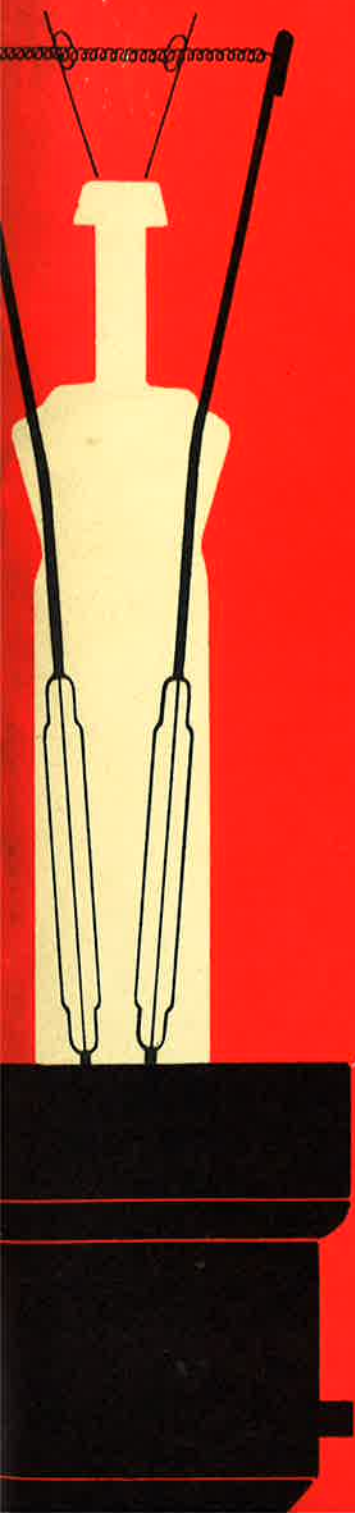




Osram

CATALOGUE FOR
NINETEEN SIXTY
TO
NINETEEN SIXTY ONE
FOR ALL
TYPES OF LAMPS

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OS. SECTION TWENTY-NINTH EDITION OCTOBER 1960

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Osram lamps and tubes

CLASSIFICATION OF LAMP GROUPS

Below are given the Groups under which OSRAM lamps are classified

<i>Group 1</i>	General and special purpose lamps in the 25 to 260 V range.	<i>Group 4</i>	Cycle dynamo bulbs.
<i>Group 2</i>	Lamps of battery type in 24 V and below (28 V and below for certain aircraft purposes, 40 V and below for trolley buses) except those in Groups 1, 3, 4, 5, 6, 7 and 10.	<i>Group 5</i>	Miners' bulbs.
<i>Group 3</i>	Flashlamp bulbs.	<i>Group 6</i>	Decoration sets and spare bulbs.
		<i>Group 7</i>	Telephone switchboard lamps.
		<i>Group 9</i>	Fluorescent tubes and other electric discharge lamps.
		<i>Group 10</i>	Radio panel bulbs.

Purchase tax schedules

PERCENTAGE OF LIST VALUE WHEN SELLING AT A DISCOUNT

GROUP	DESCRIPTION	PERCENTAGE
<i>Group 1</i>	GENERAL PURPOSE LAMPS: 200-260 V, 15-150 W in Pearl, Clear, Silverlight and Mushroom Silverlight	
	With B.C. caps { 25 or more identical lamps per item	17.1
	{ less than 25 identical lamps per item	18.3
	With any other type of cap (for all quantities)	17.1
	OTHER FILAMENT LAMPS up to and including 250 W	17.1
	PROJECTOR LAMPS in classes A1 and G	NIL
<i>Group 2</i>	VEHICLE BULBS	15.9
<i>Group 3</i>	FLASHLAMP BULBS	15.9
<i>Group 4</i>	CYCLE DYNAMO BULBS	15.9
<i>Group 5</i>	MINERS' BULBS	
	Types approved by the Mines Dept. and marked M.F.P.	NIL
	All other types	18.3
<i>Group 6</i>	DECORATION LIGHTS	
	Complete sets	8.6
	Spare bulbs	17.1
<i>Group 7</i>	TELEPHONE SWITCHBOARD (and Telewriter) LAMPS	18.3
<i>Group 9</i>	FLUORESCENT TUBES up to and including 80 W	17.1
	Other discharge lamps in Group 9	NIL
<i>Group 10</i>	RADIO PANEL BULBS	15.9

For details of fixed amounts of Purchase Tax when selling at list prices nett, see next page.

LIST EXTRA CHARGES FOR SPECIAL FINISHING, ETC.

Colour spraying or external frosting

On any Osram lamps or bulbs required to be colour sprayed or frosted, for which prices are *not* shown in this publication, the following extras to the list price will apply:—

<i>Group 1</i>	Over 150 W	2/- per lamp
	150 W and below	1/- per lamp
<i>Groups 2, 3, 4</i>	18 mm. bulbs and larger	1/- per lamp
<i>and 10</i>	10 mm., 11 mm. and 15 mm. bulbs	6d. per lamp

CAPS

Where existing standard types are suitable for re-capping, the following extras apply when the caps detailed below are fitted to quantities of less than 1,000 identical lamps or bulbs, in place of the listed standard cap(s). When special production is necessary, however, details of charges for non-standard caps are available on application.

<i>Group 1</i>	B.C., E.S., S.B.C., S.E.S., S.C.C., C.C. 3-pin	
	B.C., or Bosch	1/- per lamp
	G.E.S., Medium Prefocus	2/- per lamp
	Large Prefocus	3/- per lamp
<i>Groups 2, 3, 4</i>	B.C., S.B.C., S.C.C., A.S.B.C., S.B.C. index (off-	
<i>and 10</i>	set pins), A.S.C.C., 3-pin B.C., Bosch, E.S., S.E.S.,	
	American Prefocus	1/- per lamp
	M.E.S., M.C.C.	6d. per lamp
	Any listed lamp	10/- per lamp

SILVERING

<i>Group 1</i>	SPECIAL MARKING	
	On items of less than 1,000 identical lamps for one delivery	3d. per lamp
	On items of 1,000 and over identical lamps for one delivery	No extra charge

FIXED AMOUNTS WHEN SELLING AT LIST PRICES NETT

Lamps and tubes GROUPS 1 AND 9

Where list price is		Addition to list price is	Where list price is		Addition to list price is	Where list price is		Addition to list price is
over	and not over		over	and not over		over	and not over	
s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1 1	1 3½	2½	7 5	7 11	1 4	18 7	19 1	3 3
1 3½	1 6	3	7 11	8 4	1 5	19 1	19 7	3 4
1 6	1 8½	3½	8 4	8 10	1 6	19 7	20 0	3 5
1 8½	2 0	4	8 10	9 4	1 7	20 0	20 6	3 6
2 0	2 2	4½	9 4	9 10	1 8	20 6	21 0	3 7
2 2	2 6	5	9 10	10 4	1 9	21 0	21 6	3 8
2 6	2 8½	5½	10 4	10 10	1 10	21 6	22 0	3 9
2 8½	2 11	6	10 10	11 4	1 11	22 0	22 6	3 10
2 11	3 2	6½	11 4	11 9	2 0	22 6	23 0	3 11
3 2	3 5	7	11 9	12 9	2 1	23 0	23 6	4 0
3 5	3 8	7½	12 3	12 9	2 2	23 6	24 0	4 1
3 8	3 11	8	12 9	13 3	2 3	24 0	24 6	4 2
3 11	4 2	8½	13 3	13 9	2 4	24 6	25 0	4 3
4 2	4 5	9	13 9	14 3	2 5	25 0	26 0	4 5
4 5	4 8	9½	14 3	14 9	2 6	26 0	27 0	4 7
4 8	4 11	10	14 9	15 2	2 7	27 0	28 0	4 9
4 11	5 2	10½	15 2	15 8	2 8	28 0	29 0	4 11
5 2	5 5	11	15 8	16 2	2 9	29 0	30 0	5 1
5 5	5 8	11½	16 2	16 8	2 10	30 0	31 0	5 3
5 8	5 11	1 0	16 8	17 2	2 11	31 0	32 6	5 6
5 11	6 6	1 1	17 2	17 8	3 0	32 6	34 0	5 9
6 6	6 11	1 2	17 8	18 1	3 1	34 0	35 0	6 0
6 11	7 5	1 3	18 1	18 7	3 2			

Vehicle bulbs and other battery types GROUPS 2, 3, 4 AND 10

Where list price is		Addition to list price is	Where list price is		Addition to list price is	Where list price is		Addition to list price is
over	and not over		over	and not over		over	and not over	
s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
3	7	1	2 11	3 2	6	5 7	5 10	11
7	9½	1½	3 2	3 5½	6½	5 10	6 1	11½
9½	1 1	2	3 5½	3 8½	7	6 1	6 4	1 0
1 1	1 4	2½	3 8½	3 11½	7½	6 4	6 11	1 1
1 4	1 7½	3	3 11½	4 3	8	6 11	7 5	1 2
1 7½	1 10	3½	4 3	4 6	8½	7 5	8 0	1 3
1 10	2 1½	4	4 6	4 9	9	8 0	8 6	1 4
2 1½	2 4½	4½	4 9	5 0	9½	8 6	9 0	1 5
2 4½	2 8	5	5 0	5 3	10	9 0	9 6	1 6
2 8	2 11	5½	5 3	5 7	10½	9 6	10 0	1 7

For details of purchase tax percentages of list value, when selling at a discount, see page opposite.

Packing, delivery and breakages in transit

Packing and delivery of standard lamps and tubes, listed in this catalogue, is free. Special cold cathode tubes, packing and delivery extra.

Transit breakages, which will be replaced or credited at G.E.C.

option, must be returned carriage paid within seven days, and G.E.C. advice numbers quoted.

The company does not accept responsibility for the safe custody of, or undertake to return, lamps forwarded for examination.

Scope

This new and up-to-date catalogue provides immediate and comprehensive reference data on the very wide range of Osram lamps and fluorescent tubes. Over 90 categories of Osram lamps are shown on the following pages, ranging from the tiny sub-miniature indicator lamp with a bulb only a quarter of an inch in diameter, to the massive 10 kW lamp used for film and television studio lighting.

This Osram catalogue lists all lamps and fluorescent tubes in general use and provides the maximum information required by the trade on each lamp type. Voltage, wattage, price, dimensions, light centre length and standard packing quantities are shown against each lamp where appropriate, and it is believed that the style of this important list is best suited to your requirements in the organisation of your day to day business for Osram products.

Special finishes

Throughout this catalogue, the prices given apply to lamps with standard caps or finishes as shown. The schedule on the inside front cover gives details of the list price extras which apply to special finishes and non-standard caps.

Special lamp types

In the preparation of a general catalogue of this nature it would be extremely difficult to include every type of Osram lamp for which there is not a general demand. Enquiries for special types not listed in this catalogue are welcomed and immediate information will be supplied concerning availability and price, dependent upon the quantities involved.

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. Prices apply only in Great Britain and Northern Ireland.

THE GENERAL ELECTRIC CO. LTD.

HEAD OFFICE

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

TELEPHONE: TEMPLE BAR 8000

TELEGRAMS: ELECTRICITY, WESTCENT, LONDON

CABLEGRAMS: "POLYPHASE, LONDON"

OSRAM RESEARCH AND DEVELOPMENT

G.E.C. Research Laboratories, North Wembley

Fundamental and applied research on all types of light sources. Extensive life testing on all types of tungsten filament, mercury and sodium lamps and fluorescent tubes.

Osram Lamp Works, North Wembley and Shaw

Development work on metal filament lamps at Wembley, mercury and sodium lamps and fluorescent tubes at Shaw. Mechanical engineering development unit at Wembley for the design of new lamp making equipment.

OSRAM LAMP AND COMPONENT MANUFACTURE

Osram Lamp Works, North Wembley

Tungsten filaments, molybdenum supports, lead-in wires, cap fuses.

General purpose and G.L.S., studio lighting and projector lamps, vehicle bulbs, miniature types, miners' bulbs.

Osram Lamp Works, Shaw

Tungsten filaments, molybdenum supports, fluorescent tube cathode assemblies.

Complete range of Osram tubes 9 in. 6 W—8 ft. 125 W.

Integral sodium, sodium and mercury lamps, G.L.S., decorative and vehicle bulbs.

Osram Lamp Works, Team Valley

High wattage, G.L.S., special purpose and vehicle bulbs.

Glass Bulbs Ltd., Harworth

Ribbon-type bulbs for G.L.S. lamps, vehicle bulbs, etc.

Osram Glass Works, Lemington-on-Tyne

Hard glass bulbs for projector lamps and other specialised bulbs.

Lamp Caps Ltd., Chesterfield

Full range of caps for all types of lamps and tubes.

Lumifax Ltd., Wembley

Fluorescent powders.

OSRAM SERVICE AND QUALITY

G.E.C. branches throughout the United Kingdom provide an unsurpassed delivery service based on full and comprehensive stocks of all types of Osram lamps and tubes.

The G.E.C. guarantees that Osram lamps and tubes are made throughout in England

from the best materials with rigid controls imposed at every stage of manufacture.

Where there is a relevant British Standard, Osram lamps and tubes not only meet it but frequently give a performance appreciably higher than that specified.

General lighting service lamps GROUP 1

Osram General Purpose and General Lighting Service lamps listed below and on the facing page are made to give the highest possible standards of performance.

Types covered by the scope of the following British Standards comply fully with the Specification:—

B.S. 161:1956 (25—1,500 W, 200—250 V) ; B.S. 555:1939 (25—500 W, 100—130 V, and other miscellaneous tungsten filament lamps.)
75 W and 100 W Coiled Coil lamps are at present shown in B.S.S. 161 with 68 mm. diameter bulbs. Application has been made to the B.S.I. for these lamps with 60 mm. diameter bulbs to be included in B.S. 161.

Coiled coil, pearl and clear 200-260 V in 10 V steps

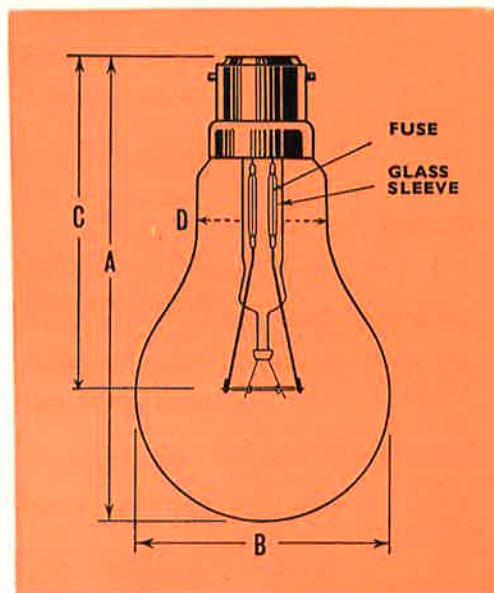
Watts	Filament	Price per lamp	Standard packing quantity	List price of standard pack	Standard cap	Light output	Lamp dimensions							
							Length		Bulb diameter		Cap contact to filament centre		Neck diameter	
							A		B		C		D	
		s. d.		£ s. d.		at 240 V	mm.	in.	mm.	in.	mm.	in.	mm.	in.
40	Coiled coil	1 2½	25	1 10 2½	B.C. or E.S.	390	105±3.5	4½	60±1	2⅝	75±3	2⅞	33±1	1 ⅝
60	Coiled coil	1 2½	25	1 10 2½		665	105±3.5	4½	60±1	2⅝	75±3	2⅞	33±1	1 ⅝
75	Coiled coil	1 10	25	2 5 10		880	105±3.5	4½	60±1	2⅝	75±3	2⅞	33±1	1 ⅝
100	Coiled coil	1 5	25	1 15 5		1260	105±3.5	4½	60±1	2⅝	75±3	2⅞	33±1	1 ⅝

Dimensional diagram and position of glass sealed fuses in OSRAM 40—1500 W lamps.

FUSE S All gasfilled lamps (i.e. 40—1500 W) shown on these pages have internal safety fuses.

Silverlight 200/210, 220/230, 240 and 250 V

Watts	Price per lamp	Standard packing quantity	List price of standard pack	Standard cap	Filament	Lamp dimensions
	s. d.		£ s. d.			
40	1 5½	25	1 16 5½	B.C. or E.S.	Coiled coil	As for Pearl and Clear lamps
60	1 5½		1 16 5½		Coiled coil	
100	1 8		2 1 8		Coiled coil	
150	2 5		3 0 5		Single coil	



Mushroom silverlight 200/210, 220/230, 240 and 250 V

Watts	Price per lamp	Standard packing quantity	List price of standard pack	Standard cap	Filament	Lamp dimensions							
						Length*		Bulb diameter		Cap contact to filament centre*		Neck diameter	
						A		B		C		D	
	s. d.		£ s. d.			mm.	in.	mm.	in.	mm.	in.	mm.	in.
60	1 5½	25	1 16 5½	B.C. or E.S.	Coiled coil	93±3	3 ⅞	55±1	2 ⅞	75±3	2 ⅞	32±1	1 ¼
100	1 8		2 1 8			107±3	4 ⅞	65±1	2 ⅞	85±3	3 ⅞	32±1	1 ¼
150	2 5		3 0 5			120±3.5	4 ¾	75±1	2 ⅞	95±3	3 ¾	37±1	1 ⅞

* When E.S. caps are supplied the length and cap contact to filament centre dimensions are increased by 1.5 mm.

For purchase tax see pages 2 and 3

General lighting service lamps GROUP 1

Single coil, pearl and clear

Watts	Finish	Voltages and price per lamp			Standard packing quantity	Standard cap	Light output Nominal average lumens throughout life	Lamp dimensions							
		200-260 V in 10 V steps and 110, 120	100, 130	25, 32, 50 60, 75				Length		Bulb diameter		Cap contact to filament centre		Neck diameter	
		s. d.	s. d.	s. d.				A		B		C		D	
15	Clear Pearl	1 6½ 1 6½	1 6½ 1 6½	— 3 0	25	B.C. or E.S.	at 240 V 110	mm. 105±3.5	in. 4½	mm. 60±1	in. 2½	mm. 75±3	in. 2 15/16	mm. 33±1	in. 1 5/16
25	Clear Pearl	1 4 1 4	1 6½ 1 6½	— 3 0	25	B.C. or E.S.	200	105±3.5	4½	60±1	2½	75±3	2 15/16	33±1	1 5/16
40	Clear Pearl	1 2½ 1 2½	1 8½ 1 8½	— 3 0	25	B.C. or E.S.	325	105±3.5	4½	60±1	2½	75±3	2 15/16	33±1	1 5/16
60	Clear Pearl	1 2½ 1 2½	1 8½ 1 8½	— 3 0	25	B.C. or E.S.	575	105±3.5	4½	60±1	2½	75±3	2 15/16	33±1	1 5/16
75	Clear Pearl	1 10 1 10	2 2 2 2	— —	25	B.C. or E.S.	780	125±3.5	4 7/8	68±1	2 11/16	90±3	3½	37±1	1 7/16
100	Clear Pearl	1 5 1 5	2 2 2 2	— 4 0	25	B.C. or E.S.	1160	125±3.5	4 7/8	68±1	2 11/16	90±3	3½	37±1	1 7/16
150	Clear Pearl	1 11 1 11	2 11 2 11	— 6 0†	25	B.C. or E.S.	1960	160±4.5	6½	80±1	3½	120±3.5	4½	39±1	1 11/16
200	Clear Pearl	2 11½ 2 11½	4 3 4 3	9 0† —	25	B.C. or E.S.	2720	170±5	6½	80±1	3½	130±4	5½	39±1	1 11/16
300	Clear Pearl	6 9 7 9	8 0 9 0	12 0† —	12	G.E.S.	4300	233±7	9½	110±1.5	4 5/16	178±4	7	50±1	1 11/16
500	Clear Pearl	8 6 9 6	10 6 11 6	16 0† —	9	G.E.S.	7700	267±8	10½	130±1.5	5½	202±5	7 11/16	52±1	2
750	Clear	14 6	14 6	—	6	G.E.S.	12400	300±9	11¾	150±1.5	5 7/8	225±8	8 7/8	55±1	2 3/16
1000 *1000	Clear Hard Glass Clear	16 0	16 0	—	6	G.E.S.	17300	300±9	11¾	150±1.5	5 7/8	225±8	8 7/8	55±1	2 3/16
1500 *1500	Clear Hard Glass Clear	47 0	—	—	6	G.E.S.	27500	300±9	11¾	150±1.5	5 7/8	225±8	8 7/8	55±1	2 3/16
		22 6	22 6	—	4	G.E.S.		335±9	13 3/16	170±1.5	6 11/16	250±8	9 13/16	60±1	2 3/8
		59 0	—	—	4	G.E.S.		335±9	13 3/16	170±1.5	6 11/16	250±8	9 13/16	60±1	2 3/8

† 25 and 50 V only.

