

The Osram logo is centered on a red rectangular background. It features a large, white, stylized letter 'O' with a horizontal line extending from its base to the right. To the right of the 'O', the word 'sram' is written in a white, lowercase, sans-serif font.

LAMPS

and

TUBES

(Overseas edition)

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Other sections of OSRAM lamp catalogues are as follows :—

OS. SECTION (PART 2)
OSRAM vehicle bulbs, and
other battery types.

OS. SECTION (PART 3)
OSRAM lamps for Photographic
and Projection apparatus.

The material listed in this publication is offered subject to the Company's Terms of Business and Conditions of Sale, a copy of which may be obtained on request.

THE GENERAL ELECTRIC CO. LTD. of ENGLAND

Head Office : Magnet House, Kingsway, London, W.C.2.



Regd. Trade Mark

LAMPS AND TUBES

The General Electric Company Limited guarantee that such lamps and tubes, as are made in their English factories and branded OSRAM are made only from the best materials, as scheduled hereunder, and that the lamps and tubes comply in every respect with the appropriate British Standard.

SCHEDULE

TUNGSTEN FILAMENTS	Manufactured at the OSRAM Lamp Works, Hammersmith, Wembley, Team Valley and Shaw (Manchester).
MOLYBDENUM SUPPORTS	Manufactured at the OSRAM Lamp Works, Hammersmith, Wembley, Team Valley and Shaw (Manchester).
GLASS BULBS, TUBING AND STEM RODS	Manufactured at the OSRAM Glass Works, Wembley, Middlesex, Lemington-on-Tyne and at a G.E.C. allied works at Harworth, Yorks.—Glass Bulbs Ltd. The Pearl finish (inside frosting of the Pearl Osram bulb) is also executed at these works by a special acid etching process.
LEAD-IN WIRES	Manufactured at the OSRAM Lamp Works, Shaw (Manchester) and Wembley.
CAPS	Manufactured at the G.E.C. allied works, Lamp Caps Ltd., Chesterfield.
ARGON GAS	Manufactured at the OSRAM Lamp Works, Hammersmith.
FLUORESCENT POWDERS	Made by Lumifax Ltd., Wembley, a subsidiary company of the G.E.C.
WORKMANSHIP	OSRAM lamps are the product of the finest workmanship, and the equipment at the OSRAM Lamp Works represents the latest developments in the science of lamp manufacture.
RESEARCH	To ensure that the high and consistent quality of OSRAM lamps is maintained, the product is submitted to innumerable tests—some to destruction—by the Research Laboratories of The General Electric Co. Ltd., Wembley, Middlesex.

A G.E.C. Product

THE Osram organisation of the G.E.C. is the largest and most comprehensive lamp manufacturing organisation in the British Commonwealth. It produces the principal raw materials from which lamps are made—glass and tungsten wire ; it produces the component parts of lamps—bulbs, tubes, filament, caps and fluorescent powders ; and it makes from them filament, sodium, mercury and fluorescent lamps whose efficiency and reliability are second to none.

The reputation for quality enjoyed by Osram lamps springs from the rigid controls that are imposed at every stage of their manufacture. Electrical, mechanical and chemical tests are carried out on materials and components as well as on finished lamps to ensure the highest possible light output consistent with good life. Batch tests on Osram lamps before they leave the works ensure that they operate at the correct rating. Where there is a relevant British Standard, Osram lamps not only meet it but frequently give a performance appreciably higher than that demanded. Where there is no British Standard the Company adheres to specifications that represent the highest possible standards of performance.

The Osram organisation retains its leading place in the field of lamp development because it is backed by the resources of the G.E.C. Research Laboratories at Wembley. Here every aspect of electric lighting is under constant review. Fundamental study of metallurgy, glass technology, photometry and the various phenomena associated with electrical discharges through gases and luminescent materials is integrated with practical development work, not only on the electric lamp itself but also on the lighting fittings and auxiliary apparatus with which Osram lamps are used. This striving for perfection for over 60 years is responsible for the present popularity of Osram lamps, which more people specify and purchase than any other brand sold in Great Britain.

CLASSIFICATION

Below are given the Groups under which OSRAM lamps in this catalogue are classified.

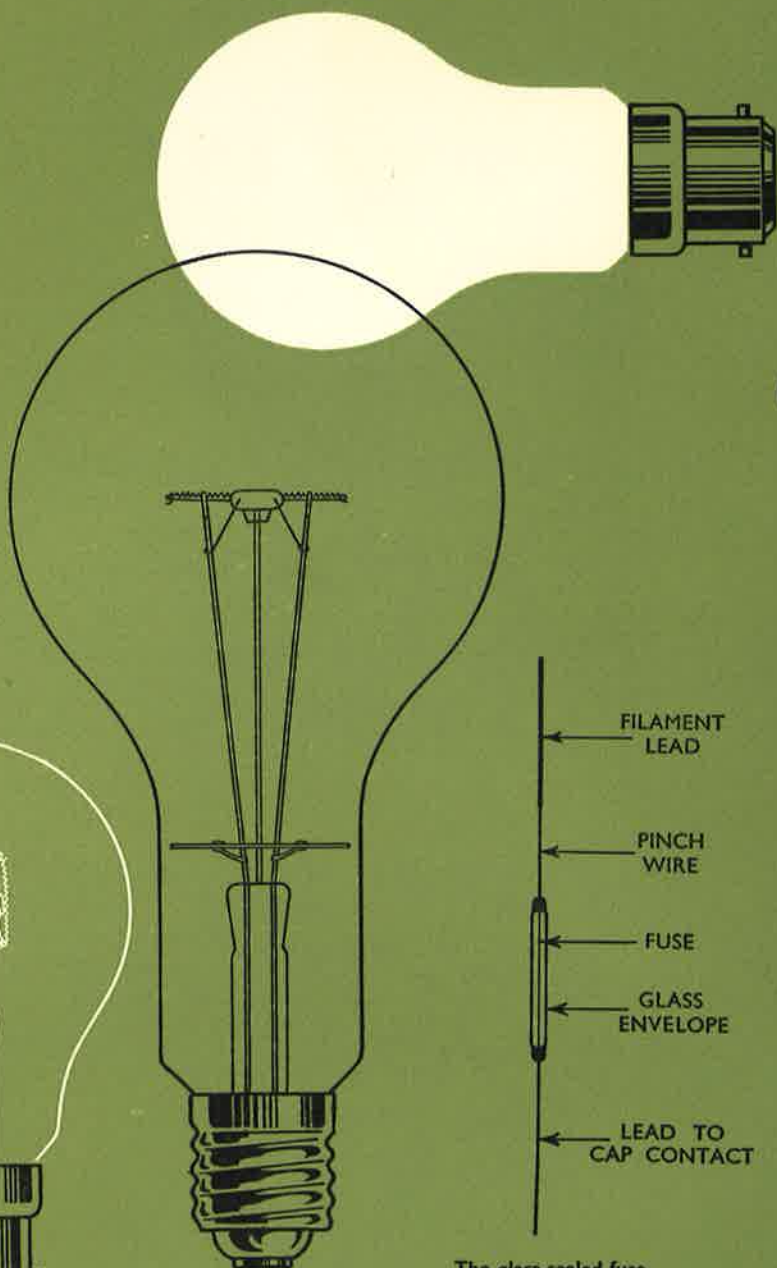
- GROUP 1. Lamps of 25 to 260 volts for general lighting service purposes and other lamps for specialised lighting purposes in this voltage range.
- GROUP 6. Christmas tree decoration lamps.
- GROUP 9. Fluorescent tubes and other electric discharge lamps.

40 watt: PEARL

500 watt:
CLEAR



25 watt: CLEAR



The glass-sealed fuse
used in G.L.S. lamps

Osram

PEARL AND CLEAR

COILED COIL & SINGLE COIL

OSRAM general lighting service lamps comply in every detail with British Standard 161:1956. In sizes up to 200 watts the use of OSRAM Pearl lamps, which provide excellent diffusion with very low light absorption, is recommended.

OSRAM Coiled Coil lamps are the result of the constant search for increased efficiency. They cost a little more than the single coil type but the slight extra cost is negligible compared with the extra light produced (they give up to 20 per cent more light than the equivalent single coil sizes).

SINGLE COIL FILAMENT


Watts	Volts	Cap	Finish	Dimensions and Technical Data
15 } 25 } 40 } 60 }	6, 12, } 25—75 } 100—130 } 200—260 }	B.C. or E.S.	Pearl or Clear	SEE PAGE 48
75 } 100 }	25—75 } 100—130 } 200—260 }	B.C. or E.S.	Pearl or Clear	
150 } 200 }	35—75 } 100—130 } 200—260 }	B.C. or E.S.	Pearl or Clear	
300 } 500 }	35—75 } 100—130 } 200—260 }	G.E.S.	Clear	
750 } 1,000 } 1,500 }	100—130 } 200—260 }	G.E.S.	Clear	

COILED COIL FILAMENT


Watts	Volts	Cap	Finish	Description and Technical Data
40 } 60 } 75 } 100 }	200—260	B.C. or E.S.	Pearl or Clear	SEE PAGE 48

FUSES—All OSRAM General Lighting Service Lamps in ratings between 40 and 300 watts, 200-260 volt have internal fuses to provide local protection for the circuit fuses.

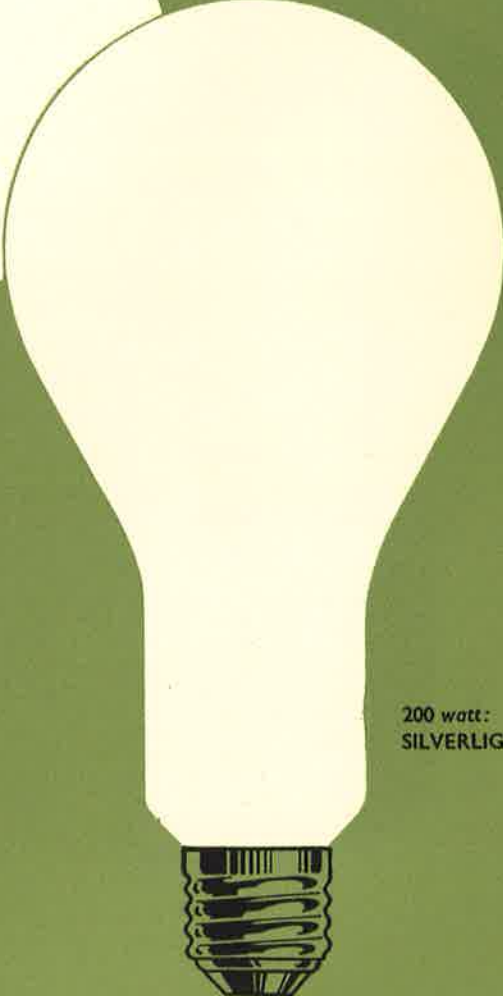
general lighting service



100 watt:
PINK PEARL



40 watt:
SILVERLIGHT



200 watt:
SILVERLIGHT

Osram

PINK PEARL

Osram Pink Pearl lamps provide soft, restful lighting for homes, hotels, restaurants, etc. The tinting process leaves a smooth surface on the bulb so that they are easy to clean and will not harbour dust and dirt.

Watts	Cap	Filament	Volts and price per lamp
			200/210, 220/230, 240 and 250
60 100 150	} B.C.	Single coil	

SILVERLIGHT

By means of a special process the inside of the Osram Silverlight lamp is sprayed with minute particles of silica which greatly increase the diffusion but have very little light absorption.

These lamps are ideal for all positions where the bulb is wholly or partially visible, such as standard lamps, open shades, cinema canopies, etc., or where extra diffusion is required to avoid ceiling shadows in pendant fittings, etc.

Watts	Cap	Filament	Volts and price per lamp
			200, 210, 220, 230, 240, 250, 260
40 60 100	} B.C.	Coiled coil	
150 200	B.C. E.S.	Single coil Single coil	

Manufactured under British patent: 653323

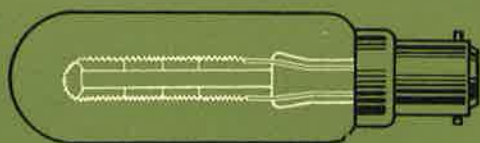
Dimensions are the same as those given for standard 40, 60, 100, 150 and 200 watt G.L.S. lamps shown on page 48.

