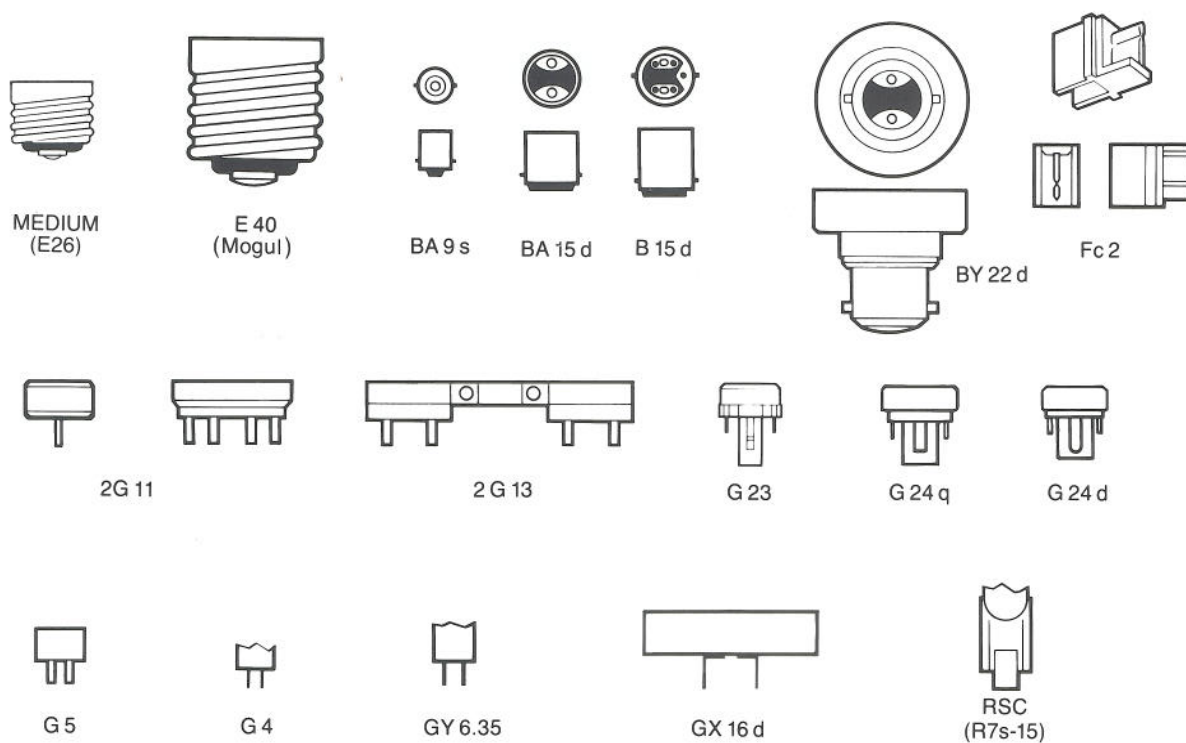
BURNING POSITIONS

- ☐ permissible
☒ not permissible

Examples of burning positions for discharge lamps.



BASE TABLE

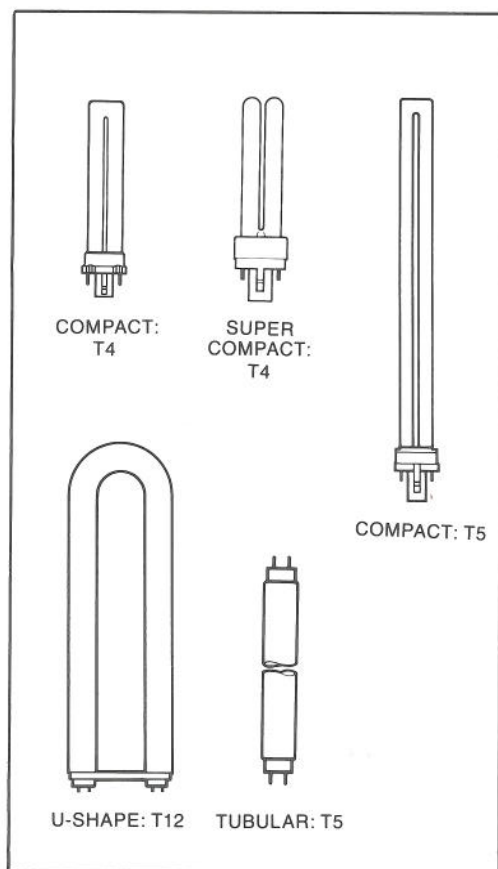


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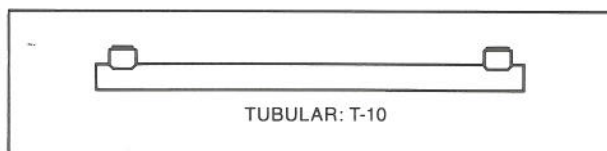
Bulb Shape Guide

A bulb designation consists of a letter(s) to indicate the shape and a number(s) to indicate the approximate major diameter in eighths of an inch. Bulbs are measured through their greatest diameter in eighths of an inch, thus, an F-15 bulb is a flame shape, $1\frac{5}{8}$ of an inch (or $1\frac{7}{8}$ inches) in diameter.