For purchase tax see pages 2 and 3

* Voltages 210, 230, 240 and 250 V only.

Guaranteed tubes GROUP 9

FLUORESCENT TUBE GUARANTEE

The outstanding quality achieved as a result of careful controls and tests during manufacture enables a firm guarantee to be offered with every Osram tube. A free replacement will be provided if failure occurs, in normal service, before 3,000 hours or one year of use. This guarantee covers all straight Osram tubes listed in the range 9 in. 6W—

8 ft. 125W. All Osram fluorescent tubes comply in every detail with B.S. 1853:1956 where applicable.

LIGHT OUTPUT

Continuous research in the Osram Organisation results in ever-increasing standards of quality together with higher light output.

Tube			Standard cap	Price per tube (universal start, type MCFA/U)	Standard colours	Average Initial light output in lumens (100 hrs.)	Average light output for the first 5,000 hours of life (lumens)	Standard packing quantity
Rating		Dia.						
8 ft. 125W	38	1½	B.C. R.D.C. or Bi-pin	s. d.				
				16 0	White	8375	7500	12
					Warm white	8250	7375	
					Daylight	8000	7125	
				18 0	Deluxe warm white	5500	4375	
	Natural	6375	5375					
5 ft. 80W	38	1½	B.C. or Bi-pin		Colour matching	5750	5000	12 or 25
				21 0	Deluxe natural	4625	3750	
				10 6	White	5120	4640	
					Warm white	5120	4560	
					Daylight	4960	4480	
4 ft. 40W	38	1¼	Bi-pin		Deluxe warm white	3200	2720	12 or 25
				12 6	Natural	3840	3360	
					Colour matching	3520	3040	
				14 6	Deluxe Natural	2800	2240	
				9 9	White	2720	2480	
3 ft. 30W	26	1	Bi-pin		Warm white	2640	2440	25
					Daylight	2680	2440	
					Deluxe warm white	1680	1440	
				11 0	Natural	2000	1760	
					Colour matching	1840	1600	
2 ft. 40W	38	1½	Bi-pin		Deluxe natural	1480	1200	25
				9 9	White	1920	1740	
					Warm white	1890	1680	
					Daylight	1920	1710	
					Deluxe warm white	1200	960	
2 ft. 20W	38	1½	Bi-pin		Natural	1410	1200	25
					Colour matching	1290	1080	
				9 9	White	1760	1440	
					Warm white	1760	1440	
					Daylight	1680	1440	
1½ ft. 15W	26	1	Bi-pin		Deluxe warm white	1120	880	25
				11 0	Natural	1320	1080	
					Colour matching	1240	1000	
				9 3	White	1060	960	
					Warm white	1060	960	
					Daylight	1040	940	25
					Deluxe warm white	660	540	
					Natural	780	680	
					Colour matching	720	620	
				10 6	White	720	615	
					Warm white	735	615	25
					Daylight	720	600	
					Deluxe warm white	465	360	
					Natural	525	435	
					Colour matching	480	390	

Universal start tubes

All OSRAM Guaranteed Tubes 1½ ft.—8 ft. 15W—125W now have a robust yet unobtrusive metallic stripe firmly bonded to the tube.

The stripe is applied as an integral part of the manufacturing process and enables these tubes to be operated in either switch or switchless start circuits.

D.C. Supply

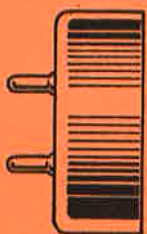
Special OSRAM tubes, with characteristics suited to d.c. operation should be specified.

Low temperature operation

For reliable starting at sub-zero temperatures, OSRAM tubes from the special low temperature range should be ordered.

Full details of both these types may be obtained on application.

Lumen values are measured at 20°C and at rated watts. See B.S. 1270:1952.



Bi-pin Cap



B.C. Cap



R.D.C. Cap

Manufactured under one or more of British Letters Patent Nos. 533451, 561177, 581656, 580363, 610025, 629754, 635545, 639823, 649181, 688346 and other British patents granted or pending.

Miniature tubes

These compact light sources are finding many applications in bollard and road sign lighting and in portable handlamps.

Tube		Standard cap	Price per tube switch start*(type MCF/U)	Standard colours	Average light output for the first 5,000 hours of life	Standard packing quantity
Rating	Dia.					
9 in. 6W	mm. 14 in. $\frac{9}{16}$	Miniature Bi-pin	s. d. 8 0	{ Natural Daylight Warm white	lumens 153 180 198	100
			7 6			
12 in. 8W	mm. 14 in. $\frac{9}{16}$		8 0		216 288 320	
			7 6	{ Natural Daylight Warm white		96

Reflector type

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 the downward light.

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.

Tube		Price per tube universal start (type MCFRA/U)	Standard cap	Standard colours	Max. intensity candelas	Initial brightness cd./in. ²		Average light output for the first 5,000 hours of life	Standard packing quantity
Rating	Dia.					Gap	Reflector		
4 ft. 40W	mm. 38 in. $1\frac{1}{2}$	s. d. 11 9	Bi-pin	{ Daylight Warm white	470 465	8.3 8.0	1.5 1.5	lumens 2200 2160	12 or 25
5 ft. 80W	mm. 38 in. $1\frac{1}{2}$	12 6	{ B.C. Bi-pin	{ Daylight Warm white	880 885	12.5 12.6	2.3 2.3	4040 4100	
8 ft. 125W	mm. 38 in. $1\frac{1}{2}$	19 0	R.D.C.	{ Daylight Warm white	1390 1430	12.1 12.7	2.2 2.3	6440 6640	12

Showcase lighting

With a diameter of only one inch, the OSRAM 5 ft. 50W 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		Standard cap	Price per tube universal start (type MCFA/U)	Standard colours	Average light output for the first 5,000 hours of life	Standard packing quantity
Rating	Dia.					
5 ft. 50W	mm. 26 in. 1	Bi-pin	s. d. 17 3 16 0	{ Natural Warm white	lumens 2100 2850	25

Decorative types

CIRCLE

The 40W Circle tube is siliconed as standard and is suitable for use in all circuits.

Tube		Price per tube siliconed	Standard cap	Standard colour	Average light output for the first 2,500 hours of life	Standard packing quantity
Rating	Dia.					
16 in. dia. Circle 40W	mm. 32 in. $1\frac{1}{4}$	s. d. 45 0	Special 4-pin	Deluxe warm white	lumens 1280	6

COLOURED TUBES

Tube		Price per tube switch start* (type MCF/U)	Standard cap	Standard colours	Standard packing quantity
Rating	Dia.				
5 ft. 80W	mm. 38 in. $1\frac{1}{2}$	s. d. 17 6	{ B.C. Bi-pin	Red, blue, green, yellow	12 or 25

* Tubes for switchless start circuits available to order at no extra charge.

Lumen values are measured at 20°C and at rated watts.

Guaranteed tubes

The range of standard near-white colours for lighting purposes will meet practically every lighting requirement and may be divided into two categories, general service tubes with high efficiencies and special service tubes with good colour-rendering.

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.

GENERAL SERVICE TUBES *High Efficiency*

White

In this, the highest efficiency tube in the Osram range, an average efficiency during the first 5,000 hours of life of 58 Lm/W has been achieved for the 5 ft. 80 W rating. Its colour appearance is intermediate between that of the Warm white and Daylight tubes. This tube is suitable for industrial applications where really good colour-rendering is not necessary. It has also been used in some shops and offices where it may be attractive because of its intermediate colour appearance.

Warm white

This high efficiency tube has colour-rendering properties which are warmer than those of the White tube, and the 5 ft. 80 W size in Warm white has an average efficiency during the first 5,000 hours of life of 57 Lm/W. Its primary use is in installations where a warm colour allied with high efficiency is required. The colour-rendering properties are adequate for many lighting purposes including factory, office and some store installations.

Daylight

In this tube, high efficiency is allied with a cool colour appearance. It is more suitable for industrial purposes where really good colour-rendering is not necessary.

SPECIAL SERVICE TUBES *Good Colour-rendering*

Deluxe warm white

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.

Natural

This colour is suitable for many commercial applications, including office and shop lighting. The efficiency is reasonably high and the colour-rendering pleasing and acceptable for most purposes.

Deluxe natural

A cool colour tube with a special blend of phosphors giving excellent rendering of red colours. Particularly suitable for the hotel and catering industry, this tube gives best results in installations with high levels of illumination.

Colour matching

Primarily developed for installations where accurate colour discrimination is an important factor, this tube is now finding many applications in shop and store lighting where an "outdoor" appearance is required. Installations using Colour matching tubes should be designed for a fairly high level of illumination to give a bright and attractive appearance.

Coloured tubes *Red, Blue, Green and Yellow*

These colours, which are made in the 5 ft. 80 W size, are intended mainly for decorative and display lighting. Their great benefit as compared with 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.

COLOUR APPEARANCE

The colour appearance of a fluorescent tube depends to some extent upon the tube loading. Slight differences may sometimes be observed, therefore, between tubes of the same colour, but of different length or wattage (see B.S. 1853:1956).

CHOICE OF DECORATIONS

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.

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

Starter switches and ballast lamps

The OSRAM "Universal" starters OS 345 and OS 13 have been designed for use with 3 ft., 4 ft., or 5 ft. tubes on 200-250 V a.c. and are of the "Glow" type. OSRAM starters bearing the suffix T after the Cat. No. are the "Thermal" type. All OSRAM canister starters

incorporate a self-contained radio interference suppressor, and they are interchangeable with other makes of starters of similar rating.

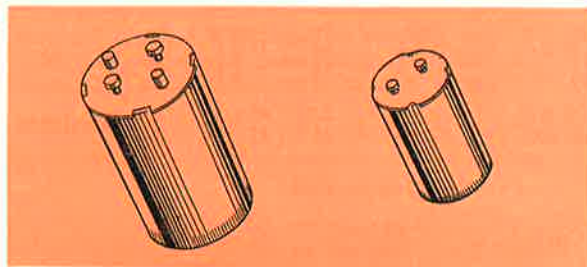
Made to B.S. 2818 where applicable.

Canister starters GLOW TYPES

Cat. No.	Price each	Type of canister	Type of base	Standard packing quantity
OS 345	s. d. 6 0	Large	4-pin	12 or 144
OS 13	2 9	Small	2-pin	12 or 360
OS 14	4 0			
OS 15	2 9			

THERMAL TYPES

OS 3T OS 4T OS 8T	6 4	Large	4-pin	12 or 144
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Dimensions of canisters (approx.)

Type	Length		Diameter	
	mm.	in.	mm.	in.
Large	54.0	2 1/8	28.0	1 1/8
Small	39.0	1 1/2	21.0	3/8

CIRCUITS AND RECOMMENDED STARTERS

Tube rating	Supply voltage	Circuit	Cat. No.	
			Large 4-pin	Small 2-pin
9 in. 6 W 12 in. 8 W	{ 200/250 a.c. 100/130 a.c. }	Single tube	—	OS 14
9 in. 6 W 12 in. 8 W	{ 200/250 a.c. 100/130 a.c. }	Two tubes in series	—	OS 15
1 1/2 ft. 15 W	{ 200/250 a.c. 100/130 a.c. }	Single tube or two tubes in series	OS 3T	—
		Single tube	OS 3T	OS 15
2 ft. 20 W	{ 200/250 a.c. 100/130 a.c. }	Single tube or two tubes in series	OS 3T	—
		Single tube	OS 3T	OS 15
2 ft. 40 W	{ 200/250 a.c. 100/130 a.c. }	Two tubes in series	OS 8T	—
		Single tube		—
3 ft. 30 W	{ 200/250 a.c. 200/250 d.c. }	Single tube	OS 345	OS 13
		Single tube	OS 3T	—
4 ft. 40 W	{ 200/250 a.c. 200/250 d.c. }	Single tube	OS 345	OS 13
		Single tube	OS 4T	—
5 ft. 50 W	200/250 a.c.	Single tube (capacitive circuit only)	OS 3T	—
5 ft. 80 W	{ 200/250 a.c. 200/250 d.c. }	Single tube	OS 345	OS 13
		Single tube	OS 8T	—
8 ft. 125 W	200/250 a.c.	Single tube (capacitive circuit only)	OS 8T	—
16 in. dia. circle 40 W	200/250 a.c.	Single tube	OS 345	OS 13

Glass tubular starter

Earlier models of fluorescent fittings were designed for starters of this class.

Cat. No.	Price each	Cap	Circuit details	Standard packing quantity
OS 12	s. d. 4 4	S.B.C.	Single tube 5 ft. 80 W 200/250 V a.c.	144

OSRAM STARTER SWITCHES ARE NOT SUBJECT TO PURCHASE TAX

Price per lamp	Standard cap	Finish	Dimensions				Standard packing quantity
			Length		Diameter		
s. d. 2 6	3-pin B.C.	Pearl Single coil	mm. 117.5±3.5	in. 4 $\frac{5}{8}$	mm. 65±1	in. 2 $\frac{9}{16}$	100

Ballast lamps GROUP 1

for tungsten lamp control system—fluorescent lighting. In the G.E.C. tungsten lamp control system for fluorescent lighting, the ballast lamps limit the current through the tubes, and replace the conventional choke. Cathode heating power is supplied by a low voltage transformer.

For purchase tax see pages 2 and 3

Circuit	Type No.	Volts	Watts	Light output (initial lumens)
Twin 4 ft. 40 W straight tubes	2	220/230	60	635
	3	240	65	685
	4	250	70	735
Single 40 W 16 in. dia. circle	5	200/210	70	705
	6	220/230	80	845
	7	240	80	850
	8	250	80	865

Decorative lamps GROUP 1

Coloured G.L.S. lamps

Red, blue, green, yellow, flame, amber, pink, orange, white.

Watts	Voltages and price per lamp	Standard cap	Lamp dimensions				Standard packing quantity
	110, 120, 200/210, 220/230 240/250		Length		Diameter		
	s. d.	} B.C. or E.S.	mm.	in.	mm.	in.	100
15	1 11		105±3.5	4 ¹ / ₈	60±1	2 ³ / ₈	
25	1 11	} B.C.	105±3.5	4 ¹ / ₈	60±1	2 ³ / ₈	25
40	1 9		105±3.5	4 ¹ / ₈	60±1	2 ³ / ₈	25
60	1 9		105±3.5	4 ¹ / ₈	60±1	2 ³ / ₈	25
100	2 3		125±3.5	4 ⁷ / ₈	68±1	2 ¹¹ / ₁₆	25



45 mm. Round bulb



25W Candle (Plain)



25W Candle (Twisted)

Silverlight CANDLE AND ROUND BULB

Type	Watts	Voltages and price per lamp	Standard cap	Lamp dimensions				Standard packing quantity
		200/210, 220/230, 240/250		Length		Diameter		
Candle	25	s. d. 3 0	{ S.B.C. or B.C.	mm. 95±3	in. 3¾	mm. 35±1	in. 1⅝	} 50
	40	3 6		91±3	3½	35±1	1⅝	
45 mm. Round bulb	25	2 6	{ S.B.C. or B.C.	72±3	2⅞	45±1	1¾	} 100
	40	2 9		67±3	2⅝	45±1	1¾	

Candle lamps PLAIN AND TWISTED TYPES

Shape	Watts	Clear			Frosted or coloured flame, amber, pink			Lamp dimensions				Standard packing quantity
		200/210 220/230 240/250	110 120	50	200/210 220/230 240/250	110 120	50	Length (with S.B.C. cap)		Diameter		
Plain	25	s. d. 2 6	s. d. 2 6	s. d. 4 9	s. d. 3 0	s. d. 3 0	s. d. 5 3	mm. 97±3	in. 3 11⁄16	mm. 35±1	in. 1 3⁄8	50
	40	3 0	3 0	—	3 6	3 6	—	124±5	4 7⁄8	45±1	1 3⁄4	
	60	3 0	3 0	—	3 6	3 6	—	124±5	4 7⁄8	45±1	1 3⁄4	
Twisted	25	3 0	—	—	3 6	—	—	105±5	4 1⁄8	35±1	1 3⁄8	
	40	3 6	—	—	4 0	—	—	141±5	5 5⁄8	55±1	2 3⁄16	
	60	3 6	—	—	4 0	—	—	141±5	5 5⁄8	55±1	2 3⁄16	

Standard cap: B.C. or S.B.C.

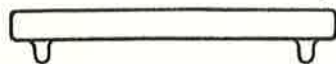
EXTENDED TYPE

Watts	Voltages and price per lamp	Shape	Finish	Lamp dimensions				Standard packing quantity
	210, 240			Length		Diameter		
25	s. d. 6 6	Plain	Clear bulb and opalised stem	mm. 208±5	in. 8 ³ / ₁₆	mm. 35±2	in. 1 ³ / ₈	25
40	7 0			238±5	9 ⁵ / ₁₆	45±2	1 ³ / ₄	
60	7 6			238±5	9 ⁵ / ₁₆	45±2	1 ³ / ₄	

Standard cap: B.C. or S.B.C.

Tubular lamps GROUP 1

Architectural (Tube diameter 30 mm.)



Standard straight lengths



Standard curves
Overall length
along centre line
of lamp 500 mm.
(19 $\frac{1}{16}$ in.)

Overall length		Standard voltages	Watts	Price per lamp	
in.	mm.			White opal	Coloured
12	305	110, 120, 200/210, 220/230, 240/250	35	£ s. d. 12 4	£ s. d. 15 4
18	457		53	17 6	1 2 0
20	500		60	19 0	1 4 0
24	610		75	1 2 6	1 8 6
36	915	200/210, 220/230, 240/250	110	1 10 0	1 19 0
48	1220		150	1 15 0	2 7 0

Curve	Radius		Standard voltages	Watts	Price per lamp	
	in.	mm.			White opal	Coloured
$\frac{1}{8}$ Circle	25	637	110, 120, 200/210, 220/230, 240/250	60	£ s. d. 1 10 0	£ s. d. 1 15 0
$\frac{1}{4}$ "	12 $\frac{1}{2}$	318				
$\frac{1}{2}$ "	6 $\frac{1}{4}$	159				

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

Standard finishes: White opal or coloured 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.

Striplite

Watts	Type	Voltages and price per lamp				Length ±1 mm.		Diameter ±1 mm.		Standard packing quantity
		110, 120, 200/210 220/230, 240/250		25, 50						
		Clear	Obscured & coloured	Clear	Obscured & coloured					
30	{ 221 284 }	s. d. 5 9	s. d. 6 3	s. d. 6 0	s. d. 6 6	mm. 221 284	in. 8 ¹¹ / ₁₆ 11 ³ / ₁₆	mm. 25 25	in. 1 1	25
60	{ 221 284 }	6 6 6 0	7 0 6 6	— —	— —	221 284	8 ¹¹ / ₁₆ 11 ³ / ₁₆	25 25	1 1	

Standard cap: Centre contact.

Opal tubular

Watts	Voltages and price per lamp	Standard cap	Length ± 3 mm.		Diameter ± 1 mm.		Standard packing quantity
	110, 120, 200/210 220/230, 240/250						
40 60 } }	s. d. 8 6	B.C.	mm. 302	in. 11 $\frac{7}{8}$	mm. 37	in. 1 $\frac{1}{2}$	25

Clear tubular

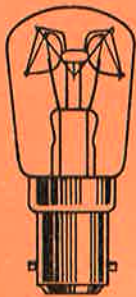
Watts	Voltages and price per lamp		Standard cap	Length (with S.B.C. cap) ±3 mm.		Diameter ±1 mm.		Standard packing quantity
	110, 120, 200/210 220/230, 240/250	25. 50						
25	s. d. 3 9	s. d. 4 9	B.C., S.B.C. or E.S.	mm. 92	in. 3 ⁵ / ₈	mm. 25	in. 1	50

Opal Tubular



25W Clear Tubular

Indicator lamps GROUP 1



Pygmy



Pilot



Small Neon

Pygmy *clear* This small lamp is specially designed for signs, illuminated score boards, totalisators, etc.