FUSES—All OSRAM Pink Pearl and Silverlight lamps have internal fuses to provide local protection for the circuit fuses.

general lighting service



OPAL TUBULAR



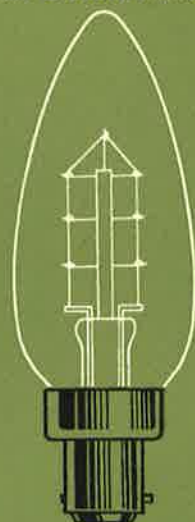
25 watt: TUBULAR



25 watt: CANDLE
extended type



25 watt: CANDLE twisted



25 watt: CANDLE plain

Osram

CANDLE LAMPS

plain and twisted types

Watts	Length		Diameter		Shape	Finish	Voltages and price per lamp
							110, 120, 200/210, 220/230, 240, 250
25	mm.	in.	mm.	in.	Plain	Clear	
40	97±4	3 $\frac{13}{16}$	35±1	1 $\frac{1}{8}$	Plain	Clear	
60	124±5	4 $\frac{7}{8}$	45±2	1 $\frac{3}{4}$	Plain	Clear	
25	124±5	4 $\frac{7}{8}$	45±2	1 $\frac{3}{4}$	Twisted	Clear	
40	105±5	4 $\frac{1}{8}$	35±1	1 $\frac{1}{8}$	Twisted	Clear	
60	146±5	5 $\frac{3}{4}$	55±1	2 $\frac{3}{16}$	Twisted	Clear	

STANDARD CAP : S.B.C. When specially ordered, standard B.C. or S.E.S. caps can be fitted without extra charge.

Frosted and colour sprayed: Red, blue, green, yellow, flame, amber, pink and white, extra.

extended type

Watts	Length		Diameter		Shape	Finish	Voltages and price per lamp
							110, 120, 200/210, 220/230, 240, 250
25	mm.	in.	mm.	in.	Plain	Clear bulb and Opalised stem	
40 }	208±5	8 $\frac{3}{16}$	35±2	1 $\frac{1}{8}$	Plain		
60 }	238±5	9 $\frac{5}{16}$	45±2	1 $\frac{1}{2}$	Plain		

STANDARD CAP : S.B.C. When specially ordered, standard B.C. caps can be fitted without extra charge.

CLEAR TUBULAR

Watts	Cap	Length ± 3 mm.		Diameter ± 1 mm.		Voltages and price per lamp	
						110, 120, 200/210, 220/230, 240, 250	50
25	*S.B.C.	mm.	in.	mm.	in.		
		92	3 $\frac{1}{2}$	25	1		

* B.C. or S.E.S. at same price if specially ordered.

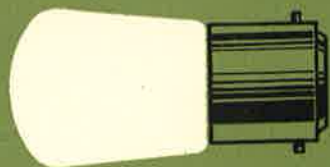
OPAL TUBULAR

Watts	Cap	Length ± 3 mm.		Diameter ± 1 mm.		Voltages	Price per lamp
40 }	B.C. or E.S.	mm.	in.	mm.	in.	110, 120, 200/210, 220/230, 240, 250	
60 }							
		302	11 $\frac{7}{8}$	38	1 $\frac{1}{2}$		

special lighting service



15 watt: G.L.S.
COLOURED



15 watt: PYGMY
COLOURED



40 watt: G.L.S.
COLOURED

Osram

COLOURED LAMPS

Red, Blue, Green, Yellow, Orange, Flame, Amber, Pink and White.

GENERAL LIGHTING SERVICE

Watts	Cap	Voltages and price per lamp	
		200/210, 220/230, 240/250	100, 110, 120, 130
15	B.C.		
25	B.C.		
40	B.C.		
60	B.C.		
75	B.C.		
100	B.C.		

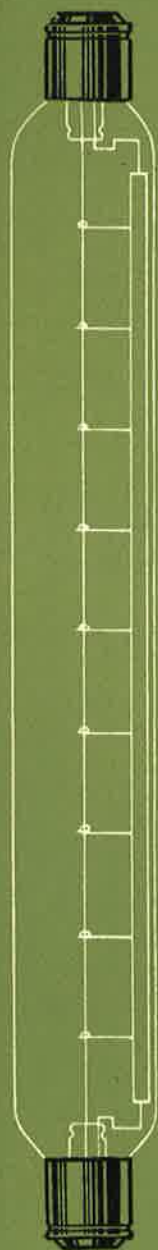
The above sizes can be supplied wholly or partially colour sprayed.
150 W to 500 W sizes are also available wholly or partially sprayed WHITE only—details on application. The dimensions are the same as those of the corresponding wattages shown on page 48.

PYGMY

Watts	Cap	Voltages and price per lamp	
		110, 120, 130, 200/210, 220/230, 240/250	25, 50, 60
15	B.C., E.S., S.B.C. or S.E.S.		

For details and dimensions of clear Pygmy lamps see page 17.

special lighting service



30 watt:
STRIPLITE



150 watt:
REFLECTOR
SPOTLIGHT

Osram

STRIPLITE

These lamps have a single coil tungsten filament burning in a vacuum, the tubes lighting throughout the bulb length.

Watts	Length		Diameter		Voltages and price per lamp	
	Tolerance ± 1 mm.		Tolerance ± 1 mm.		110, 120, 200/210, 220/230, 240, 250	
					Clear	Obscured or Coloured
30	mm.	in.	mm.	in.		
	221	$8\frac{11}{16}$	25	$1\frac{1}{8}$		
	284	$11\frac{3}{8}$	25	$1\frac{1}{8}$		
60	284	$11\frac{3}{8}$	25	$1\frac{1}{8}$		

Standard cap: Centre contact.

Prices and particulars of special trough reflectors for use with OSRAM Striplite lamps on application.

REFLECTOR SPOTLIGHT

with internally silvered bulb

This lamp is designed primarily for spotlighting individual displays in shop windows and interiors.

It can also be used for photographic purposes, the internal silvering making a separate reflector unnecessary.

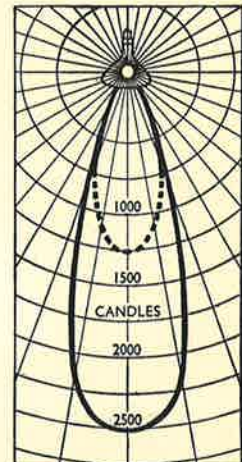
Watts	Volts	Cap	Dimensions				Price per lamp
			Length		Diameter		
			mm.	in.	mm.	in.	
75	110, 200, 210 220, 230 240, 250	B.C. or E.S.	129 ± 3	5 ¹ / ₈	95 ± 1	3 ³ / ₄	
100*		B.C. or E.S.	129 ± 3	5 ¹ / ₈	95 ± 1	3 ³ / ₄	
150		E.S.	178 ± 4	7	126 ± 1.5	5	

* This rating is not made in 110 V.

REFLECTOR FLOODLIGHT

with internally silvered bulb

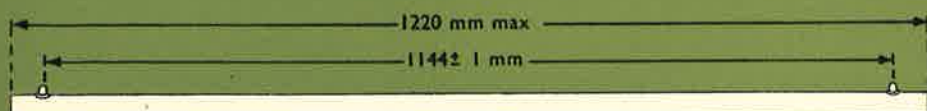
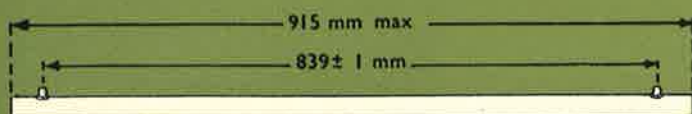
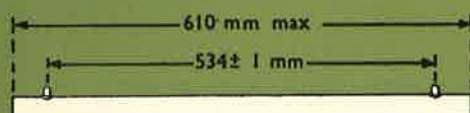
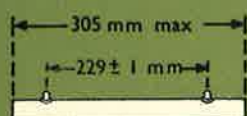
The lamps described above are available with the crown of the bulb heavily etched to provide a broader light distribution for floodlighting purposes at no extra cost.



Reflector Spotlight

Average light distribution
75 W----- 150 W—

special lighting service



Osram

ARCHITECTURAL

standard straight lengths
30 mm. dia.

Length		Volts	Watts	Price per lamp	
in.	mm.			White opal	Colour sprayed
12	305	110, 120, 200/210 220/230 240, 250	35 60 75		
20	500				
24	610				
36	915	200/210 220/230 240, 250	110 150		
48	1220				

standard curves*—30 mm. dia.

Curve	Radius		Volts	Watts	Price per lamp	
	in.	mm.			White opal	Colour sprayed
$\frac{1}{8}$ Circle	25	637	110, 120, 200/210, 220/230, 240, 250	60		
$\frac{1}{4}$ "	12 $\frac{1}{2}$	318				
$\frac{1}{2}$ "	6 $\frac{1}{2}$	159				

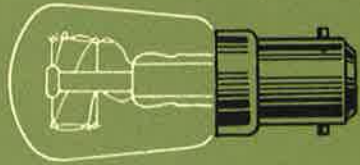
* Overall length along centre line of lamp 500 mm. (19 $\frac{1}{8}$ in.).

Caps : Round peg type : 38 mm. (1 $\frac{1}{2}$ in.) from ends of lamp.

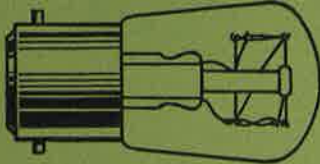
Standard finishes : White opal and externally colour sprayed red, blue, green, amber, pink, flame, orange and yellow.

Prices of OSRAM architectural lamps in lengths and curves (up to a maximum of 48 in.) other than those shown above may be obtained on application.

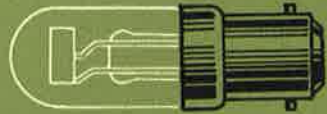
special lighting service



15 watt : PYGMY clear, S.B.C.



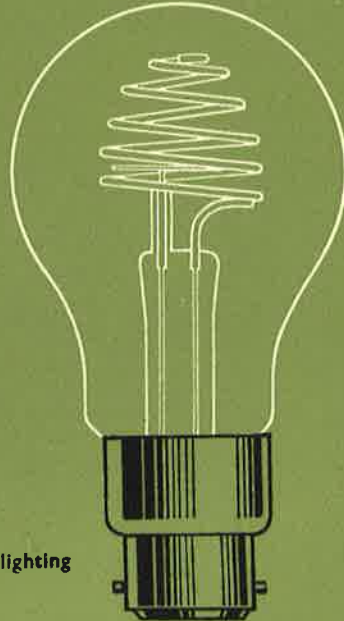
15 watt: PYGMY clear, B.C.



NEON indicator (small)



NEON Indicator
(large)



NEON lighting

NEON

Neon discharge lamps are manufactured in two types—lighting and indicator. The lighting type is specially suitable and economical where a dim illumination is required continuously, and is, therefore, an ideal night light. The indicator types, supplied in two sizes, are designed for use with domestic appliances such as cookers, control switches, etc., and many other applications where a visual indication of whether a circuit is switched on is required. All types for mains voltage operation are normally supplied with a resistor in the cap. For other purposes these lamps are available without the resistor.

Type	Watts	Cap	Dimensions				Price per lamp	
			Length		Diameter			
LIGHTING	5	B.C. or E.S.	mm. 110±8	in. 4 $\frac{1}{8}$	mm. 60±1	in. 2 $\frac{3}{8}$		
INDICATOR	0.5	{	B.C.	56±3	2 $\frac{3}{8}$	28±1	1 $\frac{1}{8}$	
			E.S.	58±4	2 $\frac{1}{2}$	28±1	1 $\frac{1}{8}$	
	0.5	{	S.E.S.	56±4	2 $\frac{3}{8}$	18±1	$\frac{3}{4}$	
			S.B.C.	54±4	2 $\frac{1}{2}$	18±1	$\frac{3}{4}$	

Voltages 200 220, 230/250.

PYGMY (clear)

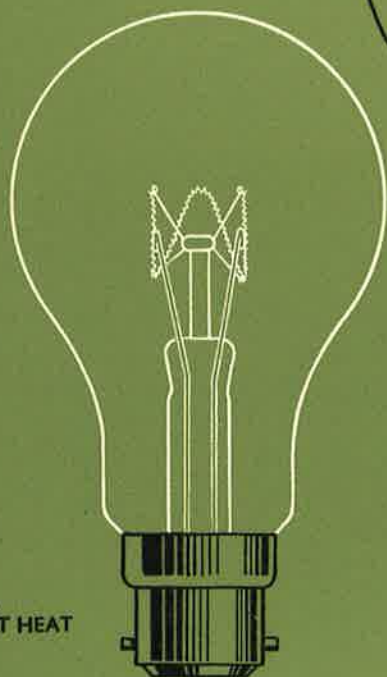
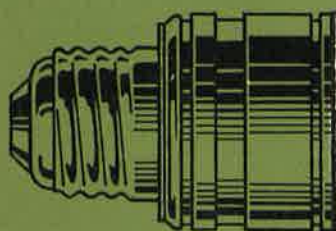
This exceptionally small lamp is specially designed for signs, illuminated score boards, totalisators, etc.

For details of coloured Pygmy lamps see page 11.