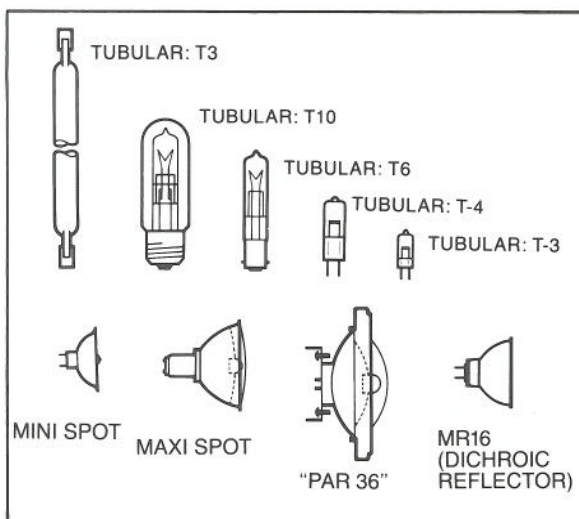
Fluorescent Lamps



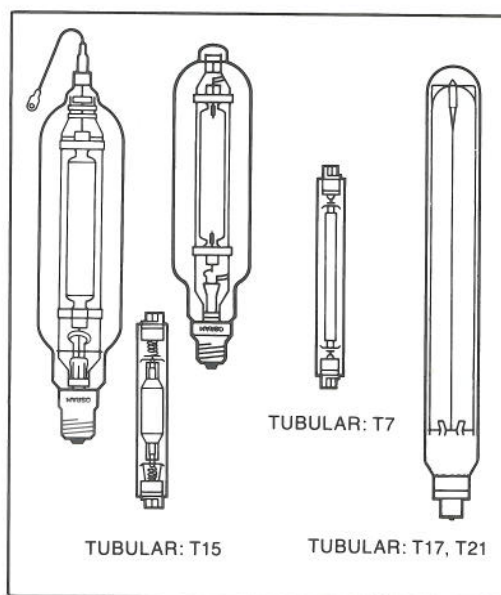
Incandescent Lamps



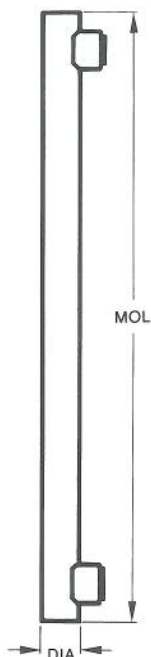
Tungsten-Halogen Quartz Lamps



High Intensity Discharge Lamps



INCANDESCENT LAMPS



Linestra® Linear Incandescent Lamps

Linestra® lamps are available in clear or low glare opal finish. These lamps are line voltage incandescent lamps. No ballast or transformer is required. Linestra's warm light makes them ideal as under cabinet or counter lights and around mirrors for pleasing, glare-free light without harsh shadows. Linestras can also be placed end-to-end to create lines of light.

APPLICATION: Both residential and commercial.

Order Description	U.S. Description	Watts	Volts	Lumens	Average Life (Hrs)	Diameter (mm)	Diameter (Inches)	MOL (mm)	MOL (Inches)	Base	Standard Package
1603 Opal	35 Watt Linear Incandescent Lamp	35W	125/130V	240	2000	30	1 ³ / ₁₆	300	11.81	2x S14s	25
1603 Clear ¹	35 Watt Clear Linear Incandescent Lamp	35W	125/130V	260	2000	30	1 ³ / ₁₆	300	11.81	2x S14s	25
1604 Opal	60 Watt Linear Incandescent Lamp	60W	125/130V	460	2000	30	1 ³ / ₁₆	500	19.69	2x S14s	25
1604 Clear	60 Watt Clear Linear Incandescent Lamp	60W	125/130V	510	2000	30	1 ³ / ₁₆	500	19.69	2x S14s	25
1104 Opal	120 Watt Linear Incandescent Lamp	120W	125/130V	930	2000	30	1 ³ / ₁₆	1000	39.37	2x S14s	16
1104 Clear	120 Watt Clear Linear Incandescent Lamp	120W	125/130V	1020	2000	30	1 ³ / ₁₆	1000	39.37	2x S14s	16

Linestra® Lampholders

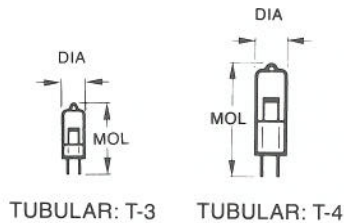
Lampholder



Order Description	Maximum Overall Length (mm)	Maximum Overall Length (Inches)	Standard Packaging
662 Socket	59	2 ⁵ / ₁₆	50

¹Consult factory for availability.

TUNGSTEN-HALOGEN (QUARTZ) LAMPS

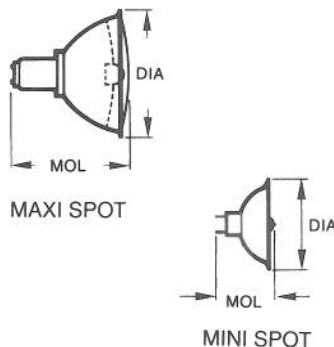


Low Voltage Tungsten-Halogen (Quartz) Lamps Without Reflector

These lamps offer efficacies of up to 25 lumens per watt. Their sturdy and compact construction make them particularly appropriate for small fixtures. They are ideal for fixtures with built-in reflectors, high intensity desk lamps, or as a free burning decorative light source.

APPLICATIONS: In homes to accent wall decorations, or as a working or supplementary light. For commercial use in display windows or small showcases, and in museums and galleries.

Order Description	U.S. Description	Watts	Volts	Lumens	Average Life (Hrs)	Burn Position	Diameter (mm)	Diameter (Inches)	MOL (mm)	MOL (Inches)	Base	Standard Package
64405	5W 12V Nonreflectorized Lamp	5W	12V	60	2000	Any	9	5/16	31	1 1/4	G4	100
64410	10W 6V Nonreflectorized Lamp	10W	6V	120	2000	Any	9	5/16	31	1 1/4	G4	100
64415	10W 12V Nonreflectorized Lamp	10W	12V	140	2000	Any	9	5/16	31	1 1/4	G4	100
64425	20W 12V Nonreflectorized Lamp	20W	12V	350	2000	Any	9	5/16	31	1 1/4	G4	100
64435	20W 24V Nonreflectorized Lamp	20W	24V	350	1000	Any	9	5/16	31	1 1/4	G4	100
64440	50W 12V Nonreflectorized Lamp	50W	12V	950	2000	Any	12	1/2	44	1 3/4	GY 6.35	100
64450	75W 12V Nonreflectorized Lamp	75W	12V	1350	2000	Any	12	1/2	44	1 3/4	GY 6.35	100
64458	100W 12V Nonreflectorized Lamp	100W	12V	2500	2000	Any	12	1/2	44	1 3/4	GY 6.35	100
64460	100W 24V Nonreflectorized Lamp	100W	24V	2000	2000	Any	12	1/2	44	1 3/4	GY 6.35	100



Low Voltage Tungsten-Halogen (Quartz) Lamps With Metal Reflectors

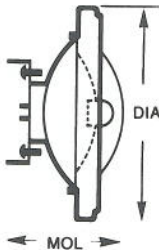
OSRAM low voltage halogen lamps with exclusive metal reflectors provide superior performance in tracklighting, downlighting and display lighting applications. They recreate true incandescent color with consistent light beams, eliminating hot spots. The lamp's heat is reflected away from the socket area, keeping it cooler, and enhancing the fixture's reliability. The anti-glare shield increases visual comfort.