Watts	Voltages and price per lamp		Standard cap	Lamp dimensions				Standard packing quantity
	110, 120, 130 200/210, 220/230, 240/250, 260	25, 50, 60, 150		Length		Diameter		
15	s. d.	s. d.	{ B.C. E.S. S.B.C. or S.E.S.	mm. 57±4	in. 2½	mm. 28±1	in. 1½	100
	1 10	3 0		60.5±4 63±4 65±4	2⅜ 2½ 2⅝			

Pygmy frosted or coloured red, blue, green, yellow, flame, amber, pink, orange or white.

Watts	Voltages and price per lamp	Standard cap	Lamp dimensions				Standard packing quantity
	110, 120, 200/210 220/230, 240/250		Length		Diameter		
15	s. d. 2 2½	{ B.C. or S.B.C.	mm. 57±4 63±4	in. 2¼ 2½	mm. 28±1 28±1	in. 1⅞ 1⅞	} 100

Switchboard Indicator *clear*

Watts	Voltages and price per lamp	Standard cap	Lamp dimensions				Standard packing quantity
	100/130, 200/260		Length		Diameter		
12/15*	s. d. 2 6	B.C.	mm. 57±4	in. 2¼	mm. 28±1	in. 1⅞	100

*Consumption 12-15 watts according to supply voltage.

Pilot *clear*

Watts	Voltages and price per lamp	Standard cap	Lamp dimensions				Standard packing quantity
	100/130, 200/250		Length		Diameter		
10	s. d. 4 0	{ Candelabra or S.B.C.	mm. 46±2 40±2	in. 1 13⁄16 1 9⁄16	} 20 max.	mm. in. 3⁄8	100

Neon *clear* Neon discharge lamps are manufactured in two types—lighting and indicator. 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	Voltage range and price per lamp	Standard cap	Lamp dimensions				Standard packing quantity
		200/220, 230/250		Length		Diameter		
Lighting Indicator, Large Small	5	s. d.		mm.	in.	mm.	in.	100
	0.5	6 0	B.C.	110±8	4 ¹¹ / ₈	60±1	2 ³ / ₈	
	0.5	4 0	B.C.	56±3	2 ⁷ / ₈	28±1	1 ¹ / ₈	
		4 0	S.B.C.	54±3	2 ⁵ / ₈	18±1	¾	

Neon lamps are NOT subject to purchase tax.

For purchase tax see pages 2 and 3

Reflector spotlight with internally silvered bulb

Carefully controlled bulb contours and accurately located filaments ensure uniformly high performance. The beam angle is approximately 50° and the lamps may be burned in any position.

Applications include shop and display lighting, local bench lighting in workshops, etc. Reflector spotlights and floodlights (see below) are also widely used in photographic studios.

Watts	Voltage range and price per lamp	Standard cap	Lamp dimensions				Standard packing quantity
	110, 120, 200/210, 220/230, 240, 250		Length		Diameter		
*75 100	s. d. 8 0	B.C. or E.S.	mm. 129±3	in. 5 ¹ / ₁₆	mm. 95±1	in. 3 ³ / ₄	12
150	12 0	E.S.	179.5±4	7 ¹ / ₁₆	126±1.5	5	
500	52 6	G.E.S.	262±8	10 ⁵ / ₁₆	183±1.5	7 ¹ / ₄	1

HIGH INTENSITY TYPE (100 hour life)

500	56 0	G.E.S.	262±8	10 ⁵ / ₁₆	183±1.5	7 ¹ / ₄	1
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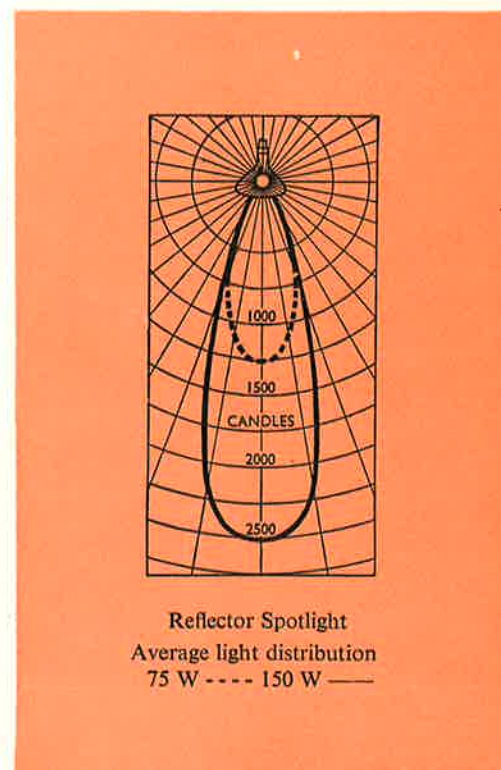
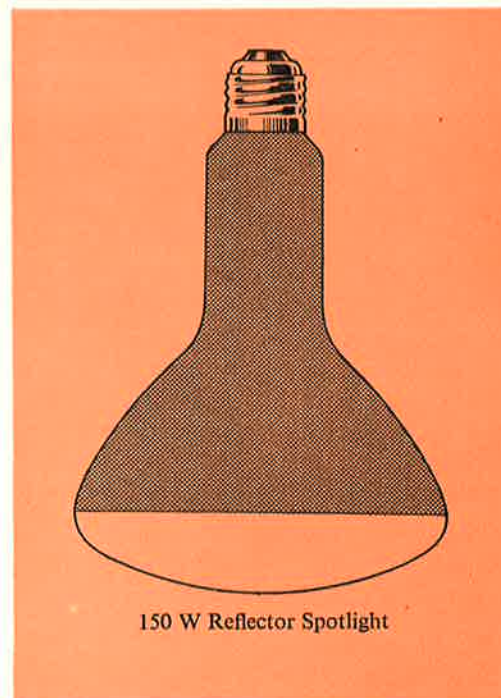
*The 75 W rating is also available in 24 V at 12s. 6d. per lamp.

Reflector floodlight with internally silvered bulb

A special etching process applied to the crown of the bulb gives a broader light distribution for floodlighting purposes.

Watts	Voltage range and price per lamp	Standard cap	Lamp dimensions				Standard packing quantity
	110, 120, 200/210, 220/230, 240, 250		Length		Diameter		
	s. d.		mm.	in.	mm.	in.	} 12
75 } 100 }	8 0	B.C. or E.S.	129±3	5 ¹ / ₁₆	95±1	3 ³ / ₄	
150	12 0	E.S.	179.5±4	7 ¹ / ₁₆	126±1.5	5	

For purchase tax see pages 2 and 3



Lamps for special purposes GROUP 1

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

Watts	Finish	Voltages and price per lamp		Standard cap	Length		Diameter		Standard packing quantity
		110, 120, 200/210, 220/230, 240, 250, 260	25, 50		Tolerance ±3·5 mm.		Tolerance ±1 mm.		
		s. d.	s. d.		mm.	in.	mm.	in.	
40 } 60 100	Pearl*	2 0†	3 0	} B.C. or E.S. {	105	4 ¹ / ₈	60	2 ³ / ₈	100
	Pearl	2 9	—		125	4 ⁷ / ₈	68	2 ¹¹ / ₁₆	50

*Also available in clear at no extra cost.

† Vacuum lamps. Other ratings and voltages are gas filled.

Traction Intended for series burning across a supply voltage of some 600 V total, these lamps comply fully with B.S. 867. The extra low voltage (40-50 V) type incorporate an automatic short-circuiting fitment so that the remainder of the chain stay alight in the event of lamp failure.

Ampere rating	Nominal watts	Voltages and price per lamp		Standard cap	Length		Diameter		Standard packing quantity
		110, 120 Pearl	40, 50 Pearl		Tolerance ± 3·5 mm.		Tolerance ± 1 mm.		
0·35 0·52 1·5	40 60 60	s. d. 1 9 —	s. d. — 3 0	B.C. or E.S. E.S.	mm. 110 117·5	in. 4 ⁵ / ₁₆ 4 ⁸ / ₈	mm. 60 65	in. 2 ³ / ₈ 2 ⁹ / ₁₆	100

Miscellaneous lamps

Type	Watts	Price per lamp	Standard voltages	Standard cap	Length ± 3.5 mm.		Diameter ± 1 mm.		Standard packing quantity
		s. d.			mm.	in.	mm.	in.	
45 mm. ROUND BULB (Pearl)	25 40	2 0 2 3	110, 120, 200/210, 220/230, 240, 250	{ S.B.C. or B.C.	75	2 $\frac{11}{16}$	45	1 $\frac{3}{4}$	100
					70	2 $\frac{3}{4}$	45	1 $\frac{3}{4}$	
DAYLIGHT BLUE	40 60 100	5 6 5 6 7 6	{ 110, 120, 200/210, 220/230, 240/250	{ B.C.	105	4 $\frac{1}{8}$	60	2 $\frac{3}{8}$	25
					105	4 $\frac{1}{8}$	60	2 $\frac{3}{8}$	
					125	4 $\frac{7}{8}$	68	2 $\frac{11}{16}$	
MARINE NAVIGATION (Clear)	40 60	4 9 5 0	110, 120, 210, 220, 230, 240	{ B.C. or E.S.	140 max.	5 $\frac{9}{16}$	63 max.	2 $\frac{1}{2}$	50
					150 max.	5 $\frac{15}{16}$	70 max.	2 $\frac{11}{16}$	
FIREGLOW	60	3 9	200/210, 220/230, 240, 250	B.C.	105	4 $\frac{1}{8}$	60	2 $\frac{3}{8}$	100
BOLLARD LAMP (Pearl)	25	2 0	200/210, 220/230, 240, 250	B.C.	105	4 $\frac{1}{8}$	60	2 $\frac{3}{8}$	100
REFRIGERATOR LAMP (Pearl)	40	2 8	110, 200/250	E.S.	90	3 $\frac{1}{2}$	44 ± 2	1 $\frac{1}{2}$	120
TRAFFIC SIGNAL (Clear)	65	2 0	210, 230, 240, 250	E.S.	105*	4 $\frac{1}{8}$	60	2 $\frac{3}{8}$	100
BAKER'S OVEN	60	1 9	{ 110, 120, 200/210, 220/230, 240/250	{ B.C.	105	4 $\frac{1}{8}$	60	2 $\frac{3}{8}$	25

*Light centre length 62 ± 3 mm. (2 $\frac{7}{16}$ in.).

Underwater

The OSRAM underwater lamp and fitting was developed in collaboration with the Admiralty Research Laboratory and has now been accepted as a standard equipment diving lamp for the Royal Navy.

This lamp is designed for underwater use only, and operates in direct contact with the water, the 1 mm. thick bulb successfully withstanding a pressure of up to 600 lb./in.², corresponding to a depth of about 1,200 ft.

Watts	Price per lamp	Standard voltages	Finish	Standard cap	Nominal average efficiency	Objective average life	Dimensions					
							Length		Diameter		Light centre length	
1000	s. d. 43 0	110 230, 250	Clear	E.S.	lm/W 23.5	hours 50	mm.	in.	mm.	in.	mm.	in.
					16	300	179±10	7 ¹ / ₁₆	100±2	3 ¹ / ₁₆	129±5	5 ¹ / ₁₆

Operating theatre This lamp has an axial filament and has been specially designed for use in a G.E.C. operating theatre fitting. The lamp is rated at 25 V to comply with the latest Ministry of Health safety recommendations.

Watts	Price per lamp	Standard voltage	Finish	Standard cap	Nominal average efficiency	Objective average life	Dimensions					
							Length		Diameter		Light centre length	
150	s. d. 9 6	25	Pearl	E.S.	lm/W 16.5	hours 1000	mm.	in.	mm.	in.	mm.	in.
							160±4.5	6 ¹ / ₄	80±1	3 ¹ / ₈	120±3.5	4 ³ / ₄

Scialytic

Using a bunched-type filament, these lamps are designed for use in operating theatre fittings. The large reflector in the fitting provides an extended light source, focused on the working area, to give high-intensity lighting which is virtually shadow free.

Watts	Price per lamp	Standard voltages	Finish	Standard cap	Nominal average efficiency	Objective average life	Dimensions					
							Length		Diameter		Light centre length	
100	s. d. 12 0	210, 230, 240	Clear	B.C.	lm/W 9.2	800	mm.	in.	mm.	in.	mm.	in.
150	24 6	210, 230, 240	Clear	B.C.	9.2		144±10	5 ¹ / ₁₆	75±1	2 ¹ / ₁₆	115±5	4 ⁹ / ₁₆

Theatre batten The common light-centre-length and overall dimensions enable either rating to be used, depending upon the level of illumination required.

Watts	Price per lamp	Standard voltages	Finish	Standard cap	Nominal average efficiency lm/W		Objective average life	Dimensions						Standard packing quantity
								Length		Diameter		Light centre length		
	s. d.				110 V	240 V	hours	mm.	in.	mm.	in.	mm.	in.	
100	2 7	110, 210 230, 240 250	Clear	B.C. or E.S.	14.0	13	1000	137.5±3.5	5 ³ / ₈	75±1	2 ¹ / ₁₆	120±3	4 ¹ / ₁₆	50
150	3 11				15.5	14	1000							

Miscellaneous

A range of Lighthouse, Marine Searchlight, Aero Beacon and Cloud Searchlight lamps is available, details on application.

BURNING POSITIONS

All lamps described on this page may be burned in any position.

Heating Lamps GROUP 1

Infra-red

The 250 W type, with or without internal reflector, has many applications in industry for process heating and drying. Reflector lamps are also used for chick-rearing, pig-farrowing, etc.

Quartz tubular heaters as illustrated provide a high-output, concentrated heat source. Rapid variations in output may be obtained either by switching or by voltage variation.

Type	Watts	Price per lamp	Standard voltages	Standard cap	Lamp dimensions				Standard packing quantity	
					Length		Diameter			
Reflector	250	s. d. 17 9	100/130 or 200/250	E.S.	mm. 178±4	in. 7	mm. 126±1.5	in. 5	12	
Clear	250	7 9	100/130	E.S.	178±5.5	7	90±1	3½	25	
Clear quartz tubular (horizontal operation only)	{ 500 1000 2000	75 0 84 0 112 0	100/125 200/250 200/250	{ Flexible metal tags	200±5 350±5 350±5	7⅞ 13⅜ 13⅜	{ 12 max. ½		25	
Clear quartz tubular (universal operation)		500 1000 2000	78 0 90 0 118 0		100/125 200/250 200/250	200±5 350±5 350±5				7⅞ 13⅜ 13⅜

Universal type quartz tubular heaters may be operated in any position.

Carbon filament

HEATERS clear

Watts	Voltage range and price per lamp	Standard cap	Lamp dimensions				Standard packing quantity
	110/115, 200/210 220/230, 240/250		Length		Diameter		
65	s. d. 5 0	} B.C. or E.S. {	mm. 110±3.5	in. 4 ⁵ / ₁₆	mm. 60±1	in. 2 ³ / ₈	100
130	5 6		125±3.5	4 ⁷ / ₈	68±1	2 ¹¹ / ₁₆	50
200	6 2		125±3.5	4 ⁷ / ₈	68±1	2 ¹¹ / ₁₆	50
200*	8 6		E.S. 130±5	5 ¹ / ₈	90±1	3 ¹ / ₂	50

*Round bulb, sprayed flame.

"Robertson" Carbon filament

RADIATOR sprayed flame

Watts	Voltage range and price per lamp	Standard cap	Lamp dimensions				Standard packing quantity
	110/120 200/220, 230/250		Length		Diameter		
250	s. d. 29 6	B.C.*	mm. 265±5	in. 11½	mm. 57±1	in. 2¼	50

*Available with double cap in 230/250 V rating and clear bulb 3s. 0d. extra.

For purchase tax see pages 2 and 3

Infra-red clear quartz tubular

Decoration lights GROUP 6

The Lilliput 20 and 40 bulb sets. The fully-insulated holders in these entirely new sets have been designed to use Osram bulbs with sub-miniature screw caps. Positive contact is ensured and bulb replacement simplified.

Removable decorative shades are fitted to the bulb holders. Internal cut-outs are fitted to the bulbs in both sets, so that in the event of the failure of one or more bulbs, the remainder will stay alight.

Supplied complete with B.C. adaptor for use on 200-250 V mains supply.

The Standard set consists of twelve 20 V 3 W coloured lamps in series, complete with spare lamp (OS 2101), flex, lampholders, and B.C. adaptor.

The large bulb set. This attractively packed luxury set has twelve colourful bulbs wired in series complete with a B.C. adaptor. There are two spare bulbs (OS 2019) with each set. Large-sized 20 V 6 W bulbs provide considerably increased illumination, and are contained in special shrouded holders. A long, braided flex with a total span of 16 ft. is another special feature.

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

Description	Cat. No.	Price each	P.T. extra	Standard packing quantity
		£ s. d.	s. d.	
LILLIPUT 40-BULB SET, complete with decorative shades	OS 2023	2 5 7	3 11	24
Spare bulbs, sub-miniature screw cap, clear or coloured 6 V 0.75 W	OS 2024	8½	1½	12
LILLIPUT 20-BULB SET				
With decorative shades	OS 2022	1 6 8	2 4	24
Without shades	OS 2021	1 2 1	1 11	24
Spare bulbs, sub-miniature screw cap, clear or coloured, 12 V 1.2 W	OS 2025	8½	1½	12
Spare bulbs, capless for original Lilliput set, clear or coloured, 6 V 0.75 W	OS 2100	7	1½	12
STANDARD SET	OS 2011	16 7	1 5	24
Spare bulbs 20 V 3 W coloured	OS 2010	1 0	2	12
LARGE BULB SET	OS 2000	1 5 6	2 3	6
Spare bulbs 20 V 6 W coloured	OS 2019	1 2	2½	12
PARTY LIGHT SET	OS 2102	1 4 10	2 2	16
Spare bulbs 20 V 3 W clear	OS 2009	1 0	2	12
LILLIPUT CHRISTMAS TREE	OS 2026	1 18 10	6 8	12



Lilliput 40-bulb set



Standard set

Coloured lamp set GROUP 1

Each OSRAM coloured lamp set comprises eight OSRAM 230/250 V 15 W 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.

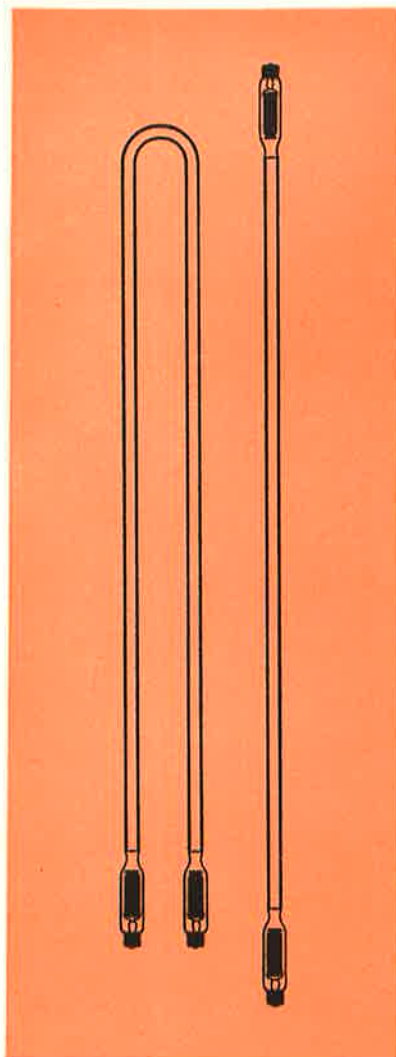
A maximum of eight sets can be joined together to form lengths of up to 144 ft. by means of the special 5 amp 2-pin plug and socket.

Description	Cat. No.	Price	P.T. extra	Standard packing quantity
		£ s. d.	s. d.	
COLOURED LAMP SET	OS 2105	2 0 0	3 3*	6
Spare lamp, 230/250 V 15 W S.E.S. 50 mm. round bulb coloured—red, blue, green or yellow	—	2 4	5	100

*Purchase tax is payable on the lamps only.