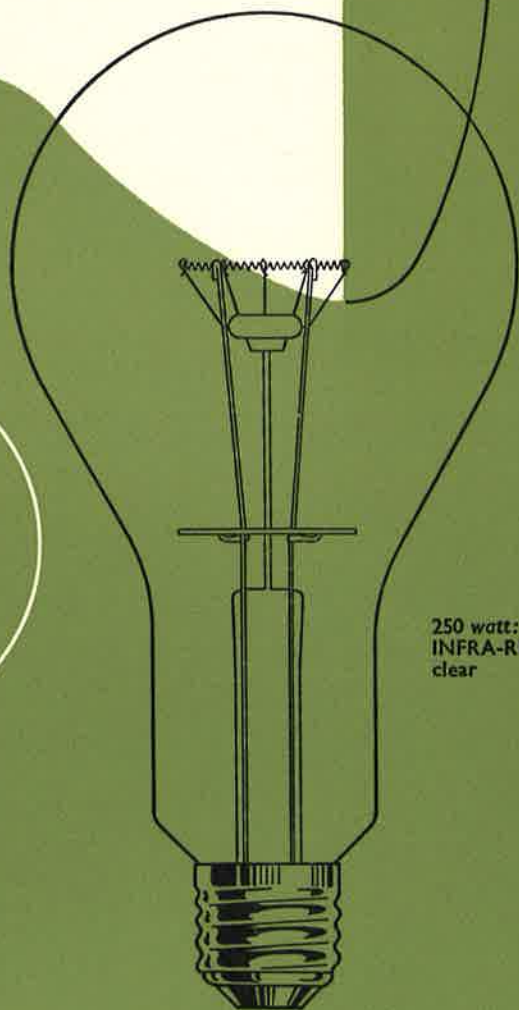
Watts	Cap	Dimensions				Voltages and price per lamp	
		Length		Diameter		110, 120, 130, 200/210, 220/230, 240, 250, 260	25, 50, 60
15	B.C. E.S. S.B.C. S.E.S.	mm. 56±3 59±3 62±3 64±3	in. 2 $\frac{3}{8}$ 2 $\frac{5}{8}$ 2 $\frac{7}{8}$ 2 $\frac{1}{2}$	mm. 28±1	in. 1 $\frac{1}{8}$		

special lighting service

250 watt: INFRA-RED REFLECTOR



60 watt :
RADIANT HEAT



250 watt:
INFRA-RED
clear

Osram

INFRA-RED

The 250 watt infra-red lamp, with or without internal reflector, has many applications in industry for process heating and drying. The 200/260 volt reflector lamp is used also for agricultural purposes, e.g. pig farrowing.

REFLECTOR TYPE

Watts	Volts	Cap	Dimensions				Price per lamp
			Length		Diameter		
250	100/130 200/260	E.S.	mm. 178±4	in. 7	mm. 126±1.5	in. 5	

CLEAR AND PEARL

Watts	Volts	Cap	Dimensions				Price per lamp	
			Length		Diameter		Clear	Internally frosted
250	100/130	E.S.	mm. 178±5.5	in. 7	mm. 90±1	in. 3½		

RADIANT HEAT

The OSRAM metal filament radiant heat lamp is widely used in hospitals for the treatment of diseases or conditions which require the application of heat.

Watts	Volts	Caps	Dimensions				Price per lamp Clear
			Length		Diameter		
60 {	110, 120 200/260	B.C. or E.S.	mm. 117.5±3.5	in. 4½	mm. 65±1	in. 2½	

"ROBERTSON" RADIATOR

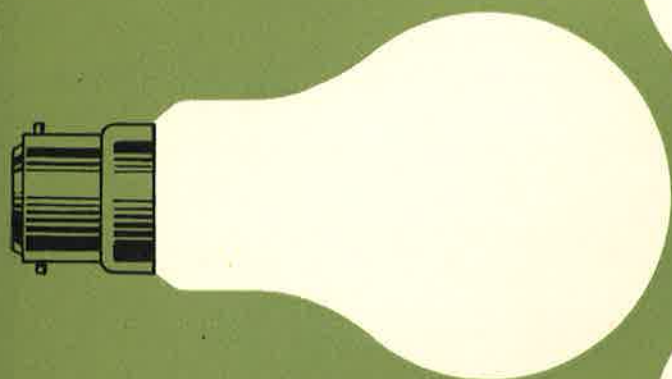
(Carbon filament, sprayed flame)

Watts	Standard cap	Dimensions				Voltage range and price per lamp
		Length		Diameter		110, 120, 200/220, 230/250
250	B.C.	mm. 265±5	in. 11¼	mm. 57±1	in. 2¼	

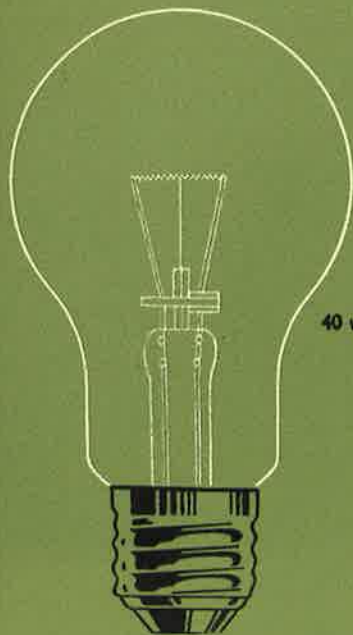
60 watt: ROUGH SERVICE



60 watt: L.V. SERIES TRACTION



40 watt: E.L.V. SERIES TRACTION



Osram

ROUGH SERVICE

For use where there is considerable vibration or where the lamp is subject to mechanical shock.

Watts	Cap	Length		Diameter		Finish	Volts and price per lamp
		Tolerance ± 3·5 mm.		Tolerance ± 1 mm.			
40 60 100	B.C. or E.S.	mm. 110 117·5 137·5	in. 4 ⁵ / ₁₆ 4 ⁷ / ₈ 5 ³ / ₈	mm. 60 65 75	in. 2 ³ / ₈ 2 ⁹ / ₁₆ 2 ¹¹ / ₁₆	} Pearl or Clear Pearl	110, 120, 200/210, 220/230, 240, 250, 260

The 40 W and 60 W ratings are vacuum, 100 W gasfilled.

LOW VOLTAGE SERIES TRACTION (gasfilled)

These lamps are specially designed to withstand the voltage fluctuations and other conditions met with in traction service, e.g., tramcar and train lighting.

Ampere rating	Nominal watts	Length		Diameter		Volts and price per lamp
		Tolerance ± 3·5 mm.		Tolerance ± 1 mm.		100, 110, 120, 130 volts Pearl or Clear
0·35 0·52	40 } 60 }	mm. 110	in. 4 ⁵ / ₁₆	mm. 60	in. 2 ³ / ₈	

Standard cap—B.C. or E.S. (E27/25)

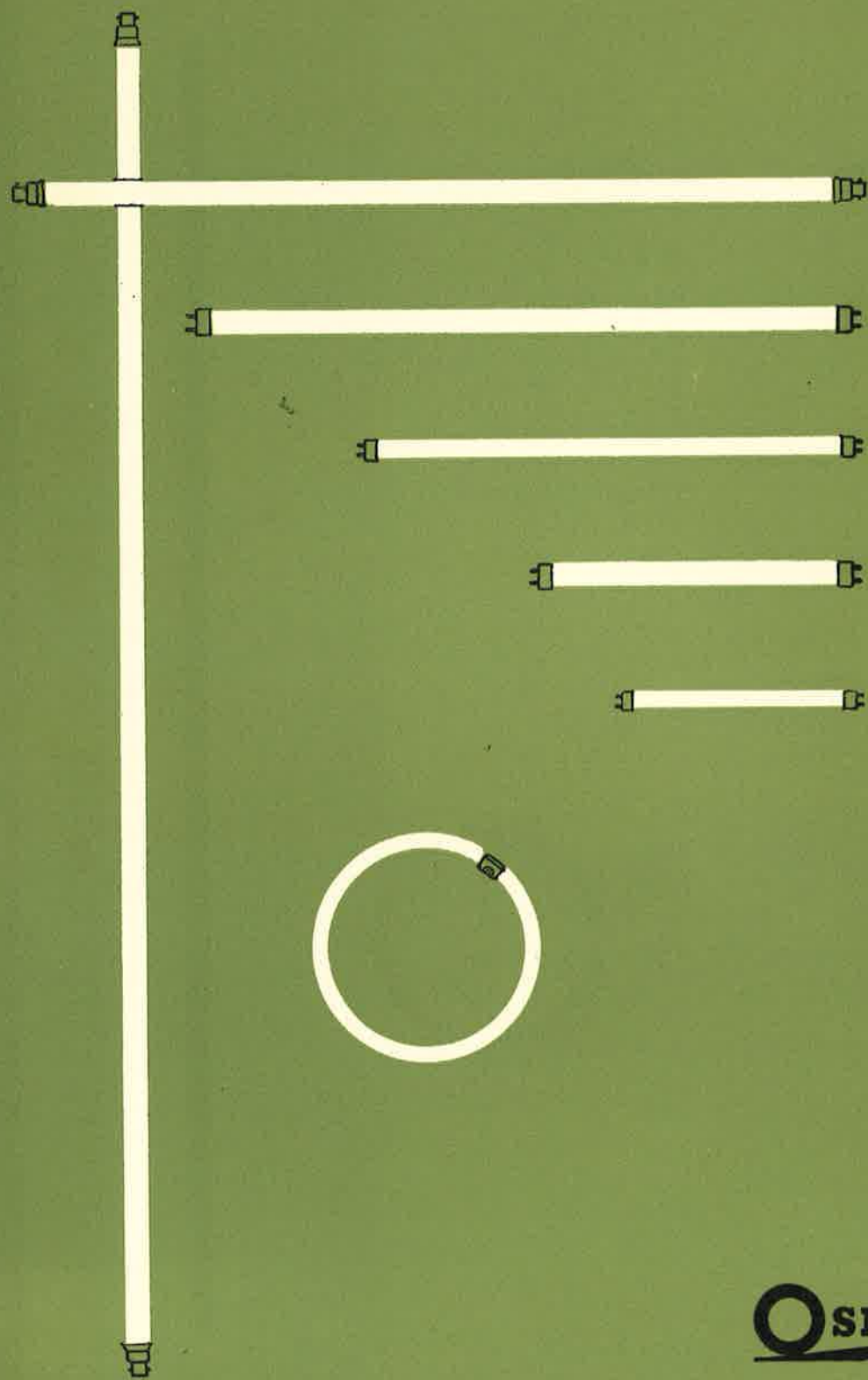
EXTRA LOW VOLTAGE LONG SERIES TRACTION (gasfilled)

These lamps are made for connection in series of 10 to 15 lamps. The small voltage drop across each lamp enables a thicker and stronger filament to be used, so that the lamps are even more robust than the ordinary traction type. A further advantage is that each lamp is fitted with a short-circuiting device, which only comes into action when a lamp fails, so that the rest of the series is unaffected and the burnt-out lamp can be located at once.

These lamps are only supplied with E.S. caps, and should be used with the G.E.C. short-circuiting lampholders, which enable lamps to be changed without putting out the rest of the lamps in the series.

Nominal watts	Volts	Length		Diameter		Cap	Price per lamp	
		Tolerance ± 3·5 mm.		Tolerance ± 1 mm.			Pearl	Clear
40	<div>40 50</div> }	mm. 110	in. 4 ⁵ / ₁₆	mm. 60	in. 2 ³ / ₈	E.S (E27/25)		
60	<div>40 50</div> }	117·5	4 ⁵ / ₈	65	2 ⁹ / ₁₆			

special lighting service



Osram

FLUORESCENT

Osram fluorescent tubes are available in a wide range of colours to suit every lighting need. Guidance on the choice of suitable colours is given on pages 26 and 27.

A special range of Osram fluorescent tubes, emitting radiation in the long wave u.v. region, is available for photoprinting processes—details on application.

SWITCH START (Type MCF/U)

Tube		Cap	Standard colours
Rating	Dia.		
1½ ft., (457 mm.) 15 W	1 in.	Bi-pin	White Warm white Deluxe warm white Daylight Natural Colour matching Daylight 6500° K
2 ft., (590 mm.) 20 W	1½	Bi-pin	
2 ft., (590 mm.) 40 W	1½	Bi-pin	
3 ft., (900 mm.) 30 W	1½	Bi-pin	
4 ft., (1200 mm.) 40 W	1½	Bi-pin	
5 ft., (1524 mm.) 80 W	1½	B.C. or Bi-pin	
†5 ft., (1524 mm.) 50 W	1	Bi-pin	Natural
*8 ft., (2438 mm.) 125 W	1½	B.C.	White, Warm White, Daylight and Natural
*Circle 16 in. (406 mm.) dia. 40 W	1¼	Special 4-pin	Deluxe warm white

COLOURED TUBES

2 ft., (590 mm.) 20 W	1½	Bi-Pin	} Red, Blue, Green and Yellow
4 ft., (1200 mm.) 40 W	1½	Bi-Pin	
5 ft., (1524 mm.) 80 W	1½	B.C. or Bi-Pin	

REFLECTOR TUBE (Type MCFR/U)

†4 ft., (1200 mm.) 40 W	1½	Bi-pin	Daylight
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† See page 25 for full details of these tubes

INSTANT START

SILICONED (Type MCFE/U)

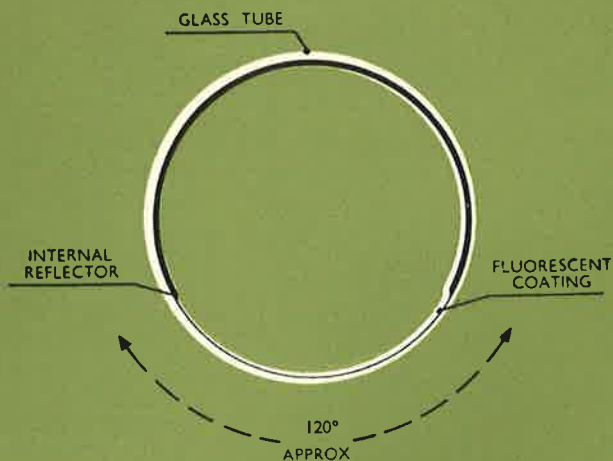
For use with instant start control gear in interior installations using earthed metal fittings under normal operating conditions.