Available in two sizes (48mm or 70mm) with silver or gold anodized reflectors in spot or flood beam spread. The silver color reflector provides 3000°K light, suitable for most merchandising applications. The gold reflector gives a warmer, more intimate 2600°K light without the need for dimming.

Order Description	U.S. Description	Watts	Volts	Maximum Intensity (cd)	Beam Spread	Diameter (mm)	Diameter (Inches)	MOL (mm)	MOL (Inches)	Base	Average Life (Hrs)	Standard Package
Minispot												
41960 SP ¹	10W 48mm Silver Reflector 10 Degree Spot	10W	6V	1500	10 degrees	48	1 15/16	31	1 1/4	G4	2000	10
41900 FL ¹	20W 48mm Silver Reflector 15 Degree Flood	20W	12V	1000	15 degrees	48	1 15/16	31	1 1/4	G4	2000	10
41905 FL ¹	20W 48mm Gold Reflector 15 Degree Flood	20W	12V	850	15 degrees	48	1 15/16	31	1 1/4	G4	2000	10
41900 SP ¹	20W 48mm Silver Reflector 10 Degree Spot	20W	12V	3800	10 degrees	48	1 15/16	31	1 1/4	G4	2000	10
41905 SP ¹	20W 48mm Gold Reflector 10 Degree Spot	20W	12V	3100	10 degrees	48	1 15/16	31	1 1/4	G4	2000	10
41930 SP ¹	20W 48mm Silver Reflector 10 Degree Spot	20W	24V	3800	10 degrees	48	1 15/16	31	1 1/4	G4	2000	10
Maxispot												
41970 FL ¹	20W 70mm Silver Reflector 30 Degree Flood	20W	12V	600	30 degrees	70	2 3/4	50	2.00	BA 15d	2000	10
41975 FL ¹	20W 70mm Gold Reflector 30 Degree Flood	20W	12V	516	30 degrees	70	2 3/4	50	2.00	BA 15d	2000	10
41970 SP ¹	20W 70mm Silver Reflector 10 Degree Spot	20W	12V	5000	10 degrees	70	2 3/4	50	2.00	BA 15d	2000	10
41975 SP ¹	20W 70mm Gold Reflector 10 Degree Spot	20W	12V	4300	10 degrees	70	2 3/4	50	2.00	BA 15d	2000	10
41990 FL ¹	50W 70mm Silver Reflector 30 Degree Flood	50W	12V	1100	30 degrees	70	2 3/4	50	2.00	BA 15d	2000	10
41995 FL ¹	50W 70mm Gold Reflector 30 Degree Flood	50W	12V	950	30 degrees	70	2 3/4	50	2.00	BA 15d	2000	10
41990 SP ¹	50W 70mm Silver Reflector 10 Degree Spot	50W	12V	10000	10 degrees	70	2 3/4	50	2.00	BA 15d	2000	10
41995 SP ¹	50W 70mm Gold Reflector 10 Degree Spot	50W	12V	9000	10 degrees	70	2 3/4	50	2.00	BA 15d	2000	10
41980 FL ¹	75W 70mm Silver Reflector 30 Degree Flood	75W	12V	3000	30 degrees	70	2 3/4	50	2.00	BA 15d	2000	10
41980 SP ¹	75W 70mm Silver Reflector 10 Degree Spot	75W	12V	15000	10 degrees	70	2 3/4	50	2.00	BA 15d	2000	10

¹Silver/Gold refers to reflector color, not material composition.

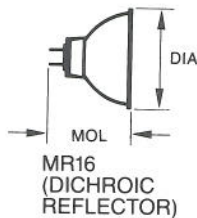
TUNGSTEN-HALOGEN (QUARTZ) LAMPS (continued)



"PAR 36" Type Metal Reflector Lamps

Another Osram innovation is the metal reflector replacement for the PAR 36 lamp. The lamp offers long life, light weight and the superior performance of halogen. The 41830 is a direct replacement for the 4515 PAR 36. The lamp is available in a wide variety of beam patterns and wattages, suitable for tracklighting, downlighting, display and disco lighting.

Order Description	U.S. Description	Watts	Volts	Maximum Intensity (cd)	Beam Spread	Diameter (mm)	Diameter (Inches)	MOL (mm)	MOL (Inches)	Base	Average Life (Hrs)	Standard Package
41830 SSP	"Par 36" Type 3 Degree Super Spot	35W	6V	45000	3 degrees	111	4 3/8	60	2 3/8	M4 w/Screw	2000	10
41835 NSP	"Par 36" Type 5 Degree Narrow Spot	50W	12V	30000	5 degrees	111	4 3/8	60	2 3/8	M4 w/Screw	2000	10
41835 SP	"Par 36" Type 10 Degree Spot	50W	12V	20000	10 degrees	111	4 3/8	60	2 3/8	M4 w/Screw	2000	10
41835 FL	"Par 36" Type 30 Degree Flood	50W	12V	2500	30 degrees	111	4 3/8	60	2 3/8	M4 w/Screw	2000	10
41840 SP	"Par 36" Type 10 Degree Spot	75W	12V	25000	10 degrees	111	4 3/8	60	2 3/8	M4 w/Screw	2000	10
41840 FL	"Par 36" Type 30 Degree Flood	75W	12V	4000	30 degrees	111	4 3/8	60	2 3/8	M4 w/Screw	2000	10
41840 WFL	"Par 36" Type 60 Degree Wide Flood	75W	12V	800	60 degrees	111	4 3/8	60	2 3/8	M4 w/Screw	2000	10
41850 SP	"Par 36" Type 10 Degree Spot	100W	12V	45000	10 degrees	111	4 3/8	60	2 3/8	M4 w/Screw	2000	10
41850 FL	"Par 36" Type 30 Degree Flood	100W	12V	6000	30 degrees	111	4 3/8	60	2 3/8	M4 w/Screw	2000	10
41850 WFL	"Par 36" Type 60 Degree Wide Flood	100W	12V	1200	60 degrees	111	4 3/8	60	2 3/8	M4 w/Screw	2000	10



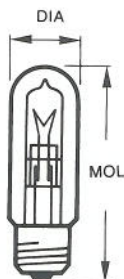
KLR® Low Voltage Tungsten-Halogen (Quartz) Lamps with Dichroic Reflectors (MR 16)

OSRAM KLR® (MR 16) lamps eliminate over 60% of the infrared heat energy from the light beam by passing the heat through the lamp reflector. A special coating on the reflector provides superior lumen maintenance when compared to most competitor's MR 16 products. The OSRAM KLR® lamps should be substituted for standard MR 16 types in all tracklighting, downlighting and display lighting fixtures designed for dichroic reflector lamps.