Cold cathode fluorescent tubes

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 OSRAM hot cathode 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.

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

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

Description	Electrode position	Lighting length	Standard colours and price
			White, 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.	s. d. 38 6
CLASS B Straight tubes shorter than standard	Straight-on	Less than 8 ft. 6 in.	49 9
CLASS C Straight tubes	Right-angle or parallel electrodes	8 ft. 6 in. or less	62 3
CLASS D Curved or bent tube (one bend only)	Any position	8 ft. 6 in. or less	116 0
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. 2¼ in., 3 in., 3½ in. or 4 in.	Straight-on	8 ft. 6 in.	45 6

Delivery charges are included in the above list prices.

NON-STANDARD

COLD CATHODE TUBES

Full details and prices of the following are available on application.

Colours other than standard listed above.

Exterior lighting tubes.

Special shapes to suit the contours of an installation.

TECHNICAL DETAILS Class A tubes

Colour	Tube current mA	Tube watts	Initial light output in lumens (100 hrs.)	Average light output on the first 15,000 hours of life (lumens)
White	120	67.5	3105	2632
Daylight			3037	2565
Deluxe warm white			2362	1755
Warm white			3240	2767
Natural			2565	2227
Intermediate			3037	2565
Gold	60	50	675	625

These tubes are not subject to purchase tax.

Mercury discharge lamps GROUP 9

Fluorescent COLOUR CORRECTED

Type	Lamp rating	Price per lamp	Nominal average output throughout life	Cap	Overall length		Overall diameter		Distance from contact on cap to the centre of discharge		Standard packing quantity
		£ s. d.	lumens		mm.	in.	mm.	in.	mm.	in.	
MBF/U Fluorescent	80	2 8 6	2700	3 pin B.C.	160±4.5	6 ⁵ / ₁₆	80±1	3 ¹ / ₈	120±4	4 ³ / ₈	25
	125	2 19 0	4900	3 pin B.C.*	178±5.5	7	88±1	3 ¹ / ₂	133±5	5 ¹ / ₂	25
	250	4 19 0	10500	G.E.S.	220±7	8 ¹¹ / ₁₆	89±1.5	3 ⁹ / ₁₆	147.5±5	5 ¹³ / ₁₆	6
	400	6 10 0	18000	G.E.S.	280±6	11	115±1.5	4 ¹ / ₂	177.5±5	7	6
	700	11 0 0	32000	G.E.S.	335±7.5	13 ¹ / ₄	165±1.5	6 ¹ / ₂	200±5	7 ⁷ / ₈	1
	1000	12 0 0	50000	G.E.S.	335±7.5	13 ¹ / ₄	165±1.5	6 ¹ / ₂	200±5	7 ⁷ / ₈	1
MAF/V Fluorescent	400	4 1 6	12800	G.E.S.	335±7.5	13 ¹ / ₄	165±1.5	6 ¹ / ₂	200±7.5	7 ⁷ / ₈	1
MBFR/U Reflector Fluorescent	400	7 10 0	14000	G.E.S.	270±7	10 ⁸ / ₁₆	183±1.5	7 ¹ / ₄	—	—	1

*Also available with G.E.S. cap.

Pearl and clear

MB/U Pearl	80	1 19 6	2600	3 pin B.C.	160±4.5	6 ⁵ / ₁₆	80±1	3 ¹ / ₈	113±4	4 ¹ / ₂	} 25
	125	2 5 0	4600	3 pin B.C.	178±5.5	7	88±1	3 ¹ / ₂	128±5	5 ¹ / ₁₆	
MA/V Clear	250	2 9 0	8750	G.E.S.	290±8	11 ⁸ / ₁₆	48±3	1 ⁷ / ₈	170±8	6 ³ / ₁₆	} 25
	400	2 14 0	16000	G.E.S.	330±8	13	48±3	1 ⁷ / ₈	190±8	7 ¹ / ₂	
MA/V Clear hard glass	250	2 19 6	8750	G.E.S.	290±8	11 ⁸ / ₁₆	48±3	1 ⁷ / ₈	170±8	6 ³ / ₁₆	} 25
	400	3 6 0	16000	G.E.S.	330±8	13	48±3	1 ⁷ / ₈	190±8	7 ¹ / ₂	
MA/H Clear hard glass	250	2 19 6	7500	G.E.S.	290±8	11 ⁸ / ₁₆	48±3	1 ⁷ / ₈	170±8	6 ³ / ₁₆	} 25
	400	3 6 0	13200	G.E.S.	330±8	13	48±3	1 ⁷ / ₈	190±8	7 ¹ / ₂	
MB/U Clear	1000	8 0 0	52000	G.E.S.	335±7.5	13 ¹ / ₄	165±1.5	6 ¹ / ₂	200±7	7 ⁷ / ₈	1

Lamps on this page must only be operated in conjunction with suitable control gear, details on application.

BURNING POSITIONS

MA/V	Vertical, cap-up or horizontal with magnetic deflectors.
MA/V Hard glass	Vertical, cap-up in corrosive atmospheres or horizontal with magnetic deflector in open or semi-open fittings.
MA/H Hard glass	Any position without magnetic deflectors.
MB/U MBF/U MBFR/U	} Any position.
MAF/V	
MAF/V	Vertical, cap-up only.

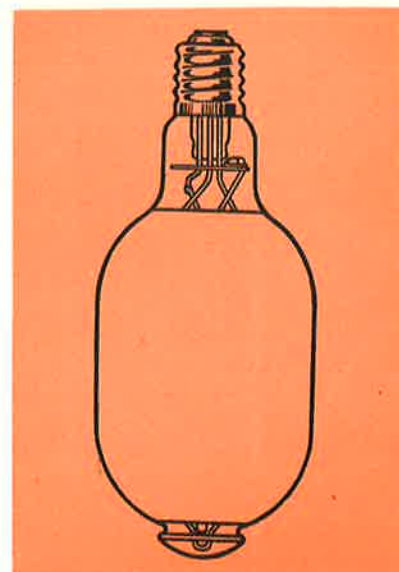
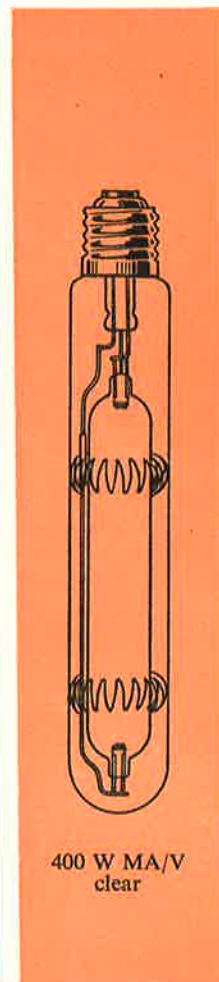
VOLTAGE RANGES

MA/V, MAF/V, MB/U, MBF/U, MBFR/U, 80—700 W: 200/220, 230/240 and 250 V.

MB/U, MBF/U, 1 kW: 350/370, 370/410 and 410/450 V. (May be operated from 200/250 V A.C. supplies in conjunction with suitable control gear.)

MA/H: 200/250 V.

OSRAM mercury lamps of the MB and MBF types are manufactured under one or more of the following British Letters Patent and other British Patents and pending applications: 577599, 594059, 626303, 695316, 737914, 748928.



These lamps are not subject to purchase tax.

Mercury discharge lamps GROUP 9



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 wavelength 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 and it can be used to detect alterations in documents.

Watts	Price per lamp	Cap	Lamp dimensions						Standard packing quantity
			Overall length		Diameter		Light centre length		
80 125	£ s. d. 2 17 6 3 3 0	3-pin B.C.	mm. 178±5.5	in. 7	mm. 90±1	in. 3 ⁹ / ₁₆	mm. 128±5	in. 5 ¹ / ₁₆	25

Voltage range: 200/220, 230/240, 250 V.

These lamps must only be operated in conjunction with suitable control gear, details on application.

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	Price per lamp	Cap	Nominal average output throughout life (lumens)	Lamp dimensions						Standard packing quantity
	Pearl			Overall length		Diameter		Light centre length*		
160	£ s. d. 2 8 0	E.S. or B.C.	2200	mm. 178±5.5	in. 7	mm. 90±1	in. 3 ⁹ / ₁₆	mm. D=128±6 F=133±6	in. 5 ¹ / ₈ 5 ¹ / ₄	12
250	2 16 0	G.E.S.	3700	233±7	9 ³ / ₁₆	110±1.5	4 ⁶ / ₁₆	D=173±6 F=178±6	6 ¹³ / ₁₆ 7	

Voltage range: 200/210, 220/230, 240 and 250 V A.C.

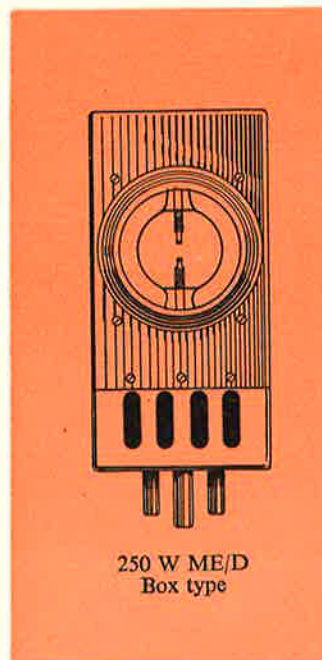
*D=Discharge. F=Filament.

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, photomicrography, 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 a 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 V	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	141±3 mm. (excluding pins)	130±3 mm. (excluding pins)
Diameter	50±2 mm.	64×55 mm. box
Light centre length	85±1 mm. (excluding pins)	80±1 mm. (excluding pins)
Cap	3-pin base (or large prefocus)	3-pin base
Burning position	Vertical, base (or cap) down	Vertical, base down
Price per lamp	£15 10 0	£21 10 0

These lamps are not subject to purchase tax.

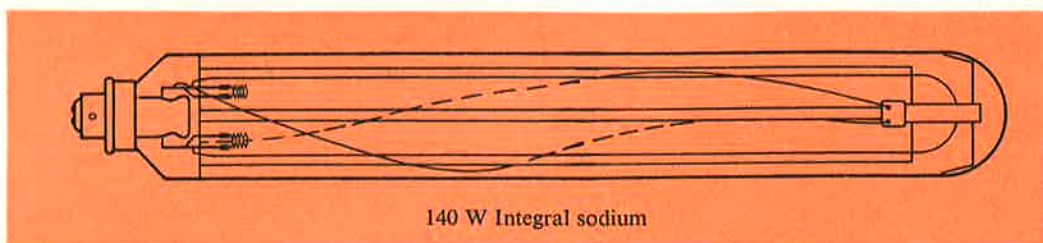
These lamps must only be operated in conjunction with suitable control gear, details on application.

Sodium discharge lamps GROUP 9

Integral Sodium TYPE SOI/H

Watts	Price per lamp	Nominal average output throughout life (lumens)	Standard cap	Lamp dimensions						Standard packing quantity
				Overall length ±10 mm.		Diameter ±2 mm.		Light centre length ±10 mm.		
45	£ s. d.		} My- calex B.C. }	mm.	in.	mm.	in.	mm.	in.	
60	2 17 0	2295		238	9 ³ / ₈	50	2	140	5 ¹ / ₂	12
85	3 2 6	3540		300	11 ¹³ / ₁₆	50	2	170	6 ¹ / ₂	12
140*	3 16 0	5950		415	16 ⁵ / ₁₆	50	2	230	9 ¹ / ₈	12
280	3 19 0	9800		518	20 ³ / ₈	65	2 ⁹ / ₁₆	280	11	6
	7 18 0	22400	4-pin	509	20 ¹ / ₁₆	65	2 ⁹ / ₁₆	280	11	6

* Available with internal aluminium reflectors, £4. 10. 6 list. Manufactured under British Patent No. 801482.



OSRAM integral jacket sodium lamps represent a major advance in discharge tube design. Capable of directly replacing the well-known detachable jacket type, these lamps are even more efficient. The 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. Integral lamps are not affected by conditions of high humidity, ensuring reliable starting throughout life.

Linear type

This high power lamp uses an arc tube of novel design to give an initial efficiency of 100 Lm/W. The operating circuit comprises an auto transformer in conjunction with a thermal relay.

Watts	Price per lamp	Nominal average output throughout life (lumens)	Standard cap	Lamp dimensions				Standard packing quantity	Thermal relay (Canister type, 4-pin base)					
				Overall length		Diameter ±1.5 mm.			Cat. No.	Price each	Dimensions			
											Length		Diameter	
	£ s. d.			in.	mm.	mm.	in.		OS16T (Type ST42)	s. d.	mm.	in.	mm.	in.
200	5 10 0	18400	Bi-pin	35 3⁄8 max.	909 max.	38	1 1⁄2	1		6 4	54	2 1⁄8	28	1 1⁄8

Sodium TYPE SO/H DETACHABLE JACKET

The inner arc tube is maintained at an even temperature by a detachable vacuum jacket. The special two-piece ceramic cap enables either the inner tube or the outer jacket to be replaced independently.

Watts	Price per lamp		Nominal average output throughout life (lumens)	Standard cap	Lamp dimensions						Standard packing quantity	
	Without jacket	With detachable jacket			Overall length ±10 mm.		Diameter ±2 mm.		Light centre length ±10 mm.		Inners	Jackets
					mm.	in.	mm.	in.	mm.	in.		
45	£ 2 0 0	£ 3 1 9	2250	Ceramic B.C.	238	9 ³ / ₈	50	2	140	5 ¹ / ₂	20	12
60	2 5 0	3 9 6	3420		300	11 ¹³ / ₁₆	50	2	170	6 ¹ / ₂	20	12
85	3 0 0	4 9 3	5525		415	16 ⁵ / ₁₆	50	2	230	9 ¹ / ₈	20	15
140	3 5 0	4 18 0	9100		518	20 ³ / ₈	65	2 ⁹ / ₁₆	280	11	20	12

BURNING POSITIONS

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

85 W, 140 W and 280 W ratings should be burnt horizontally, but may be tilted to any angle from 5° (cap down) to 20° (cap up).

200 W linear type lamps must be operated within 20° of the horizontal position. If tilted beyond these limits, lamp performance may be seriously impaired.

Lamps on this page must only be operated in conjunction with suitable control gear, details on application.

VOLTAGE RANGE 200/250 V A.C.

These lamps are not subject to purchase tax.

Miscellaneous discharge lamps GROUP 9

Floodlighting tubes These tubes are for use with G.E.C. floodlighting equipment (details on application).

NEON TYPE NE/H, RED

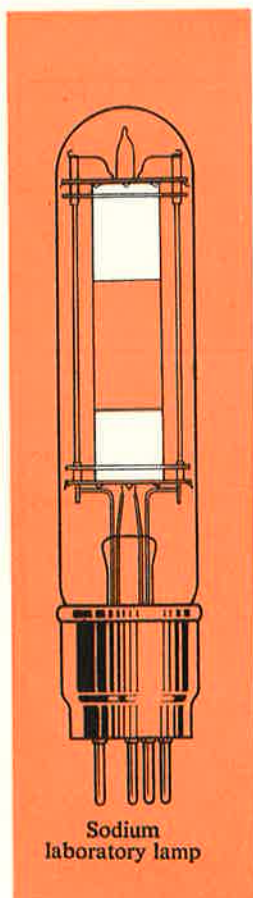
MERCURY TYPE MC/H, LIGHT GREEN OR DARK BLUE

Type	Watts	Price per lamp	Voltage range	Standard cap	Dimensions			
					Length		Diameter	
Neon Mercury	400 250	£ s. d. 4 10 0	200/250 V A.C.	2-prong	mm. 1180±10	in. 46 $\frac{1}{8}$	{ mm. Tube 38±1.5 Bulb 65±4	in. 1 $\frac{1}{2}$ 2 $\frac{3}{8}$

Laboratory lamps

These lamps are suitable for a number of applications in the laboratory including spectroscopy, polarimetry, refractometry and interferometry. The Sodium lamp emits about 99% of its visible radiation at wavelengths of 5890 and 5896 Angstrom units, the familiar yellow D lines.

The other lamps of this type emit radiation at well defined wavelengths, characteristic of the metal fillings. The lamp containing both Cadmium and Mercury is particularly useful as it provides a number of well spaced lines covering very nearly the whole of the visible region.



Type	Price per lamp	Supply †	Lamp dimensions			
			Overall length Excluding pins		Diameter	
SL/D1.3 Sodium	£ s. d. 4 17 6	100/250 V a.c./d.c.	mm. 153 ±5*	in. 6 $\frac{1}{8}$	mm. 34 ±1	in. 1 $\frac{3}{8}$
ML/D2.0 Mercury	6 7 0	100/250 V a.c./d.c.	238 ±5	9 $\frac{3}{8}$	40 ±1	1 $\frac{5}{8}$
CL/D2.0 Cadmium	7 4 0	200/250 V a.c./d.c.	238 ±5	9 $\frac{3}{8}$	40 ±1	1 $\frac{5}{8}$
CML/D2.0 Cadmium /Mercury	7 4 0	200/250 V a.c./d.c.	238 ±5	9 $\frac{3}{8}$	40 ±1	1 $\frac{5}{8}$

Standard cap: British 4-pin valve.

† When ordering, state whether for use on a.c. or d.c. supply.

* The lamp for operation on d.c. supplies has an overall length of 168±5 mm. (6 $\frac{5}{8}$ in.)

Further details of laboratory lamps and other special lamps for laboratory use together with particulars of control gear, are available on application. These lamps are not subject to purchase tax.

Lamps for photoprinting GROUP 9

Emulsions used in photography and in the graphic arts (e.g. letterpress, photogravure, offset lithography and silk screen printing) are normally

more sensitive to the blue and long-wave ultra-violet sections of the spectrum. Special light sources have accordingly been developed.

Fluorescent tubes

"Blacklight" tubes employ a phosphor emitting radiation in the long-wave ultra-violet region, and compared with other ultra-violet sources, these

tubes provide the shortest printing times yet realised. Tubes emitting saturated blue light are also available, details on application.

Tube			Standard cap	Type MCFA/U (Metal stripe)			Standard packing quantity
Rating	Diameter			Black light 350*	Light Blue 475*	Colour Matching	
	mm.	in.		s. d.	s. d.	s. d.	
5 ft. 80 W	38	1½	B.C.	20 0	18 6	12 6	} 12 or 25 25
4 ft. 40 W	38	1½	Bi-pin	—	—	11 0	
2 ft. 40 W	38	1½	Bi-pin	18 0	16 6	11 0	

* Nominal wavelength (in millimicrons) of peak emission spectrum (1mμ=10Å). Details of control gear available on application.

Mercury lamps

These high pressure mercury vapour lamps are recommended in applications demanding compact and powerful light sources for printing.

Type	Watts	Price per lamp	Standard voltages	Standard cap	Nominal average output through- out life	Dimensions						Standard packing quantity
						Overall length		Overall diameter		Distance from contact on cap to the centre of discharge		
MB/U Pearl	125	s. d. 45 0	200/220, 230/240, 250	3-pin B.C.	lumens 4600	mm. 178±5.5	in. 7	mm. 88±1	in. 3½	mm. 128±5	in. 5 1⁄16	25
MB/U Clear	1000	160 0	350/370, 370/410, 410/450	G.E.S.	52000	335±7.5	13¼	165±1.5	6½	200±7	7⅞	1
MA/V Clear	250	49 0	} 200/220, 230/240, 250	G.E.S.	8750	290±8	11⅝	48±3	1⅞	170±8	6¾	} 25
	400	54 0			16000	330±8	13	48±3	1⅞	190±8	7½	

These lamps are not subject to purchase tax.

Sodium lamps

Type SOI/H Integral and SO/H detachable jacket

Watts	Price per lamp						Nominal average output throughout life (lumens)		Voltage range	Lamp dimensions						Standard packing quantity		
	Integral	Without jacket		With detachable jacket		Integral				Detachable Jacket		Overall length ± 10 mm.		Diameter ±2 mm.				
							mm.	in.				mm.	in.	mm.	in.			
45	£ 2 17 0	£ 2 0 0	£ 3 1 9	2295	2250	A.C. 200/250	238	9 ³ / ₈	50	2	140	5 ¹ / ₂	12	20	12			

Standard cap—Integral, Mycalex B.C. Detachable jacket, Ceramic B.C.
These lamps are not subject to purchase tax.