EXTERNAL METAL STRIPE (Type MCFA/U)

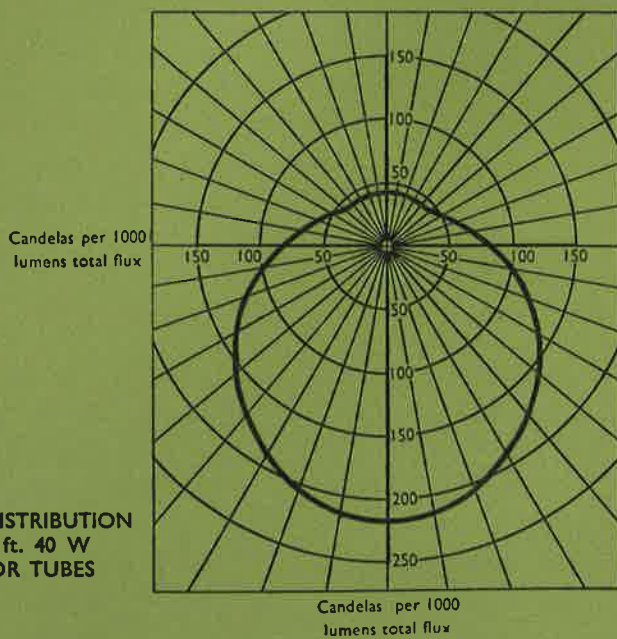
For optimum results with instant start control gear under unfavourable conditions—e.g. at low temperatures or where the mains voltage is abnormally low.

* The 8ft. 125 W tube is supplied with an external metal stripe and the Circle is siliconed as standard. These types are therefore suitable for use in switch start or instant start circuits.

For light output and other technical information see page 49. For details of chokes and capacitors see pages 51 to 53.

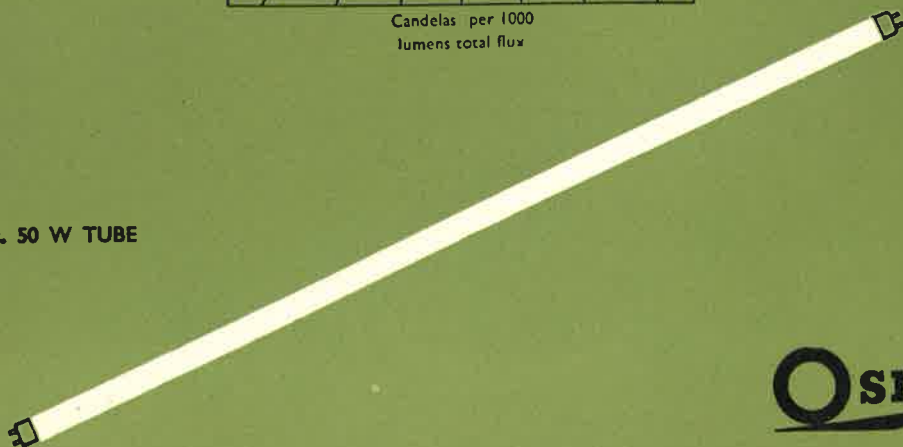


DIAGRAMMATIC VIEW SHOWING CONSTRUCTION
OF REFLECTOR FLUORESCENT TUBES



LIGHT DISTRIBUTION
CURVE 4 ft. 40 W
REFLECTOR TUBES

5ft. 50 W TUBE



Osram

FLUORESCENT

REFLECTOR TUBES

The internal reflector in these Osram tubes is a layer of titanium dioxide extending over about two-thirds of the circumference. This form of construction gives a considerable increase in downward light as shown in the polar diagram opposite.

Primarily intended for simple fittings of the batten type these reflector tubes reduce maintenance costs as the efficiency of the internal reflector is maintained despite the presence of dust and dirt which tend to collect on the upper surface of the tube.

Dimensions and electrical characteristics are identical with standard tubes.

Technical Data

4 ft. 40 W

Colour	Max. intensity candelas	Initial brightness cd./in. ²		Total flux (lumens) Average for first 5,000 hours of life	Price per tube switch start (type MCFR/U)
		Gap	Reflector		
Daylight	390	7.1	1.3	1,830	

5 ft. 50 W Tube

With a diameter of only one inch, the Osram 5 ft. 50 W fluorescent tube has been designed for showcase lighting, but is equally suitable for all situations in which a tube of small diameter is necessary.

Tube		Cap	Overall length (incl. pins)	Price per tube switch start (type MCF/U)	Standard colour
Rating	Dia.				
5 ft. 50 W (1524 mm.)	1 in. 26 mm.	Bi-pin	59.615 in. 151.4 cm.		Natural

INSTANT START

Both the tubes described on this page are available for use with instant start control gear at the standard extras on list prices—see page 23.

fluorescent tubes

OSRAM FLUORESCENT TUBES

The range of standard near-white colours for lighting purposes will meet practically every lighting requirement, and may be divided into two categories, "warm" and "cool" colours.

Although in many cases personal taste dictates the final choice of colour, it is hoped that the following notes will assist in selecting the most suitable colour for any particular installation.

WARM COLOURS

WARM WHITE

This is the most efficient tube in the Osram range and the 5 ft. 80 watt tube has an average efficiency through the first 5,000 hours of life of 52 lumens per watt. It is for use in installations where a warm colour allied with high efficiency is required.

This colour blends well with tungsten filament lamps and both types can be used together in the same installation. The colour-rendering properties are adequate for many lighting purposes, including factory, office and large store installations. Where necessary the slight deficiency in deep red light may be corrected by mixing with the Warm White a proportion of Deluxe Warm White tubes, a description of which is given below.

DELUXE WARM WHITE

This is a colour similar to Warm White so far as tube appearance is concerned but some efficiency has been sacrificed to obtain better colour-rendering properties. Nevertheless the Deluxe Warm White tube still gives about $2\frac{1}{2}$ times the light output of tungsten lamps of equivalent wattage. The colour-rendering properties of Deluxe Warm White, which are similar to those of filament lamps, make this tube suitable for restaurants, hotels, theatre foyers, shops, showrooms and many other situations where people gather and where a pleasant sociable atmosphere is required. It improves the appearance of food and other commodities and is particularly kind to the complexion.

COOL COLOURS

DAYLIGHT

Daylight is an efficient colour, the 5 ft. 80 watt tube having an average efficiency through the first 5,000 hours of life of 49 lumens per watt. It is very suitable for industrial purposes where really good colour rendering is not necessary.

NATURAL

The colour appearance of the Natural tube is similar to that of the Daylight tube but some efficiency is sacrificed to give improved colour-rendering properties. The better colour rendering makes this colour suitable for many commercial applications, including office and shop lighting. This is probably the best general-purpose colour of the range. The efficiency is reasonably high and the colour rendering pleasing and acceptable for most purposes.

This is a tube specially developed to simulate the light of north sky daylight and is suitable for many purposes where accurate colour discrimination is important. Among these may be mentioned colour printing, sorting of hides and the examination of foodstuffs, but there are many other applications.

COLOUR MATCHING

The Colour Matching tube is usually unsuitable for normal interior lighting purposes, because of its very cool appearance, but it blends well with daylight and its possible use for general lighting should not be forgotten; there are applications, such as the lighting of flower shops, where its excellent colour-rendering properties are most acceptable, especially when enhanced by filament lamp spotlighting.

COLOURED TUBES

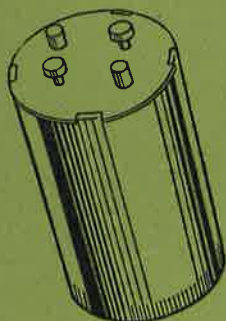
These colours, which are made in the 5 ft. 80 watt size, are intended mainly for decorative and display lighting. Their great benefit as compared with any other forms of coloured light source is that unless great saturation of colour is necessary, they do not require external colour filters. The efficiencies vary in accordance with the colour, green being the most efficient, followed by yellow, blue and red in that order, but even the red tube is much higher in efficiency than the combination of a tungsten lamp and a colour filter, or a sprayed bulb.

RED, BLUE, GREEN AND YELLOW

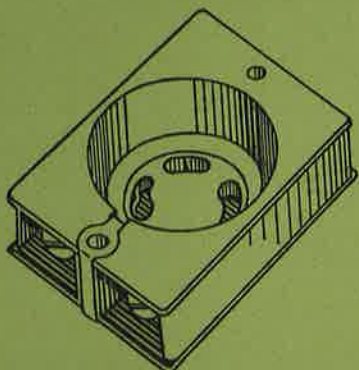
Finally, a word of warning about the choice of decorations and furnishings. It is most important that no scheme of decoration or furnishing should be chosen except in conjunction with the colour of the fluorescent tube selected. Some materials and colours tend to look unattractive with some colours of fluorescent lighting, and experience is the best guide.

Enclosed fittings with coloured glass or plastics can be used with fluorescent tubes, but the use of delicate tints is advisable.

Advice on this and all other aspects of the use of fluorescent tubes is available from all G.E.C. branches.



CANISTER STARTER



HOLDER *for above S1547*



**GLASS TUBULAR
STARTER**



Manufactured under one or more
of the following British Patents :—
538239, 536750, 541925, 556428,
558205.

Osram

STARTER SWITCHES

The OSRAM " Universal " starter Cat. No. OS345 (Model S.T.26) has been designed for use with 3 ft., 4 ft., or 5 ft. tubes on 200-250 volts A.C. and is of the " Glow " type. OSRAM starters bearing the suffix T after the Cat. No. are of the " Thermal " type. All OSRAM starters are interchangeable with other makes of starters of similar rating.

CANISTER STARTERS

These starter switches incorporate a self-contained radio interference suppressor and have a 4-pin base.

Tube Rating	Supply voltage	Circuit	Cat. No.	Starter Model No.	Price each
1½ ft. 15 W	200/250 A.C.	Single tube or two tubes in series	OS3T	ST25	
	100/130 A.C.	Single tube	OS3T	ST25	
2 ft. 20 W	200/250 A.C.	Single tube or two tubes in series	OS3T	ST25	
	100/130 A.C.	Single tube	OS3T	ST25	
2 ft. 40 W	200/250 A.C.	Two tubes in series	OS8T	ST23	
	100/130 A.C.	Single tube	OS8T	ST23	
3 ft. 30 W	200/250 A.C.	Single tube	OS345	ST26	
	200/250 D.C.	Single tube	OS3T	ST25	
4 ft. 40 W	200/250 A.C.	Single tube	OS345	ST26	
	200/250 D.C.	Single tube	OS4T	ST24	
5 ft. 50 W	200/250 A.C.	Single tube (capacitive circuit only)	OS3T	ST25	
5 ft. 80 W	200/250 A.C.	Single tube	OS345	ST26	
	200/250 D.C.	Single tube	OS8T	ST23	
8 ft. 125 W	200/250 A.C.	Single tube (capacitive circuit only)	OS8T	ST23	
16 in. circle 40 W	200/250 A.C.	Single tube	OS345	ST26	

GLASS TUBULAR STARTERS

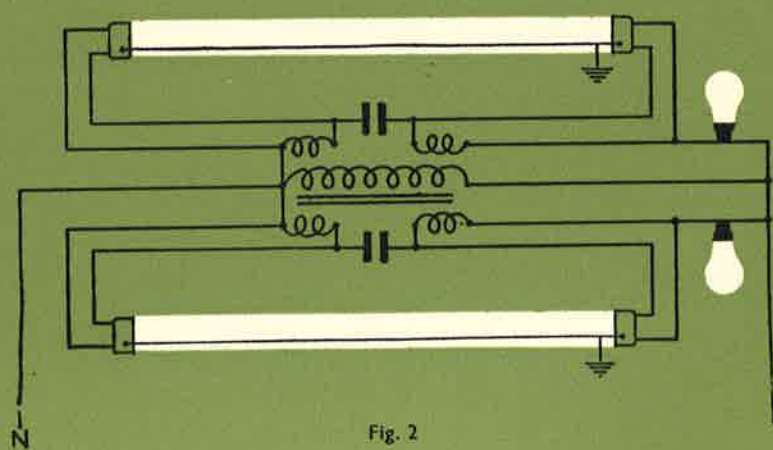
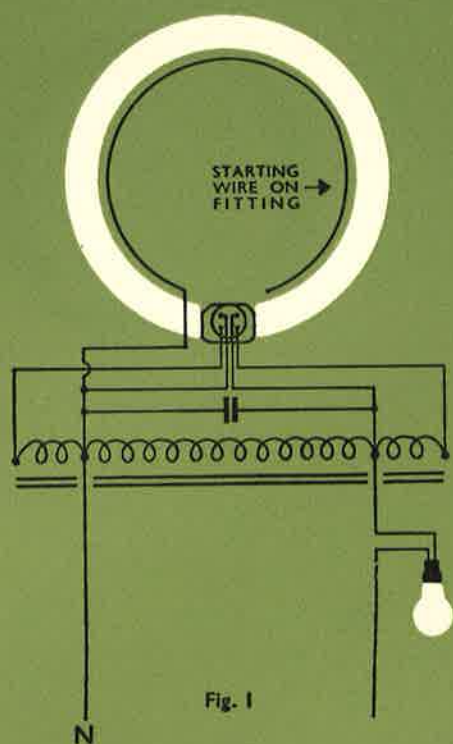
Earlier models of fluorescent fittings were designed for starters of this class. They are fitted with an S.B.C. cap.