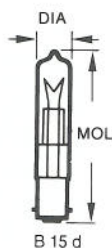
Order Description	U.S. Description	Watts	Volts	Maximum Intensity (cd)	Beam Spread	Diameter (mm)	Diameter (Inches)	MOL (mm)	MOL (Inches)	Base	Average Life (Hrs)	Standard Package
41860 SP ¹	20W MR16 Very Narrow Spot (ESX)	20W	12V	10000	5 degrees	51	2.00	44	1 3/4	GX 5.3	2000	10
41860 FL ¹	20W MR16 Medium Flood (BAB)	20W	12V	1000	20 degrees	51	2.00	44	1 3/4	GX 5.3	2000	10
41870 SP ¹	50W MR16 Very Narrow Spot (EXT)	50W	12V	15000	7 degrees	51	2.00	44	1 3/4	GX 5.3	2000	10
41870 FL ¹	50W MR16 Narrow Flood (EXZ)	50W	12V	2800	20 degrees	51	2.00	44	1 3/4	GX 5.3	2000	10
41870 WFL ¹	50W MR16 Flood (EXN)	50W	12V	1800	40 degrees	51	2.00	44	1 3/4	GX 5.3	2000	10
41880 SP ¹	75W MR16 Narrow Spot (EYF)	75W	12V	17500	10 degrees	51	2.00	44	1 3/4	GX 5.3	2000	10
41880 FL ¹	75W MR16 Narrow Flood	75W	12V	4000	20 degrees	51	2.00	44	1 3/4	GX 5.3	2000	10
41880 WFL ¹	75W MR16 Flood (EYC)	75W	12V	2300	40 degrees	51	2.00	44	1 3/4	GX 5.3	2000	10

¹OSRAM KLR lamps are not ANSI coded. The ANSI codes listed are the closest equivalent ANSI type. OSRAM KLR lamps have, in general, a slightly narrower beam spread and a higher intensity than their closest ANSI type, and may be substituted wherever that type is used in non-photographic applications.

TUNGSTEN-HALOGEN (QUARTZ) LAMPS (continued)



TUBULAR: T10



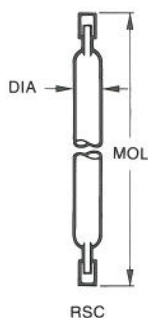
TUBULAR: T6

Line Voltage Tungsten-Halogen (Quartz) Lamps — Single Ended

DC Bayonet Base. These high efficacy light sources with their DC bayonet bases can be used wherever a small, high efficiency light source is desired.

Medium Base. This exclusive OSRAM product has an outer hard glass envelope which allows normal handling of the bulb. Used with porcelain sockets, the compact size and high light output allows for the design of architecturally pleasing luminaires.

Order Description	U.S. Description	Watts	Volts	Lumens	Average Life (Hrs)	Burn Position	Diameter (mm)	Diameter (Inches)	MOL (mm)	MOL (Inches)	Base	Standard Package
64477 Clear 120V	Sing. Ended Line Volt. Tungsten-Halogen Quartz Lamp	150W	120V	2760	2000	Any	15.5	5/8	95	3 3/4	B15d	10
64477 Frosted 120V	Sing. Ended Line Volt. Tungsten-Halogen Quartz Lamp	150W	120V	2660	2000	Any	15.5	5/8	95	3 3/4	B15d	10
64478 Clear 120V	Sing. Ended Line Volt. Tungsten-Halogen Quartz Lamp	150W	120V	2760	2000	Any	31	1 1/4	105	4 1/8	MED	15
64478 Frosted 120V	Sing. Ended Line Volt. Tungsten-Halogen Quartz Lamp	150W	120V	2660	2000	Any	31	1 1/4	105	4 1/8	MED	15
64479 Clear 120V	Sing. Ended Line Volt. Tungsten-Halogen Quartz Lamp	250W	120V	4750	2000	Any	15.5	5/8	95	3 3/4	B15d	10
64479 Frosted 120V	Sing. Ended Line Volt. Tungsten-Halogen Quartz Lamp	250W	120V	4540	2000	Any	15.5	5/8	95	3 3/4	B15d	10
64480 Clear 120V	Sing. Ended Line Volt. Tungsten-Halogen Quartz Lamp	250W	120V	4750	2000	Any	31	1 1/4	105	4 1/8	MED	15
64480 Frosted 120V	Sing. Ended Line Volt. Tungsten-Halogen Quartz Lamp	250W	120V	4540	2000	Any	31	1 1/4	105	4 1/8	MED	15



TUBULAR: T3

Line Voltage Tungsten-Halogen (Quartz) Lamps — Double Ended

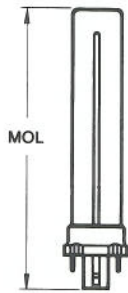
The OSRAM quality and rugged construction make these lamps a perfect choice for replacement or in new applications. Available in all popular wattages.

APPLICATIONS: Downlights, wallwashers, uplights, indirect and pendant fixtures in halls, auditoriums, conference rooms, restaurants, showrooms, modern living rooms, and outdoor floodlights.

Order Description	U.S. Description	Watts	Volts	Lumens	Average Life (Hrs)	Burn Position	Diameter (mm)	Diameter (Inches)	MOL (mm)	MOL (Inches)	Base	Standard Package
64703 120V ¹	Q300T3/CL 120V	300W	120V	6000	2000	H-15	12	1/2	114	4 1/2	RSC	12
64703 125/130V ¹	Q300T3/CL 125/130V	300W	125/130V	5600	2000	H-15	12	1/2	114	4 1/2	RSC	12
64700 120V ¹	Q500T3/CL 120V	500W	120V	11100	2000	H-15	12	1/2	114	4 1/2	RSC	12
64700 125/130V ¹	Q500T3/CL 125/130V	500W	125/130V	10500	2000	H-15	12	1/2	114	4 1/2	RSC	12
64760 240/250V ¹	Q1500T3/CL 240/50V	1500W	240/250V	33000	2000	H-15	12	1/2	250.7	9 7/8	RSC	12

¹Double ended lamps available in clear only.

FLUORESCENT LAMPS



COMPACT: T4

DULUX™ S Compact Fluorescent Lamps

An exciting development in lighting, DULUX™ S offers advanced qualities. This high efficiency lamp emits a pleasant warm light similar to incandescent (/41) or a white light similar to cool white fluorescent (/21), but uses only one-quarter the electrical energy. In addition, it lasts up to thirteen times longer than standard incandescent lamps.

