

1967

Osram

Catalogue for all types
of lamps and tubes

OSRAM (G.E.C.) LIMITED

P.O. Box 17, East Lane, Wembley, Middlesex

Telephone: ARNold 4321 Telex: 22418

Contents

SECTION ONE

General lighting service lamps

Filta-lite
Extra-lite
Silverlight
Three light lamp
Single coiled filament G.L.S.
Rough service
Coloured G.L.S.
Round bulb
Candle lamps
Pygmy clear
Pygmy coloured
Architectural
Striplight
Maxtrip
Opal tubular
Clear tubular
Reflector spotlight
Reflector floodlight
Supa-lite (Par 38)
Dichroic reflector lamp
Bowl silvered reflector lamp
Infra-red
Carbon filament heaters
Switchboard indicator
Pilot

Miscellaneous Types:—

Daylight blue
Marine navigation
Interlite (domestic equipment)
lamp
Traffic signal
Fireglow
Theatre batten
Decoration lights

SECTION TWO

Discharge lamps

FLUORESCENT TUBES

Standard
D.C. operation
Low temperature operation
Miniature
Reflector
Showcase lighting
Coloured tubes
Tubes for graphic arts

COLD CATHODE TUBES

STARTER SWITCHES

Canister glow
Canister thermal

MERCURY FLUORESCENT LAMPS

MBF/U types
Toplite MBFR/U

MERCURY LAMPS

MB/U types
MBW/U black glass
ME/D compact source
Dualite MBTF/V

SODIUM LAMPS

Detachable jacket type SO/H
Integral type SOI/H
Integral type SOX
Linear type SLI/H

LABORATORY LAMPS

SECTION THREE

Vehicle and miniature bulbs

Sealed beam units
Headlights
Tungsten halogen headlights
Flashing indicators, stop and
combined stop and tail
Side and tail
Indicators
Sub-miniature indicators
Festoon
Interior lighting
Trolley bus
Flashlamps
Radio panel

SPECIAL PURPOSE LAMPS

Miners' bulbs
Telephone switchboard
Telewriter lamps
Vehicle bulb index

SECTION FOUR

Photographic and projector lamps

TUNGSTEN HALOGEN LAMPS FOR PHOTOGRAPHY

Photoflood
Photographic
Photographic enlarger

LAMPS FOR COLOUR PHOTOGRAPHY

Controlled colour temperature

BULBS FOR FLASH PHOTOGRAPHY

Photoflash bulbs

LAMPS FOR PROJECTION

Class A1
Class B1
Class B2
Class E
Class F
Class FL
Class G
Class S
Under water
Class T

LAMPS FOR AIRCRAFT AND AIRFIELDS

Approach lights
Airfield runway

Purchase Tax schedules and lamp groups

Percentage of list value when selling at a discount

Lamp Group	Description	%
GROUP ONE	<i>General purpose lamps:</i> 200-260V, 15-150W in Pearl, Clear and Filta-lite	
	With B.C. caps { 25 or more identical lamps per item less than 25 identical lamps per item	17-1 18-3
	With any other type of cap (for all quantities)	17-1
	<i>Projector lamps in classes A1 and G</i>	NIL
	<i>Other filament lamps up to and including 250W</i>	17-1
GROUP TWO	<i>Vehicle bulbs</i>	15-9
GROUP THREE	<i>Flashlamp bulbs</i>	15-9
GROUP FIVE	<i>Miners' bulbs</i> Types approved by the Mines Dept. and marked M.F.P. All other types	NIL 18-3
GROUP SIX	<i>Decoration lights</i> Complete sets Spare bulbs	17-1 17-1
GROUP SEVEN	<i>Telephone switchboard (and Telewriter) lamps</i>	15-9
GROUP NINE	<i>Fluorescent tubes up to and including 80W</i> Other discharge lamps in Group 9	17-1 NIL
GROUP TEN	<i>Radio panel bulbs</i>	15-9

N.B. A 10% Surcharge on purchase tax is at present in operation.

Extra charges on list price

Special finishing

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:

Group One	Minimum Quantity	Price per Lamp
15/200W	25	2/- per lamp
300W	24	2/6 per lamp
500W	18	3/- per lamp
750/1000W	12	5/- per lamp
<i>Groups Two, Three and Ten</i>		
18 mm. bulbs and larger	1000	1/- per lamp
10 mm., 11 mm. and 15 mm. bulbs	1000	6d. per lamp

Silvering

Any listed lamp. Price on application.

Special marking

Group One

The minimum quantity per item is 250.

On items of between 250/1500 identical lamps for one delivery 3d. per lamp extra. On items of over 1500 identical lamps for one delivery, no extra charge.

Special capping

Where existing standard types are suitable for re-capping, the following extras apply when the caps are fitted 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.

Group One	Minimum Quantity	Price per Lamp
B.C., E.S., S.B.C., S.E.S., S.C.C., B.C., 3-pin B.C. or Bosch	25	2/6 per lamp extra
G.E.S., Medium Prefocus	12	4/- per lamp extra
Large Prefocus	12	4/- per lamp extra

Prices for over 1000 lamps on application.

Groups Two, Three and Ten.

B.C., S.B.C., S.C.C., A.S.B.C., S.B.C. index (offset pins), A.S.C.C. 3-pin B.C., Bosch, E.S., S.E.S., M.E.S., M.C.C.	1000 1000	1/- per lamp extra 6d. per lamp extra
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Prices for over 5000 lamps on application.

Inspection Certificate Charges

Any single item of an order of less than £5 list value that calls for inspection and the issue of a certificate will be subject to a fee of £3 3s. 0d. strictly net.

Lamps and tubes GROUPS ONE AND NINE

Fixed amounts when selling at list prices net

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 3	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 TWO, THREE, FOUR AND TEN

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

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 our option, must be returned carriage paid within seven days, and our advice note numbers quoted. The company does not accept responsibility for the safe custody of, or undertake to return, lamps forwarded for examination.

This catalogue

This catalogue provides a comprehensive reference to the enormous range of Osram lamps and fluorescent tubes. This includes over 90 categories of Osram products, from the sub-miniature indicator lamp with a bulb of only a quarter of an inch diameter to the massive 10 kW lamp used for film and television studio lighting.

The maximum information required by the trade is provided on all lamps and fluorescent tubes in general use. This includes details, wherever appropriate, of voltage, wattage, price, dimensions, light centre length and standard packing quantities for each lamp.

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.

Special finishes and lamp types

Throughout this catalogue, prices given apply to lamps with standard caps or finishes. For lamps with special finishes and non-standard caps, details of the list price extras are noted previously.

Every type of Osram lamp for which there is a general demand is included. But enquiries about special types which cannot be listed are welcomed. Immediate action will be taken to supply information concerning availability and price, depending on the quantities involved.

Osram quality

Osram lamps are British made and are guaranteed. Only the finest materials are used throughout and rigid quality controls are imposed at every stage of manufacture.

Osram lamps and tubes always comply with the relevant British Standards. Frequently they give a performance appreciably higher than that specified.

Osram Technical Service

The Osram Technical Service exists for the benefit of all Osram customers to advise and help with all lamp and tube problems. Requests for technical help or information should be made to the relevant Osram area sales manager.

Where to obtain Osram Lamps

Osram distribution throughout Great Britain is covered by area offices and depots. These are at the addresses on the opposite page.

Osram (S&C) Limited

Area Offices

SOUTHERN REGION

London, Home Counties and Southern

East Lane, Wembley, Middlesex. *Arnold 1255*

Telephone sales office

73 Bedford Place, Southampton. *Southampton 25634*

Design Centre for lighting schemes

P.O. Box No. 17, East Lane, Wembley, Middlesex. *Arnold 4321*

East Anglia and South East

Selinas Lane, Dagenham, Essex. *Dominion 2555*

MIDLAND AND SOUTH WEST REGION

Midlands

Electric Avenue, Witton, Birmingham, 6. *East 1571*

East Midlands

25 Stoney Street, Nottingham. *Nottingham 55912/6*

South West

32 Victoria Street, Bristol. *Bristol 26671/8*

Sales Office

11 Brunswick Road, Plymouth, Devon. *Plymouth 60226/8*

South Wales

2/4 Garth Street, Cardiff. *Cardiff 37331/5*

NORTHERN REGION

North West and North Wales

25 Tyldesley Road, Atherton, Manchester. *Atherton 2471/6*

Yorkshire

25 Dewsbury Road, Ossett, Yorkshire. *Ossett 765/9*

SCOTLAND AND NORTH EAST REGION

North East

A.36, Team Valley Trading Estate, Gateshead upon Tyne, 11. *Low Fell 878575*

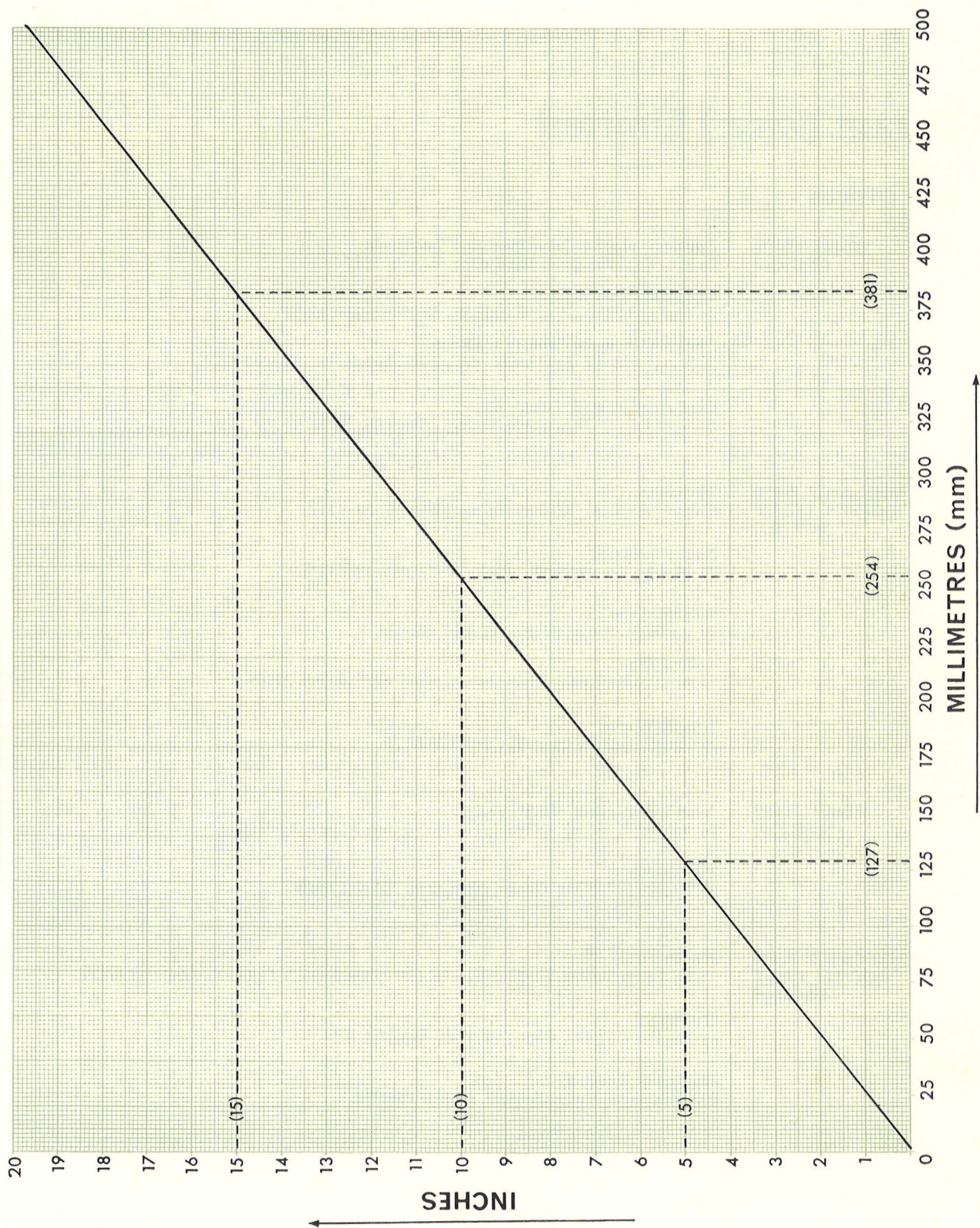
Scotland

Grove Park Street, Glasgow, NW. *Douglas 7011*

Northern Ireland

273a Donegal Road, Belfast. *Belfast 25656/8*

GRAPHICAL RELATIONSHIP BETWEEN MILLIMETRES AND INCHES

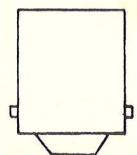
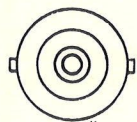


Osram

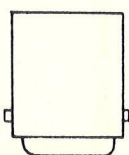
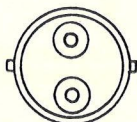
**Standard
Caps**

Standard caps

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



Small Centre Cap (S.C.C.)
B A 15s



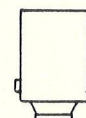
Small Bayonet Cap (S.B.C.)
B A 15d



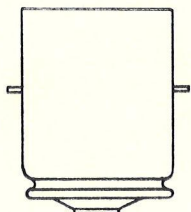
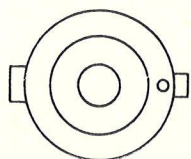
Round peg type
S/12