Tube Rating	Supply voltage	Circuit	Cat. No.	Price each
5 ft. 80 W	200/220 A.C.	Single tube	OS12L	}
	230/250 A.C.	Single tube	OS12H	

RADIO INTERFERENCE SUPPRESSOR

F8050 For use in conjunction with glass type starters

starter switches



Osram

S.E.C. TUNGSTEN LAMP CONTROL SYSTEM *for fluorescent lighting*

By employing a special OSRAM tungsten ballast lamp in series with each fluorescent tube and a small transformer for electrode heating, this system (suitable for A.C. mains only) enables the normal choke to be dispensed with.

The transformer also provides instant start facilities and the power factor of the circuit is practically unity so that no capacitor is required.

Fig. 1 shows the circuit for use with the OSRAM 40 watt circle. One OSRAM tungsten ballast lamp rated at approximately 80 watts is employed, making a total consumption of about 120 watts.

Fig. 2 indicates a suitable arrangement for operating two standard 4 ft. 40 watt OSRAM instant start straight tubes from a single small transformer. Two OSRAM tungsten ballast lamps, each taking about 65 watts, are employed, making the total consumption of the combination about 210 watts.

TUNGSTEN BALLAST LAMPS (for Osram 40 W Circle)

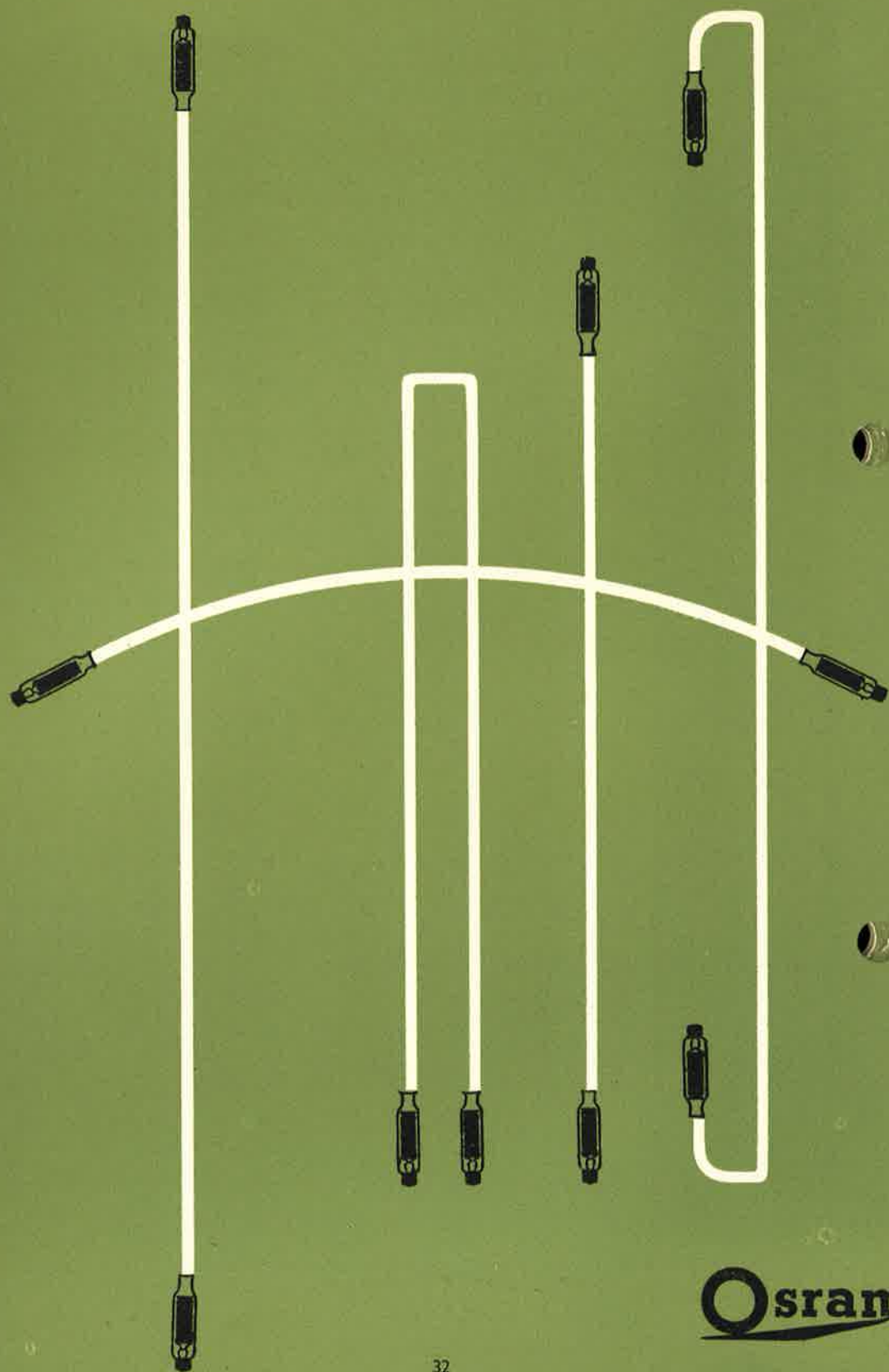
Mains Volts	Watts	Type	Cap	Finish	Light output (initial lumens)	Price per lamp
200/210	70	5	} 3-pin B.C.	Pearl Single coil	705	}
220/230	80	6			845	
240	80	7			850	
250	80	8			865	

TUNGSTEN BALLAST LAMPS (for 4 ft. 40 W straight tubes)

Mains Volts	Watts	Type	Cap	Finish	Light output (initial lumens)	Price per lamp
220/230	60	2	} 3-pin B.C.	Pearl Single coil	635	}
240	65	3			685	
250	70	4			735	

For details of control gear see page 53.

tungsten ballast lamps



Osram

COLD CATHODE FLUORESCENT

The standard OSRAM cold cathode fluorescent tubes are 20 mm. in diameter, 8 ft. 6 in. in lighting length and 9 ft. 6 in. overall length. They operate at a higher voltage than ordinary OSRAM fluorescent tubes and are generally used in G.E.C. double or triple tube fittings with the transformers and other gear housed in the end boxes. (Publications F2664/5.)

STANDARD COLOURS: Daylight, Deluxe Warm White, Warm White, Intermediate, Natural and Gold.

Details and prices of colours other than those listed above are available on application.

The main advantages of OSRAM cold cathode tubes are as follows:

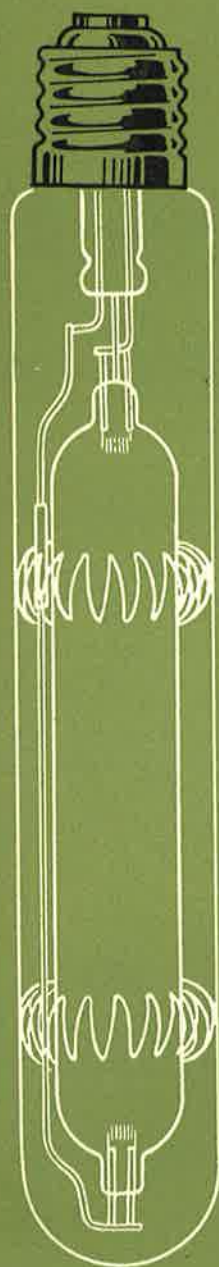
- High luminous efficiency. Low surface brightness.
- Low maintenance costs. Long life.
- Ability to operate on a reduced supply voltage if necessary.
- Dimming is possible with suitable control gear.

Particulars of OSRAM cold cathode tubes for exterior lighting purposes may be obtained on application.

For details of light output see page 50.

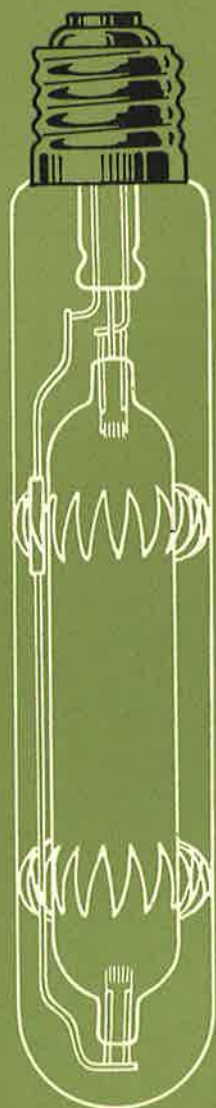
Description	Electrode position	Lighting length	Standard colours and price
			Warm White, Deluxe Warm White, Daylight, Natural, Intermediate and Gold
CLASS A Standard straight tube (overall length 9 ft. 6 in.)	Straight-on	8 ft. 6 in.	
CLASS B Straight tubes shorter than standard	Straight-on	Less than 8 ft. 6 in.	
CLASS C Straight tubes	Right-angle or parallel electrodes	8 ft. 6 in. or less	
CLASS D Curved or bent tube (one bend only)	Any position	8 ft. 6 in. or less	
CLASS H—Group H.B. Hairpin tube with fully coated semi-circular bend (overall length 4 ft. 9 in. from electrode cap to extremity of bend of tube). Distance between centres of limbs limited to 2½ in., 2¾ in., 3 in., 3½ in. or 4 in.	Straight-on	8 ft. 6 in.	
Group H.S. Hairpin tube with rectangular bend and clear glass bridge-piece between limbs. Distance between centres of limbs not exceeding 6 in.	Straight-on Straight-on	Up to 4 ft. 1 in. per limb Over 4 ft. 1 in. and up to 7 ft. per limb (excluding group H.B.)	

cold cathode fluorescent



250 watt : MA/V

400 watt : MA/V



80 watt : MB/U



125 watt : MB/U

Osram

MERCURY CLEAR (Type MA/V and MB/V) PEARL (Type MB/U)

These high efficiency lamps are widely used for street lighting and for factory and yard lighting.

Burning positions—

Universal

MB/U lamps are designed for vertical burning, but may be operated in other positions without material effect upon performance.

Vertical

MA/V lamps are intended for operation in the cap-up position. Special types are available for cap-down burning.

MB/V type—cap up burning only.

Horizontal

For horizontal operation with a magnetic deflector, the use of the hard glass type MA/V lamp is recommended.

MA/H lamps are available for horizontal burning without a magnetic deflector.

Type	Lamp Rating	Overall length		Overall diameter		Distance from contact on cap to the centre of discharge		Cap	Price per lamp
		mm.	in.	mm.	in.	mm.	in.		
MA/V† Clear	250	290±8	11½	48±3	1⅞	170±8	6¾	G.E.S.	
	400	330±8	13	48±3	1⅞	190±8	7½	G.E.S.	
MB/U Pearl	80	160±4.5	6⅝	80±1	3⅞	113±4	4½	3 pin B.C.	
	125	178±5.5	7	90±1	3⅝	128±5	5⅞	3 pin B.C.	
MB/V Clear	1,000	335±7.5	13¼	165±1.5	6½	200±7	7⅞	G.E.S.	

Voltage ranges:—MA/V 250 and 400 W, 200/220, 230/240, 250.

MB/U 80 and 125 W, 200/220, 230/240, 250.

MB/V 1,000 W, 350/370, 370/410, 410/450.