General illumination

For general illumination in printing work OSRAM Colour matching or Deluxe warm white tubes are recommended as they provide efficient lighting with good colour-rendering properties. OSRAM Guaranteed tubes (Hot Cathode) and OSRAM Cold Cathode tubes are listed on pages 8—9 and 20 respectively.

BURNING POSITIONS

Fluorescent tubes Any position.

MA/V Clear Vertical cap up or horizontal with magnetic deflectors.

MB/U Any position.

Sodium 45 W 5° cap down to vertical cap up.

Lamps for photography GROUP 1

Photoflood Designed for indoor photography by artificial lighting. The Series 1 photoflood is fitted with a standard bayonet cap so that it can be used in an ordinary electric light fitting.

Type No.	Watts	Price per lamp	Standard voltages	Finish	Standard cap	Nominal effcy Lm/W	Objective average life	Dimensions				Standard packing quantity
								Length		Diameter		
Series 4	250	s. d. 3 3	30	Pearl	E.S.	33	hours 5	mm. 117·5±3·5	in. 4 ⁵ / ₁₆	mm. 65±1	in. 2 ⁹ / ₁₆	50
„ 1	275	2 9	{ 100/110 200/210 220/230 240/250 }	Pearl	B.C. or E.S.	29	2	110±3·5	4 ¹ / ₈	60±1	2 ³ / ₈	50
„ 2	500	7 0		Pearl	E.S.*	30	10	160±4·5	6 ⁵ / ₁₆	80±1	3 ¹ / ₈	50

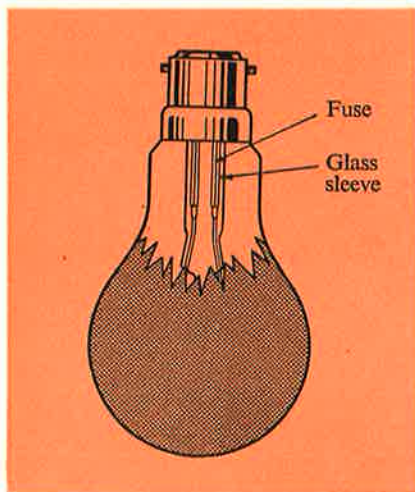
* Also available with B.C. cap. (200-250 V only).

Photographic Designed primarily for the professional photographer, for whom their long life is a considerable advantage.

Type No.	Watts	Price per lamp	Standard voltages	Finish	Standard cap	Nomi- nal effcy Lm/W	Objective average life	Dimensions				Standard packing quantity
								Length		Diameter		
Series B	500	s. d. 22 0	115, 210 230, 240, 250	Pearl	E.S.	21	hours 100	mm. 178±5.5	in. 7	mm. 88±1	in. 3½	12

Photographic enlarger The specially applied internal silica coating gives a diffused light which helps to ensure uniform illumination over the whole negative area. In the 150 W high-intensity type maximum light output is achieved with minimum heat dissipation.

Watts	Price per lamp	Standard voltages	Finish	Standard cap	Nominal effcy Lm/W	Objective average life	Dimensions				Standard packing quantity
							Length		Diameter		
60	s. d.					hours	mm.	in.	mm.	in.	
75	2 3	{ 200/210 220/230 240, 250 }	Internal Silica Coating	B.C.	8.3	1000	105±3.5	4 ⁵ / ₁₆	60±1	2 ³ / ₈	50
100	3 0				9.2	1000	125±3.5	4 ¹¹ / ₁₆	68±1	2 ¹¹ / ₁₆	50
					10.0	1000	125±3.5	4 ¹¹ / ₁₆	68±1	2 ¹¹ / ₁₆	50
150	4 3	{ 110, 210, 230, 240 250 }	Internal Silica Coating	B.C. or E.S.	19	} 100	119±3.5	4 ¹¹ / ₁₆	68±1	2 ¹¹ / ₁₆	50
High Intensity					15						
					15						
300 High Intensity	16 6	230, 240	{ Internal Silica Coating }	E.S.	17	100	178±5.5	7	90+1, -3	3 ⁵ / ₁₆	12



Other lamps for photographic use

High Wattage General Lighting Service Lamps	..	see page	7
Reflector Spotlights and Floodlights		„ „	15
Mercury Discharge Lamps		„ „	21
Sodium Discharge Lamps		„ „	23

BURNING POSITIONS

All lamps described on this page may be burned in any position.

FUSES

All the lamps shown on this page have internal safety fuses. The illustration shows the position of the fuses.

For purchase tax see pages 2 and 3

Lamps for colour photography GROUP 1

Controlled colour temperature

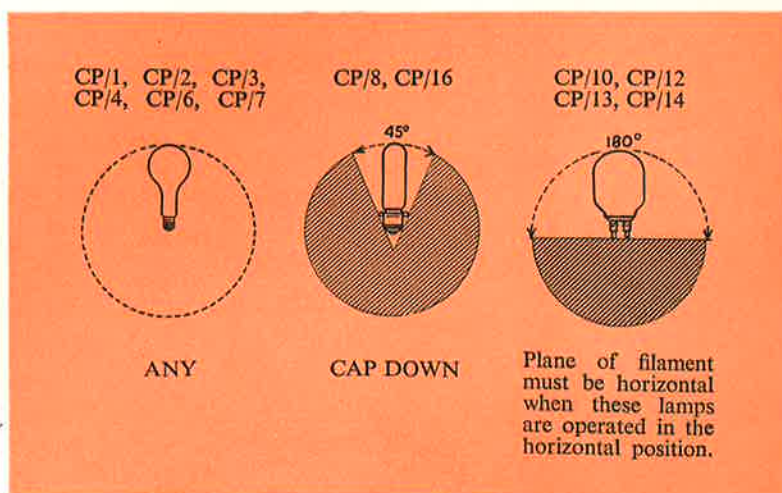
This series of lamps has been introduced to meet the needs of studios undertaking work with still and ciné colour film balanced for light sources operating at 3200°K.

For optimum results, accurate control over the supply voltage is essential—1% change in supply voltage gives a shift in colour temperature of approximately 10°K.

Ref. No.	Watts	Price per lamp	Standard volts	Objective average life	Finish*	Standard cap	Lamp dimensions						Standard Packing Quantity
							Length		Diameter		Light centre length		
		s. d.		hours			mm.	in.	mm.	in.	mm.	in.	
CP/1	275	2 9	230, 240, 250	5—8	Pearl (1)	B.C. or E.S.	110±3·5	4 $\frac{3}{8}$	60 ±1·0	2 $\frac{3}{8}$	80 ±3·0	3 $\frac{1}{8}$	50
CP/2	500	7 0	230, 240	15	„ (1)	B.C. or E.S.	160±4·5	6 $\frac{5}{16}$	80 ±1·0	3 $\frac{1}{8}$	120 ±3·5	4 $\frac{3}{4}$	50
CP/3	1000	18 0	115 230, 240	40 25	„	G.E.S.	300±9·0	11 $\frac{3}{16}$	150 ±1·5	5 $\frac{11}{16}$	225 ±8·0	8 $\frac{7}{8}$	6
CP/4	1500	24 6	115 230, 240	50 25	„	G.E.S.	335±9·0	13 $\frac{3}{16}$	170 ±1·5	6 $\frac{11}{16}$	250 ±8·0	9 $\frac{11}{16}$	4
CP/6	1000	16 0	115 230, 240	40 25	Clear (2)	G.E.S.	300±9·0	11 $\frac{3}{16}$	150 ±1·5	5 $\frac{11}{16}$	225 ±8·0	8 $\frac{7}{8}$	6
CP/7	1500	22 6	115 230, 240	50 25	„ (2)	G.E.S.	335±9·0	13 $\frac{3}{16}$	170 ±1·5	6 $\frac{11}{16}$	250 ±8·0	9 $\frac{11}{16}$	4
CP/8	500	33 0	230, 240	15	„ (3)	Med. Prefocus	133±7·0	5 $\frac{1}{4}$	64 ±2·0	2 $\frac{1}{2}$	55·5±0·5	2 $\frac{3}{16}$	12
CP/10	750	100 0	115 230, 240, 250	30 15	„ (5)	Med. Bipost	160±5·0	6 $\frac{5}{16}$	76 ±1·0	3	70·5±2·0	2 $\frac{3}{4}$	1
CP/12	2000	150 0	115 230, 240, 250	50 25	„ (6)	Bipost	232±6·0	9 $\frac{1}{8}$	152·5±2·0	6	127 ±2·0	5	1
CP/13	5000	400 0	115 230, 240, 250	75 50	„ (5)	Bipost	335±6·0	13 $\frac{3}{16}$	203 ±2·0	8	165 ±2·0	6 $\frac{1}{2}$	1
CP/14	10000	760 0	115	100	„	Bipost	482±8·0	19	300 ±2·0	11 $\frac{3}{16}$	255 ±2·0	10 $\frac{1}{16}$	1
CP/16	500	33 0	230, 240	15	„ (4)	E.S.	128±7·0	5 $\frac{1}{16}$	64 ±2·0	2 $\frac{1}{2}$	75 ±5·0	2 $\frac{11}{16}$	12

BURNING POSITIONS

The shaded portions of these diagrams show the positions in which the lamps *must not* be mounted.



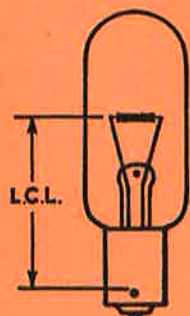
* The superscript numerals in this column denote that the lamp is a controlled colour temperature version of an existing standard lamp.

- ⁽¹⁾ Photoflood page 26
- ⁽²⁾ General Lighting Service lamps 7
- ⁽³⁾ AI/8 29
- ⁽⁴⁾ AI/42 29
- ⁽⁵⁾ Class S 32

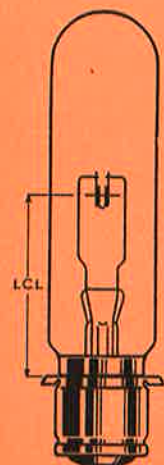
These lamps are not subject to purchase tax.

Lamps for projection GROUP 1 For Cinematograph, Film Strip and Slide Projection

Class A1



S.C.C. and S.B.C. cap



Prefocus cap

PRICES

Cat. No.	Price each	Watts	Cat. No.	Price each	Watts	Cat. No.	Price each	Watts
A1/2	£ s. d. 15 0	50	A1/20	£ s. d. 15 0	50	A1/91	£ s. d. 3 2 0	1000
A1/3	19 6	100	A1/21	18 3	100	A1/121	18 3	100
A1/4	19 6	100	A1/23	19 6	100	A1/133	19 6	100
A1/5 50 V	1 10 0	250	A1/26	1 5 0	200	A1/138	1 10 0	250
110/250 V	1 7 9	250	A1/37	1 13 0	300	A1/154	1 14 3	300
A1/6	1 14 3	300	A1/42	1 13 0	500	A1/167	1 1 9	150
A1/7	2 6 0	500	A1/46	2 8 3	500	A1/168	1 2 9	150
A1/8	1 13 0	500	A1/47	2 7 0	500	A1/175	1 5 0	150
A1/9	2 13 0	750	A1/52	2 13 0	750	A1/178	2 0 0	300
A1/11	2 10 0	1000	A1/53	2 13 0	750	A1/180	2 15 0	500
A1/14	1 10 0	250	A1/57	2 10 0	1000	A1/185	1 15 0	50
A1/15	1 10 0	250	A1/58	3 2 0	1000	A1/186	18 3	100
A1/19	15 0	50	A1/59	3 2 0	1000	A1/193	18 3	100

50-200 WATT TECHNICAL DATA Lamps with voltages in BOLD type are made to B.S. 1522 : 1960

Watts	Standard cap	Cat. No.	Standard voltages	Efficiency lumens per watt	Objective average life	Lamp dimensions		
						Length	Diam.	Light ctr. length
					hours	mm.	mm.	mm.
50	Small Prefocus	A1/185 (Integral mirror)	8	—	25	93±3	35×43	47±2
	S.C.C.	A1/2	115	17	50	76±3	25±1	34.5±2
	S.B.C.	A1/19	115	17	50	76±3	25±1	34.5±2
	S.E.S.	A1/20	115	17	50	78±3	25±1	43±3
100	Med. Prefocus	A1/3**	30	23	50	133±7	25±1	55.5±0.5
	Med. Prefocus	A1/4	12 115 210, 230, 240, 250	24 18.5 15	50	133±7	25±1	55.5±0.5
	S.C.C.	A1/21	115 210, 230, 240, 250	17 14.5	50	76±5	25±1	34.5±2
	E.S.	A1/23	230, 240, 250	17	50	128±7	25±1	75 ±5
	S.B.C.	A1/121	115 210, 230, 240, 250	17 14.5	50	76±5	25±1	34.5±2
	B.C.	A1/133	230, 240, 250	17	50	128±7	25±1	75 ±5
	S.C.C.	A1/186	12	26	25	76±5	25±1	35 ±1
	B.A. 21s 4-pin	A1/193	12	27	25	78 max.	25±1	29.5±0.5
150	S.C.C.	A1/167	115 210, 230, 240, 250	17.5 18	50	87±4	25±1	34.5±0.5
	S.B.C.	A1/168	115 210, 230, 240, 250	17.5 18	50	87±4	25±1	34.5±0.5
	Med. Prefocus	A1/175	210, 230, 240, 250	18	50	133±7	25±1	55.5±0.5
200	S.C.C.	A1/26††	100, 115	23	25	87±5	25±1	34.5±2
			230, 240	19	50	87±5	25±1	34.5±2

** Offset filament.

†† Forced cooling necessary, wall of bulb not to exceed 400° centigrade.

Standard packing quantity, all class A1

Projector Lamps—12.

Lamps for projection GROUP 1 For Cinematograph, Film Strip and Slide Projection

Class A1

250-1000 WATT TECHNICAL DATA Lamps with voltages in BOLD type are made to B.S. 1522 : 1960

Watts	Standard cap	Cat. No.	Standard voltages	Effcy. lumens per watt	Objective average life	Lamp dimensions		
						Length	Diam.	Light centre length
					hours	mm.	mm.	mm.
250	Med. Prefocus	A1/5	50 115	24	50	133±7	32±2	55.5±0.5
			210, 230, 240 , 250	22				
	Med. Prefocus	A1/15**	50	24	50	133±7	32±2	55.5±0.5
	Med. Prefocus	A1/138	210, 230, 240 , 250	21	50	133±7	64±2	55.5±0.5
	E.S.	A1/14	210, 230, 240, 250	21	50	128±7	32±2	75±5
300	Med. Prefocus	A1/6*	115	23	25	133±7	32±2	55.5±0.5
	Med. Prefocus	A1/154*	210, 230, 240 , 250	21	50	133±7	32±2	55.5±0.5
	S.C.C.	A1/37††	115	23	25	100±5	25±1	34.5±2
	Pin base	A1/178††	210, 230, 240 , 250	21	25	100±5	27±1	34.5±2
500	Med. Prefocus	A1/7*	110, 115	24	25	133±7	32±2	55.5±0.5
			210, 230, 240 , 250	22.5				
	Med. Prefocus	A1/8	115	25	50	133±7	64±2	55.5±0.5
			210, 230, 240 , 250	23				
	E.S.	A1/42	115	25	50	128±7	64±2	75±5
			210, 230, 240, 250	23				
	3-pin B.C.	A1/46***†	110, 115	24	25	137±5	37±1	95±0.5
	Bell & Howell	A1/47	210, 230, 240 , 250	22.5	25	128±7	32±2	59±0.5
750	Med. Prefocus	A1/9*	110, 115	26	25	133±7	38±2	55.5±0.5
			210, 230, 240 , 250	24				
	E.S. 3-fin	A1/52*†	110, 115	26	25	145±8	36±2	81±0.5
	Bell & Howell	A1/53*	110, 115	26	25	128±7	38±2	59±0.5
1000			210, 230, 240 , 250	24				
	Large Prefocus	A1/11	115	26	50	235±10	64±2	84±0.5
			210, 230, 240, 250	24.5				
	G.E.S.	A1/57	110, 115	26	50	230±10	64±2	120±5
			210, 230, 240, 250	24.5				
	Med. Prefocus	A1/58*	115	27	25	133±7	64±2	55.5±0.5
			210, 230, 240 , 250	24.5				
	Med. Prefocus	A1/59*	110, 115	27	25	133±7	38±2	55.5±0.5
	Bell & Howell	A1/91*	230, 240 , 250	25				
			110, 115	27	25	128±7	38±2	59±0.5

** Offset filament

* Forced cooling necessary, wall of bulb not to exceed 500° centigrade

†† Forced cooling necessary, wall of bulb not to exceed 400° centigrade

† Designed for cap up burning

CLASS A1 projector lamps (with the exception of those listed below) are fitted with a removable metal crown cap (as illustrated above).

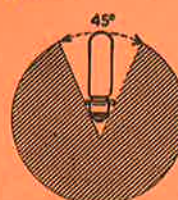
Cat. No.	Finish	Cat. No.	Finish
A1/8	Clear	A1/47	Crown internal gold finish
A1/11		A1/178	
A1/42		A1/180	
A1/46		A1/52	
		A1/57	Clear
		A1/58	
		A1/138	

Standard packing quantity, all class A1 Projector Lamps—12



BURNING POSITIONS (Class A1)

The shaded portion of this diagram shows the position in which the lamps must not be mounted.



VERTICAL CAP DOWN
(Except A1/46 and A1/52 which are designed for vertical cap up burning).

Lamps for projection GROUP 1 Floodlights, Theatre Spotlights, Epidiascopes

Class B1 and B2 *Lamps with voltages in bold type are made to B.S. 1522: 1960*

Floodlights, theatre spots and floods, shop window and display lighting

BURNING POSITIONS

The shaded portions of these diagrams show the positions in which the lamps *must not* be mounted.

CLASS B1

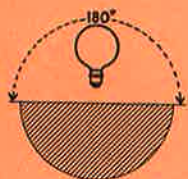


CLASS B2



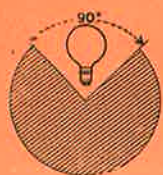
Designed for burning in any position.

CLASS T



Plane of filament must be horizontal when these lamps are operated in the horizontal position.