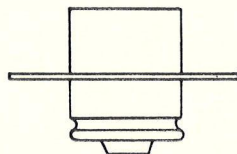
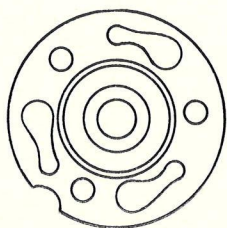
Midget Flange
S6/8



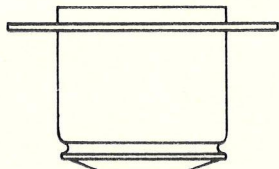
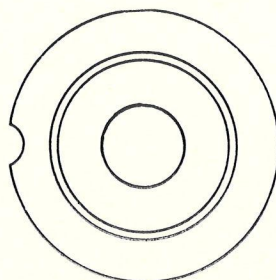
Miniature Centre Contact (M.C.C.)
B.A.9s



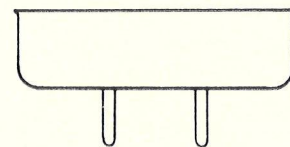
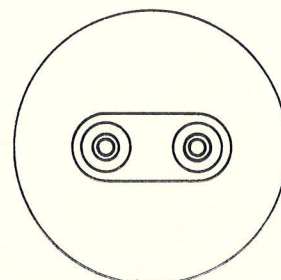
Bosch
B.A.20s



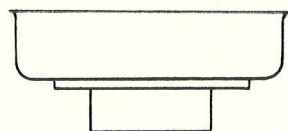
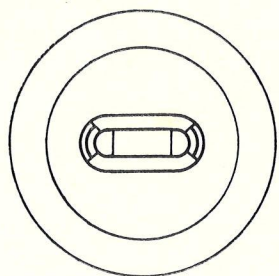
Small Pre-focus
P 15s



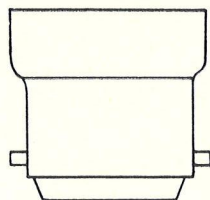
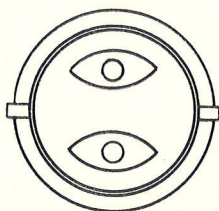
British Pre-focus (B.P.F.)
P 22s



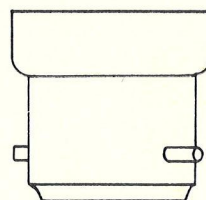
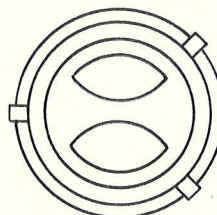
Medium Bi-pin
G 13



R.D.C.



Bayonet Cap (B.C.)
B 22

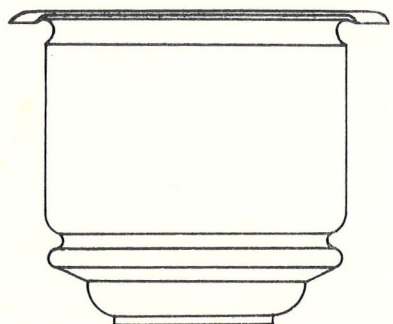
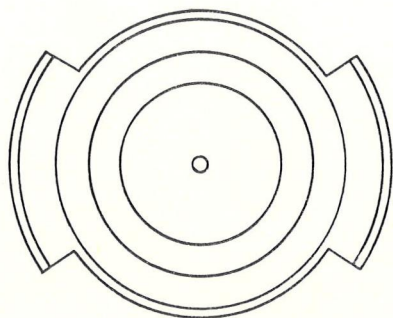


Bayonet Cap 3-pin
B 22

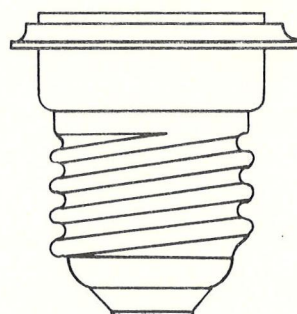
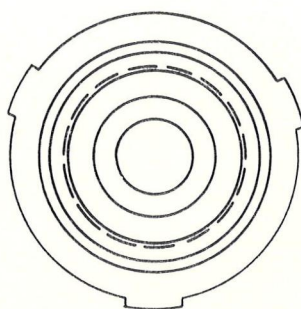


B.A.7s

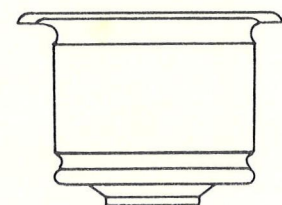
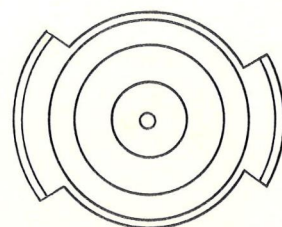
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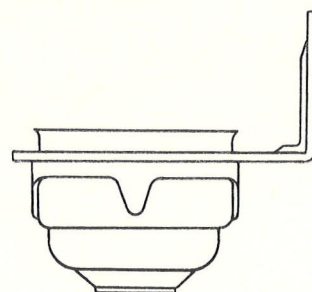
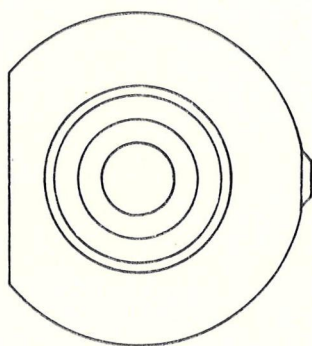
Large Pre-focus
P 40s



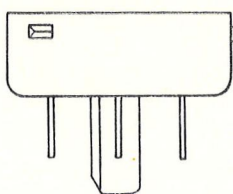
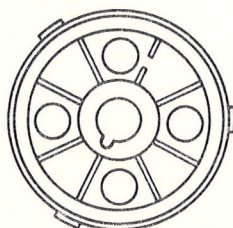
3 fin Pre-focus



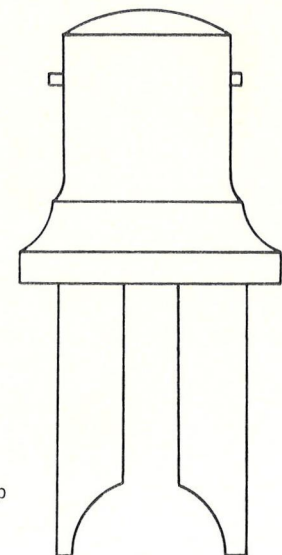
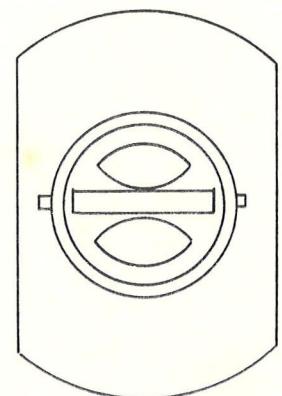
Medium Pre-focus
P 28s



Large Pre-focus
S 26s

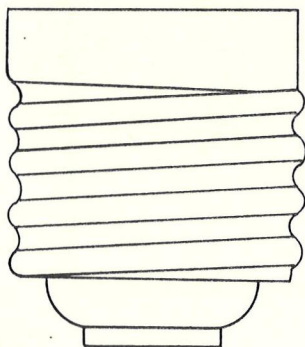
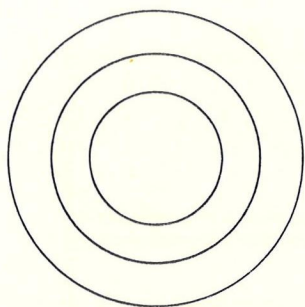


4 pin Base
G 17q

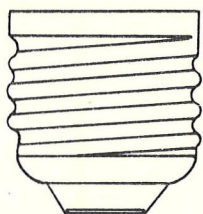
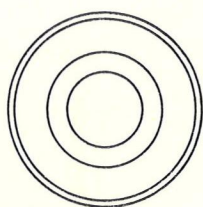


Sodium Bayonet Cap
B 22

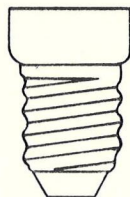
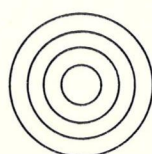
Scale : Full Size



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



Edison Screw (E.S.)
E 27



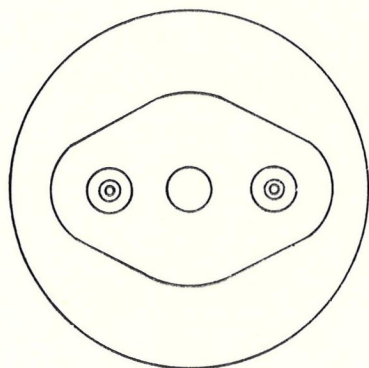
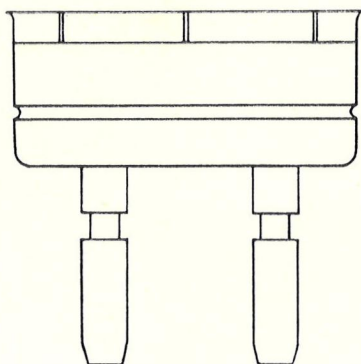
Small
Edison Screw (S.E.S.)
E 14



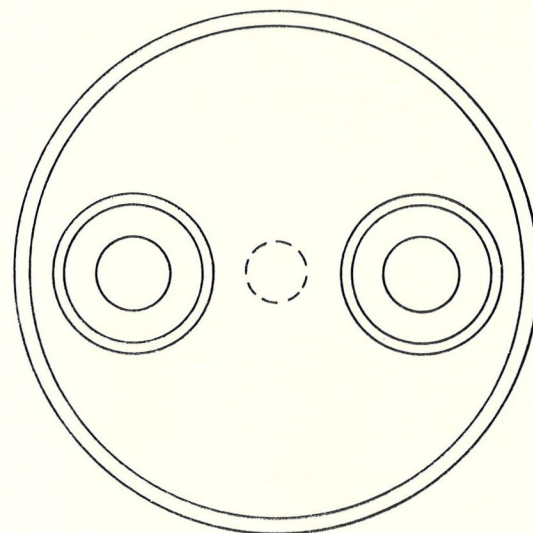
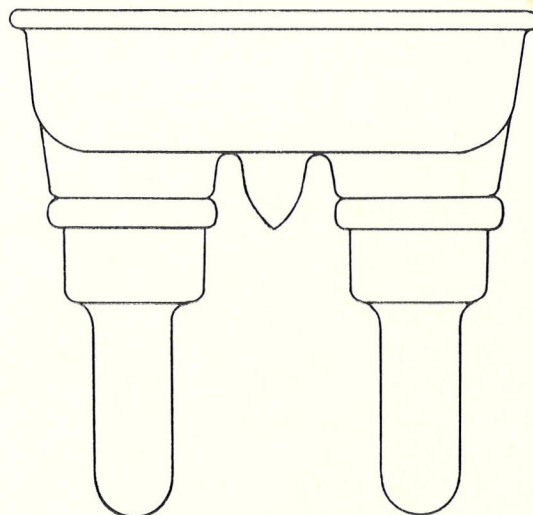
Miniature
Edison Screw
(M.E.S.)
E 10/13



Lilliput
Edison Screw
(L.E.S.)
E 5/8



Medium Bi-post
Bi 22



Large Bi-post
Bi 38

Scale: Full Size

Osram

**General
lighting
service
lamps**

Extensive Range

In the Osram range of G.L.S. lamps there is a lamp to meet almost every lighting need. These range from the standard tungsten filament lamp for the home—with all its variations in wattage, coating and colour—to lamps for industry. Osram are in the forefront of lamp design and development and are constantly adding to the range of types available.

Foremost Quality

Osram G.L.S. lamps conform fully with the relative British Standards and their performance is in excess of that laid down as the minimum by the B.S.I.

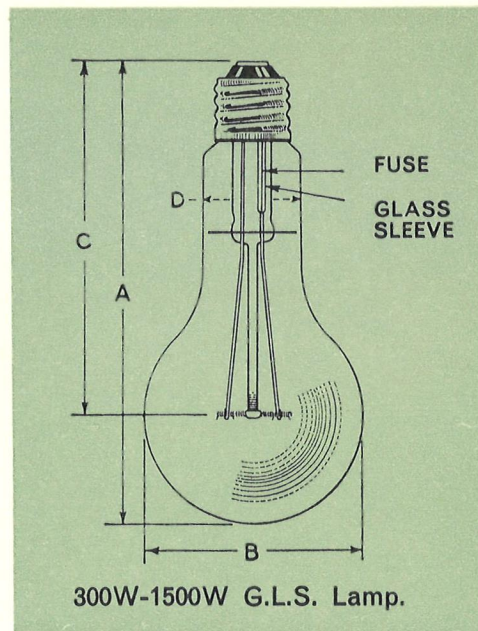
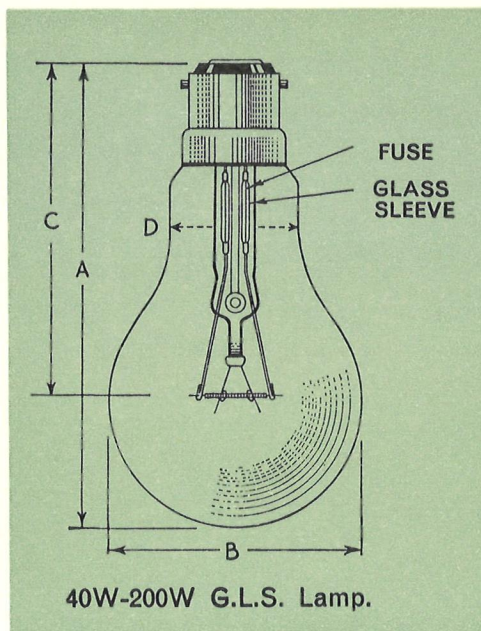
Osram standards are maintained by exacting quality control of components and 100% inspection of finished lamps.