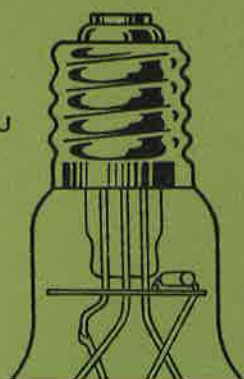
†MA/V (hard glass) and MA/H—250 watts and 400 watts Details on application

For technical data see page 50, and particulars of chokes and capacitors for use with OSRAM mercury lamps, see page 53.

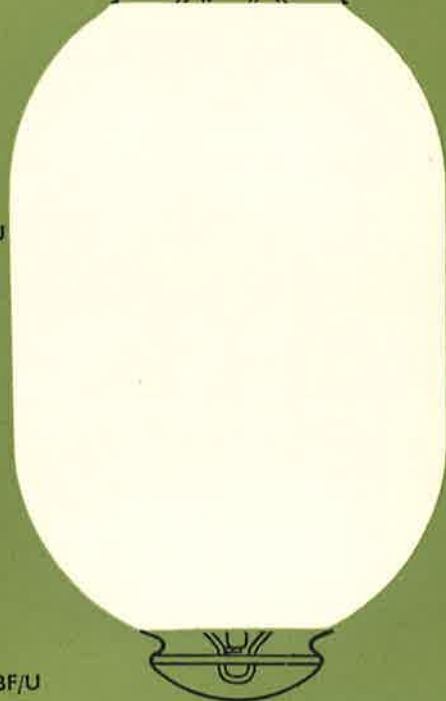
mercury lamps



125 watt: MBF/U



400 watt: MBF/U



80 watt: MBF/U

Osram

MERCURY COLOUR CORRECTED

(Types MBF/U, MBF/V and MAF/V)

Colour corrected lamps are used for street and factory lighting.

A modified fluorescent coating, recently adopted for the MBF series, has enabled considerably improved colour-rendering properties to be achieved.

With the exception of the MAF/V type, these lamps are interchangeable with Clear or Pearl mercury lamps of similar wattage, in the majority of existing fittings.

Burning Positions

The MBF series is designed for vertical burning, but may be operated in other positions without material effect on performance.

MAF/V and MBF/V lamps are for vertical, cap-up burning only.

Type	Lamp rating	Overall length		Diameter		Cap	Price per lamp
MBF/U Fluorescent	watts	mm.	in.	mm.	in.		
	80	160±4.5	6 $\frac{1}{8}$	80±1	3 $\frac{1}{8}$	3 pin B.C.	
	125	178±5.5	7	90±1	3 $\frac{9}{16}$	3 pin B.C.*	
	250	220±7	8 $\frac{1}{8}$	89±1.5	3 $\frac{1}{2}$	G.E.S.	
	400	280±6	11 $\frac{1}{8}$	121 max.	4 $\frac{1}{2}$	G.E.S.	
MBF/V Fluorescent	1,000	335±7.5	13 $\frac{1}{2}$	165±1.5	6 $\frac{1}{2}$	G.E.S.	
MAF/V Fluorescent	400	335±7.5	13 $\frac{1}{4}$	165±1.5	6 $\frac{1}{4}$	G.E.S.	

*Also available with G.E.S. cap

Voltage ranges:—MBF/U 80 W—400 W, 200/220, 230/240, 250.
 MBF/V 1,000 W, 350/370, 370/410, 410/450.
 MAF/V 400 W, 200/220, 230/240, 250.

For technical data see page 50, and particulars of chokes and capacitors for use with OSRAM mercury lamps, see page 53.

OSRAM mercury lamps of the MA, MAF, MB and MBF types are manufactured under one or more of the following British Letters Patent and other British Patents and pending applications : 543161, 577599, 594059.

mercury lamps



250 watt: ME/D
Glass type



250 watt: ME/D
Box type

MERCURY COMPACT SOURCE TYPE ME

This type of lamp provides a small source of high brightness and has a number of applications in scientific laboratories and industry. It is used mainly for projection microscopy, microphotography, fluorescent microscopy and, in conjunction with suitable filters, as a high brightness source of monochromatic radiation.

The discharge takes place in a spherical bulb of fused silica and the lamp is available in two forms, one having a glass outer bulb and the other an enclosing metal box fitted with a circular glass window. No separate lamp housing is needed with the box type of lamp, but as these lamps operate at a high pressure the glass type should only be operated in a protective housing.

Type	250 W ME/D	
	Glass type	Box type
Supply voltage	200/250 V A.C. or D.C.	200/250 V A.C. or D.C.
Arc operating voltage	60/75	60/75 V
Starting current	4/5 amp	4/5 amp
Operating current	3.7/4.6 amp	3.7/4.6 amp
Initial arc brightness (max.)	20,000 stilb. (approx.)	20,000 stilb. (approx.)
Arc length	3.75 mm.	3.75 mm.
Overall length	162 ± 3 mm.	130 ± 3 mm. (excluding pins)
Diameter	50 ± 2 mm.	64 × 55 mm.
Light centre length	65 mm.	80 mm. (excluding pins)
Cap	Large pre-focus	3-pin
Burning position	Vertical, base or cap down	Vertical, base or cap down
Price per lamp		

Details and price of control gear and further technical information on other specialised light sources may be obtained on application.

Manufactured under one or more of the following British Patents : 543161, 577599, 594059, 600495, 630547, 645870, and other Patents granted or pending.



125 watt: BLACK GLASS

160 watt: DUAL



250 watt: DUAL

Osram

BLACK GLASS (Ultra Violet) TYPE MBW/U

This is a mercury lamp in which practically all visible radiation is absorbed by the "black glass" bulb, and the radiation transmitted is restricted almost exclusively to the wave-length 3650Å. The lamp can be used to excite fluorescence in certain powders and paints. Articles can be marked so that the marking is invisible under normal light but visible under the lamp. The black glass lamp can be used to detect the presence of certain kinds of oil and grease. It is invaluable in the preparation of optically flat surfaces and can also be used to detect alterations in documents.

Watts	Dimensions mm.			Price per lamp
	Overall length	Diameter	Light centre length	
125	178 ± 5.5	90 ± 1	128 ± 5	

Cap : 3 pin B.C. Voltage range : 200/220, 230/240, 250 V.

Details of choke and capacitor for use with this lamp will be found on page 53.

DUAL TYPE MBT/U

OSRAM dual lamps are designed for use in commercial and industrial lighting where good quality of light combined with luminous efficiency is essential. The lamp contains in one pearl bulb a mercury discharge tube and a tungsten incandescent filament.

The filament, besides emitting light, acts as a ballast in series with the discharge, thus dispensing with the necessity for an external choke.

These lamps may be operated in any position.

Watts	Nominal average output throughout life (lumens)	Dimensions mm.			Cap	Price per lamp
		Overall length	Diameter	Light centre length		Pearl
160	2080	178 ± 5.5	90 ± 1	D = 128 ± 6 F = 133 ± 6	E.S. or B.C.	
250	3500	233 ± 7	110 ± 1.5	D = 173 ± 6 F = 178 ± 6	G.E.S.	

D=Discharge. F=Filament. Voltage range : 200, 210, 220, 230, 240 and 250 V A.C.

black glass and dual lamps



Osram

INTEGRAL SODIUM (TYPE SO/H)

The new Osram integral jacket sodium lamp represents a major advance in discharge tube design. Capable of directly replacing the well-known detachable jacket type, these lamps are even more efficient. The new, large-bore arc tube enables a lower current density to be employed, as heat losses by radiation are minimised by the use of concentric shields to enclose the arc tube. The complete assembly is held within the outer exhausted envelope by a resilient mounting. The integral construction reduces the number of vulnerable glass surfaces and presents no dead air space to trap moisture and dust.

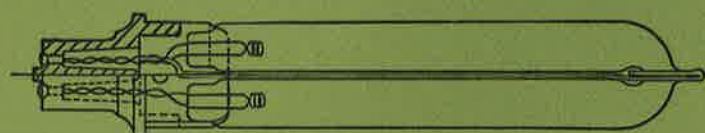
BURNING POSITION

This lamp should be burnt horizontally, but may be tilted to any angle from 5° (cap down) to 20° (cap up). If tilted beyond these limits, lamp performance might be seriously impaired.

Watts	Dimensions						Nominal average output throughout life (lumens)	Cap	Price per lamp
	Overall length ± 10 mm.		Diameter ± 2 mm.		Light centre length ± 10 mm.				
45	mm. 238	in. 9 ³ / ₈	mm. 50	in. 2	mm. 140	in. 5 ¹ / ₂	2,250	} Mycalex B.C. {	
60	300	11 ¹ / ₈	50	2	170	6 ³ / ₄	3,420		
85	415	16 ⁵ / ₁₆	50	2	230	9 ¹ / ₈	5,525		
140	518	20 ³ / ₈	65	2 ⁹ / ₁₆	280	11	9,800		

Voltage 200/250 A.C.

Details of auto-transformer for use with this lamp are given on page 53.



45 watt: INNER



45 watt: JACKET



60 watt: SODIUM



140 watt: SODIUM

Osram

SODIUM TYPE SO/H

OSRAM sodium lamps are available in four ratings and are suitable for flood-lighting and street lighting.

They are composed of an inner tube, in which the sodium discharge takes place, and a detachable vacuum-flask jacket. The latter serves to maintain the inner tube at an even temperature. Both inner tube and outer jacket are mounted on a special two-piece ceramic bayonet cap, so that they can be replaced independently.

These lamps require an A.C. supply and must be used in conjunction with special G.E.C. auto-transformers.

BURNING POSITIONS

The 45 W and 60 W ratings may be operated in any position between 5° (cap down) and vertical (cap up).

The 85 W and 140 W ratings should be burnt horizontally, but may be tilted to any angle from 5° (cap down) to 20° (cap up).

If tilted beyond these limits, lamp performance may be seriously impaired.

Watts	Dimensions mm.			Nominal average output throughout life (lumens)	Cap	Price per lamp	
	Overall length ± 10 mm.	Diameter ± 2 mm.	Light centre ± 10 mm.			Without jacket	With detachable jacket
45	238	50	140	2250	Ceramic B.C.		
60	300	50	170	3420	Ceramic B.C.		
85	415	50	230	5525	Ceramic B.C.		
140	518	65	280	9100	Ceramic B.C.		

Voltage: 200/250 A.C.

Details of auto-transformers for use with OSRAM sodium lamps are given on page 53.



STANDARD SET



PARTY LIGHTS



LARGE BULB SET



STAR AND CANDLE SET



COLOURED LAMP SET

Osram

DECORATION LIGHTS

OSRAM Decoration Lights are specially attractive for all indoor parties and celebrations and for the decoration of restaurants, snack bars, shop interiors, window displays and Christmas trees. The sets are wired in series and can be run very economically on any voltage between 200 and 260.

The Star and Candle set. This set consists of 12 attractive, coloured plastic stars and candles (6 of each) illuminated by 20 volt 3 watt lamps connected in series. Each candle is fitted with a coloured bulb (OS 2010) which represents the candle flame, and the stars are illuminated from inside by small clear glass lamps (OS 2018). This novel set is supplied complete with 2 spare lamps, beads for fixing and a B.C. adaptor.

The Large Bulb set. This attractively packed luxury set has 12 colourful bulbs wired in series complete with fixing beads and a B.C. adaptor. There are 2 spare bulbs (OS 2019) with each set. Large size 20-volt 6-watt bulbs are used, providing considerably increased illumination, and they are contained in special shrouded holders. A long, braided flex with a total span of 16 ft. is another special feature.

The Standard set consists of twelve 20-volt 3-watt coloured lamps in series, complete with spare lamp (OS 2010), flex, lampholders, beads for fixing and B.C. adaptor.

The Party Light set consists of twelve 20-volt 3-watt clear lamps in series complete with spare lamp (OS 2009). This set is fitted with attractive transparent bell-shades, each having a coloured illustration from a nursery rhyme. Complete with flex, lampholders, beads for fixing and a B.C. adaptor.

Description	Cat. No.	Price each	Purchase Tax extra
Star and Candle set	OS2104		
Large bulb set	OS2000		
Standard set	OS2011		
Party lights	OS2102		
Spare lamp, 20 V 3 W, coloured	OS2010		
Spare lamp, 20 V 3 W, clear	OS2009		
Spare lamp, 20 V 3 W, clear 15 mm. ..	OS2018		
Spare lamp, 20 V 6 W, coloured	OS2019		

GROUP 1

COLOURED LAMP SET

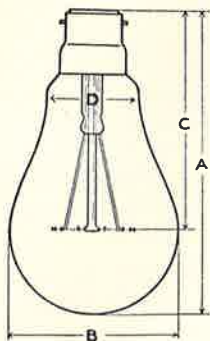
Each OSRAM coloured lamp set comprises eight OSRAM 230/250-volt 15-watt coloured lamps (two each of red, blue, green and yellow), in shrouded lampholders wired complete with 18 ft. of flex, having a 5-amp 2-pin plug at one end and a fully protected matching socket at the other end.