APPLICATIONS: Use DULUX™ S lamps for creative lighting in small fixtures, indoors and out. They can be used for decorative lighting designs, and are perfect for ceiling, wall and table lamps in residential and commercial applications. They are the ideal choice for furniture showcases, hand lamps, emergency and security lighting.

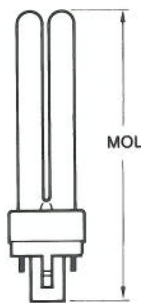
Order Description	U.S. Description	Watts	Lumens	MOL (mm)	MOL (Inches)	Base	Color Temperature	CRI	Average Life (Hrs)	Standard Package
Dulux S 5 W/41	5 W Compact Fluorescent	5W	250	105	4 1/8	G23	2700 K	86	10000	50
Dulux S 7 W/41	7 W Compact Fluorescent	7W	400	135	5 5/16	G23	2700 K	86	10000	50
Dulux S 9 W/41	9 W Compact Fluorescent	9W	600	167	6 9/16	G23	2700 K	86	10000	50
Dulux S 13 W/41	13 W Compact Fluorescent	13W	900	178	7.00	GX23	2700 K	86	10000	50
Dulux S 5 W/21 ²	5 W Compact Fluorescent	5W	280	105	4 1/8	G23	4000 K	86	10000	50
Dulux S 7 W/21	7 W Compact Fluorescent	7W	450	135	5 5/16	G23	4000 K	86	10000	50
Dulux S 9 W/21	9 W Compact Fluorescent	9W	670	167	6 9/16	G23	4000 K	86	10000	50
Dulux S 13 W/21	13 W Compact Fluorescent	13W	1000	178	7.00	GX23	4000 K	86	10000	50

¹At 3 hours per start.

²Special order basis. See your OSRAM representative.

FLUORESCENT LAMPS (continued)

DULUX™ D and DULUX™ E Super Compact Fluorescent Lamps



SUPER COMPACT: T4

Designed to replace up to 100 watts of incandescent lighting without sacrifice of light, DULUX™ D lamps are completely new, extremely compact fluorescent lamps. They possess the ideal advantages of color, and color rendering similar to incandescent lamps, super compact size, high energy efficacy, and long life. The DULUX™ D emits a warm, pleasant light evenly in all directions, so that conical reflectors can be used.

DULUX™ E lamps are similar in size and output to DULUX™ D. However, they do not have the integral starter and capacitor found in the DULUX™ D. Distinguished by a four pin base, these lamps are ideally suited for electronic ballast operation and operation on dimming circuits.

APPLICATIONS: Downlights, table lamps, pendant and wall lamps, plus modern outdoor fixtures.

Order Description	U.S. Description	Watts	Lumens	MOL (mm)	MOL (Inches)	2 Pin Base	Color Temperature	CRI	Average Life (Hrs)	Standard Package
Dulux D 10W	10W Super Compact Fluorescent	10W	600	108	4¼	G24d-1	2700 K	86	10000	50
Dulux D 13W	13W Super Compact Fluorescent	13W	900	140	5½	G24d-1	2700 K	86	10000	50
Dulux D 18W	18W Super Compact Fluorescent	18W	1250	170	6⅞	G24d-2	2700 K	86	10000	50
Dulux D 26W	26W Super Compact Fluorescent	26W	1800	190	7½	G24d-3	2700 K	86	10000	50

With integral starter and RFI capacitor

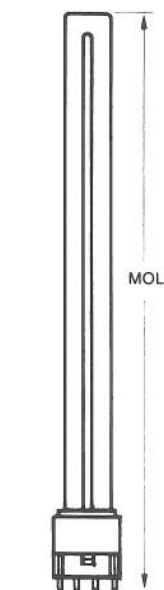
Order Description	U.S. Description	Watts	Lumens	MOL (mm)	MOL (Inches)	4 Pin Base	Color Temperature	CRI	Average Life (Hrs)	Standard Package
Dulux E 10W ²	10W Electronic Super Compact Fluorescent	10W	600	108	4¼	G24q-1	2700 K	86	10000	50
Dulux E 13W ²	13W Electronic Super Compact Fluorescent	13W	900	140	5½	G24q-1	2700 K	86	10000	50
Dulux E 18W ²	18W Electronic Super Compact Fluorescent	18W	1250	170	6⅞	G24q-2	2700 K	86	10000	50
Dulux E 26W ²	26W Electronic Super Compact Fluorescent	26W	1800	190	7½	G24q-3	2700 K	86	10000	50

No integral starter or RFI capacitor

¹At 3 hours per start.

²Lamps can utilize electronic or magnetic ballasts.

FLUORESCENT LAMPS (continued)



COMPACT: T5

DULUX™ L “Long Compact” Fluorescent Lamps

New from OSRAM, these compact 18, 24 and 36 watt fluorescent lamps have the same light output as standard F20, F30 and F40 lamps, but with only one-third the length. OSRAM's high efficiency Trichrome® phosphors offer excellent color rendering with a choice of color temperatures at substantially lower wattages than standard linear fluorescents.

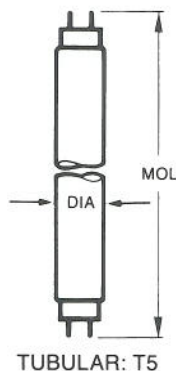
APPLICATIONS: Recessed troffers, sconces, indirect lighting, task/ambient systems, signs or wherever an efficient light source of good color rendering is required.