All 40-200W high-voltage Osram G.L.S. lamps have two sheathed fuses (see diagram) to meet the requirements of B.S. 88. The 300-1500W range are fitted with a new type of loose sheathed fuse designed to give protection to the circuit fuse (see diagram).

The design features of fuses for high wattage lamps are such that B.S. 88 does not apply in its entirety but in the case of the 300-1500W lamps the requirements of B.S. 88 are met so far as the conditions are applicable.

Lamp dimensions: A — Length
B — Bulb diameter

C — Cap Contact to filament centre
D — Neck diameter



General lighting service lamps

All types covered by the following British Standards comply fully with the specification:
B.S. 161:1956; B.S. 555:1962.

All lamps in this section are subject to purchase tax under Group One.

Filta-lite 220/230, 240 and 250V

Watts	List price	Standard packing quantity	List price of standard pack	Standard cap	Filament	Lamp dimensions		
						Length	Bulb diameter	Neck diameter
						A	B	D
40	s. d. 1 11	25	£ s. d. 2 7 11	B.C.	Coiled coil	mm. 93±3	mm. 55±1	mm. 32±1
60	1 11	25	2 7 11			93±3	55±1	32±1
100	2 1½	25	2 13 1½			106±3.5	65±1	32±1
150	2 5	25	3 0 5			120±3.5	75±1	39±1

This lamp is an example of an advance in modern home lighting developed in the Osram development laboratories. It has a coiled coil filament for extra light and a coating of titanium dioxide on a pearl bulb which eliminates the "bright spot" common to other tungsten filament lamps and diffuses light evenly over the bulb.

Extra-lite (Clear and Pearl), 220/230, 240 and 250V

Watts	List price	Standard packing quantity	List price of standard pack	Standard cap	Filament	Light output †Nominal average lumens throughout life	Lamp dimensions			
							Length	Bulb diameter	Cap contact to filament centre	Neck diameter
							A	B	C	D
40	s. d. 1 6½	25	£ s. d. 1 18 6½	B.C.	Coiled coil	390	mm. 105±3.5	mm. 60±1	mm. 75 Nom.	mm. 33±1
60	1 6½	25	1 18 6½		Coiled coil	665	105±3.5	60±1	75 Nom.	33±1
*75	1 11	25	2 7 11		Coiled coil	880	105±3.5	60±1	75 Nom.	33±1
100	1 6½	25	1 18 6½		Coiled coil	1260	105±3.5	60±1	75 Nom.	33±1
**150	2 0	25	2 10 0		Coiled coil	2040	125±3.5	68±1	90 Nom.	37±1

* 75W not available with clear finish.

** 150W Extra-lite is not available with a clear finish or in the 220/230V rating.

† For 240V Lamps at 240V

Single coil filament, pearl and clear

Watts	Finish	List price		Standard packing quantity	List price of standard pack (Mains voltage)	Standard cap \$	Light output × Nominal average lumens throughout life	Lamp dimensions			
		High voltage 200-260V in 10V steps. Low voltage 110V, 120V	Extra low voltage 25, 50					Length	Bulb diameter	L.C.L.	Neck diameter
		s. d.	s. d.					A	B	C	D
25	Pearl	1 6½	3 6	25	1 18 6½	{B.C. or E.S.}	200	105±3.5	60±1	75 Nom.	33±1
40	Pearl	1 6½	3 6	25	1 18 6½	{B.C. or E.S.}	325	105±3.5	60±1	75 Nom.	33±1
60	Pearl	1 6½	3 6	25	1 18 6½	{B.C. or E.S.}	575	105±3.5	60±1	75 Nom.	33±1
75	**Pearl	1 11(a)	—	25	2 7 11	{B.C. or E.S.}	780	125±3.5	60±1	90±3	37±1
100	Pearl	1 6½(a)	4 6	25	1 18 6½	{B.C. or E.S.}	1160	125±3.5	60±1	90±3	37±1
150	Clear	2 0	—	25	2 10 0	{B.C. or E.S.}	1960	160±4.5	80±1	120±3.5	39±1
200	Pearl	2 0	—	25	2 10 0	{E.S.}	2720	160±4.5	80±1	120±3.5	39±1
300	Clear	2 9	10 0(b)	25	3 8 9	{B.C. or E.S.}	4300	233±7	110±1.5	178±4	50±1
500	Pearl	7 3	13 0	12	4 7 0	{G.E.S.}	7700	233±7	110±1.5	178±4	50±1
750	Clear	8 3	—	12	4 19 0	{G.E.S.}	12400	300±9	150±1.5	225±8	55±1
1000	Clear	10 0	—	9	4 10 0	{G.E.S.}	17300	300±9	150±1.5	225±8	55±1
1000	Hard Glass	17 0	—	6	5 2 0	{G.E.S.}	27500	300±9	150±1.5	225±8	55±1
1500	Clear	47 0	—	12	28 4 0	{G.E.S.}	335±9	170±1.5	250±8	60±1	37±1
1500	Hard Glass	17 0	—	6	5 2 0	{G.E.S.}	335±9	170±1.5	250±8	60±1	37±1
1500	Clear	47 0	—	30	70 10 0	{G.E.S.}	335±9	170±1.5	250±8	60±1	37±1
1500	Hard Glass	24 0	—	4	4 16 0	{G.E.S.}	335±9	170±1.5	250±8	60±1	37±1
1500	Clear	59 0	—	30	88 10 0	{G.E.S.}	335±9	170±1.5	250±8	60±1	37±1

** Not available in 110 and 120 volt.

(a) Not available in 200/210V with E.S. cap or in the 260V rating.

(b) Available in E.S. clear only

§ When E.S. caps are supplied, the length and cap contact to filament centre dimensions of the lamp shown are increased by 1.5 mm. in the 15-150W Lamps.

× For 240V Lamps at 240V

Warmlite, 240/250V

Watts	List price	Standard packing quantity	List price of standard pack	Standard cap	Filament	Lamp dimensions		
						Length	Bulb diameter	Neck diameter
						A	B	D
60	s. d.		£ s. d.			mm.	mm.	mm.
100	2 4	25	2 18 4	B.C.	Single coil	105±3.5	60±1	33±1
		25				125±3.5	68±1	37±1

Three light lamp, 240V

Watts	List price	Cap	Filaments	Lamp dimensions			
				Length	Bulb diameter	Cap contact to filament centre	Neck diameter
60/100/160	s. d. 6 3	Special E.S.	Coiled coil	A 140±5	B 80±1	C 100±3·5	D 39±1

This lamp contains two filaments which can be switched on either separately or in combination to give three different levels of light, 60W, 100W, 160W.

Slumberlite, 200/260V

Watts	List price	Standard cap	Lamp dimensions	
			Diameter	Length
5/8	s. d. 2 0	B.C.	mm. 60±1	mm. 105±3·5

Rough Service, 110/120V

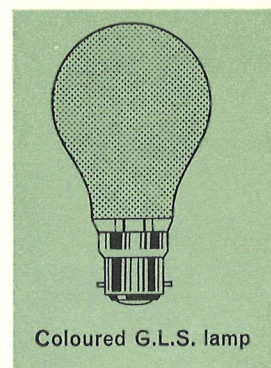
Watts	Finish	List price	Standard cap	Lamp dimensions		Standard packing quantity
				Length*	Diameter	
40	Clear & pearl	s. d. 2 0	} B.C. or E.S.	mm. 105±3·5	mm. 60±1	25
60	Clear & pearl	2 0		105±3·5	60±1	25
100	Pearl	2 9		125±3·5	68±1	25

Especially suited to the applications where the lamp is likely to be subjected to vibration and shock.

Coloured G.L.S. lamps, 200/250V, Red, blue, green, yellow, amber, pink and white

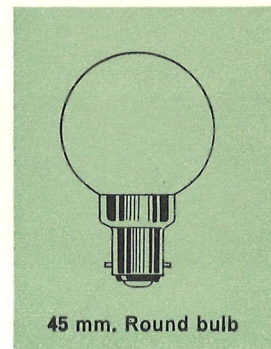
Watts	List price	Caps	Lamp dimensions		Standard packing quantity 25
			Length	Diameter	
15	s. d. 2 1½	} B.C. or E.S.*	mm. 105±3·5	mm. 60±1	£ s. d. 2 13 1½
25	2 1½		105±3·5	60±1	2 13 1½
40	2 5		105±3·5	60±1	3 0 5
60	2 5	} B.C.	105±3·5	60±1	3 0 5
100	2 11½		125±3·5	68±1	3 13 11½

*Flame not available in an E.S. cap.

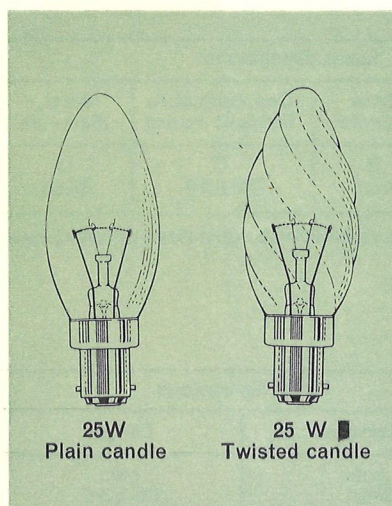


Round Bulb, 230/250V

Type	Watts	List price	Standard cap	Lamp dimensions		Standard packing quantity 100
				Length	Diameter	
Pearl	25	s. d. 2 6	{ S.B.C. B.C.	mm. 71±5	mm. 45±1	£ s. d. 12 10 0
	40	2 6		69·5±5	45±1	12 10 0
Silverlight	25	2 6	{ S.B.C. B.C. S.E.S.	71±5	45±1	12 10 0
	40	2 6		69·5±5	45±1	12 10 0
				75·5±5	45±1	



Candle lamps, 230/250V



Shape	Watts	Clear	*Pearl or coloured flame, amber, pink	Lamp dimensions		Standard packing quantity 50	
		List price	List price	Length (with S.B.C. cap)	Diameter		
Plain	25	s. d. 3 0	s. d. 3 9	mm. 95±3	mm. 35±1	£ 7 10	s. d. 0 0
	40	3 0	3 9	124±5	45±1	7 10	0 0
	60	3 3	3 9	124±5	45±1	8 2	6 6
Twisted	25	3 9	4 3	101±5	35±1	9 7	6 6
	40	3 9	4 3	141±5	45±1	9 7	6 6
	60	3 9	4 3	141±5	45±1	9 7	6 6
Silver-light	25	3 0	—	95±5	35±1	7 10	0 0
	40	3 0	—	95±5	35±1	7 10	0 0
	60†	3 3	—	124±5	45±1	8 2	6 6

Caps: B.C. or S.B.C. or S.E.S.

†60W Silverlight candle not available with S.E.S. cap.

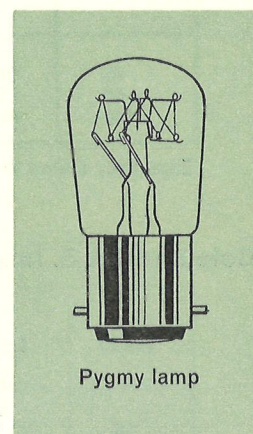
*Minimum ordering quantity for coloured lamps 50.

Pygmy clear

Watts	Voltages		Standard cap	Lamp dimensions		Standard packing quantity
	110/120, 130, 200/250, 260† List price	25, 50, 60, 150 List price		Length	Diameter	
15	s. d. 1 10	s. d. 3 0*	{ B.C. E.S. S.B.C. or S.E.S.	mm. 57±4 59±4 63±4 65±4	} 28±1	100

*Standard cap B.C. or S.B.C. 25V and 50V.

†260V not available with E.S. cap.

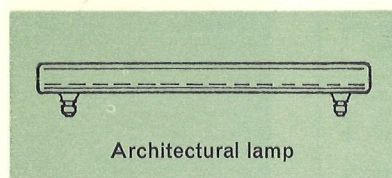


Pygmy coloured Frosted or coloured red, blue, green, yellow, amber, pink or white*

Watts	Voltages and list price per lamp	Caps	Lamp dimensions		Standard packing quantity
	110/120, 200/250		Length	Diameter	
15	s. d. 2 2½	{ B.C. or S.B.C.	mm. 57±4 63±4	mm. 28±1 28±1	} 100

*Also available in white, minimum ordering quantity 1000, List price 2/8 each.

200/250V Frosted also available with E.S. cap.



Architectural white opal 230/250v (Tube diameter 30 mm.)