A maximum of eight sets can be joined together to form lengths of up to 144 ft. by means of the special 5-amp 2-pin plug and socket.

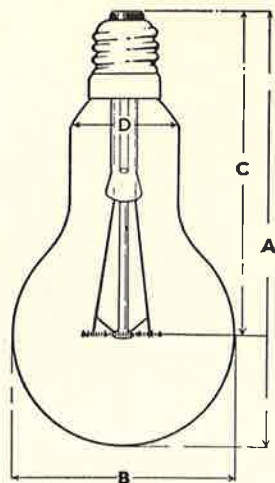
Description	Cat. No.	Price	Purchase Tax extra
Coloured lamp set	OS2105		
Spare lamp, 230/250 V 15 W S.E.S 50 mm. round bulb coloured red, blue, green or yellow	—		

TECHNICAL DETAILS

GENERAL LIGHTING SERVICE LAMPS



Dimensional diagram 15-150 watts



Dimensional diagram
200-1500 watts

DIMENSIONS AND LIGHT OUTPUT										
Standard watts	Nominal average lumens throughout life**		Length		Bulb diameter		Cap contact to filament centre		Neck diameter	
	at 240 V	at 110 V	A		B		C		D	
			mm.	in.	mm.	in.	mm.	in.	mm.	in.
15	110†	133†	92.5±3.5	3 ⁵ / ₈	55±1	2 ³ / ₈	65±3	2 ¹ / ₂	31±1	1 ³ / ₈
25	200†	228	100±3.5	3 ¹⁵ / ₁₆	60±1	2 ³ / ₈	70±3	2 ³ / ₄	33±1	1 ¹ / ₈
40	325 390*	449 —	110±3.5	4 ⁵ / ₁₆	60±1	2 ³ / ₈	80±3	3 ¹ / ₈	33±1	1 ⁵ / ₁₆
60	575 665*	759 —	110±3.5	4 ⁵ / ₁₆	60±1	2 ³ / ₈	80±3	3 ¹ / ₈	33±1	1 ⁵ / ₁₆
75	780 880*	1000 —	125±3.5	4 ⁷ / ₈	68±1	2 ¹¹ / ₁₆	90±3	3 ¹ / ₂	37±1	1 ¹ / ₂
100	1160 1260*	1400 —	125±3.5	4 ⁷ / ₈	68±1	2 ¹¹ / ₁₆	90±3	3 ¹ / ₂	37±1	1 ¹ / ₂
150	1960	2230	160±4.5	6 ¹ / ₄	80±1	3 ¹ / ₈	120±3.5	4 ³ / ₄	39±1	1 ¹ / ₂
200	2720	3090	170±5	6 ³ / ₄	80±1	3 ¹ / ₈	130±4	5 ¹ / ₈	39±1	1 ¹ / ₂
300	4300	4950	233±7	9 ¹ / ₈	110±1.5	4 ⁵ / ₁₆	178±4	7	50±1	1 ¹⁵ / ₁₆
500	7700	8950	267±8	10 ¹ / ₂	130±1.5	5 ¹ / ₈	202±5	7 ¹¹ / ₁₆	52±1	2
750	12400	14270	300±9	11 ³ / ₄	150±1.5	5 ⁷ / ₈	225±8	8 ⁷ / ₈	55±1	2 ³ / ₈
1000	17300	19640	300±9	11 ³ / ₄	150±1.5	5 ⁷ / ₈	225±8	8 ⁷ / ₈	55±1	2 ³ / ₈
1500	27500	30220	335±9	13 ¹ / ₄	170±1.5	6 ¹¹ / ₁₆	250±8	9 ¹¹ / ₁₆	60±1	2 ³ / ₈

† These lamps are Vacuum—the remainder are Gasfilled.

* These figures are for Coiled Coil lamps—the remainder are Single Coil.

** These values are intended to provide practical guidance for design purposes.

TECHNICAL DETAILS FLUORESCENT TUBES.

Tube	Type of circuit	Current (amp)			Colour	Avg. light output for the first 5000 hours of life (lumens) *	Approximate brightness candelas per sq. in. after 100 hours
		Mains	Tube				
			Operating	Starting			
8 ft. 125 W	Single tube Twin tube	0.80 } 1.40 }	0.91	1.0/1.6	White Warm white Daylight Natural	7125 7000 6750 5375	6.0 5.9 5.7 4.8
5 ft. 80 W	Single tube Twin tube	0.50 } 0.80 }	0.85	1.0/1.6	White Warm white Daylight Natural Deluxe warm white Colour matching Daylight 6500° K	4320 4240 4080 3200 2640 3040 3520	6.0 5.9 5.7 4.6 4.0 4.4 5.0
5 ft. 50 W	Single tube	0.48	0.48	0.5/0.75	Natural	2050	4.9
4 ft. 40 W	Single tube Twin tube	0.25 } 0.40 }	0.41	0.5/0.75	White Warm white Daylight Natural Deluxe warm white Colour matching Daylight 6500° K	2320 2280 2200 1680 1440 1600 1840	3.9 3.9 3.6 3.0 2.6 2.8 3.3
3 ft. 30 W	Single tube Twin tube	0.18 } 0.33 }	0.34	0.4/0.65	White Warm white Daylight Natural Deluxe warm white Colour matching Daylight 6500° K	1560 1530 1470 1170 960 1080 1320	5.5 5.4 5.2 4.2 3.7 3.9 5.0
2 ft. 40 W†	Two-in-series	0.50	0.88	1.0/1.6	White Warm white Daylight Natural Deluxe warm white Colour matching Daylight 6500° K	1360 1360 1320 1080 760 1000 1240	5.6 5.6 5.2 4.4 3.4 4.1 5.1
2 ft. 20 W†	Two-in-series Single tube	0.25 } 0.15 }	0.35	0.4/0.7	White Warm white Daylight Natural Deluxe warm white Colour matching Daylight 6500° K	900 900 800 640 460 620 740	3.3 3.3 3.0 2.5 2.1 2.4 2.8
1½ ft. 15 W†	Two-in-series Single tube	0.18 } 0.12 }	0.30	0.4/0.65	White Warm white Daylight Natural Deluxe warm white Colour matching Daylight 6500° K	510 540 555 420 330 375 495	4.3 4.5 4.5 3.6 3.1 3.2 4.2

16 in. Circle

16 in. dia. 40 W	Single tube	0.25	0.41	0.5/0.75	Deluxe warm white	1280**	2.6
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* These values are intended to provide practical guidance for design purposes.

** This figure is based on the first 2500 hours of life.

† 2 ft. 20 watt and 1½ ft. 15 watt tubes may be operated singly on 100/130 volts and singly or two-in-series on 200/250 volts.

‡ 2 ft. 40 watt tubes may be operated singly on 100/130 volts or two-in-series on 200/250 volts. Wattages quoted are nominal and refer to tubes only, excluding gear losses.

Manufactured under one or more of the following British Patents: 533451, 537901, 561177, 563185, 572740, 578192, 578195, 580363, 610025, 635545, 688346, and other Patents granted or pending.

TECHNICAL DETAILS

MERCURY DISCHARGE LAMPS

Light output and running characteristics

Type	Lamp rating	Nominal average output throughout life (lumens)	P.F. capacitor	Approximate mains starting current at 230 volts		Average current when burning at full brightness at 230 volts	
				Without capacitor	With G.E.C. capacitor	Without capacitor	With G.E.C. capacitor
MA/V Clear	watts 250 400	8750 15600	μ F 13 20	amp 3.5 5.5	amp 2.5 4.5	amp 2.0 3.0	amp 1.4 2.3
MAF/V Fluorescent	400	12800	20	5.5	4.5	3.0	2.3
MB/U Pearl	80 125	2320 3875	8 10	1.35 1.7	0.8 1.15	0.75 1.10	0.45 0.70
MBF/U Fluorescent	80 125 250 400	2320 3875 9250 16800	8 10 13 20	1.35 1.7 3.5 5.5	0.8 1.15 2.5 4.5	0.75 1.10 2.0 3.0	0.45 0.70 1.4 2.3
MB/V Clear	1,000	50000	14	FULL DETAILS ARE GIVEN IN PUBLICATION OS 2342—AVAILABLE ON REQUEST			
MBF/V Fluorescent	1,000	45000	14				

COLD CATHODE TUBES

Colour	Tube current mA	Tube watts	Lumens per watt at 100 hours	Lumens per watt average through life	Surface brightness cd./sq. in. at 100 hours
Daylight	120	67.5	42	35	3.9
De luxe warm white			32	24.5	3.0
Warm white			45	37	4.3
Natural			36	30	3.3
Intermediate			42	35	3.9
Colour matching			32	24.5	3.0
Gold	60	50	13.5	12.5	0.85

Further details of the application and use of Osram Cold Cathode Tubes are given in Publications F 2664/5.

The Osram Cold Cathode tubes listed above are manufactured under British Letters Patent No. 578192 or 457486.



GEAR TABLES FOR OSRAM FLUORESCENT TUBES ON 50 CYCLE A.C. SUPPLIES

5 ft. 80 W and 4 ft. 40 W tubes. SWITCH START

GEAR	SUPPLY	SINGLE TUBE CIRCUIT		TWIN TUBE CIRCUIT			
				Inductive		Capacitive	
		5 ft. 80 W	4 ft. 40 W	5 ft. 80 W	4 ft. 40 W	5 ft. 80 W	4 ft. 40 W
Choke	200/210 V	F 8301	F 8311	F 8301	F 8311	F 8303	F 8313
	210/220 V	F 8304	F 8314	F 8304	F 8314	F 8305	F 8315
	230/240 V	F 8305	F 8315	F 8305	F 8315	F 8304	F 8314
	240/250 V	F 8303	F 8313	F 8303	F 8313	F 8301	F 8311
Capacitor	200/250 V	F 8530	F 8525 or F 8532	NONE	NONE	F 8630	F 8625 or F 8632
Starter	200/250 V	OS 345		OS 345		OS 345	

3 ft. 30 W tubes. SWITCH START

GEAR	SUPPLY	SINGLE TUBE CIRCUIT	TWIN TUBE CIRCUIT	
			Inductive	Capacitive
Choke	200 V	F 8314	F 8314	F 8319
	210 V	F 8315	F 8315	F 8318
	220 V	F 8313	F 8313	F 8318
	230/240 V	F 8318	F 8318	F 8315
	250 V	F 8319	F 8319	F 8314
Capacitor	200/250 V	F 8525	NONE	F 8626
Starter	200/250 V	OS 345	OS 345	OS 345

2 ft. 40 W, 2 ft. 20 W, 1½ ft. 15 W tubes. SWITCH START

GEAR	SUPPLY	SINGLE TUBE CIRCUIT		
		2 ft. 40 W	2 ft. 20 W	1½ ft. 15 W
Choke	105/127 V	F 8336	F 8337	F 8337
	200 V	—	F 8321	F 8321
	210/220 V	—	F 8324	F 8324
	230/240 V	—	F 8325	F 8325
	250 V	—	F 8323	F 8323
Capacitor	105/127 V	F 8527 or F 8540	F 8505	F 8505
	200/250 V	—	F 8529	F 8529
Starter	105/250 V	OS 8T	OS 3T	OS 3T

5 ft. 50 W tubes. SWITCH START (Capacitive Circuit only)

SUPPLY	CHOKE	CAPACITOR	STARTER
230/240 V 250 V	F 8319 F 8318	F 8626 F 8626	OS 3T OS 3T
IN THIS CIRCUIT THE CHOKE AND CAPACITOR MUST BE WIRED IN SERIES			

NOTE:—All 5 ft., 4 ft. and 3 ft. two-tube SWITCH START fittings are supplied with one tube on Inductive circuit and one tube on Capacitive circuit.