CLASS E



Cat. No.	Price per lamp	Watts	Standard cap	Standard voltages	Efficiency lumens per watt	Objective average life	Lamp dimensions		
							Length	Diameter	Light centre length
B1/1	s. d. 16 0	100	E.S.	{ 115 210, 230, 240 , 250	12 9.2	hours 800	mm. 115±10	mm. 80±2	mm. 75 ±5
B1/2	25 0	250	E.S.	{ 115 210, 230, 240 , 250	14.5 12.5	800	115±10	80±2	75 ±5
B1/7	26 3	250	Medium prefocus	{ 115 210, 230, 240 , 250	14.5 12.5	800	120±10	80±2	55.5±0.5
B1/3	34 0	500	G.E.S.	{ 115 210, 230, 240 , 250	16 14.5	800	180±10	130±5	115 ±5
B1/4	46 6	1000	G.E.S.	{ 115 210, 230, 240 , 250	17.5 16.5	800	180±10	130±5	115 ±5
B2/1	34 0	500	G.E.S.	{ 115 210, 230, 240 , 250	16 14.5	800	267±8	130±5	202 ±7
B2/2	42 0	1000	G.E.S.	{ 115 210, 230, 240 , 250	17.5 16.5	800	300±9	150±2	225 ±8
B2/3	56 0	1500	G.E.S.	{ 210 230, 240 , 250	17.5	800	335±9	170±2	250 ±8

Class T *Lamps with voltages in bold type are made to B.S. 1522: 1960*

Theatre spotlights

Cat. No.	Price per lamp	Watts	Standard cap	Standard voltages	Efficiency lumens per watt	Objective average life	Lamp dimensions		
							Length	Diameter	Light centre length
T/3	s. d. 24 6	250	Medium prefocus	210, 230, 240 , 250	16	hours 200	mm. 119±5	mm. 76±1	mm. 55.5±0.5
T/1	33 9	500	Medium prefocus	{ 115 210, 230, 240 , 250	18.5 18	200	130±10	95±1	55.5±0.5
T/2	42 9	1000	Large prefocus	210, 230, 240 , 250	20	200	190±10	130±2	84 ±0.5

Class E

Specially designed for epidiascopes

Cat. No.	Price per lamp	Watts	Standard cap	Standard voltages	Efficiency lumens per watt	Objective average life	Lamp dimensions		
							Length	Diameter	Light centre length
E/1	s. d. 37 6	500	Medium prefocus	{ 115 210, 230, 240 , 250	23 22	hours 100	mm. 135±10	mm. 100±2	mm. 60±0.5
E/3	36 6	500	E.S.	210, 230, 240 , 250	20.6	100	135±10	100±2	85±5

Packing—Lamps on this page will be packed to individual requirements

Lamps for projection GROUP 1 Micro-projection, Sound Film Reproduction

Class F *Lamps with voltages in bold type are made to B.S. 1522 : 1960*

Micro-projection, microscope illumination

Cat. No.	Price per lamp	Watts	Volts	Standard cap	Efficiency lumens per watt	Objective average life	Lamp dimensions		
							Length	Diameter	Light centre length
	s. d.					hours	mm.	mm.	mm.
F/30	7 6	8	4	S.E.S.	13	100	62±5	35±2	52±5
F/8	7 0	12	12	S.B.C.	15	100	57±5	35±2	40±3
F/10	7 6	24	6	S.E.S.	17	100	60±5	38±2	50±5
F/24	6 3	24	6	E.S.	18	100	57±5	38±2	47±5
F/17	6 3	24	6	S.B.C.	19	100	60±5	38±2	44±5
F/3	6 3	24	12	S.B.C.	19	100	60±5	38±2	44±5
F/10	7 6	24	12	S.E.S.	19	100	60±5	38±2	50±5
F/1	10 0	30	6	S.E.S.	21	25	57±5	35±2	47±5
F/23	10 0	30	6	E.S.	15	200	63±5	35±2	53±5
F/25	10 0	30	6	E.S.	21	25	63±5	35±2	53±5
F/26	10 0	30	6	S.E.S.	16	200	65±5	35±2	47±5
F/41	10 0	30	6	S.B.C.	21	25	58±5	35±2	40±5
F/2	12 6	48	6	S.B.C.	16.5	100	57±5	35±2	40±3
F/7	12 6	48	8	S.E.S.	16.5	100	60±5	38±2	41±3
F/4	12 6	48	12	S.E.S.	21	100	70±5	50±2	40±3
F/13	12 6	48	12	E.S.	21	100	70±5	50±2	38±5
F/52	12 6	48	6	S.E.S.	16.5	100	62±3	35±2	49±2
F/14	20 0	100	12	E.S.	21	100	85±5	60±2	55±5
F/63	22 0	100	12	Medium prefocus	21	100	93±5	60±2	37±0.5

For purchase tax see pages 2 and 3

Class G *Lamps with voltages in bold type are made to B.S. 1015*

Sound film reproduction

B.S. No.	Cat. No.	Price per lamp	Volts	Amp	Standard cap	Efficiency lumens per watt	Objective average life	Lamp dimensions		
								Length	Diameter	Light centre lgth.
		s. d.					hours	mm.	mm.	mm.
E.L.10A	G/1	10 9	4	0.75	Small prefocus	12	50	48±3	25 ±1	28.5 ±0.5
—	G/19	7 3	4	0.75	S.C.C.	10	50	48±3	15.5 ±0.5	31.75 ±0.75
—	G/29	8 6	4	0.75	Small prefocus	12	50	56±2	16 ±0.5	28.5 ±0.5
E.L.9	G/4	9 3	6	1	S.C.C.	12	100	40±2	18 ±1	21.5 ±0.5
—	G/5	9 3	6	1	Small prefocus	12	100	57±3	16 ±1	28.5 ±0.5
E.L.1A	G/7	11 0	8	4	Small prefocus	21	100	75±3	25 ±1	37.3 ±0.5
E.L.1	G/8	9 3	8	4	S.C.C.	21	100	75±3	25 ±1	44 ±1
E.L.2	G/9	9 3	8.5	4	S.C.C.	21	100	75±3	25 ±1	44 ±1
E.L.4A	G/10	13 9	10	5	Small prefocus	23	100	75±3	25 ±1	37.3 ±0.5
E.L.4	G/11	12 3	10	5	S.C.C.	23	100	75±3	25 ±1	41 ±1
E.L.5	G/12	12 3	10	5	S.C.C.	23	100	75±3	25 ±1	44 ±1
—	G/23	12 3	5	6.5	Small prefocus	18	50	75±3	25 ±1	41 ±0.5
E.L.6A	G/13	13 9	10	7.5	Small prefocus	23.5	100	75±3	25 ±1	37.3 ±0.5
E.L.6	G/14	12 3	10	7.5	S.C.C.	23.5	100	75±3	25 ±1	41 ±1

Packing—Lamps on this page will be packed to individual requirements.

Class G not subject to purchase tax.

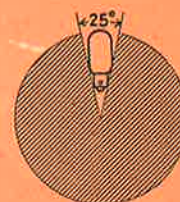
BURNING POSITIONS

The shaded portions of these diagrams show the positions in which the lamps must not be mounted.

CLASS F



CLASS G



Lamps for projection GROUP 1 Film Studio Lighting, Theatre and Aerodrome Floodlighting

Class S *Lamps with voltages in bold type are made to B.S. 1075*

Film studio lighting, large spots and floods

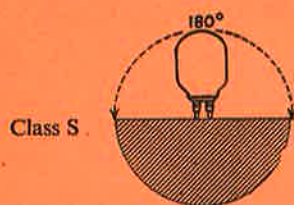
Cat. No.	Price per lamp	Watts	Standard cap	Standard voltages	Efficiency lumens per watt	Objective average life	Lamp dimensions		
							Length	Diameter	Light centre length
S/3	s. d. 92 6	500	Med. bipost	{ 115 230, 240, 250	22 20.5	hours 100	mm. 138±5	mm. 95 ±2	mm. 63.5±2
S/6*	100 0	750	Med. bipost	{ 115 210, 230, 240, 250	22 21.5	100	160±5	76 ±1	70.5±2
S/4	130 0	1000	Bipost	{ 115 210, 230, 240, 250	24 24	100	232±6	152.5±2	127 ±2
S/1*	150 0	2000	Bipost	{ 115 210, 230, 240 , 250	26 24	100	232±6	152.5±2	127 ±2
S/5*	140 0	2000	G.E.S.	{ 115 230, 240, 250	26 24	100	220±10	150 ±2	134 ±5
S/2*	400 0	5000	Bipost	{ 115 210, 230, 240 , 250	28 26.5	100	335±6	203 ±2	165 ±2

* See page 27 for similar lamps suitable for colour film balanced for 3200°K.

Class FL Theatre and Aerodrome floodlights

Cat. No.	Price per lamp	Watts	Standard cap	Standard voltages	Efficiency lumens per watt	Objective average life	Lamp dimensions	
							Length	Diameter
FL/4	s. d. 40 3	250	E.S.	230, 240, 250	13	hours 1000	mm. 300±10	mm. 56±2
FL/1	65 0	500	G.E.S.	{ 115 210, 230, 240, 250	15.5 14.5	1000	355±10	90±2
FL/2	70 0	1000	G.E.S.	{ 115 210, 230, 240, 250	16.5 16	1000	390±10	90±2
FL/6	75 0	1000	P40 and centralising	{ 115 210, 230, 240, 250	16.5 16	1000	425± 5	90±2
FL/5	70 0	1000	G.E.S.	210, 230, 240, 250	24	200	390±10	90±2
FL/7	75 0	1000	P40 and centralising	{ 115 210, 230, 240, 250	23.5 24	200	425± 5	90±2
FL/3	122 0	2000	P40 and centralising	210, 230, 240	22.5	200	425± 5	90±2

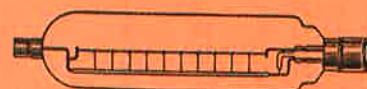
BURNING POSITIONS



Class S

The shaded portion of this diagram shows the position in which the lamp *must not* be mounted.

Plane of filament must be horizontal when these lamps are operated in the horizontal position.



Class FL. Horizontal only.

Packing—Lamps on this page will be packed to individual requirements.

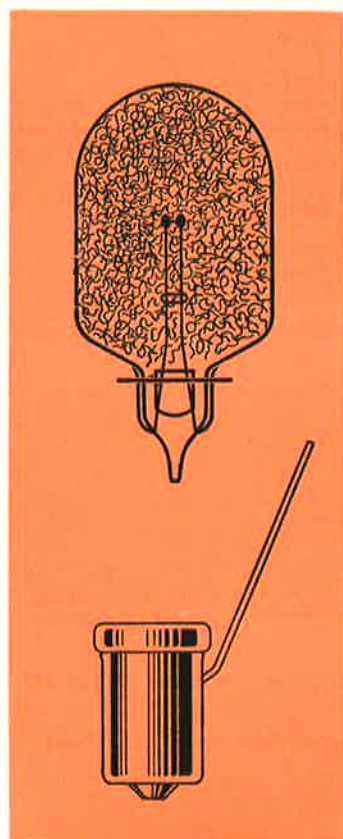
Bulbs for flash photography

Capless photoflash bulbs Class M

These bulbs are wire-filled and of capless construction. They are suitable for either X or M synchronised shutters, and their small size makes them ideal for all photographers. The blue-coated versions are intended for use with daylight colour film.

Type	Price each	Total light output	Peak flux	Time to peak of flash	Time to half peak of flash	Duration of flash at half peak	Finish	Firing voltage	Dimensions				Standard packing quantity
									Length		Diameter		
	s. d.	lumen seconds	lumens	milli-seconds	milli-seconds	milli-seconds			mm.	in.	mm.	in.	
1	8	7,500	600,000	18	13	10	Clear	3-30	46	1 $\frac{13}{16}$	16	$\frac{5}{8}$	{ 10 or 400
1BS	9	7,500	600,000	18	13	10	Blue						
5	9	18,000	1,400,000	20	12	12	Clear	3-30	62	2 $\frac{7}{16}$	31	1 $\frac{1}{4}$	{ 5 or 300

These bulbs have a special glass base (as illustrated).
These photoflash bulbs are made in Germany.



Adaptor/Ejector

Enables capless bulbs to be used in equipment designed for flashbulbs with A.S.C.C. caps. After firing, the bulb may be ejected by depressing the ejector lever.

Cat. No.	List price	Standard packing quantity
OS A1	s. d. 1 6	10

TIME/LIGHT CURVES

No. 1



No. 1BS



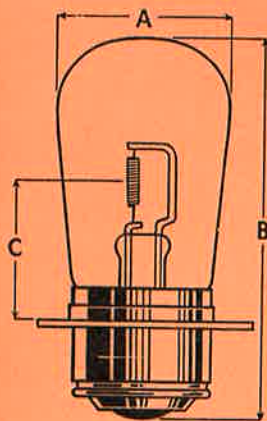
No. 5



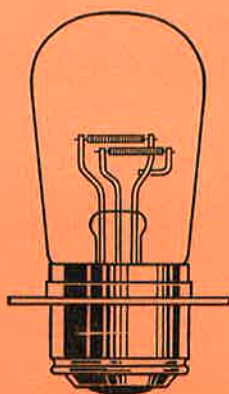
Vehicle bulbs GROUP 2

BULB DIMENSIONS

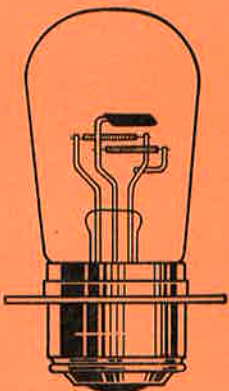
A. 28 ± 1 mm. B. 58 ± 2 mm.
C. 21.5 ± 0.5 mm.



Single filament
(axial)



Double filament
(transverse)



Double transverse filament
(shielded filament)

Headlights BRITISH PREFOCUS TYPE

Accurate prefocusing of these bulbs during manufacture ensures optimum performance in modern headlights.

SINGLE FILAMENT

Volts	Watts	Finish	Cat. No.	Price	Filament	Contact	Standard packing quantity
6	36	Clear	172	s. d. 3 9	Axial	Single	12 or 240
	36	Clear	173	3 9	Transverse		
	36	Cad. yellow	660	5 0	Transverse		
12	36	Cad. yellow	659	5 0	Axial	Single	
	36	Clear	162	3 9	Axial		
	38	Clear	325	3 9	Transverse		
	38	Clear	326	3 9	Transverse	Double	
	48	Clear	185	4 6	Axial	Single	
	48	Cad. yellow	685	5 9	Axial		
24	48	Clear	323	4 6	Transverse		
	48	Cad. yellow	600	5 9	Transverse	Double	
	44	Clear	331	4 6	Axial		
	44	Clear	330	4 6	Transverse		
	44	Cad. yellow	601	5 9	Trasnverse		

DOUBLE FILAMENT (TRANSVERSE)

Volts	Watts	Finish	Cat. No.	Price	Dip or Drive arrangement	Contact	Standard packing quantity
6	24 & 24	Clear	166	s. d. 4 9	Vertical dip	Double	12 or 240
	30 & 24	Clear	312	5 0	Vertical dip		
	30 & 24	Cad. yellow	602	6 3	Vertical dip		
6.4	30 & 24	Clear	373	5 0	R.H. drive	Double	
	45 & 35	Clear	356	5 6	R.H. drive		
12	42 & 36	Clear	354	4 6	R.H. drive	Double	
	42 & 36	Cad. yellow	603	5 9	R.H. drive		
	42 & 36	Clear	355	4 6	L.H. drive		
	42 & 36	Cad. yellow	604	5 9	L.H. drive		
	48 & 48	Clear	302	6 9	R.H. drive		
	48 & 48	Clear	303	6 9	L.H. drive		
	60 & 36	Clear	404*	7 0	R.H. drive		
24	44 & 38	Clear	359	5 6	R.H. drive	Double	
	44 & 38	Clear	332	5 6	L.H. drive		

*Bulb dimensions:—Diameter 38 ± 1 mm. Overall length 60 ± 2 mm.
Light centre length 21.5 ± 0.5 mm.

SHIELDED FILAMENT TYPE (DOUBLE TRANSVERSE FILAMENT)

Volts	Watts	Finish	Cat. No.	Price	Drive arrangement	Contact	Standard packing quantity
12	50 & 40	Clear	414	s. d. 5 0	R.H. drive	Double	12 or 240

Made in accordance with B.S. 941 where applicable.

For purchase tax see pages 2 and 3

Headlights SINGLE FILAMENT (AXIAL)

Volts	Watts	Clear								Cadmium yellow		Standard packing quantity
		S.C.C. cap		S.B.C. cap		B.C. cap		Bosch cap single contact		S.C.C. cap		
		Cat. No.	Price	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price	
6	24	106	s. d. 2 6	109	s. d. 2 6	—	s. d. —	—	s. d. —	—	s. d. —	12
	36	108	2 9	111	2 9	—	—	130	3 0	374	4 0	
12	24	1	2 6	4	2 6	701	2 6	—	—	—	—	or 240 120
	36	2	2 6	5	2 6	702	2 6	—	—	375	3 9	
	36†	57	2 6	—	—	—	—	—	—	—	—	
	48	23	4 0	27	4 0	703	4 0	96	4 3	—	—	
	60*	90	5 6	26	5 6	704	5 6	87	5 9	—	—	
24	24	—	—	122	2 6	620	2 6	—	—	—	—	12 or 240 120
	36	621	2 6	123	2 6	622	2 6	—	—	—	—	
	48	623	4 0	140	4 0	624	4 0	—	—	—	—	
	60*	—	—	128	5 6	127	5 6	—	—	—	—	

† Transverse filament. * Bulb diameter 50 mm.

DOUBLE FILAMENT The standard filament formation for 6 V ratings is inverted "V" and for 12 and 24 V ratings "transverse".

Volts	Watts	Clear						Cadmium yellow		Standard packing quantity
		S.B.C. cap		3-pin B.C. cap		American prefocus cap		S.B.C cap		
		Cat. No.	Price	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price	
6	18 & 18	180	s. d. 4 6	—	s. d. —	—	s. d. —	—	s. d. —	12 or 240
	24 & 24	168	3 6	—	—	—	—	—	—	
	30 & 30	169	3 6	—	—	—	—	—	—	
	36 & 36	170	3 6	672	3 9	693	4 9	699	4 9	
12	36 & 36	171	3 6	—	—	632	4 0	376	4 9	
24	36 & 36	194	4 3	—	—	—	—	700	5 6	
	44 & 38	671	5 0	—	—	—	—	—	—	

Sealed beam headlight unit (DOUBLE FILAMENT TRANSVERSE)

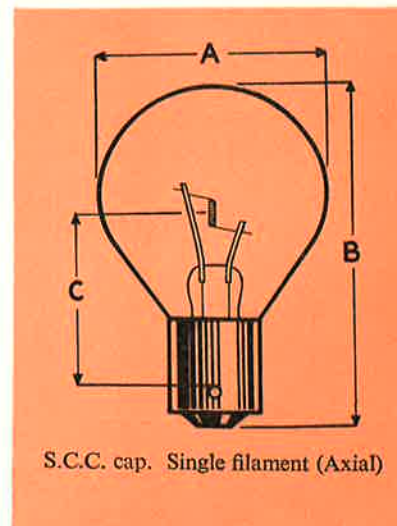
Volts	Watts	Cat. No.	Price	Diameter inches	Standard packing quantity
12	60 & 45	7002	29 6*	7	6

* This unit is not subject to purchase tax.

For purchase tax see pages 2 and 3

Made in accordance with B.S. 941 where applicable.

BULB DIMENSIONS Single and Double Filament			
Standard caps	A	B	C
	Diameter	Overall length	Light centre length
	mm.	mm.	mm.
S.C.C. or S.B.C.	$\begin{cases} 38 \pm 1 \\ 50 \pm 1 \end{cases}$	$\begin{cases} 56 \pm 4 \\ 63 \pm 4 \end{cases}$	$\begin{cases} 28.5 \pm 1 \end{cases}$
B.C.	$\begin{cases} 38 \pm 1 \\ 50 \pm 1 \end{cases}$	$\begin{cases} 56 \pm 4 \\ 63 \pm 4 \end{cases}$	$\begin{cases} 28.5 \pm 2 \end{cases}$
3-pin B.C.	38 ± 1	56 ± 4	26 ± 2
American prefocus	38 ± 1	58 ± 4	28.5 ± 1
Bosch	$\begin{cases} 38 \pm 1 \\ 50 \pm 1 \end{cases}$	$\begin{cases} 67 \pm 4 \\ 71 \pm 4 \end{cases}$	$\begin{cases} 30 \pm 1 \\ 30 \pm 1.5 \end{cases}$



Vehicle bulbs GROUP 2

Spotlights FOR MARCHAL EQUIPMENT SINGLE FILAMENT (AXIAL)

Volts	Watts	Clear		Cadmium yellow		Cap	Bulb dimensions			Standard packing quantity
		Cat. No.	Price	Cat. No.	Price		Diameter	Overall length	Light centre length	
6	48	682B	s. d. 4 3	682J	s. d. 5 6	3-pin S.C. 3-pin B.C. double contact	mm. 38±1	mm. 56±4	mm. 26±2	12 or 240
12	48	1282B	4 3	1282J	5 6					
24	48	2482B	4 3	2482J	5 6					
12	48	1283B	4 3	1283J	5 6					

DOUBLE FILAMENT

6	48 & 18	684B	4 9	684J	6 0	3-pin B.C. double contact	38±1	56±4	26±2	12 or 240
12	48 & 18	1284B	4 9	1284J	6 0					

Spotlights FOR NOTEK EQUIPMENT

Volts	Watts	Type	Clear		Filament	Cap	Bulb dimensions			Standard packing quantity
			Cat. No.	Price			Diameter	Overall length	Light centre length	
6	36	—	608	s. d. 3 0	Transverse Transverse Axial	S.C.C. American prefocus	mm. 38±1	mm. 56±4	mm. 29 ±0.75	12 or 240
	36	Nearlite	667	3 6			38±1	59±4	28.5±0.5	
	36	Farlite	669	3 6			38±1	56±4	29 ±0.75	
12	36	—	615	3 0	Transverse Transverse Axial	S.C.C. American prefocus	38±1	56±4	29 ±0.75	
	36	Nearlite	668	3 6			38±1	58±4	28.5±0.5	
	36	Farlite	670	3 6			38±1	58±4	28.5±0.5	



Side and tail
15 mm. M.C.C. cap



Sidelight
18 mm. S.B.C. cap. 24 V
Twin-bow filament

Side and tail Bulb diameter—with M.C.C. cap, 15±1 mm.
with S.C.C., S.B.C., and B.C. caps, 18±1 mm.