Overall length		Watts	List price
in.	mm.		£ s. d.
12	305	35	13 0
18	457	53	18 0
20	500	60	1 0 0
24	610	75	1 4 0
36	915	110	1 12 0
48	1220	150	1 17 0

Standard cap: Round peg type—38mm from ends of lamp

Striplite

Watts	Type	Voltages 110/120, 230, 250		Length	Diameter	Standard packing quantity
		Clear List price	Opalised List price			
30	{ 221 284 }	s. d. 6 3	s. d. 6 9	mm. 221 284	mm. 25 25	25
60	{ 221 284 }	6 3 6 3	6 9 6 9	221 284	25 25	

Standard cap: Centre contact.

Maxtrip

Watts	Voltages 220/230, 240/250 Opalised List price	Cap	Length	Diameter	Standard packing quantity
40 60	s. d. 6 9 6 9 } }	Side peg } }	mm. 252	mm. 25	25

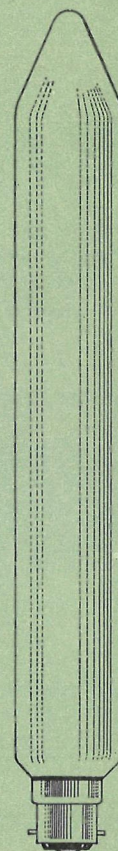
Opal tubular

Watts	Voltages 230/250 List price	Cap	Length	Diameter	Standard packing quantity
40 60 }	s. d. 11 0	B.C.	mm. 302±3	mm. 37±1	25

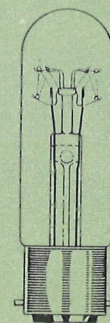
Clear tubular

Watts	Voltages		*Caps	Length with S.B.C. cap	Diameter	Standard packing quantity
	110/120, 200/220 230/250 List price	25, 50				
25	s. d. 4 3	s. d. 6 0	B.C., S.B.C. or E.S.	mm. 92±3	mm. 25±1	50

*200/220V available in E.S. and S.E.S. only.
230/250V also available in an S.E.S. cap.



Opal Tubular



25W Clear Tubular

Reflector spotlight, 230, 240 and 250V

Watts	List price	Caps	Lamp dimensions		Standard packing quantity
			Length	Diameter	
75 } 100 }	s. d. 8 6	{ B.C. E.S.	mm. 137 ±3 138.5±3	mm. 95±1 95±1	} 6 1
150 *500	12 9 100 0	{ B.C. E.S. G.E.S.	176 ±5 262 ±8	126±1.5 183±1.5	

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.

*Minimum ordering quantity 25 lamps.

Reflector floodlight, 230, 240 and 250V

Watts	List price	Caps	Lamp dimensions		Standard packing quantity
			Length	Diameter	
75 } 100 }	s. d. 8 6	{ B.C. E.S.	mm. 137 ±3 138.5±3	mm. 95±1 95±1	} 6
150	12 9	{ B.C. E.S.*	176 ±5	126±1.5	

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

*250V 150W Reflector floodlight available with E.S. cap only.

Supa-lite spot or flood lamps (PAR 38), 115, 230, 240 and 250V

Watts	List price	Caps	Lamp dimensions		Standard packing quantity
			Length	Diameter	
150	s. d. 17 6	E.S.	mm. 135±3	mm. 121.5±1.5	10

Dichroic sealed beam reflector lamp (PAR 38), 240 and 250V

Available in blue, green, red and yellow

Watts	List price	Caps	Lamp dimensions		Standard packing quantity
			Length	Diameter	
150	s. d. 30 0	E.S.	mm. 135±3	mm. 121.5±1.5	10

Dichroic sealed beam 'Cool-lite' reflector lamp (PAR 38), 240 and 250V

Watts	List price	Caps	Lamp dimensions		Standard packing quantity
			Length	Diameter	
150	s. d. 30 0	E.S.	mm. 135±3	mm. 121.5±1.5	10

Bowl silvered lamp, 240 and 250V

Watts	List price	Cap	Lamp dimensions		Standard packing quantity
			Length	Diameter	
100	s. d. 6 6	3 Pin B.C.	mm. 125±6	mm. 68±1	25

Infra-red

Type	Watts	List price	Standard voltages	Standard cap	Lamp dimensions		Standard packing quantity
					Length*	Diameter	
Reflector (Pearl)	250	s. d. 18 6	100/130 or 200/250	E.S.	mm. 178±4	mm. 126±1.5	6
Reflector (Ruby)	250	22 0	200/250	E.S.	184±4	126±1.5	6
Clear quartz tubular universal operation	500 1000 2000	68 0 84 0 112 0	100/125 200/250 200/250	Flexible metal tags	241 Nom. 368 Nom. 368 Nom.	11 Nom.	25
Clear quartz tubular horizontal operation	4000	290 0	230	Flexible leads	494 Nom.	20 max.	—

*Length of tubular quartz infra red heaters refers to length between connector slots.

Carbon filament heaters, clear, 220/230, 240/250V

Watts	List price	Cap	Lamp dimensions		Standard packing quantity
			Length	Diameter	
65 130 200*	s. d. 6 0 6 6 7 6	B.C.	mm. 110±3.5 125±3.5 130±5	mm. 60±1 68±1 90±1	25 25 25

Used where a low intensity infra red heater is required.

*Special orders of 500 only in 220/230v rating.



Infra-red clear quartz tubular

Switchboard indicator clear, 200/260V

Watts	List price	Standard cap	Lamp dimensions		Standard packing quantity
			Length	Diameter	
12/15*	s. d. 2 6	B.C.	mm. 57±4	mm. 28±1	100

Designed to withstand voltage surges and is ideally suited as a mains volt indicator on control panels etc.

* Consumption 12-15 watts according to supply voltage.

Pilot clear, 100/130, 200/250V

Watts	List price	Standard cap	Lamp dimensions		Standard packing quantity
			Length	Diameter	
10	s. d. 4 0	{ Candelabra S.E.S. or S.B.C.	mm. 47±2 48±2 40±2	mm. 20 max.	100



Pilot Lamp

Miscellaneous Types

	Watts	List Price	Standard voltages	Standard cap	Length	Diameter	Standard packing quantity
Daylight blue	60	s. d. 5 6	240/250	B.C.	mm. 105±3.5 125±3.5	mm. 60 68	25
	100	7 6					
Marine navigation (Clear)	40	6 9	{ 110,120,220, 230, 240,	B.C. or E.S.	{ 140 max. 150 max.	63 max. 70 max.	50
	60	6 9					
Interlite (domestic equipment) lamp	40	2 8	200/250	E.S.	94.5±3.5	44±2	100
Traffic signal (Clear)*	65	2 3	230, 240, 250	E.S.	106.5±3.5	60	100

* Light centre length 62±3 mm.

Fireglow lamps

Watts	List Price	Volts	Cap	Finish	Standard packing quantity
60	s. d. 6 6	200/250	B.C.	Natural Colour Glass	25
60	6 6		B.C. 3-pin		
60	7 6		Special 2-pin		
60	3 9		B.C.	Lacquered	25
60	3 9		B.C. 3-pin		
60	4 9		Special 2-pin		

Theatre batten

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

Watts	List price	Standard voltages	Finish	Standard cap	Nominal average efficiency lm/W	Objective average life	Dimensions			Standard packing quantity
							Length	Diameter	Light centre length	
100	s. d. 2 7	240 250	Clear	E.S.	240V 12	hours 1000	141.5±3.5	mm. 80±1	mm. 121.5±3	25
150	3 11				13	1000				

Christmas decoration lights

Description	Cat. No.	Price each	Standard packing quantity
Standard Set	OS 2011	s. d. 16 8	24
Spare Bulbs			
20V 3W coloured	OS 2010	1 0	—
20V 3W clear	OS 2009	1 0	—
Lilliput Spares			
6V 0.75W clear or coloured	OS 2024	8½	—
12V 1.2W clear or coloured	OS 2025	8½	—

The Standard Set consists of twelve 20V 3W coloured lamps in series complete with spare lamp (OS 2010), flex, lamp holders and B.C. adaptor.

Coloured Lilliput miniature bulbs with sub-miniature screw cap are supplied in polythene bags of three.

Osram

**Discharge
lamps**

OSRAM FLUORESCENT TUBES

Are Guaranteed All Osram tubes are guaranteed for either 3,000 hours or one year's use—whichever may come first. Guaranteed fluorescent tubes were first introduced by Osram and made possible by keen quality control and frequent tests throughout manufacture. All Osram 8 ft., 5 ft. and 4 ft. tubes of 1½ in. diameter have an increased rated life of 7,500 hours.

Have Universal Starting All Osram guaranteed tubes can be operated in either switch or switchless start circuits.

†Have the Highest Lumen Output The Osram 8 ft. 125W and 5 ft. 65/80W Warm White and White fluorescent tubes have the highest Lighting Design Lumens of any tubes produced in the United Kingdom. This is achieved by "preclassification", another Osram first whereby the fluorescent powder particle is produced to dimensions enabling maximum transfer of energy from U.V. to visible light to be made—more light to use.

*General service tubes. High efficiency—
Good colour-rendering*

WHITE

In this tube a Lighting Design Lumen figure of 4,800* has been achieved for the 5 ft. 80W 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 shops and offices where it is 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. 80W rating gives a Lighting Design Lumen figure of 4,875*. 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.

*Measured in compliance with B.S. 1853.

Special service tubes. Excellent colour rendering

WARM TONE

The colour rendering properties of Warmtone, 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.

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. 80W size, are intended mainly for decorative and display lighting. Their great benefit as compared with other forms of coloured light source is that 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 and wattage (see B.S. 1853:1960).

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 furnishings should be chosen except in conjunction with the colour of the fluorescent tube selected.

Advice on all aspects of the use of fluorescent tubes is available from the Technical Services and Applications Dept., Osram (G.E.C.) Limited, East Lane, Wembley, Middlesex, or from Area Sales Offices as listed on page 7.

†Lighting Design Lumens. The 2,000 hour light output figure normally used in the planning of lighting installations. If lumen values are required between 2,000 and 7,500 hours, a reduction factor of 2-3% per 1,000 hours of extra life should be applied.

OSRAM MERCURY LAMPS

Mercury lamps were pioneered by G.E.C. research and the first mercury lamp in the world was introduced by Osram in 1933. Since then Osram have maintained their leadership in this field, the latest developments being:—Osram Elliptical MBF/U lamps—Osram Toplite lamps—Osram Dualite lamps.

MBF/U MERCURY FLUORESCENT LAMPS

These lamps can be recognised by their neater appearance—modern elliptical shaped bulbs—but that is only one of the many improvements. Advanced manufacturing techniques enable Osram to offer a Mercury Fluorescent lamp range with the highest red ratio (9%) in the U.K. coupled with the highest light output and best reliability on the market today.

MBFR/U TOPLITE MERCURY REFLECTOR LAMPS

The Osram TOPLITE mercury reflector lamps have an outer envelope of completely new contour with a built-in reflecting surface which gives a closely controlled polar distribution very similar to that of a standard lamp and dispersive type reflector fitting. This reflector is, of course, impervious to the effect of dirt, dust and corrosion, and the lumen maintenance throughout life is therefore materially better than that of a standard lamp/fitting combination. The lamps also have a phosphor coating which provides a substantial degree of colour correction.

The outer envelopes are manufactured from hard glass and are therefore suitable for operation in exposed situations.

MBFT/V DUALITE MERCURY LAMP

Osram's wide experience in lamp development and manufacture has been employed to produce the new Dualite lamp, an exceptional lamp combining the warmth of tungsten lighting with the long life of the mercury discharge lamp. The excellent colour rendering, 12% red ratio, is obtained by the excitation of a fluorescent coating on the outer bulb as well as the red content of the light emitted by the tungsten filament. The filament besides emitting light acts as a ballast in series with the discharge, thus dispensing with the necessity for an external choke.

OSRAM SODIUM LAMPS

Osram offer the widest range of sodium lamps including the advanced integral types, linear lamps and the detachable jacket types,

INTEGRAL TYPES

The integral type was introduced by Osram in 1955 to meet the demand for a more efficient lamp following the increasing demand for sodium street lighting lamps after the war.

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 and reliable starting throughout life is ensured. SOI/H and SOX integral lamps are available.

LINEAR TYPES

The Linear design of sodium lamp means that higher intensities can be achieved more economically in street lighting and in other applications where colour discrimination is not of primary importance. Osram linear lamps are available in 60W, 175W and 200W ratings.