Order Description	U.S. Description	Watts	Lumens	MOL (mm)	MOL (Inches)	Base	Color Temperature	CRI	Average Life (Hrs) ²	Standard Package
Dulux L 18W/21 ¹	18W/21 Long Compact Fluorescent	18W	1250	221	8 ¹¹ / ₁₆	2G11	4000 K	86	15000	10
Dulux L 18W/31 ¹	18W/31 Long Compact Fluorescent	18W	1250	221	8 ¹¹ / ₁₆	2G11	3000 K	86	15000	10
Dulux L 18W/41 ¹	18W/41 Long Compact Fluorescent	18W	1250	221	8 ¹¹ / ₁₆	2G11	2700 K	86	15000	10
Dulux L 24W/21 ¹	24W/21 Long Compact Fluorescent	24W	1900	320	12 ⁹ / ₁₆	2G11	4000 K	86	15000	10
Dulux L 24W/31 ¹	24W/31 Long Compact Fluorescent	24W	1900	320	12 ⁹ / ₁₆	2G11	3000 K	86	15000	10
Dulux L 24W/41 ¹	24W/41 Long Compact Fluorescent	24W	1900	320	12 ⁹ / ₁₆	2G11	2700 K	86	15000	10
Dulux L 36W/21 ¹	36W/21 Long Compact Fluorescent	36W	3000	417	16 ⁷ / ₁₆	2G11	4000 K	86	15000	10
Dulux L 36W/31 ¹	36W/31 Long Compact Fluorescent	36W	3000	417	16 ⁷ / ₁₆	2G11	3000 K	86	15000	10
Dulux L 36W/41 ¹	36W/41 Long Compact Fluorescent	36W	3000	417	16 ⁷ / ₁₆	2G11	2700 K	86	15000	10

¹Consult factory for availability.

²At 3 hours per start.

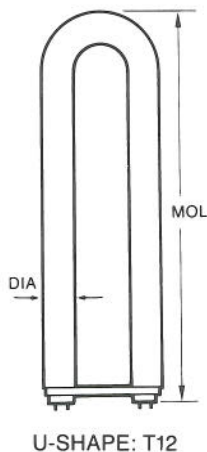
FLUORESCENT LAMPS (continued)



Miniature Fluorescent Lamps

Standard miniature fluorescent lamps in cool white and warm white colors are suitable for vending machines, under counter and other applications requiring a long, thin lamp.

Order Description	U.S. Description	Watts	Lumens	Diameter (mm)	Diameter (Inches)	MOL (mm)	MOL (Inches)	Base	Color Temperature	Average Life (Hrs) ¹	Standard Package
L4W/20	F4T5/CW	4W	135	16	5/8	152	6.00	MIN BIPIN	4150 K	7500	25
L6W/20	F6T5/CW	6W	290	16	5/8	229	9.00	MIN BIPIN	4150 K	7500	25
L6W/30	F6T5/WW	6W	200	16	5/8	229	9.00	MIN BIPIN	3100 K	7500	25
L8W/20	F8T5/CW	8W	400	16	5/8	288	11 5/16	MIN BIPIN	4150 K	7500	25
L8W/30	F8T5/WW	8W	385	16	5/8	288	11 5/16	MIN BIPIN	3100 K	7500	25
L13W/20	F13T5/CW	13W	800	16	5/8	517	20 5/16	MIN BIPIN	4150 K	7500	25



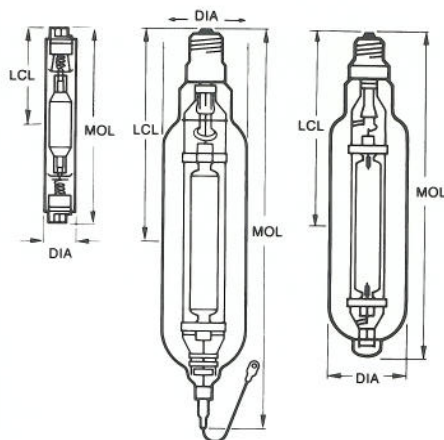
U-Shaped Fluorescent Lamps

For replacement in fixtures that utilize 3 5/8 inch leg spacing "U" shaped lamps in warm white or cool white phosphors.

Order Description	U.S. Description	Watts	Lumens	Diameter (mm)	Diameter (Inches)	MOL (mm)	MOL (Inches)	Base	Color Temperature	Average Life (Hrs) ¹	Standard Package
L40W/20 UK	FB40CW/U3	40W	2400	38	1 1/2	607	24	2 G 13-92	4150 K	7500	12
L40W/30 UK	FB40WW/U3	40W	2700	38	1 1/2	607	24	2 G 13-92	3100 K	7500	12

¹At 3 hours per start.

HIGH INTENSITY DISCHARGE LAMPS



TUBULAR

HQI® Metal Halide Lamps — Single and Double Ended

These OSRAM exclusive metal halide lamps are distinguished by their high efficacy, compact size and accurate color rendering properties. HQI® lamps offer a variety of color temperatures to meet the most critical requirements. They are available in daylight, neutral deluxe and warm deluxe colors. Warm deluxe and neutral deluxe feature consistent lamp to lamp color and a limited color shift.

APPLICATIONS: Indoors — clothing and fabric stores, automobile showrooms, offices, display windows, factories, warehouses, exhibit halls or wherever critical color evaluations are made. HQI (daylight color) is also excellent for plant growth. Outdoors — parking areas, sports lighting, facade lighting, security and street lighting.

Order Description	ANSI	Watts	Lumens	Average Life (Hrs) ⁷	Diameter (mm)	Diameter (Inches)	MOL (mm)	MOL (Inches)	LCL (mm)	LCL (Inches)	Base	Color Temperature	CRI	Burn Position	Standard Package
HQI-T 250 W/D ⁴	M80PR-250/D	250W	19000	15000	46	1 ³ / ₁₆	220	8 ¹ / ₁₆	150	5 ¹ / ₁₆	E40	5400 K	90	VBV 150	12
HQI-T 400 W/DH ⁴	M86PZ-R360/DH	400W	25000	15000	46	1 ³ / ₁₆	285	11 ¹ / ₄	175	6 ¹ / ₁₆	E40	6000 K	93	H 45	12
HQI-T 400 W/DV ⁴	M86PZ-R360/DV	400W	25000	15000	46	1 ³ / ₁₆	285	11 ¹ / ₄	175	6 ¹ / ₁₆	E40	5900 K	95	VBV 45	12
HQI-T 1000 W/D ⁴	M83PV-R1000/D	1000W	90000	11000	76	3.00	340	13 ³ / ₈	220	8 ¹ / ₁₆	E40	6000 K	93	H 60	6
HQI-T 2000 W/D ^{1,4}	M83PT-R2000/D	2000W	170000	11000	100	3 ¹ / ₂	430	16 ¹ / ₁₆	265	10 ⁷ / ₁₆	E40	6000 K	93	H 60	4
HQI-T 2000 W/N ^{2,3,4}		2000W	190000	11000	100	3 ¹ / ₂	430	16 ¹ / ₁₆	265	10 ⁷ / ₁₆	E40	4500 K	65	Universal	4
HQI-T 2000 W/D ^{1,2,4}		2000W	170000	11000	100	3 ¹ / ₂	430	16 ¹ / ₁₆	265	10 ⁷ / ₁₆	E40	6000 K	93	H 60	4

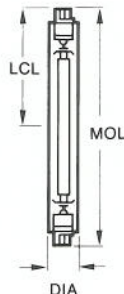
WARNING: This lamp can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if outer envelope is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available. This OSRAM HQI® lamp must be used only with an OSRAM approved ballast (a list of approved ballasts is available from OSRAM), of matching wattage rating and on a power supply that is within the voltage limits specified for the ballast. The use of enclosed fixtures with a tempered borosilicate glass lens or proven equivalent is recommended.