The OSRAM 24 V 6 W Side and tail bulb for commercial vehicles and the 14 V 7W bulb employ a double bead twin-bow series connected filament construction. This will withstand far greater vibration than the single supported filament type.

Volts	Watts	S.C.C. cap		S.B.C. cap		M.C.C. cap		Standard packing quantity	
		Cat. No.	Price each	Cat. No.	Price each	Cat. No.	Price each	18 mm. bulbs	15 mm. bulbs
6	3	200	s. d. 1 4	204	s. d. 1 4	988	s. d. 1 5	12 or 600	24 or 600
	6	205	1 6	206	1 6	951	1 7		
12**	4	—	—	—	—	222	1 5		
	6	207	1 4	209	1 4	989	1 5		
14	7	OS 261	1 8	OS 262	1 8	—	—		
16	6	636	2 0	637	2 0	—	—		
24*	6	149	1 4	150	1 4	OS 248†	1 8		

*B.C. cap. Cat. No. 638 1s. 4d.

** M.E.S. cap. Cat. No. OS 621 1s. 5d.

† Bulb diameter 18 mm. ± 1 mm. Where applicable, bulbs on this page are made in accordance with B.S. 941.

Vehicle bulbs GROUP 2

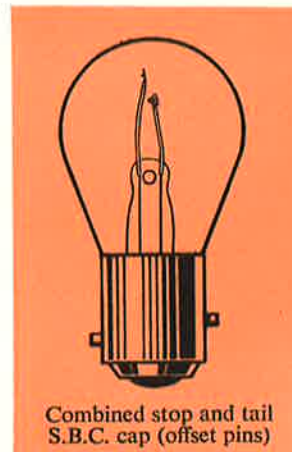
Flashing indicators, stop and combined stop and tail Bulb diameter: 25 ± 1 mm.

SINGLE FILAMENT

Volts	Watts	Cap	Cat. No.	Price each	Standard packing quantity
6	18	A.S.C.C.	317	s. d. 3 9	12 or 288
12	18	A.S.B.C.	319	3 9	
	21	A.S.C.C.	382	3 0	
24	21	A.S.B.C.	335	3 0	
	18	A.S.C.C.	338	3 9	
24	24	A.S.B.C.	333	3 9	
	24	A.S.C.C.	339	3 9	

DOUBLE FILAMENT

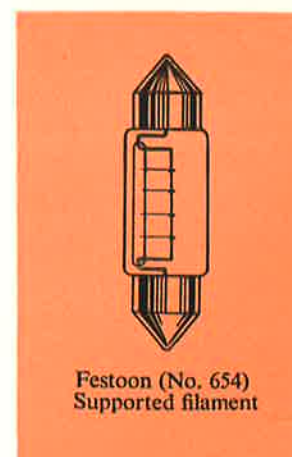
6	6 & 18	S.B.C.	383	3 6	12 or 288
	6 & 18	S.B.C. Index offset pins	384	3 6	
12	6 & 21	S.B.C.	381	3 6	
	6 & 21	S.B.C. Index offset pins	380	3 6	
24	6 & 24	S.B.C.	692	3 9	
	6 & 24	S.B.C. Index offset pins	334	3 9	



Festoon These bulbs are suitable for trafficators and roof lamps.

Volts	Watts	Bulb dimensions		Cat. No.	Price each	Standard packing quantity
		Overall length ± 1 mm.	Diameter ± 0.5 mm.			
6	3	mm. 35.5	mm. 7.5	255	s. d. 2 3	24 or 864
	6	38	11	253	2 7	
12	3	35.5	7.5	256	2 3	
	6	38	11	254	2 7	
	6	44	11	258	2 7	
24	6	38	11	653	2 6	24 or 864
	6	44	11	260	2 7	12 or 720
	6	38	11	654*	3 10	24 or 864

*Filament specially supported to withstand heavy vibration. Made in accordance with B.S. 941 where applicable.



Vehicle bulbs GROUP 2



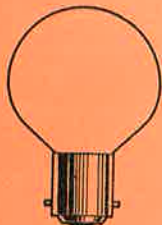
7.5 mm. Sub-miniature
Indicator L.E.S. cap



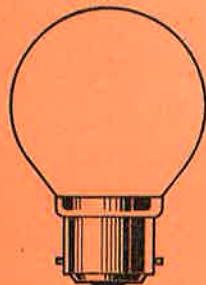
15 mm. Indicator
M.E.S. cap



11 mm. Indicator
M.C.C. cap
Scale $\times 1$



38 mm. Bus S.B.C. cap
Pearl



50 mm. Bus B.C. cap
Pearl
Scale $\times \frac{1}{2}$

Indicators PANEL AND WARNING

Volts	Watts	Diameter of bulb ± 1 mm.	M.E.S. cap		M.C.C. cap		Standard packing quantity
			Cat. No.	Price each	Cat. No.	Price each	
6	1.8	11 mm.	982	s. d. 1 6	640	s. d. 1 9	24 or 1200
	3	11 mm.	990	1 1	641	1 2	24 or 1200
	6	15 mm.	950	1 3	—	—	24 or 600
8	1.6	15 mm.	983	2 3	—	—	24 or 600
12	1.5	7.5 mm. max.	280*	1 9	—	—	24 or 1200
	2.2	10 mm. tubular	OS 263	1 5	—	—	24 or 600
	2.2	11 mm.	987	1 1	643	1 2	24 or 1200
	2.2	15 mm.	986	1 1	645	1 2	24 or 600
16	3	15 mm.	985	2 2	647	2 3	24 or 600
24	2.8	10 mm. tubular	695	1 8	—	—	24 or 600
	2.8	15 mm.	993	1 4	651	1 5	24 or 600

* Cap: Lilliput Screw E5/8. 2.5 V and 3.5 V bulbs used as warning lights in series with a resistor are shown on page 40.

Vehicle interior lighting These bulbs are suitable for interior lighting of buses, coaches, yachts, etc.

Volts	Watts	Amp	Diameter of bulb	Cap	Price each			Standard packing quantity
					Clear	Pearl	Silverlight	
12	12†	1.0	mm. 38	B.C. or S.B.C.	s. d. 2 0	s. d. 2 0	s. d. —	144
			50	B.C. or S.B.C.	—	2 0	—	120
12	24	2.0	38	B.C. or S.B.C.	2 4	2 4	—	144
24	12	0.5	38	B.C. or S.B.C.	2 1	2 1	—	144
			50	B.C. or S.B.C.	—	2 1	2 5	120
24	20	0.83	38	B.C. or S.B.C.	2 4	2 4	—	144
			50	B.C. or S.B.C.	—	2 4	—	120

† Made in accordance with the latest issue of B.S. 555. For headlights, see pages 34 and 35. For side and tail lights, see page 36.

Trolley Bus (35 V) These lamps, although mainly used for trolley-bus lighting, are suitable for many other forms of lighting where low voltage and small bulb size are the deciding factors.

Description	Volts	Watts	Diameter of bulb	Finish	Cap	Price each	Standard packing quantity
Instrument	35	6	mm. 18	Clear	S.B.C.	s. d. 2 6	12 or 600
Side	35	6	38	Clear	B.C.	2 6	144
Interior	35	15	38	Clear	B.C.	2 9	144
Head lamp	35	36	38	Clear	S.B.C.	4 0	144

Train lighting, loco headlights, railway signal lights A range of lamps is available, details on application

Vehicle bulbs

Autocycles GROUP 2

HEADLIGHTS DOUBLE FILAMENT

Volts	Watts	Bulb diameter ± 1 mm.	Finish	Cap	Cat. No.	Price	Standard packing quantity
6	15 & 15	25	Clear	S.B.C. One long pin	386	s. d. 4 6	} 12 or 288
6	15 & 15	25	Clear	S.B.C. Index (offset) pins	696	4 6	

Motor assisted cycles GROUP 4 Headlights

Volts	Amp	Bulb diameter ± 1 mm.	Finish	Cap	Cat. No.	Price each	Standard packing quantity
6	1.0	18 mm.	Clear	S.C.C.	OS 210	s. d. 1 6	} 12 or 600 10 or 1000
6	1.0	15 mm.	Clear or granulated	M.E.S.	OS 208*	1 4	

* When ordering granulated bulbs the suffix
"G" should be added to the catalogue number.

Speedometer bulb FOR MOTOR CYCLES GROUP 2

Volts	Amp	Cap	Diameter of bulb	Cat. No.	Price each	Standard packing quantity
6.5	0.3	M.C.C.	mm. 11±1	OS 75M	s. d. 7	} 10 or 1000
8	0.3	M.C.C.	11±1	OS 83M	7	

Cycle dynamo GROUP 4 Headlights

Volts	Amp	Bulb diameter ± 1 mm.	Finish	Cap	Cat. No.	Price each	Standard packing quantity
6	0.3	18	Clear	S.C.C.	979	s. d. 1 4	} 12 or 600
6	0.5	18	Clear	S.C.C.	980	1 4	
6	0.25	15	} Clear or granulated	} M.E.S.	OS 1144	8	} 10 or 1000
6	0.3	15			OS 200	8	
6	0.45	15			OS 1145	8	
6	0.5†	15			997	8	

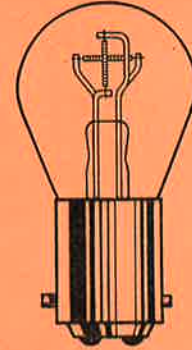
When ordering granulated bulbs, the suffix
"G" should be added to the catalogue number.

† This rating with granulated bulb is gasfilled.

Tail Lights

Volts	Amp	Bulb diameter ± 1 mm.	Finish	Cap	Cat. No.	Price each	Standard packing quantity
6	0.04	11 mm.	Clear	M.E.S.	991	s. d. 8	} 10 or 1000
6	0.1	11 mm.	Clear	M.E.S.	998	8	

Note: All 11 and 15 mm. diameter bulbs on this page are supplied only
in multiples of the smallest standard packing quantity—i.e. 10 bulbs.



Autocycle headlight
S.B.C. one long pin



Cycle dynamo
15 mm. headlight granulated
finish M.E.S. cap

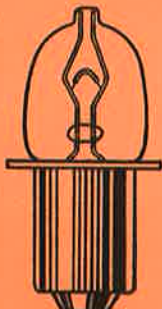


Cycle dynamo
18 mm. headlight S.C.C. cap
Scale × 1

Miniature bulbs



Lens end flashlamp



Prefocus flashlamp



11 mm. round bulb M.E.S. cap



Tubular M.E.S. cap

Scale $\times 1\frac{1}{2}$

Flashlamp GROUP 3 For spotlight torches, panel lamps for radio receivers, cycle lamps, etc.

Round bulb. Clear with M.E.S. cap

Volts	Amp	Diameter ± 1 mm.	Overall length (max.)	Cat. No.	Price each	Standard packing quantity
		mm.	mm.		s. d.	
1.25	0.25	11	24	OS 72	4	10 or 1000
1.5	0.2	11	24	OS 71		
‡2.5	0.2	11	24	OS 43 or 970		
2.5	0.3	11	24	OS 45 or 972		
‡3.5	0.15	11	24	OS 50 or 974		
3.5	0.3	11	24	OS 55 or 977		
4.0	0.3	11	24	OS 60		
4.5	0.3	15	29	OS 65		
5.0	0.15	15	29	OS 69	8	

Lens end type. Clear with M.E.S. cap

Volts	Amp	Diameter ± 1 mm.	Overall length (max.)	Cat. No.	Price each	Standard packing quantity
2.2	0.25	10	24.7	OS 99	7	10 or 1000

Prefocus type. Clear

Volts	Amp	Diameter ± 1 mm.	Overall length (max.)	Cat. No.	Price each	Standard packing quantity
2.5	0.3	11	31	OS 67	7½	10 or 1000
3.5	0.3	11	31	OS 68	7½	
5.5	0.3	11	31	OS 62	7½	

‡ These bulbs are used for car ignition warning lights in series with an appropriate resistor.

Radiopanel GROUP 10

Round bulb. Clear

Volts	Amp	Diameter ± 1 mm.	Overall length (max.)	Cap	Cat. No.	Price each	Standard packing quantity
		mm.	mm.			s. d.	
6.0	0.04	11	24	M.E.S.	OS 64	1 0	10 or 1000
6.0	0.06	11	24	"	OS 66		
§6.2*	0.3	15	30	"	OS 70		
††6.3	0.11	11	24	"	OS 76	7	
†6.5	0.3	11	24	"	OS 75		
†6.5	0.3	11	25	M.C.C.	OS 77		
†6.8	0.3	11	24	M.E.S.	OS 87		

Tubular. Clear

Volts	Amp	Diameter ± 1 mm.	Overall length (max.)	Cap	Cat. No.	Price each	Standard packing quantity
		mm.	mm.			s. d.	
‡6.2*	0.3	10	30	M.E.S.	OS 85	7	10 or 1000
‡6.3**	0.15	10	30	M.E.S.	OS 84		
†6.5	0.3	10	30	M.E.S.	OS 90		
†6.5	0.3	10	30.5	M.C.C.	OS 90M		

§ High-efficiency lamps for intermittent use only. For continuous running applied voltage should not exceed 4 V.

* Also suitable for series burning with valves taking 0.2 amp.

** Also suitable for series burning with valves taking 0.1 amp.

† For continuous burning on 6.5 V or in series with valve heaters taking 0.3 amp.

†† For continuous burning on 6.3 V or in series with valve heaters taking 0.1 amp. In cases where H.T. current is passed through the dial bulbs, they must be shunted by a resistor, so that the current through them is reduced to 0.1 amp.

Note: Bulbs in Groups 3 and 10 are supplied only in multiples of the smallest standard packing quantity—i.e. 10 bulbs.

Miners' Lamps GROUP 5

Krypton-filled miners' bulbs

OSRAM Krypton-filled miners' bulbs give approximately 20 per cent more light than the equivalent argon-filled lamp, without any increase in current consumption and without in any way reducing the life of the bulb.

The effect of Krypton gas is to reduce the energy lost by the filament through convection, and also to allow the filament to be run at a higher tempera-

ture without reducing its life. The result is that more light is produced for the same expenditure of energy.

They have been fully tested and approved by the Ministry of Fuel and Power, who has certified that they give the additional light claimed.

Each approved bulb bears the official M.F.P. stamp.



CATEGORY 1 (A) Approved by the Ministry of Fuel and Power

For use in	Volts	Amp	Shape	Dimensions		Cap	Finish	Price each	Standard packing quantity
				Diameter mm.	Overall length mm.				
Hand lamps†	2.5	1.75	Pear	18±2	43.5±2	953*	Pearl	s. d. 3 0	25 or 250
Hand lamps†	2.5	1.75	Pear	18±2	45.5±2	S.E.S.	Pearl	3 0	25 or 250
Cap lamps	3.6	1.0	Round	18±1	30.5±1	M.E.S.	Clear	2 6	50 or 500
Cap lamps	3.75	1.0 & 1.0	Pear	18±2	40 ±2	S.B.C.	Clear	3 6	25 or 250
Cap lamps	4.0	0.8	Round	18±1	30.5±1	M.E.S.	Clear	2 6	50 or 500
Hand lamps†	4.0	1.0	Pear	18±2	45.5±2	S.E.S.	Pearl	3 0	25 or 250
Cap lamps	4.0	1.0	Round	18±1	30.5±1	M.E.S.	Clear	3 0	50 or 500

†These bulbs have fuses in the caps.

* Special S.C.C. cap. Made in accordance with B.S. 535:1953 where applicable. These bulbs are not subject to purchase tax.

Vacuum miners' bulb

For use in	Volts	Amp	Shape	Dimensions		Cap	Finish	Price each	Standard packing quantity
				Diameter mm.	Overall length mm.				
Cap lamps	2.5	0.75	Round	15±1	27.5±1.5	M.E.S.	Clear	s. d. 2 0	50 or 500

For purchase tax see pages 2 and 3



Hand lamp bulb 953 cap
Pearl



Hand lamp bulb S.E.S. cap
Pearl



Cap lamp bulb
M.E.S. cap

Scale × 1

Lamps for aircraft



Subminiature indicator
midget flange cap



Indicator M.E.S. cap



Indicator telephone type
Scale $\times 1\frac{1}{2}$

Instrument or indicator

Volts	Watts	Standard cap	Finish	Joint Services Cat. No.	Price each	Lamp group	Lamp dimensions			Standard packing quantity
							Length	Diameter	Light centre length	
3	0.24	M.E.S.	Clear	995-1109	s. d. 1 0	3	mm. 23 $\pm$ 1	mm. 11 $\pm$ 1	mm. —	10 or 1000
3.5	0.105	M.E.S.	Clear	995-1101	1 0	3	23 $\pm$ 1	11 $\pm$ 1	—	10 or 1000
6	0.24	Side Clip	Clear	995-9101	2 2	7	1.75 in. max.	0.245 in. min.	—	100
	0.24	M.E.S.	"	995-1110	1 0	10	23 $\pm$ 1	11 $\pm$ 1	—	10 or 1000
	0.6	"	"	995-1126	1 0	10	27.5 $\pm$ 1.5	15 $\pm$ 1	—	24 or 600
	1.8	"	"	995-1208	1 6	2	23 $\pm$ 1	11 $\pm$ 1	—	10 or 1000
6.5	2.36	M.E.S.	Clear	995-1225	7 10	10	23 $\pm$ 1	11 $\pm$ 1	—	1000
12	1.2	Side Clip	Clear	995-9114	2 2	7	1.75 in. max.	0.245 in. min.	—	100
	1.2	"	"	995-9112	2 2	7	1.53 in. max.	0.245 in. min.	—	100
	2.2	M.E.S.	"	995-3247	1 1	2	23 $\pm$ 1	11 $\pm$ 1	—	24 or 1200
	2.2	"	"	995-1219	1 1	2	27.5 $\pm$ 1.5	15 $\pm$ 1	—	24 or 600
	6	Festoon	"	995-1254	2 7	2	38 $\pm$ 1	11 $\pm$ 0.5	—	24 or 864
24	2.4	Side Clip	Clear	995-9211	2 2	7	1.53 in. max.	0.26 in. min.	—	100
	2.4	"	"	995-9215	2 2	7	1.75 in. max.	0.245 in. min.	—	100
	2.8	M.E.S.	"	995-1230	1 4	2	27.5 $\pm$ 1.5	15 $\pm$ 1	—	24 or 600
	2.8	"	"	995-1232	1 8	2	28.5 $\pm$ 1.5	10 $\pm$ 1	—	24 or 600
	6	Festoon	"	995-1256	2 6	2	38 $\pm$ 1	11 $\pm$ 0.5	—	24 or 864
28	0.04A	S6/8*	Clear	995-9118	4 6	2	15 $\pm$ 1	6.25	—	50
	3.5	M.E.S.	"	995-1273	2 3	2	27.5 $\pm$ 1.5	15 $\pm$ 1	—	24 or 600
	3.5	"	"	995-1284	2 3	2	28.5 $\pm$ 1.5	10 $\pm$ 1	—	24 or 600
	3.5	M.C.C.	"	995-1271	2 6	2	29 $\pm$ 1.5	10 $\pm$ 1	—	24 or 600
	7.5	Festoon	"	995-1288	4 6	2	38 $\pm$ 1	11 $\pm$ 0.5	—	24 or 864
	7.5	"	Nat. Red	995-1289	12 0	2	38 $\pm$ 1	11 $\pm$ 0.5	—	24 or 864