FLUORESCENT TUBES

GENERAL PURPOSE TYPES GROUP NINE

Tube		Standard cap	List Price	Standard colours	Initial lumens (100 hours)	Lighting Design Lumens (2,000 hours)	Standard packing quantity
Rating	Dia.						
	mm. in.		s. d.				
8 ft. 125W	38 1½	B.C. R.D.C. or Bi-pin	16 0	{ White	9000	8250	12
			18 0	{ Warm White	9250	8600	
5 ft. 80W	38 1½	B.C. or Bi-pin	10 6	{ Daylight	8400	7750	12 or 25
			12 6	{ Warmtone	6720	5700	
5 ft. 65/80W	38 1½	Bi-pin	10 6	{ Natural	6700	5720	12 or 25
			12 6	{ Colour Matching	5750	5200	
4 ft. 40W	38 1½	Bi-pin	9 9	{ White	5300	4800	12 or 25
			11 0	{ Warm White	5450	4875	
3 ft. 30W	26 1	Bi-pin	9 9	{ Daylight	5200	4600	25
			11 0	{ Warmtone	4000	3400	
2 ft. 40W	38 1½	Bi-pin	9 9	{ Natural	4080	3520	25
			11 0	{ Colour Matching	3550	3150	
2 ft. 20W	38 1½	Bi-pin	9 3	{ White	4800	4300	25
			10 6	{ Warm White	4900	4425	
1½ ft. 15W	26 1	Bi-pin	8 9	{ Daylight	4700	4150	25
			9 9	{ Warmtone	4000	3400	
				{ Natural	3600	3050	
				{ Colour Matching	3550	3150	
				{ White	2875	2580	
				{ Warm White	2900	2700	
				{ Daylight	2700	2450	
				{ Warmtone	2150	1950	
				{ Natural	2000	1900	
				{ Colour Matching	1900	1700	
				{ White	2000	1740	
				{ Warm White	2050	1750	
				{ Daylight	1950	1650	
				{ Warmtone	1580	1350	
				{ Natural	1550	1300	
				{ Colour Matching	1440	1200	
				{ White	1760	1500	
				{ Warm White	1900	1700	
				{ Daylight	1680	1420	
				{ Warmtone	1375	1080	
				{ Natural	1410	1080	
				{ Colour Matching	1320	1010	
				{ White	1150	1050	
				{ Warm White	1200	1050	
				{ Daylight	1100	960	
				{ Warmtone	920	780	
				{ Natural	910	710	
				{ Colour Matching	820	700	
				{ White	735	650	
				{ Warm White	770	670	
				{ Daylight	740	625	
				{ Warmtone	600	510	
				{ Natural	600	515	
				{ Colour Matching	570	480	

Miniature tubes

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

Tube		Standard cap	List Price	Standard colours	Lighting Design Lumens (2,000 hours)	Standard packing quantity	
Rating	Dia.						
9 in. 6W	mm. in.	Miniature Bi-pin	s. d.	{	175 235 245 225	} 96	
	14 $\frac{9}{16}$		8 0				Natural
			7 6				Daylight
							Warm White
12 in. 8W	14 $\frac{9}{16}$		8 0	{	250 340 360 340	} 96	
			7 6				Natural
							Daylight
							Warm White
21 in. 13W	14 $\frac{9}{16}$	11 6	{	630	} 48		
						White	

Reflector types

The internal reflector in these Osram tubes is a layer of titanium dioxide extending over 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 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	Lighting Design Lumens (2,000 hours)	Standard packing quantity
Rating	Dia.					
4 ft. 40W	mm. 38 in. $1\frac{1}{2}$	s. d. 11 9	Bi-pin	Warm White	2150	} 12 or 25
5 ft. 65/80W	mm. 38 in. $1\frac{1}{2}$	12 6	Bi-pin	Warm White	3550	
8 ft. 125W	mm. 38 in. $1\frac{1}{2}$	19 0	Bi-pin	Warm White	3900	

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	List Price	Standard colours	Lighting Design Lumens (2,000 hours)	Standard packing quantity
Rating	Dia.					
5 ft. 50W	mm. 26 in. 1	Bi-pin	{ s. d. 12 6 10 6	{ Natural Warm White	2100 3100	} 25

Universal start tubes

All Osram Guaranteed Tubes from $1\frac{1}{2}$ ft. 15W to 8 ft. 125W, can be operated in either switch or switchless start circuits.

Full details of all tubes may be obtained from:

Technical Services and Applications Department,
Osram (G.E.C.) Limited,
East Lane, Wembley, Middlesex.

Lumen values are measured according to B.S. 1853:1960 where applicable: otherwise at rated wattage.

COLOURED TUBES

Tube			List Price	Standard cap	Standard colours	Standard packing quantity
Rating	Dia.					
	mm.	in.	s. d.			
5 ft. 80W	38	1½	17 6	{ B.C. Bi-pin }	Red, blue, green, yellow	12 or 25
4 ft. 40W	38	1½	17 0	Bi-pin	Red, blue, green, yellow	12 or 25
2 ft. 20W	38	1½	15 0	Bi-pin	Red, blue, green, yellow	25

Fluorescent tubes for graphic arts and office copying GROUP NINE

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.

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

Where compact but powerful light sources—of high actinic content—are required for printing purposes then High Pressure Mercury Lamps are recommended—See MB/U.

† Nominal wavelength (in millimicrons) of peak emission spectrum ($1m\mu=10\text{\AA}$). Details of control gear available on application to Technical Services and Applications Dept., Osram (G.E.C.) Limited, East Lane, Wembley, Middlesex.

* Light Blue 475 tubes are exempt from Purchase Tax.

COLD CATHODE FLUORESCENT TUBES

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.
- 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, Intermediate and Gold
CLASS A Standard straight tube (overall length 9 ft. 6 in.)	Straight-on	8 ft. 6 in.	s. d. 43 6
CLASS B Straight tubes shorter than standard	Straight-on	Less than 8 ft. 6 in.	63 9
CLASS C Straight tubes	Right-angle or parallel electrodes	8 ft. 6 in. or less	82 3
CLASS D Curved or bent tube (one bend only)	Any position	8 ft. 6 in. or less	156 6
CLASS H 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 2 $\frac{3}{8}$ in., 2 $\frac{1}{4}$ in., 3 in., 3 $\frac{1}{2}$ in. or 4 in.	Straight-on	8 ft. 6 in.	56 0

Delivery charges are included in the above list prices.

Cold cathode—class A tubes

Colour	120mA Tubes (67.5W)		150mA Tubes (91W)*	
	Initial light output at 100 hours	Average light output over the first 15,000 hours	Initial light output at 100 hours	Average light output over the first 15,000 hours
White	lumens 3550	lumens 3100	lumens 4800	lumens 3900
Daylight	3400	2900	4650	3700
Deluxe Warm White	2450	1750	3250	2000
Warm White	3550	3100	4800	3900
Intermediate	3150	2650	4250	3310
Colour matching	2400	1950	3200	2250

* Special tubes are supplied for operation at 150mA. Details and prices of appropriate control gear for 120 and 150mA tubes available on application.

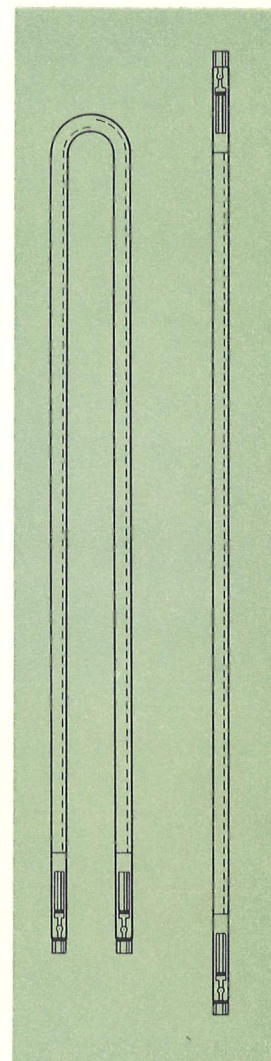
Non-standard cold cathode tubes

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

Coloured tubes other than standard listed above.

Exterior lighting tubes.

Special shapes can be supplied for tailor made installations.



STARTER SWITCHES

The Osram "Universal" starters OS 345 and OS 13 have been designed for use with 3 ft., 4 ft., or 5 ft. tubes on 200-250V 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.

Circuits and recommended starters

Tube rating	Supply voltage	Circuit	Cat. No.	
			Large 4-pin	Small 2-pin
9 in. 6W 12 in. 8W	200/250 a.c. 100/130 a.c.	Single tube Single tube	— —	OS 14 OS 15
9 in. 6W 12 in. 8W	200/250 a.c.	Two tubes in series	—	OS 15
1½ ft. 15W	200/250 a.c./d.c.	Single tube or two tubes in series	OS 3T	—
	100/130 a.c./d.c.	Single tube	OS 3T	—
	200/250 a.c./d.c.	Single tube	—	OS 15
2 ft. 20W	200/250 a.c./d.c.	Single tube or two tubes in series	OS 3T	—
	100/130 a.c./d.c.	Single tube	OS 3T	—
	200/250 a.c./d.c.	Single tube	—	OS 15
2 ft. 40W	200/250 a.c./d.c.	Two tubes in series	OS 8T	—
	100/130 a.c./d.c.	Single tube		
3 ft. 30W	200/250 a.c.	Single tube	OS 345	OS 13
	200/250 a.c./d.c.	Single tube	OS 3T	—
4 ft. 40W	200/250 a.c.	Single tube	OS 345	OS 13
	200/250 a.c./d.c.	Single tube	OS 4T	—
5 ft. 50W	220/250 a.c.	Single tube (capacitive circuit only)	OS 3T	—
5 ft. 65/80W	200/250 a.c.	Single tube	OS 345	OS 13
5 ft. 80W	200/250 a.c.	Single tube	OS 345	OS 13
	200/250 a.c./d.c.	Single tube	OS 8T	—
8 ft. 125W	230/250 a.c.	Single tube (capacitive circuit only)	OS 8T	OS 18

Canister glow starters

Cat. No.	Price each	Type of canister	Type of base	Standard packing quantity
OS 345	s. d. 3 8	Large	4-pin	10 or 500
OS 13 OS 14 OS 15 OS 18	2 9 4 0 2 9 4 9	Small	2-pin	10 or 500

Canister thermal starters

Cat. No.	Price each	Type of canister	Type of base	Standard packing quantity
OS 3T OS 4T OS 8T OS 16T	s. d. 7 6	Large	4-pin	10 or 500

Approximate dimensions. Large: Length 54 mm. (2½ in.). Diameter 28 mm. (1½ in.). Small length 39 mm. (1½ in.). Diameter 21 mm. (1⅜ in.).

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. 80W 200/250V a.c.	144

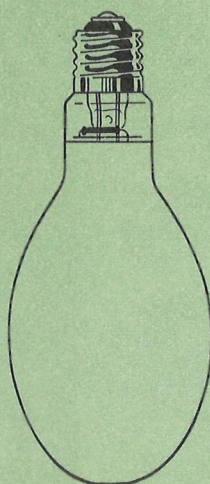
MERCURY LAMPS GROUP NINE

Mercury Fluorescent lamps MBF/U and MBFR/U types

Type	Lamp rating	Nett Trade Price	Lighting Design Lumens (2000 hrs)	Cap	Overall length	Overall diameter	Light Centre Length	Standard packing quantity
MBF/U Fluorescent	80	£ s. d. 1 10 6	2850	3-pin B.C.*	mm. 160±4.5	mm. 80±1	mm. 120±4	25
	125	1 16 3	5000	3-pin B.C.*†	176±5.5	88±1	133±5	25
	250	2 18 6	11000	G.E.S.	221±6	90±1.0	150.5±5	25
	400	4 8 6	20000	G.E.S.	280±6	120±1.5	177.5±5	25
	700	7 12 6	33600	G.E.S.	315±5	141±2	208±5	1
	1000	9 10 0	52000	G.E.S.	345±5	165±2	212±5	1
Toplite MBFR/U Reflector Fluorescent	250	3 15 0	10250	G.E.S.	245±5	166±2	Not applicable	1
	400	5 2 6	17200	G.E.S.	270±5	181±2		1
	700	8 15 0	30800	G.E.S.	305±7	201±2		1
	1000	10 15 0	45000	G.E.S.	343±7	248±2.5		1

* Also available with E.S. cap.

† Also available with G.E.S. cap.



400W
MBF/U
Fluorescent



400W
MBFR/U
Toplite
Reflector
Fluorescent

Lamps on this page must only be operated in conjunction with suitable control gear, details on application. These lamps are not subject to purchase tax.

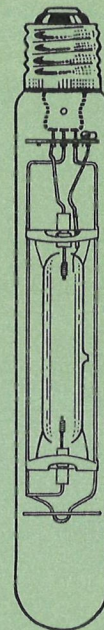
MERCURY LAMPS MB/U types

Type	Lamp rating	Nett Trade Price	Lighting Design Lumens (2000 hrs.)	Cap	Overall length	Overall diameter	Light Centre Length	Standard packing quantity
MB/U	80	£ s. d. 1 11 0	2850	3-pin B.C.	mm. 160±4.5	mm. 80±1	mm. 113±4	} 25
Pearl	125	1 17 6	4950	3-pin B.C.	176±5.5	88±1	128±5	
MB/U	250	2 6 6	10600	G.E.S.	290±8	48±3	170±8	} 25
	400	2 11 6	18800	G.E.S.	330±8	48±3	190±8	
Clear	1000	6 0 0	52000	G.E.S.	335±7.5	165±1.5	200±7	1

Voltage range

MB/U, MBF/U, MBFR/U 80-700W—200/250
 MB/U, MBF/U, MBFR/U 1 kW 370/410 and 410/450.
 (May be operated from 200/250V a.c. suitable control gear)
 MBFT/V 160W—220/240.