Order Description	ANSI	Watts	Lumens	Average Life (Hrs) ⁷	Diameter (mm)	Diameter (Inches)	MOL (mm)	MOL (Inches)	Base	Color Temperature	CRI	Burn Position	Standard Package
HQI-TS 70 W/WDL ⁴	M85PX-70/WDL	70W	5000	15000	20	3/4	114	4 ¹ / ₂	RSC	3000 K	81	H 45	12
HQI-TS 70 W/NDL ^{4,5}	M85PX-70/NDL	70W	5500	15000	20	3/4	114	4 ¹ / ₂	RSC	4300 K	85	H 45	12
HQI-TS 150 W/WDL ^{4,5}	M81PS-150/WDL	150W	9900	15000	23	15/16	132	5 ¹ / ₁₆	RSC	3000 K	81	H-15	12
HQI-TS 150 W/NDL ⁴	M81PS-150/NDL	150W	11250	15000	23	15/16	138	5 ¹ / ₁₆	RSC	4300 K	88	H 45	12
HQI-TS 250 W/NDL ⁴	M80PR-250/NDL	250W	20000	15000	30	1 ¹ / ₁₆	163	6 ¹ / ₁₆	Fc2	4300 K	88	H 45	12
HQI-TS 250 W/D ⁴	M80PR-250/D	250W	19000	15000	30	1 ¹ / ₁₆	163	6 ¹ / ₁₆	Fc2	5400 K	93	H 45	12
HQI-TS 400 W/D ⁴	M86PY-R360/D	400W	25000	15000	31	1 ¹ / ₄	206	8 ¹ / ₈	Fc2	5600 K	93	H-15	12
HQI-TS 1000 W/D ^{4,6}	M83PV-R1000/D	1000W	90000	12000	36	1 ¹ / ₁₆	260	10 ¹ / ₄	Fc2	6000 K	93	H 45	6
HQI-TS 2000 W/D ^{4,6}	M83PT-R2000/D	2000W	170000	12000	100	3 ¹ / ₂	490	19 ¹ / ₁₆	E40/W Flex	6000 K	93	H 60	4

WARNING: This lamp can cause serious skin burns and eye inflammation from shortwave ultraviolet radiation. Use this lamp only in fixtures with a fully enclosing ultraviolet (UV) filter glass. This OSRAM HQI® lamp must be used only with an OSRAM approved ballast (a list of approved ballasts is available from OSRAM), of matching wattage rating and on a power supply that is within the voltage limits specified for the ballast. The use of enclosed fixtures with a tempered borosilicate glass lens or proven equivalent is recommended.

¹For replacement purposes only. For new installations, we recommend HQI-T 2000 W/D/I. ²No ignitor required. ³Horizontal lumens 170,000; in vertical burning, color differences are possible. ⁴Operation is restricted to suitably enclosed fixtures. Consult OSRAM HQI Technical Data Sheets and your OSRAM representative for details. ⁵Consult factory for availability. ⁶Non-stock type; check lead times. ⁷At 10 hours per start.

HIGH INTENSITY DISCHARGE LAMPS (continued)



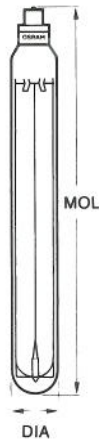
TUBULAR

VIALOX® (NAV) High Pressure Sodium Lamps

OSRAM NAV double-ended high pressure sodium lamps feature high efficacy and extremely small size. The 70 and 150 watt ratings are physically and electrically interchangeable with 70 and 150 watt HQI® metal halide lamps. This facility enables extremely versatile fixture/lamp combinations.

APPLICATIONS: Indoor and outdoor, wherever high efficacy is important, such as streets, parking areas, shipyards, security lighting, etc.

Order Description	U.S. Description	Watts	Lumens	Average Life (Hrs) ⁴	Diameter (mm)	Diameter (Inches)	MOL (mm)	MOL (Inches)	LCL (mm)	LCL (Inches)	Base	Color Temperature	CRI	Burn Position	Standard Package
NAV-TS 70 W ^{1,2}	Double Ended High Pressure Sodium	70W	7000	15000	20	3/4	114	4 1/2	57	2 1/4	RSC	2000 K	22	H-45	12
NAV-TS 150 W ^{1,2}	Double Ended High Pressure Sodium	150W	15500	15000	23	1 5/16	138	5 7/16	66	2 5/8	RSC	2000 K	22	H-15	12
NAV-TS 250 W ¹	Double Ended High Pressure Sodium	250W	25500	15000	23	1 5/16	206	8 1/8	103	4 1/16	Fc2	2000 K	22	H-45	12



TUBULAR

NA Low Pressure Sodium Lamps

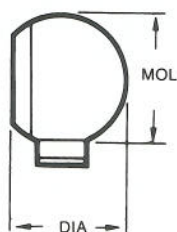
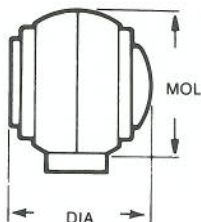
NA low pressure sodium lamps are the most efficient lamp with an efficacy of up to 183 lumens per watt. They emit a monochromatic yellow light.

APPLICATIONS: Suitable for roadway, parking lot and security lighting.