*Midget flange

General service

Volts	Watts	Standard cap	Finish	Joint Services Cat. No.	Price each	Lamp group	Lamp dimensions			Standard packing quantity
							Length	Diameter	Light centre length	
6	6	S.B.C.	Clear	995-2241	s. d. 1 6	2	mm. 32.5 $\pm$ 2.5	mm. 18 $\pm$ 1	mm. 17.5 $\pm$ 1.5	12 or 600
12	6	S.B.C.	Clear	995-2248	1 4	2	32.5 $\pm$ 1.5	18 $\pm$ 1	—	12 or 600
	12	"	"	995-2293	2 0	2	56 $\pm$ 4	38 $\pm$ 1	—	160
	24	B.C.	Pearl	995-4217	2 4	2	55 $\pm$ 4	38 $\pm$ 1	—	160
24	6	S.B.C.	Clear	995-2254	1 4	2	32.5 $\pm$ 1.5	18 $\pm$ 1	—	12 or 600
	12	"	"	995-2295	3 6	2	46 $\pm$ 2.5	25 $\pm$ 1	28.5 $\pm$ 1.5	12 or 288
	36	"	"	995-2422	2 6	2	56 $\pm$ 4	38 $\pm$ 1	28.5 $\pm$ 1	160
	36	B.C.	"	995-4407	2 6	2	56 $\pm$ 4	38 $\pm$ 1	28.5 $\pm$ 2	160
28	7	S.B.C.	Clear	995-3271	2 9	2	32.5 $\pm$ 2.5	18 $\pm$ 1	—	12 or 600
	7	S.C.C.	"	995-3282	2 8	2	32.5 $\pm$ 2.5	18 $\pm$ 1	—	12 or 600
	18	"	Pearl	995-3273	3 6	2	46 $\pm$ 2.5	25 $\pm$ 1	28.5 $\pm$ 1.5	12 or 288
	18	S.B.C.	Clear	995-3277	3 6	2	46 $\pm$ 2.5	25 $\pm$ 1	28.5 $\pm$ 1.5	12 or 288

For purchase tax see pages 2 and 3

Lamps for aircraft

Cockpit

Volts	Watts	Standard cap	Finish	Joint Services Cat. No.	Price each	Lamp group	Lamp dimensions			Standard packing quantity
							Length	Diameter	Light centre length	
12	2.2 7	M.E.S. S.B.C.	Red Clear	995-1220 995-2261	s. d. 1 7	2	mm. 27.5 ± 1.5	mm. 15 ± 1	mm. —	24 or 600 12 or 600
					3 0		32.5 ± 2.5	18 ± 1	17.5 ± 1.5	

Navigation

Volts	Watts	Standard cap	Finish	Joint Services Cat. No.	Price each	Lamp group	Lamp dimensions			Standard packing quantity
							Length	Diameter	Light centre length	
12	10 20	S.B.C. "	Clear "	995-2272	s. d. 3 6	2	mm. 46 ± 2.5	mm. 25 ± 1	mm. 30 ± 1.5	240 160
				995-3127	4 0	2	54 ± 3	38 max.	33 ± 1.5	
24	10 20	S.B.C. "	Clear "	995-2276	4 6	2	46 ± 2.5	25 ± 1	30 ± 1.5	240 160
				995-3219	4 6	2	54 ± 3	38 max.	33 ± 1.5	
28	24	S.B.C.	Clear	995-2431	4 6	2	54 ± 3	35 ± 1	33 ± 1.5	160

Identification downwards

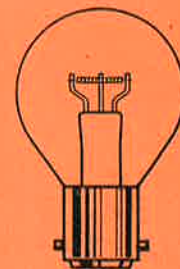
Volts	Watts	Standard cap	Finish	Joint Services Cat. No.	Price each	Lamp group	Lamp dimensions			Standard packing quantity
							Length	Diameter	Light centre length	
12	30 80	S.B.C. "	Pearl "	995-2401	s. d. 5 0	2	mm. 58 ± 2.5	mm. 28 ± 1	mm. 38 ± 1.5	100 160
				995-2603	7 0	2	58 ± 2.5	38 ± 1	—	
24	16 80	S.B.C. "	Pearl "	995-3202	3 6	2	46 ± 2.5	25 ± 1	—	240 160
				995-2604	7 6	2	58 ± 2.5	38 ± 1	38 ± 1.5	

Taxying

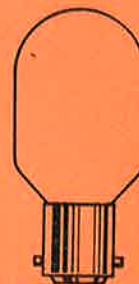
Volts	Watts	Standard cap	Finish	Joint Services Cat. No.	Price each	Lamp group	Lamp dimensions			Standard packing quantity
							Length	Diameter	Light centre length	
12	36	S.B.C.	Clear	995-2417	s. d. 2 6	2	mm. 56 ± 4	mm. 38 ± 1	mm. 28.5 ± 1	160
24	60	S.B.C.	Clear	995-2511	6 0	2	56 ± 4	38 ± 1	28.5 ± 1	160

Aircraft landing, aircraft runway A range of lamps is available, details on application.

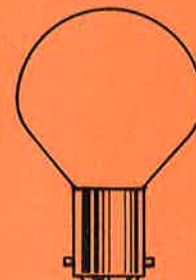
For purchase tax see pages 2 and 3.



38 mm. navigation
S.B.C. cap
Scale × $\frac{1}{8}$



Pearl
28 mm. identification
downwards S.B.C. cap
Scale × $\frac{1}{8}$



Pearl
38 mm. identification
downwards S.B.C. cap
Scale × $\frac{1}{8}$

Special purpose lamps

Scale $\times 1\frac{1}{2}$



Telephone switchboard lamp



Telewriter lamp

Telephone switchboard lamps GROUP 7

Type	Volts	Amp	Price each	End piece colour	Overall diameter (nominal)	Overall length	Standard packing quantity
			s. d.		in.	in.	
No. 2 Metal filament	4	0.25	2 2	Green	0.275	1.75 $\pm$ 0.00 - 0.06	100 or 1000
	6	0.04	2 2	Grey			
	12	0.1	2 2	Red/Yellow			
	17	0.045	2 2	Orange			
	24	0.1	2 2	Yellow			
	50	0.1	2 2	White			
	60	0.06	2 9	White/Mauve			
No. 2 Carbon filament	12	0.117	2 9	Red			100 or 1000
	36	0.075	2 9	Black			
	40	0.068	2 9	Blue			
	50	0.107	2 9	White			

Cap:—Side contact plates and end pieces. Made to B.S. 1050:1953 or B.S. 469:1952 where applicable.

Telewriter lamps GROUP 7

Metal filament	50	0.05	3 1	M.E.S.	6.5 mm. (max.)	33 mm. $\pm$ 2	50 or 500
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Quantity prices available on application

Marine signalling GROUP 2

Volts	Watts	Cap	Finish	Joint Services Cat. No.	Price each	Diameter	Overall length	Standard packing quantity
12	36	Special Aldis	Clear	995-9401	s. d. 15 0	mm. 50 $\pm$ 1	mm. 100 $\pm$ 5	72
24	36			995-9402	15 0			

Miscellaneous types

Volts	Rating	Standard cap	Bulb diameter	Catalogue No.	Lamp group	Price each	Standard packing quantity
			mm.			s. d.	
2	0.75 amp	M.E.S.	15 $\pm$ 1	OS 73	2	2 6	24 or 600
4	0.46 amp	„	11 $\pm$ 1	705	2	1 6	24 or 1200
†6	1.0 amp	„	18 $\pm$ 1	OS 207	5	3 0	12 or 600

†Sewing machine lamp, clear (Krypton filled) Group 5

For purchase tax see pages 2 and 3

Vehicle bulbs numerical index

Cat. No.	Page No.	Description of bulb	Cat. No.	Page No.	Description of bulb
1	35	12 V 24 W S.C.C. Head	333	37	24 V 24 W A.S.B.C. Stop
2	35	12 V 36 W S.C.C. Head	334	37	24 V 6/24 W S.B.C. offset pins, Stop and tail light
4	35	12 V 24 W S.B.C. Head	335	37	12 V 21 W A.S.B.C. Stop
5	35	12 V 36 W S.B.C. Head	338	37	24 V 18 W A.S.C.C. Stop
23	35	12 V 48 W S.C.C. Head	339	37	24 V 24 W A.S.C.C. Stop
26	35	12 V 60 W S.B.C. Head	354	34	12 V 42/36 W B.P.F. Head (R.H. Drive)
27	35	12 V 48 W S.B.C. Head	355	34	12 V 42/36 W B.P.F. Head (L.H. Drive)
57	35	12 V 36 W S.C.C. Head	356	34	6-4 V 45/35 W B.P.F. Head (R.H. Drive)
87	35	12 V 60 W Bosch S.C. Head	358	34	12 V 44/38 W B.P.F. Head (R.H. Drive)
90	35	12 V 60 W S.C.C. Head	359	34	24 V 44/38 W B.P.F. Head (R.H. Drive)
96	35	12 V 48 W Bosch S.C. Head	373	34	6 V 30/24 W B.P.F. Head (R.H. Drive)
106	35	6 V 24 W S.C.C. Head	374	35	6 V 36 W S.C.C. Cad. Yellow Head
108	35	6 V 36 W S.C.C. Head	375	35	12 V 36 W S.C.C. Cad. Yellow Head
109	35	6 V 24 W S.B.C. Head	376	35	12 V 36/36 W S.B.C. Cad. Yellow Head
111	35	6 V 36 W S.B.C. Head	380	37	12 V 6/21 W S.B.C. offset pins, Stop and Tail
122	35	24 V 24 W S.B.C. Head	381	37	12 V 6/21 W S.B.C. Stop and Tail
123	35	24 V 36 W S.B.C. Head	382	37	12 V 21 W A.S.C.C. Stop
127	35	24 V 60 W B.C. Head	383	37	6 V 6/18 W S.B.C. Stop and Tail
128	35	24 V 60 W S.B.C. Head	384	37	6 V 6/18 W S.B.C. offset pins, Stop and Tail
130	35	6 V 36 W Bosch S.C. Head	386	39	6 V 15/15 W S.B.C. one long pin Head
140	35	24 V 48 W S.B.C. Head	404	34	12 V 60/36 W B.P.F. Head (R.H. Drive)
149	36	24 V 6 W S.C.C. Side	414	34	12 V 50/40 W B.P.F. (D.C.) shielded fil. Head (R.H. Drive)
150	36	24 V 6 W S.B.C. Side	600	34	12 V 48 W B.P.F. (S.C.) Cad. Yellow Spot
162	34	12 V 36 W B.P.F. (S.C.) Head	601	34	24 V 44 W B.P.F. (D.C.) Cad. Yellow Head
166	34	6 V 24/24 W B.P.F. (D.C.) Head	602	34	6 V 30/24 W B.P.F. Cad. Yellow Head
168	35	6 V 24/24 W S.B.C. Head	603	34	12 V 42/36 W B.P.F. Cad. Yellow Head (R.H. Drive)
169	35	6 V 30/30 W S.B.C. Head	604	34	12 V 42/36 W B.P.F. Cad. Yellow Head (L.H. Drive)
170	35	6 V 36/36 W S.B.C. Head	608	36	6 V 36 W S.C.C. Spot
171	35	12 V 36/36 W S.B.C. Head	615	36	12 V 36 W S.C.C. Spot
172	34	6 V 36 W B.P.F. (S.C.) Head	620	35	24 V 24 W B.C. Head
173	34	6 V 36 W B.P.F. (S.C.) Spot	621	35	24 V 36 W S.C.C. Head
180	35	6 V 18/18 W S.B.C. Head	622	35	24 V 36 W B.C. Head
185	34	12 V 48 W B.P.F. (S.C.) Head	623	35	24 V 48 W S.C.C. Head
194	35	24 V 36/36 W S.B.C. Head	624	35	24 V 48 W B.C. Head
200	36	6 V 3 W S.C.C. Side	632	35	12 V 36/36 W American Prefocus Head
204	36	6 V 3 W S.B.C. Side	636	36	16 V 6 W S.C.C. Side
205	36	6 V 6 W S.C.C. Side	637	36	16 V 6 W S.B.C. Side
206	36	6 V 6 W S.B.C. Side	638	36	24 V 6 W B.C. Side
207	36	12 V 6 W S.C.C. Side	640	38	6 V 1-8 W M.C.C. Indicator
209	36	12 V 6 W S.B.C. Side	641	38	6 V 3 W M.C.C. Indicator
222	36	12 V 4 W M.C.C. Side	643	38	12 V 2-2 W M.C.C. Indicator (11 mm.)
253	37	6 V 6 W 38 mm. Festoon	645	38	12 V 2-2 W M.C.C. Indicator (15 mm.)
254	37	12 V 6 W 38 mm. Festoon	647	38	16 V 3 W M.C.C. Indicator
255	37	6 V 3 W 35-5 mm. Festoon	651	38	24 V 2-8 W M.C.C. Indicator
256	37	12 V 3 W 35-5 mm. Festoon	653	37	24 V 6 W 38 mm. Festoon
258	37	12 V 6 W 44 mm. Festoon	654	37	24 V 6 W 38 mm. Festoon (Supported filament)
260	37	24 V 6 W 44 mm. Festoon	659	34	6 V 36 W B.P.F. (S.C.) Cad. Yellow
280	38	12 V 1-5 W Lilliput E.S. Indicator	660	34	6 V 36 W B.P.F. (S.C.) Cad. Yellow Spot
302	34	12 V 48/48 W B.P.F. Head (R.H. Drive)	667	36	6 V 36 W American Prefocus Spot (Nearlite)
303	34	12 V 48/48 W B.P.F. Head (L.H. Drive)	668	36	12 V 36 W American Prefocus Spot (Nearlite)
312	34	6 V 30/24 W B.P.F. Head	669	36	6 V 36 W American Prefocus Spot (Farlite)
317	37	6 V 18 W A.S.C.C. Stop	670	36	12 V 36 W American Prefocus Spot (Farlite)
319	37	6 V 18 W A.S.B.C. Stop			
323	34	12 V 48 W B.P.F. (S.C.) Spot			
325	34	12 V 38 W B.P.F. (S.C.) Head			
326	34	12 V 38 W B.F.P. (D.C.) Head			
330	34	24 V 44 W B.P.F. (D.C.) Head			
331	34	24 V 44 W B.P.F. (D.C.) Head			
332	34	24 V 44/38 B.P.F. (L.H. Drive)			

<i>Cat. No.</i>	<i>Page No.</i>	<i>Description of bulb</i>	<i>Cat. No.</i>	<i>Page No.</i>	<i>Description of bulb</i>
671	35	24 V 44/38 W S.B.C. Head	2482 J	36	24 V 48 W 3-pin S.C. Cad. Yellow Spot
672	35	6 V 36/36 W 3-pin B.C. Head	OS 43	40	See No. 970
682 B	36	6 V 48 W 3-pin S.C. Spot	OS 45	40	See No. 972
682 J	36	6 V 48 W 3-pin S.C. Cad. Yellow Spot	OS 50	40	See No. 974
684 B	36	6 V 48/18 W 3-pin B.C. spot	OS 55	40	See No. 977
684 J	36	6 V 48/18 W 3-pin B.C. Cad. Yellow Spot	OS 60	40	4 V 0.3 amp. M.E.S. Flash
685	34	12 V 48 W B.P.F. (S.C.) Cad. Yellow Head	OS 62	40	5.5 V 0.3 amp. Prefocus Flash
692	37	24 V 6/24 W S.B.C. Stop and Tail	OS 64	40	6 V 0.04 amp. M.E.S. Radio Panel
693	35	6 V 36/36 W American Prefocus Head	OS 65	40	4.5 V 0.3 amp. M.E.S. Flash
695	37	24 V 2.8 W M.E.S. Indicator (Tubular)	OS 66	40	6 V 0.06 amp. M.E.S. Radio Panel
696	39	6 V 15/15 W S.B.C. Index (offset) pins Head	OS 67	40	2.5 V 0.3 amp. Prefocus Flash
699	35	6 V 36/36 W S.B.C. Cad. Yellow Head	OS 68	40	3.5 V 0.3 amp. Prefocus Flash
701	35	12 V 24 W B.C. Head	OS 69	40	5 V 0.15 amp. M.E.S. Flash
702	35	12 V 36 W B.C. Head	OS 70	40	6.2 V 0.3 amp. M.E.S. Radio Panel
703	35	12 V 48 W B.C. Head	OS 71	40	1.5 V 0.2 amp. M.E.S. Flash
704	35	12 V 60 W B.C. Head	OS 72	40	1.25 V 0.25 amp. M.E.S. Flash
705	44	4 V 0.46 amp. M.E.S. Indicator (11 mm.)	OS 73	44	2 V 0.75 amp. M.E.S. Indicator (15 mm.)
950	38	6 V 6 W M.E.S. Indicator	OS 75	40	6.5 V 0.3 amp. M.E.S. Radio Panel
951	36	6 V 6 W M.C.C. Side	OS 75M	39	6.5 V 0.3 amp. M.C.C. Speedometer
970	40	2.5 V 0.2 amp. M.E.S. Flash	OS 76	40	6.3 V 0.11 amp. M.E.S. Radio Panel
972	40	2.5 V 0.3 amp. M.E.S. Flash	OS 77	40	6.5 V 0.3 amp. M.C.C. Radio Panel
974	40	3.5 V 0.15 amp. M.E.S. Flash	OS 83M	39	8 V 0.3 amp. M.C.C. Speedometer
977	40	3.5 V 0.3 amp. M.E.S. Flash	OS 84	40	6.3 V 0.15 amp. M.E.S. Tubular Radio Panel
979	39	6 V 0.3 amp. S.C.C. Cycle Dynamo	OS 85	40	6.2 V 0.3 amp. M.E.S. Radio Panel Tubular
980	39	6 V 0.5 amp. S.C.C. Cycle Dynamo	OS 87	40	6.8 V 0.3 amp. M.E.S. Radio Panel
982	38	6 V 1.8 W M.E.S. Indicator	OS 90	40	6.5 V 0.3 amp. M.E.S. Radio Panel Tubular
983	38	8 V 1.6 W M.E.S. Indicator	OS 90M	40	6.5 V 0.3 amp. M.C.C. Radio Panel Tubular
985	38	16 V 3 W M.E.S. Indicator	OS 99	40	2.2 V 0.25 amp. M.E.S. Lens End Flash
986	38	12 V 2.2 W M.E.S. Indicator (15 mm.)	OS 200	39	6 V 0.3 amp. M.E.S. Cycle Dynamo
987	38	12 V 2.2 W M.E.S. Indicator (11 mm.)	OS 207	44	6 V 1.0 amp. M.E.S. (Krypton filled)
988	36	6 V 3 W M.C.C. Side	OS 208	39	6 V 1.0 amp. M.E.S. Cycle Dynamo
989	36	12 V 6 W M.C.C. Side	OS 210	39	6 V 1.0 amp. S.C.C. Cycle Dynamo
990	38	6 V 3 W M.E.S. Indicator	OS 248	36	24 V 6 W M.C.C. Side
991	39	6 V 0.04 amp. M.E.S. Cycle Dynamo	OS 261	36	14 V 7 W S.C.C. Side
993	38	24 V 2.8 W M.E.S. Indicator	OS 262	36	14 V 7 W S.B.C. Side
997	39	6 V 0.5 amp. M.E.S. Cycle Dynamo	OS 263	38	12 V 2.2 W M.E.S. Indicator (10 mm.)
998	39	6 V 0.1 amp. M.E.S. Cycle Dynamo	OS 621	36	12 V 6 W M.E.S. Side
1282 B	36	12 V 48 W 3-pin S.C. Spot	OS 1144	39	6 V 0.25 amp. M.E.S. Cycle Dynamo (Clear)
1282 J	36	12 V 48 W 3-pin S.C. Cad. Yellow Spot	OS 1144G	39	6 V 0.25 amp. M.E.S. Cycle Dynamo (Granulated)
1283 B	36	12 V 48 W 3-pin B.C. Spot			6 V 0.45 amp. M.E.S. Cycle Dynamo (Clear)
1283 J	36	12 V 48 W 3-pin B.C. Cad. Yellow Spot	OS 1145	39	6 V 0.45 amp. M.E.S. Cycle Dynamo (Granulated)
1284 B	36	12 V 48/18 W 3-pin B.C. Spot			
1284 J	36	12 V 48/18 W 3-pin B.C. Cad. Yellow Spot	OS 1145G	39	
2482 B	36	24 V 48 W 3-pin S.C. Spot			



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