*With the exception of the MBFT/V, lamps on this page must only be operated in conjunction with suitable control gear, details on application.
 These lamps are not subject to purchase tax.*



400W MB/U clear

MBFT/V DUALITE

The Osram Dualite lamp is designed for use in commercial and industrial lighting where good quality of light combined with long life is essential. The lamp consists of a fluorescent coated envelope, a mercury discharge tube and a tungsten filament. Excellent colour rendering (12% red content) is obtained by excitation of the fluorescent coating combined with the light from the tungsten filament. The filament, besides emitting light, acts as a ballast in series with the discharge thus dispensing with the necessity for an external choke.

Watts	Nett Trade Price	Cap	Lighting Design Lumens (2000 hours)	Lamp dimensions		Standard packing quantity
				Overall length	Diameter	
160	£ s. d. 1 16 0	B.C. or E.S.	1920	mm. 176±5.5	mm. 88±1	12

The objective average life of the Dualite is 8,000 hours.

MBW/U Black glass

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 3650A. 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 alterations in documents.

Watts	Nett Trade Price	Cap	Lamp dimensions			Standard packing quantity
			Overall length	Diameter	Light centre length	
125	£ s. d. 3 7 6	3-pin B.C.	mm. 178±5.5	mm. 90±1	mm. 128±5	25

Voltage range: 200/250V.

ME/D Compact source

This type of lamp provides a small source of high brightness and has a number of applications in 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 is contained 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	250W ME/D	
	Glass type	Box type
Supply voltage	200/250V a.c. or d.c.	200/250V a.c. or d.c.
Arc operating voltage	60/75V	60/75V
Starting current	4/5 amp	4/5 amp
Operating current	3.7/4.6 amp	3.7/4.6 amp
Initial arc brightness	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.	64×50 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
Nett Trade Price	£13 17 6	£18 15 0

Lamps on this page must only be operated in conjunction with suitable control gear, details on application. These lamps are not subject to purchase tax.

SODIUM LAMPS SO/H detachable jacket

The inner arc tube is maintained at an even temperature by a detachable vacuum jacket.

Watts	Nett Trade Price		Lighting Design Lumens (3000 hrs.)	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
45	£ s. d. 1 12 6	£ s. d. 2 10 0	2565	Ceramic B.C.	mm. 238	mm. 50	mm. 140	25	12
60	1 15 9	2 15 9	3720		300	50	170	25	12
85	2 8 0	3 12 0	5950		415	50	230	25	12
140	2 11 6	4 0 0	9800		518	65	280	25	12

These lamps are not subject to purchase tax.

SODIUM LAMPS SOI/H integral

Watts	Nett Trade Price	Lighting Design Lumens (3000 hours)	Cap	Lamp dimensions			Standard packing quantity
				Overall length ± 10 mm.	Diameter ± 2 mm.	Light centre length ± 10 mm.	
45	£ s. d. 2 4 6	2835	Mycalex B.C.	mm. 238	mm. 50	mm. 140	12
60	2 9 6	3900		300	50	170	12
85	2 17 6	6460		415	50	230	12
140	3 6 9	10640		518	65	280	6

Guaranteed sodium lamps

All Osram SO/H and SOI/H Sodium lamps have an individual lamp life guarantee of 4,000 hours with an objective average life of 6,000 hours.

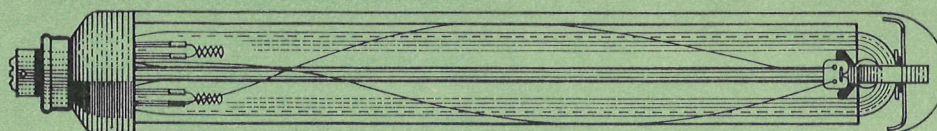
Burning positions for sodium lamps

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

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

60W, 175W and 200W 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. These lamps are not subject to purchase tax.



140W Integral sodium

SODIUM LAMPS SLI/H linear

These high power lamps use an arc tube of novel design. The outer envelope of the lamp is internally coated with a film which transmits the visible sodium light but acts as a reflector to the infra-red radiation. The heat reflection helps to maintain the correct sodium vapour pressure in the arc tube for optimum light output.

Watts	Nett Trade Price	Lighting Design Lumens (3,000 hours)	Cap	Lamp dimensions		Standard packing quantity
				Overall length	Diameter ± 1.5 mm.	
60	£ s. d. 2 13 0	5700	} Bi-pin {	mm. 426.2 max.	mm. 38	25
175	3 10 0	20000		908.8 max.	38	1
200	4 0 0	20000		909 max.	38	1

See previous page for correct burning positions.

SODIUM LAMPS SOX integral

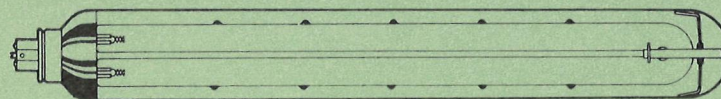
Osram pioneered the Integral design of Sodium lamp in 1955 and have now gone a step further in its development. The SOX lamp employs the latest heat reflecting film techniques to secure optimum vapour pressure for maximum efficiency.

Watts	Nett Trade Price	Lighting Design Lumens (3,000 hours)	Cap	Lamp dimensions		Standard packing quantity
				Overall length mm. Max.	Diameter mm. Nom.	
40	£ s. d. 2 9 6	4200	} B.C. {	310	50	12
60	2 17 6	7050		425	50	12
100	3 6 9	11900		528	65	6
150	4 2 6	20000		775	65	1
200	6 5 0	28500		1120	65	1

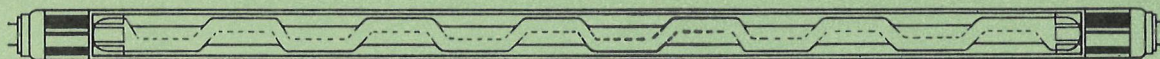
Guaranteed sodium lamps

All Osram SOX integral and SLI/H Sodium lamps have an individual lamp life guarantee of 4,000 hours, with an objective life of 6,000 hours.

Lamps on this page must only be operated in conjunction with suitable control gear, details on application. These lamps are not subject to purchase tax.



200W SOX Integral Sodium



200W Linear Sodium

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 nearly the whole of the visible region.

Type	List Price	Supply	Lamp dimensions	
			Overall length Excluding pins	Diameter
SL/D1.3 Sodium	£ s. d. 4 17 6	100/250V a.c. or d.c.†	mm. 153±5*	mm. 34±1
ML/D2.0 Mercury	6 7 0	100/250V a.c./d.c.	238±5	40±1
CL/D2.0 Cadmium	7 4 0	200/250V a.c./d.c.	238±5	40±1
CML/D2.0 Cadmium/Mercury	7 4 0	200/250V a.c./d.c.	238±5	40±1

Standard cap: British 4-pin valve.

* The lamp for operation on d.c. supplies has an overall length of 168±5 mm.

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

Further details of laboratory lamps and other special

lamps for laboratory use together with particulars of control gear, are available on application to

Technical Services and Applications Dept., Osram
(G.E.C.) Limited,
East Lane, Wembley, Middlesex.

These lamps are not subject to purchase tax.

Osram

**Vehicle
and
Miniature
Bulbs**

New Osram Vehicle Bulb Development

New Heavy Duty Range

Osram have now developed a complete range of Heavy Duty 24V lamps; spotlights, sidelights, indicators and festoons. These lamps achieve much longer lives under the arduous vibration conditions met on buses and other heavy vehicles. Details are to be found in the relevant sections.

New Festoons

A new range of high wattage festoons has been introduced. This is to meet the demand for higher outputs for vehicle interior lights and also the trend towards the use of festoons for reversing lights and flashing indicators.

Nickel Plated Caps

All Osram vehicle bulbs are now fitted with nickel plated caps, for improved appearance and resistance to corrosion in service. No damaged holders with Osram Bulbs.

Decimalised Packing

For ease of stocking, distribution and accounting, all Osram vehicle bulbs are now packed in 10 way units. *All orders must now be in multiples of the 10 way standard packing quantity.*

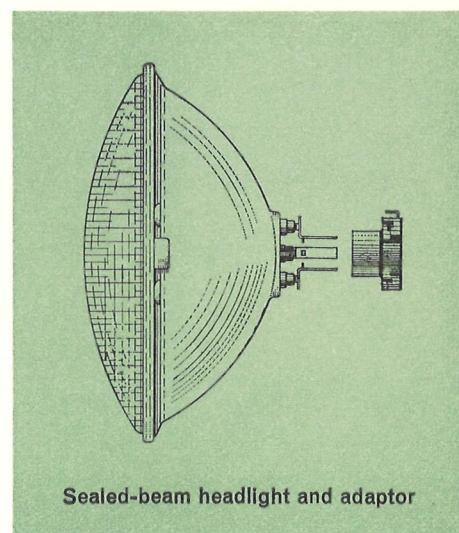
Sealed-beam headlight units and adaptors GROUP TWO

The OSRAM sealed-beam adaptor OS A2 enables Lucas 700 series lighting units to be converted without any alteration to the car wiring. The OS A3 adaptor enables pre-1966 B.M.C. Minis to be converted to the 7014 sealed beam unit.

Volts	Watts	Cat. No.	Price	Diameter inches	Standard packing quantity
12	60 and 45	7002	s. d. 29 6	7	10
12	50 and 40	7005*	29 6	7	10
12	75 and 50	7010	32 6	7	10
12	60 and 45 (Mini)	7014	29 6	7	10
12	37.5	5700	27 0	5 $\frac{3}{4}$	10
12	50 and 37.5	5702	29 6	5 $\frac{3}{4}$	10
12	50 (spot)	5704	29 6	5 $\frac{3}{4}$	10
12	50 (fog)	5706	29 6	5 $\frac{3}{4}$	10
24	50 (spot)	5707	29 6	5 $\frac{3}{4}$	10
24	50 (fog)	5708	29 6	5 $\frac{3}{4}$	10
—	—	OS A2 Adaptor	3 3	—	2
—	—	OS A3 Adaptor	4 10	—	2

*Left-hand drive

These units are not subject to purchase tax.



Sealed-beam headlight and adaptor

Headlights British prefocus type

Single filament

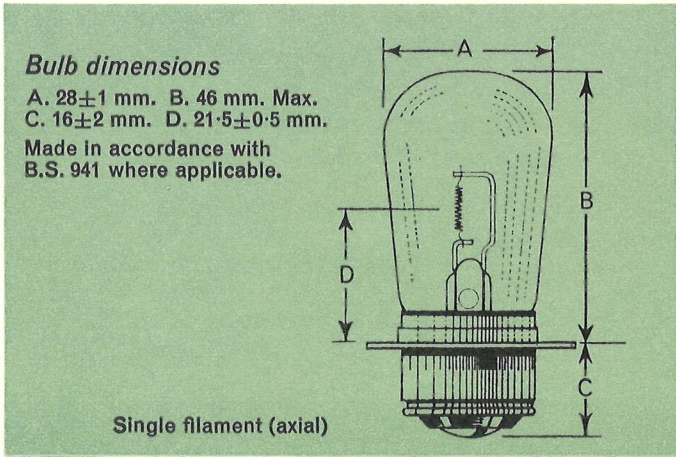
Volts	Watts	Finish	Cat. No.	Price	Filament	Contact	Standard packing quantity
6	36	Clear	172	s. d. 5 0	Axial	Single	10
	36	Clear	173	5 0	Transverse		
12	36	Clear	162	use 185	Axial	Double	
	36	Clear	177		5 0		
24	38	Clear	326	5 0	Transverse	Single	
	48	Clear	185	5 0	Axial		
	48	Cad. yellow	685	6 6	Axial	Double	
	48	Clear	323	5 0	Transverse		
	48	Cad. yellow	600	6 6	Transverse	Single	
	44	Clear	331	5 0	Axial		
	44	Clear	330	5 0	Transverse		
	44	Clear	606	5 0	Transverse	Single	

Double filament (transverse)

Volts	Watts	Finish	Cat. No.	Price	Dip or Drive arrangement	Contact	Standard packing quantity
6	24 and 24	Clear	166	s. d. 6 0	Vertical dip	Double	10
6.4	30 and 24	Clear	312	6 0	Vertical dip		
	30 and 24	Clear	373	6 0	R.H. drive		
	36 and 36	Clear	306	6 0	R.H. drive		
	45 and 35	Clear	356	6 0	R.H. drive		
12	24 and 24	Clear	425	6 0	Vertical dip		
12	42 and 36	Clear	354	use 414	R.H. drive		
	44 and 38	Clear	358	6 0	R.H. drive		
	50 and 40†	Clear	414	6 0	R.H. drive		
	48 and 48	Clear	302	7 6	R.H. drive		
	60 and 40	Clear	444*	7 6	R.H. drive		
24	44 and 38	Clear	359	6 0	R.H. drive		
24	44 and 38	Clear	332	6 0	L.H. drive		
	54 and 44†	Clear	437	6 0	R.H. drive		

*Bulb dimensions: Diameter 38 ±1 mm. Overall length max. 44 mm, from prefocus ring. Light centre length 21.5 ±0.5 mm.
Replaces 404

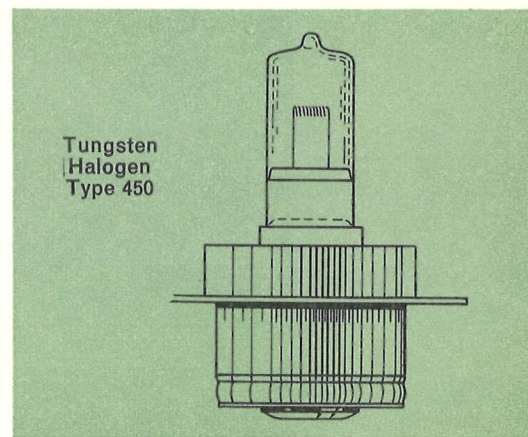
†Shielded filament



Tungsten Halogen Spot/Fog Light

Earlier names for these types were "Tungsten Iodine" and "Quartz Iodine".