Order Description	U.S. Description	ANSI	Watts	Lumens	Average Life (Hrs) ⁴	Burn Position	Diameter (mm)	Diameter (Inches)	MOL (mm)	Base	Standard Package
NA 18 W	Low Pressure Sodium Lamp	L69	18	1800	18000	VBU 150	53	2 1/16	216	BY 22d	20
NA 35 W	Low Pressure Sodium Lamp	L70	35	4800	18000	VBU 110	52	2 1/16	310	BY 22d	12
NA 55 W	Low Pressure Sodium Lamp	L71	55	8000	18000	VBU 110	52	2 1/16	425	BY 22d	9
NA 90 W ³	Low Pressure Sodium Lamp	L72	90	13500	18000	H-20	66	2 5/8	528	BY 22d	9
NA 135 W ³	Low Pressure Sodium Lamp	L73	135	22500	18000	H-20	66	2 5/8	775	BY 22d	9
NA 180 W ³	Low Pressure Sodium Lamp	L74	180	33000	18000	H-20	66	2 5/8	1120	BY 22d	9

¹To be operated on ballasts for HQI lamps of the same wattage. Electrically and physically interchangeable with the same wattage HQI lamp. ²Consult factory for availability. ³Non-stock type; check lead times. ⁴At 10 hours per start.

FIXTURE HEADS

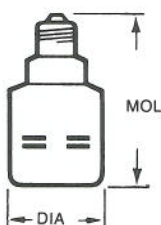


Mini Star/Maxi Star

Fixture Heads for Metal Reflector Halogen Lamps

These heads accommodate the OSRAM 48mm (Mini Star) and 70mm (Maxi Star) low voltage lamps with metal reflectors. A three foot cord and magnet are included. The magnet allows the head to be mounted to any metal surface and is completely adjustable. All you need to add is a 12 volt transformer of a "VA rating" to match the lamp wattage. Maxi Stars are available in black or white. The Mini Stars are supplied in a brushed steel finish. The unit comes equipped with the metal reflector lamp of your choice. For lamp selection, please refer to low voltage tungsten-halogen lamps with metal reflector.

Order Description	Diameter (mm)	Diameter (Inches)	Standard Packaging
Maxistar Head Black	105	4 1/8	3
Maxistar Head White	105	4 1/8	3
Ministar Head FL 41301	70	2 3/4	8
Ministar Head SP 41301	70	2 3/4	8

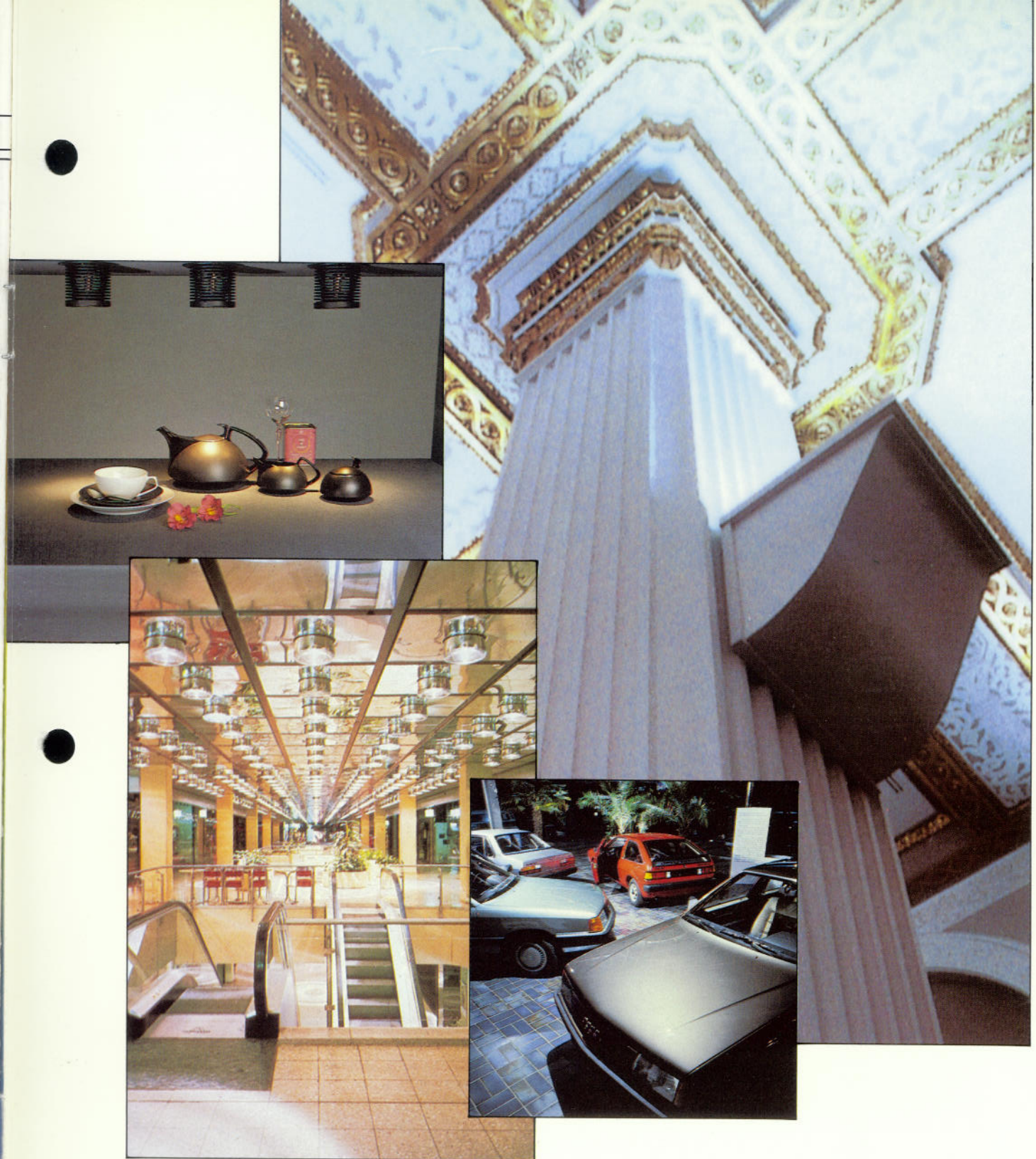


Halotube

OSRAM Halotube

OSRAM Halotube is an ideal replacement for up to 75 watts R type incandescent lamps or up to 100 watts A type incandescent lamps used in most downlights and tracklighting systems. Halotube incorporates an OSRAM 41900 halogen lamp, a transformer and a medium screw base into a neat, attractive retrofit package: simply screw out your wasteful line voltage incandescent lamp and screw in an energy efficient Halotube.

	Volts	Maximum Overall Length	Diameter	Beam Spread	Maximum C.P.	Replacement Lamp
Halotube 20W Spot	120V	5 1/8" 130mm	2 1/2" 64mm	10 degrees	3000	41900 SP
Halotube 20W Flood	120V	5 1/8" 130mm	2 1/2" 64mm	15 degrees	1000	41900 FL



Technology Brought To Light

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