GEAR TABLES FOR OSRAM FLUORESCENT TUBES ON 50 CYCLE A.C. SUPPLIES

2 ft. 40 W, 2 ft. 20 W, 1½ ft. 15 W (Two tubes in series). SWITCH START

GEAR	SUPPLY	2 ft. 40 W	2 ft. 20 W	1½ ft. 15 W
Choke	200 V	F 8301	F 8314	F 8314
	210 V	F 8304	F 8314	F 8315
	220 V	F 8305	F 8315	F 8313
	230/40 V	F 8303	F 8313	F 8318
	250 V	F 8308	F 8318	F 8319
Capacitor	200/250 V	F 8530	F 8525	F 8525
Starters	200/250 V	Two OS 8T	Two OS 3T	Two OS 3T

5 ft. 80 W, 4 ft. 40 W tubes. INSTANT START

GEAR	SUPPLY	SINGLE TUBE CIRCUIT	
		5 ft. 80 W	4 ft. 40 W
Instant Start Choke-Transformer	200/210 V 230/240 V 240/250 V	F 8421 F 8422 F 8423	F 8424 F 8425 F 8426
Capacitor Suppressor	200/250 V 200/250 V	F 8531 F 8050	F 8535 or F 8536 F 8050

5 ft. 50 W tubes. INSTANT START

GEAR	SUPPLY	SINGLE TUBE CIRCUIT
Instant Start Choke-Transformer	200/250 V	F 8417
Capacitor	200/250 V	F 8626 or F 8633
Suppressor	200/250 V	F 8050

3 ft. 30 W. tubes. INSTANT START

GEAR	SUPPLY	SINGLE TUBE CIRCUIT
Instant Start Ballast	200/220 V 230/250 V	F 8462 F 8463

2 ft. 40 W (Two tubes in series). INSTANT START

GEAR	SUPPLY	TWO TUBES IN SERIES
Instant Start Choke-Transformer	200/210 V 220/240 V 250 V	F 8406 F 8407 F 8408
Capacitor	200/210 V 220/250 V	F 8531 F 8530
Suppressors	200/250 V	Two F 8050

2 ft. 20 W, 1½ ft. 15 W (Two tubes in series). INSTANT START

GEAR	SUPPLY	Two 2 ft. 20 W	Two 1½ ft. 15 W
Choke	220 V 230/240 V 240/250 V	F 8315 F 8313 F 8318	F 8313 F 8318 F 8319
Filament Heating Transformer	220/250 V	F 8013	F 8013
Capacitor	220/250 V	F 8529	F 8529
Suppressors	220/250 V	Two F 8050	Two F 8050



GEAR TABLES FOR OSRAM FLUORESCENT TUBES ON 50 CYCLE A.C. SUPPLIES

8 ft. 125 W tube. INSTANT START.

GEAR	SUPPLY	SINGLE TUBE CIRCUIT
Instant Start Transformer	200/250 V	F 8967
Capacitor	200/250 V	F 8540 or F 8541
Suppressor	200/250 V	F 8050

T.L.C. GEAR for use with ballast lamps on page 31

GEAR	SUPPLY	4 ft. 40 W (2 tubes)	16 in. dia Circle (1 tube)
Filament Heating Transformer	200/220 V 230/250 V	F 8015 F 8017	F 8020 F 8021
Suppressors	200/250 V	Two F 8050	One F 8050 and One F 8051

A slight deviation from these recommendations may be desirable with totally enclosed multi-tube fittings. In case of doubt reference should be made to the G.E.C. Lighting Fittings Dept.

GEAR FOR MERCURY AND SODIUM

Mercury

Lamp rating	Chokes		Capacitors	
	Protected type Cat. No.	Solid filled type Cat. No.	Cat. No.	Rating in μ F
80 W	—	Z 1828	Z 1770	8
125 W	Z 1834	Z 1838	Z 1771	10
250 W	Z 1863	Z 1868	Z 1772	13
400 W	Z 1873	Z 1878	Z 1773 Z 1775	15 20

Sodium

Auto transformers

Capacitors

45 W	}	Z 1733	Z 1738	Z 1772 Z 1773 Z 1774	13 15 18
60 W					
85 W					
140 W		Z 1743	Z 1748		

(Mercury and sodium lamps are described on pages 35 to 45)

Further details will be supplied on application.



Bayonet (B.C.)
B 22/25 × 26



Small Bayonet (S.B.C.)
BA 15d/17



Bayonet (3 pin B.C.)
B 22/25 × 26 (3 pin)



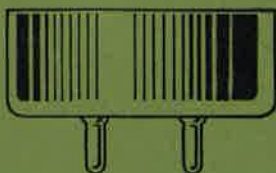
Edison Screw (E.S.)
E 27/25
or E27/27



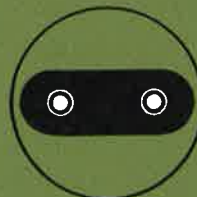
Goliath Edison Screw (G.E.S.)
E 40/45



Small Edison
Screw (S.E.S.)
E 14/27 × 18



Medium Bi-pin 35
G 13/35



Medium Bi-pin 23
G 13/23

STANDARD CAPS

The illustrations show the standard types of lamp caps fitted to OSRAM lamps together with the names by which they are known. The letters in brackets are the abbreviations used for these names throughout this catalogue, and underneath are the international cap designations.

STANDARD PACKAGES

The ordering of lamps and tubes in standard packages cannot be recommended too strongly as it expedites delivery and reduces transit breakages. All lamps are stocked ready packed in the quantities shown in the accompanying schedule.

SCHEDULE OF STANDARD PACKING

	Standard packing quantity
G.L.S. all finishes: 15, 25, 40 and 60 W 75, 100, and 150 W 200 W 300 W 500 W 750 W and 1000 W 1500 W	50 and 100 50 25 12 9 6 4
Candle: 25, 40 and 60 W plain and twisted	50
Infra-red: Reflector type 250 W Pearl and clear 250 W	12 25
Neon: Indicator 0.5 W 18 and 28 mm. Lighting type 5 W	100 100
Pygmy: 15 W 28 mm.	100
Reflector-Spotlight and Floodlight: 75, 100 and 150 W	12
Rough Service: 40 and 60 W 100 W	100 50
Striplite: 30 W and 60 W	25
Tubular: 25 W clear 40 W and 60 W opal	50 20

Fluorescent tubes—straight lengths Fluorescent circle	6, 12 and 25 6
Mercury MA 250 and 400 W MAF 400 W MB 80 W and 125 W MBF 80 W and 125 W MBF 250 W and 400 W MBW 125 W	25 4 25 25 6 25
Sodium Detachable jacket type 45 and 60 W 85 W 140 W All Integral types	Inners 20 20 20 6 Jackets 12 15 12
Starter Switches Canister type Glass tubular type	12 and 144 144

A LIST OF CATALOGUES

*dealing with electrical installation material
and allied products is given below:—*

SECTION

- C CONDUIT AND CONDUIT FITTING
- F CONTEMPORARY LIGHTING FITTINGS
DECORATIVE LIGHTING FITTINGS
PERIOD LIGHTING FITTINGS
 - (4) INDUSTRIAL LIGHTING FITTINGS AND ACCESSORIES
 - (5) COMMERCIAL LIGHTING FITTINGS
 - (6) FLOODLIGHTS AND FLOODLIGHTING
DECORATIVE FLUORESCENT FITTINGS
INDUSTRIAL FLUORESCENT FITTINGS
 - (8) SHOP WINDOW LIGHTING
- H
 - (3) CATERING EQUIPMENT
 - (4) INDUSTRIAL WATER HEATING EQUIPMENT
 - (5) AIR HEATING EQUIPMENT
- L (1) BELLS AND BELL ACCESSORIES
- M (2) INDUSTRIAL SWITCHBOARD INSTRUMENTS
- OS PART 1. OSRAM LAMPS AND TUBES
PART 2. OSRAM VEHICLE BULBS
PART 3. OSRAM LAMPS FOR PHOTOGRAPHIC AND
PROJECTION APPARATUS
- P (4) MOTORS AND MOTOR STARTERS
- S (1) ELECTRICAL ACCESSORIES
- V (4) FRACTIONAL H.P. MOTORS
- W
 - (1) PIRELLI-GENERAL WIRES AND CABLES
 - (2) WIRING SUNDRIES AND WIRING SYSTEMS
- X
 - (2) OUTDOOR SWITCHGEAR
 - (3) AUTOMATIC CIRCUIT BREAKERS
 - (4) GENALEX CABLE GLANDS
 - (5) INDUSTRIAL MOTOR CONTROL GEAR
 - (6) H.R.C. CARTRIDGE FUSES
 - (7) IRONCLAD SWITCHBOARD COMPONENTS
 - (9) TRANSFORMERS
- X & Y SWITCHGEAR AND FUSE BOARDS
- Z (1) STREET LIGHTING EQUIPMENT

A large number of publications are also available describing the great many products which are not included above. Any of these publications will gladly be supplied on receipt of precise requirements.

THE GENERAL ELECTRIC CO. LTD. OF ENGLAND

Known throughout the world as the

G.E.C.

REGD. TRADE MARK

Head Office :

MAGNET HOUSE, KINGSWAY, LONDON, W.C.2

HOME BRANCHES AND SALES DEPOTS :

	Address	Telephone No.
SOUTHERN AREA :		
LONDON, W.C.2 ...	Magnet House, Kingsway ...	Temple Bar 8000
BOURNEMOUTH ...	2a Wycliffe Road, Winton ...	Winton 5830
BRIGHTON, 1 ...	Regent Hill, Western Road ...	23277
CANTERBURY ...	Beer Cart Lane ...	2212
CROYDON ...	516 London Road ...	Thornton Heath 3246
IPSWICH ...	Magnet House, White House Road ...	81701
LUTON ...	39/43 John Street ...	3531
PLYMOUTH ...	Magnet House, Union Street ...	60226
READING ...	72/74 Castle Street ...	50251
SOUTHAMPTON ...	Magnet House, Commercial Road ...	23511
NORTH-WEST AREA :		
MANCHESTER, 3 ...	Magnet House, Victoria Bridge ...	Blackfriars 3434
BLACKBURN ...	Magnet House, Mincing Lane ...	4141/2 and 5448
BRADFORD ...	109 Thornton Road ...	20461
LEEDS ...	Magnet House, Wellington Street ...	32171
LIVERPOOL, 1 ...	Magnet House, 82/86 Whitechapel ...	Royal 7282
PRESTON, LANCS. ...	Magnet House, Derby Street ...	57871
SHEFFIELD, 1 ...	Magnet House, Fitzalan Square ...	25101
MIDLANDS AREA :		
BIRMINGHAM, 3 ...	Magnet House, Newhall Street ...	Central 7081
LEICESTER ...	Magnet House, Rutland Street ...	Granby 721
NORTHAMPTON ...	32a Newland ...	31343
NOTTINGHAM ...	Magnet House, 25 Stoney Street ...	45664
STOKE-ON-TRENT ...	Magnet House, South Wolfe Street ...	48575
SOUTH-WEST AREA :		
CARDIFF ...	Magnet House, Kingsway ...	28055
BRISTOL, 2 ...	18 Lawford Street ...	58491
GLOUCESTER ...	Magnet House, Great Western Road ...	21681
SWANSEA ...	Magnet House, The Kingsway ...	55847
NORTH-EAST AREA :		
NEWCASTLE-ON-TYNE	Magnet House, Gallowgate ...	25160
HULL ...	Magnet House, 57 Beverley Road ...	Central 36740
MIDDLESBROUGH ...	Magnet House, 52/60 Corporation Road ...	3621
SCOTLAND :		
GLASGOW, C.2 ...	Magnet House, 71 Waterloo Street ...	Central 9250
ABERDEEN ...	Magnet House, 7 Willowdale Place ...	28343
DUNDEE ...	26-30 North Lindsay Street ...	5073
EDINBURGH, 2 ...	Magnet House, 8 George Street ...	Central 5081
INVERNESS ...	13 Falcon Square ...	2623
NORTHERN IRELAND :		
BELFAST ...	Magnet House, Queen Street ...	25656
IRELAND :		
DUBLIN ...	Magnet House, 13 Trinity Street ...	71141
CORK ...	20 South Mall ...	20823

OVERSEAS ORGANISATION :

ARGENTINA : BUENOS AIRES ROSARIO	CANADA : TORONTO, With Branches in CALGARY MONTREAL VANCOUVER WINNIPEG	NEW ZEALAND : WELLINGTON AUCKLAND CHRISTCHURCH DUNEDIN HAMILTON INVERCARGILL NAPIER	SINGAPORE AND THE FEDERATION OF MALAYA : SINGAPORE KUALA LUMPUR MALACCA PENANG With Agencies in IPOH and Colony of North Borneo
AUSTRALIA : SYDNEY ADELAIDE BRISBANE HOBART LAUNCESTON MELBOURNE NEWCASTLE PERTH TOWNSVILLE WEST GEELONG With Agency in NEW GUINEA	HONG KONG : HONG KONG	PAKISTAN : KARACHI LAHORE With Agency in CHITTAGONG	SOUTH AFRICA : JOHANNESBURG BLOEMFONTEIN CAPETOWN DURBAN PORT ELIZABETH With Agencies in EAST LONDON WINDHOEK LOURENCO MARQUES
BURMA : RANGOON	INDIA : CALCUTTA AHMEDABAD BANGALORE BOMBAY COIMBATORE KANPUR MADRAS NEW DELHI SECUNDERABAD	RHODESIA : BULAWAYO SALISBURY N'DOLA (Northern Rhodesia)	

AGENCIES THROUGHOUT THE WORLD

The Osram logo is centered on a red rectangular background. It features a large, stylized white 'O' with a horizontal line extending from its base to the right. To the right of the 'O', the word 'sram' is written in a white, lowercase, sans-serif font.

Osram

The wonderful lamp

A *G.E.C.* PRODUCT

THE GENERAL ELECTRIC CO. LTD. OF ENGLAND