Volts	Watts	Finish	Cat. No.	Price	Filament	Cap	Standard packing quantity
12	55	Clear Quartz	450	s. d. 28 0	Transverse	Single Contact B.P.F.	10



Headlights single filament (Axial)

Volts	Watts	Cap	Cat. No.	Price	Bulb dimensions		Standard packing quantity
					Overall length ±4 mm.	Diameter ±1 mm.	
6	24	S.C.C.	106	s. d. 5 0	mm. 56	mm. 38	10
6	24	S.B.C.	109	5 0	56	38	
6	36	S.C.C.	108	5 0	56	38	
6	36	S.B.C.	111	5 0	56	38	
12	24	S.C.C.	1	5 0	56	38	
12	24	S.B.C.	4	5 0	56	38	
12	36	S.C.C.	2	5 0	56	38	
12	36	S.B.C.	5	5 0	56	38	
12	36	B.C.	702	5 0	56	38	
12†	36	S.C.C.	57	5 0	56	38	
12	48	S.C.C.	23	5 0	56	38	
12	48	S.B.C.	27	5 0	56	38	
12	48	B.C.	703	5 0	56	38	
24	24	S.B.C.	122	5 0	56	38	
24	24	B.C.	620	5 0	56	38	
24	36	S.C.C.	621	5 0	56	38	
24	36	S.B.C.	123	5 0	56	38	
24	36	B.C.	622	5 0	56	38	
24	48	S.B.C.	140	5 0	56	38	
24	48	B.C.	624	5 0	56	38	
24	60	S.B.C.	128	7 6	63	50	
24	60	B.C.	127	7 6	63	50	

†Transverse filament.

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

Headlights double filament

Volts	Watts	Cap	Cat. No.	Price	Filament	Bulb dimensions		Standard packing quantity
						Overall length ±4 mm.	Diameter ±1 mm.	
6	15 and 15	S.B.C. onelong pin	386	s. d. 6 0	Axial/ Transverse	mm. 47±2	mm. 25	10
6	24 and 24	S.B.C.	168	6 0	Inverted Vee	56	38	
6	36 and 36	S.B.C.	170	6 0	Inverted Vee	56	38	
12	36 and 36	S.B.C.	171	6 0	Transverse	56	38	
12	36 and 36	Small Prefocus	632	6 0	Parallel Vee	58	38	
24	36 and 36	S.B.C.	194	6 0	Transverse	56	38	
24	44 and 38	S.B.C.	671	6 0	Transverse	56	38	

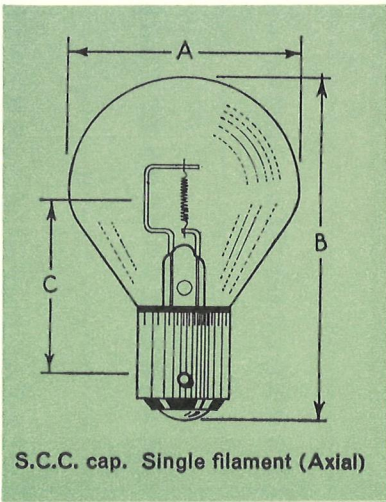
Made in accordance with B.S. 941 where applicable.

Spotlights For Notek equipment

Volts	Watts	Type	Clear		Filament	Cap	Bulb dimensions		Standard packing quantity
			Cat. No.	Price			Overall length	Diameter	
				s. d.			mm.	mm.	10
6	36	Nearlite	667	5 0	Transverse Axial	small prefocus	58±4	38±1	
	36	Farlite	669	5 0					
12	36	Nearlite	668	5 0	Transverse Axial	small prefocus	58±4	38±1	
	36	Farlite	670	5 0					

BULB DIMENSIONS
Single and Double Filament

Standard Caps	A	B	C
	Diameter	Overall length	Light centre length
S.C.C. or S.B.C.	mm. 38±1 50±1	mm. 56±4 63±4	mm. 28·5±1
B.C.	38±1 50±1	56±4 63±4	28·5±2



Flashing indicators stop and combined stop and tail

Single filament

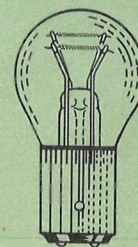
Volts	Watts	Cat. No.	Cap	Price each	Bulb dimensions		Standard packing quantity
					Overall length ± 2 mm.	Diameter ± 1 mm.	
6	18	317	A.S.C.C.	s. d. 3 6	mm. 47	mm. 25	10
	18	319	A.S.B.C.	3 6	47	25	
12	21	382	A.S.C.C.	3 6	47	25	
	21	335	A.S.B.C.	3 6	47	25	
24	18	338	A.S.B.C.	4 0	47	25	
	24	333	A.S.B.C.	4 0	47	25	
28	24	339	A.S.C.C.	4 0	47	25	
	26	344*	A.S.B.C.	4 6	47	25	
	26	345*	A.S.C.C.	4 6	47	25	

*Filament supported to withstand heavy vibration.

Double filament

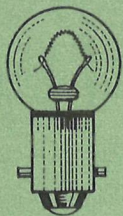
Volts	Watts	Cat. No.	Cap	Price each	Bulb dimensions		Standard packing quantity
					Overall length ± 2 mm.	Diameter ± 1 mm.	
6	6 and 18	383	S.B.C.	s. d. 4 0	mm. 45.5	mm. 25	10
	6 and 18	384	S.B.C. Index offset pins	4 0	47	25	
12	5 and 21	381	S.B.C.	4 0	45.5	25	
	5 and 21	380	S.B.C. Index offset pins	4 0	47	25	
24	6 and 24	692	S.B.C.	4 6	45.5	25	
	6 and 24	334	S.B.C. Index offset pins	4 6	47	25	

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

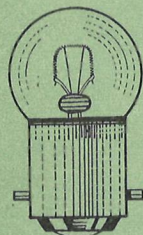


Combined stop and tail
S.B.C. cap (offset pins)

Side and Tail



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



Sidelight
18 mm. S.B.C. cap 24V
twin supports

Volts	Watts	Cap	Cat. No.	Price	Bulb dimensions		Standard packing quantity
					Overall length ± up to 2.5 mm.	Diameter ± 1 mm.	
6	3	S.C.C.	200	s. d.	mm.	mm.	10
6	3	S.B.C.	204	use 205	32.5	18	
6	3	M.C.C.	988	use 206	32.5	18	
6	6	S.C.C.	205	use 951	28	15	
6	6	S.B.C.	206	1 9	32.5	18	
6	6	M.C.C.	951	1 9	28	15	
12	4	M.C.C.	222	use 989	28	15	
12	5	Capless	501	2 0	21.7*	10	
12	6	S.C.C.	207	1 9	32.5	18	
12	6	S.B.C.	209	1 9	32.5	18	
12	6	M.C.C.	989	1 9	28	15	
12	6	M.E.S.	OS621	1 9	27.5	15	
14	7	S.C.C.	223	2 0	32.5	18	
14	7	S.B.C.	218	2 0	32.5	18	
16	6	S.B.C.	637	2 0	32.5	18	
24	6†	S.C.C.	149	2 0	32.5	18	
24	6†	S.B.C.	150	2 0	32.5	18	
24	6†	B.C.	638	2 6	37±3	18	
24	6†	M.C.C.	OS248	2 0	31	18	

*Crown of Bulb to location groove.

†Filament supported to withstand heavy vibration.

Where applicable the bulbs on this page are made in accordance with B.S. 941.

Indicators panel and warning

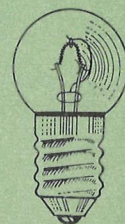
Volts	Watts	Cap	Cat. No.	Price	Bulb diameter ±1 mm.	Standard packing quantity
6	1.8	M.E.S.	982	s. d. use 990	11	10
6	1.8	M.C.C.	640	use 641	11	
6	3	M.E.S.	990	1 3	11	
6	3	M.C.C.	641	1 3	11	
6	6	M.E.S.	950	1 6	15	
8	1.6	M.E.S.	983	2 6	15	
12	2.2	M.E.S.	OS 263	1 6	10 Tubular	
12	2.2	M.E.S.	987	1 3	11	
12	2.2	M.C.C.	643	1 3	11	
12	2.2	M.E.S.	986	use 987	15	
12	2.2	M.C.C.	645	use 643	15	
12	3	Capless	504	1 9	10 Tubular	
16	3*	M.E.S.	985	2 6	15	
16	3*	M.C.C.	647	2 6	15	
24	2.8*	M.E.S.	695	1 9	10 Tubular	
24	2.8*	M.C.C.		1 9	10 Tubular	
24	2.8*	M.E.S.	993	use 650	15	
24	2.8*	M.C.C.	651	1 9	15	
24	2.8*	M.E.S.	650	1 9	11	

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

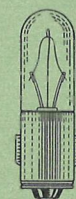
*Filament supported to withstand heavy vibration.



11 mm. Indicator
M.C.C. cap



15 mm. Indicator
(No. 985) M.E.S. cap



6.7 mm. Tubular
BA 7s cap



Midget flange cap



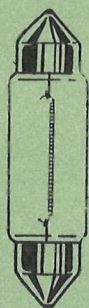
6.7 mm. Tubular
L.E.S. cap

Sub-miniature
Indicator

Indicators sub-miniature types

Volts	Watts	Cap	Cat. No.	Price	Bulb diameter mm. Max.	Standard packing quantity
6	0.6 amp	BA 7s	282	s. d. 1 9	6.7 Tubular	10
12	2	BA 7s	281	1 9	6.7 Tubular	10
12	0.75	L.E.S.	—	1 9	6.7 Tubular	10
12	1.5	L.E.S.	280	1 9	6.7 Tubular	10
24	3	BA 7s	283	1 9	6.7 Tubular	10
28	0.04 amp	Midget flange S6/8	995-9118	4 6	5.8 Tubular	50
12	0.1 amp	Midget flange S6/8	995-9120	4 6	5.8 Tubular	50
6	0.1 amp	Midget flange S6/8	995-9119	4 6	5.8 Tubular	50

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



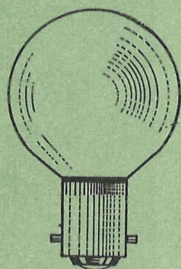
Festoon

Festoon for trafficators, roof interior fittings and reversing lights

Volts	Watts	Cat. No.	Price each	Bulb dimensions		Standard packing quantity
				Overall length ±1 mm.	Diameter ±0.5 mm.	
6	3	262	s. d. 2 6	mm. 31	mm. 7.5	10
	3	255	2 6	35.5	7.5	
	6	253	2 6	38	11	
	15	266	2 6	44	15	
	18	OS618	3 6	44	15	
12	3	263	2 6	31	7.5	
	3	256	2 6	35.5	7.5	
	6	254	2 6	38	11	
	6	258	2 6	44	11	
	10	272	2 6	38	11	
	10	265	2 6	44	15	
	15	267	2 6	44	15	
	18	270	3 6	44	15	
	21	273	3 6	44	15	
24	6	653	2 6	38	11	
	6	260	2 6	44	11	
	6	654*	4 0	38	11	
	10	274	2 6	38	11	

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

*Filament specially supported to withstand heavy vibration.



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

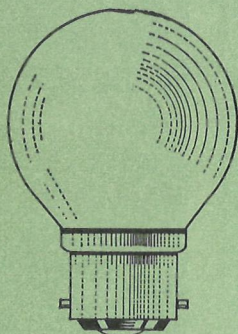
Vehicle interior lighting

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

Volts	Watts	Cap	Price each		Diameter of bulb	Standard packing quantity
			Clear	Pearl		
12	12†	B.C. or S.B.C. B.C.	s. d. 2 6	s. d. 2 6	mm. 38	144
			—	2 6	50	120
12	24	B.C. or S.B.C.*	3 0	3 0	38	144
24	12	B.C. or S.B.C. B.C.	2 6	2 6	38	144
			—	2 6	50	120
24	20	B.C. or S.B.C. B.C.	3 0	3 0	38	144
			—	3 0	50	120

†Made in accordance with B.S. 555.

*Pearl only.



50 mm. Bus B.C. cap
Pearl

Trolley bus

Description	Volts	Watts	Finish	Cap	Price each	Diameter of bulb	Standard packing quantity
Instrument and Side	35	6	Clear	S.B.C. and B.C.	s. d. 2 6	mm. 18	10
Interior	35	15	Pearl	B.C.	2 9	38	144
Headlamp	35	36	Clear	B.C.	4 0	38	144

Miniature bulbs

Flashlamp GROUP THREE Round bulb. Clear with M.E.S. cap

Volts	Amp	Cat. No.	Price each	Overall length (max.)	Diameter ± 1 mm.	Standard packing quantity
1.25	0.25	OS 72	s. d. 5	mm. 24	mm. 11	10
1.5	0.2	OS 71	5	24	11	
†2.5	0.2	OS 43 or 970	5	24	11	
2.5	0.3	OS 45 or 972	5	24	11	
†3.5	0.15	OS 50 or 974	5	24	11	
3.5	0.3	OS 55 or 977	5	24	11	
4.0	0.3	OS 60	5	24	11	
4.5	0.3	OS 65	5	29	15	
5.0	0.15	OS 69	8	29	15	

Prefocus type. Clear

2.5	0.3	OS 67	8½	31	11	10
3.5	0.3	OS 68	8½	31	11	
5.5	0.3	OS 62	8½	31	11	

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

Radio panel GROUP TEN Round bulb. Clear

Volts	Amp	Cap	Cat. No.	Price each	Overall length (max.)	Diameter ± 1 mm.	Standard packing quantity
6.0	0.04	M.E.S.	OS 64	s. d. 1 0	mm. 24	mm. 11	10
6.0	0.06	M.E.S.	OS 66	1 0	24	11	
§6.2*	0.3	M.E.S.	OS 70	7	29	15	
††6.3	0.115	M.E.S.	OS 76	7	24	11	
†6.5	0.3	M.E.S.	OS 75	7	24	11	
†6.5	0.3	M.C.C.	OS 77	7	25	11	
†6.8	0.3	M.E.S.	OS 87	7	24	11	

Tubular. Clear

Volts	Amp	Cap	Cat. No.	Price each	Overall length (max.)	Diameter ± 1 mm.	Standard packing quantity
§6.2*	0.3	M.E.S.	OS 85	s. d. 7	mm. 30	mm. 10	10
§6.3**	0.15	M.E.S.	OS 84	7	30	10	
§6.3	0.15	M.C.C.	OS 92	7	30.5	10	
†6.5	0.3	M.E.S.	OS 90	7	30	10	
†6.5	0.3	M.C.C.	OS 90M	7	30.5	10	

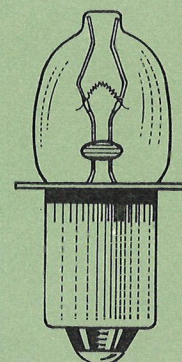
§ High-efficiency lamps for intermittent use only. For continuous running applied voltage should not exceed 4V.

* 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 6.5V or in series with valve heaters taking 0.3 amp.

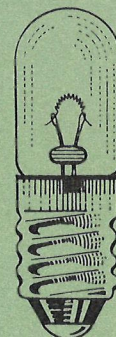
†† For continuous burning on 6.3V or in series with valve heaters taking 0.1 amp. In cases where H.T. current is passed through the dial bulbs, they must be shunted by a resistor, so that the current through them is reduced to 0.1 amp.



Prefocus flashlamp



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



Tubular M.E.S. cap

Special purpose lamps

Marine signalling GROUP TWO

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. 20 0	mm. 50±1	mm. 100±5	72
24	36			995-9402	20 0			

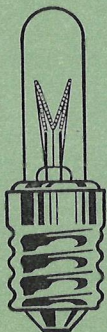


Telephone switchboard lamp

Telephone switchboard lamps GROUP SEVEN

Type	Volts	Amp	Price each	End piece colour	Overall diameter (nominal)	Overall length	Standard packing quantity
No. 2 Metal filament	4	0.25	s. d. 2 2	Green	0.275	1.75+0.000 —0.062	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			
	45	0.036*	2 2	Blue/White			
No. 2A Metal No. 2 Carbon filament	50	0.1	2 2	White	0.275	1.75+0.000 —0.062	100 or 1000
	60	0.06	2 9	White/Mauve			
	24	0.05	2 2	Yellow			
	12	0.117	2 9	Red			
	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. 469:1960 where applicable.
*55 Volts



Telewriter lamp

Telewriter lamps GROUP SEVEN

Metal filament	50	0.05	3 1	M.E.S.	6.5 mm. (max.)	33 mm.±2	50 or 500
	50	0.05	3 1	M.C.C.	6.5 mm. (max.)	33 mm.±2	50 or 500

Miners' Lamps GROUP FIVE

Krypton-filled miners' bulbs

Category 1 (A) Approved by the Ministry of Power

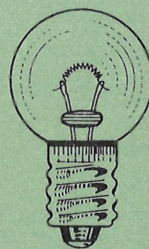
For use in	Volts	Amp	Shape	Dimensions		Cap	Finish	Price each	Standard packing quantity
				Diameter mm.	Overall length mm.				
Hand lamps†	2·5	1·75	Pear	18±2	45·5±2	S.E.S.	Pearl	s. d. 3 0	25 or 250
Cap lamps	3·6	1·0	Round	18±1	30·5±1	M.E.S.	Clear	2 6	50 or 500
Cap lamps	4·0	0·8	Round	18±1	30·5±1	M.E.S.	Clear	2 6	50 or 500
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.

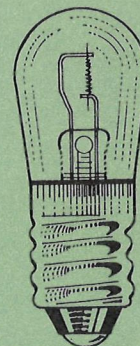
These bulbs are not subject to purchase tax.

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



Cap lamp bulb
M.E.S. cap
Scale × 1



Hand lamp bulb
S.E.S. cap Clear

Vehicle bulbs numerical index

Cat. No.	List Price	Description of bulb	Cat. No.	List Price	Description of bulb
	s. d.			s. d.	
1	5 0	12V 24W S.C.C. Head	258	2 6	12V 6W 44 mm. Festoon
2	5 0	12V 36W S.C.C. Head	260	2 9	24V 6W 44 mm. Festoon
4	5 0	12V 24W S.B.C. Head	262	2 6	6V 3W 31 mm.×8 mm. Festoon
5	5 0	12V 36W S.B.C. Head			
23	5 0	12V 48W S.C.C. Head	263	2 6	12V 3W 31 mm.×8 mm. Festoon
27	5 0	12V 48W S.B.C. Head	265	2 6	12 V 10W 44 mm.×15 mm. Festoon
57	5 0	12V 36W S.C.C. Head, Transverse filament	266	2 6	6V 15W 44 mm.×15 mm. Festoon
106	5 0	6V 24W S.C.C. Head	267	2 6	12V 15W 44 mm.×15 mm. Festoon
108	5 0	6V 36W S.C.C. Head			
109	5 0	6V 24W S.B.C. Head	270	3 6	12V 18W 44 mm.×15 mm. Festoon
111	5 0	6V 36W S.B.C. Head			
122	5 0	24V 24W S.B.C. Head	272	2 6	12V 10W 38 mm.×11 mm. Festoon
123	5 0	24V 36W S.B.C. Head			
127	7 6	24V 60W B.C. Head	273	3 6	12V 21W 44 mm.×15 mm. Festoon
128	7 6	24V 60W S.B.C. Head			
140	5 0	24V 48W S.B.C. Head	274	2 6	24V 10W 38 mm.×11 mm. Festoon
149	2 0	24V 6W S.C.C. Side			
150	2 0	24V 6W S.B.C. Side	280	1 9	12V 1.5W Lilliput E.S. Indicator
162		Replaced by No. 185			
166	6 0	6V 24/24W B.P.F. (D.C.) Head	281	1 9	12V 2W BA7s Indicator
			282	1 9	6V 0.6W BA7s Indicator
168	6 0	6V 24/24W S.B.C. Head	283	1 9	24V 3W BA7s Indicator
170	6 0	6V 36/36W S.B.C. Head	302	7 6	12V 48/48W B.P.F. Head (R.H. Drive)
171	6 0	12V 36/36W S.B.C. Head			
172	5 0	6V 36W B.P.F. (S.C.) Head	306	6 0	6V 36/36W B.P.F. Head (R.H. Drive)
173	5 0	6V 36W B.P.F. (S.C.) Spot			
177	5 0	12V 36W B.P.F. (D.C.) Spot	312	6 0	6V 30/24W B.P.F. Head
185	5 0	12V 48W B.P.F. (S.C.) Head	317	3 6	6V 18W A.S.C.C. Stop
194	6 0	24V 36/36W S.B.C. Head	319	3 6	6V 18W A.S.B.C. Stop
200		Replaced by No. 205	323	5 0	12V 48W B.P.F. (S.C.) Spot
204		Replaced by No. 206	326	5 0	12V 38W B.P.F. (D.C.) Head
205	1 9	6V 6W S.C.C. Side	330	5 0	24V 44W B.P.F. (D.C.) Head
206	1 9	6V 6W S.B.C. Side	331	5 0	24V 44W B.P.F. (D.C.) Head
207	1 9	12V 6W S.C.C. Side	332	6 0	24V 44/38W B.P.F. (L.H. Drive)
209	1 9	12V 6W S.B.C. Side			
218	2 0	14V 7W S.B.C. Side	333	4 0	24V 24W A.S.B.C. Stop
222		Replaced by No. 989	334	4 6	24V 6/24W S.B.C. offset pins, Stop and Tail
223	2 0	14V 7W S.C.C. Side	335	3 6	12V 21W A.S.B.C. Stop
253	2 6	6V 6W 38 mm. Festoon	338	4 0	24V 18W A.S.B.C. Stop
254	2 6	12V 6W 38 mm. Festoon	339	4 0	24V 24W A.S.C.C. Stop
255	2 6	6V 3W 35.5 mm. Festoon	344	4 6	28V 26W A.S.B.C. Stoplight
256	2 6	12V 3W 35.5 mm. Festoon	345	4 6	28V 26W A.S.C.C. Stoplight

Vehicle bulbs numerical index

Cat. No.	List Price	Description of bulb	Cat. No.	List Price	Description of bulb
	s. d.			s. d.	
354	—	Replaced by No. 414	645		Replaced by No. 643
356	6 0	6·4V 45/35W B.P.F. Head (R.H. Drive)	647	2 6	16V 3W M.C.C. Indicator
358	6 0	12V 44/38W B.P.F. Head (R.H. Drive)	650	1 9	24V 2·8W M.E.S. 11 mm. Indicator
359	6 0	24V 44/38W B.P.F. Head (R.H. Drive)	651	1 9	24V 2·8W M.C.C. Indicator
373	6 0	6V 30/24W B.P.F. Head (R.H. Drive)	653	2 9	24V 6W 38 mm. Festoon
380	4 0	12V 5/21W S.B.C. offset pins Stop and Tail	654	4 0	24V 6W 38 mm. Festoon (Supported filament)
381	4 0	12V 5/21W S.B.C. Stop and Tail	667	5 0	6V 36W Small Prefocus Spot (Nearlite)
382	3 6	12V 21W A.S.C.C. Stop	668	5 0	12V 36W Small Prefocus Spot (Nearlite)
383	4 0	6V 6/18W S.B.C. Stop and Tail	669	5 0	6V 36W Small Prefocus Spot (Farlite)
384	4 0	6V 6/18W S.B.C. offset pins, Stop and Tail	670	5 0	12V 36W Small Prefocus Spot (Farlite)
386	6 0	6V 15/15W S.B.C. one long pin Head	671	6 0	24V 44/38W S.B.C. Head
414	6 0	12V 50/40W B.P.F. (D.C.) shielded fil. Head (R.H. Drive)	685	6 6	12V 48W B.P.F. (S.C.) Cad. Yellow Head
404		Replaced by No. 444	692	4 6	24V 6/24W S.B.C. Stop and Tail
425	6 0	12V 24/24W B.P.F. (D.C.) Head	695	1 9	24V 2·8W M.E.S. Indicator (Tubular)
437	6 0	24V 54/44W B.P.F. Head (R.H. Drive)	702	5 0	12V 36W B.C. Head
444	7 6	12V 60/40W B.P.F. Head (R.H. Drive)	703	5 0	12V 48W B.C. Head
450	28 0	12V 55W B.P.F. Tungsten Halogen Fog/Spot	950	1 6	6V 6W M.E.S. Indicator
501	2 0	12V 5W Capless Side	951	1 9	6V 6W M.C.C. Side
504	1 9	12V 3W Capless Indicator	970	5	2·5V 0·2 amp. M.E.S. Flash
600	6 6	12V 48W B.P.F. (S.C.) Cad. Yellow Spot	972	5	2·5V 0·3 amp. M.E.S. Flash
606	5 0	24V 44W B.P.F. (D.C.) Head	974	5	3·5V 0·15 amp. M.E.S. Flash
620	5 0	24V 24W B.C. Head	977	5	3·5V 0·3 amp. M.E.S. Flash
621	5 0	24V 36W S.C.C. Head	982		Replaced by No. 990
622	5 0	24V 36W B.C. Head	983	2 6	8V 1·6W M.E.S. Indicator
624	5 0	24V 48W B.C. Head	985	2 6	16V 3W M.E.S. Indicator
637	2 0	16V 6W S.B.C. Side	986		Replaced by No. 987
638	2 6	24V 6W B.C. Side	987	1 3	12V 2·2W M.E.S. Indicator (11 mm.)
640		Replaced by No. 641	988	1 9	6V 3W M.C.C. Side
641	1 3	6V 3W M.C.C. Indicator	989	1 9	12V 6W M.C.C. Side
643	1 3	12V 2·2W M.C.C. Indicator (11 mm.)	990	1 3	6V 3W M.E.S. Indicator
			993		Replaced by No. 650
			5700	27 0	12V 37·5W Sealed Beam Unit
			5702	29 6	12V 50/37·5W Sealed Beam Unit

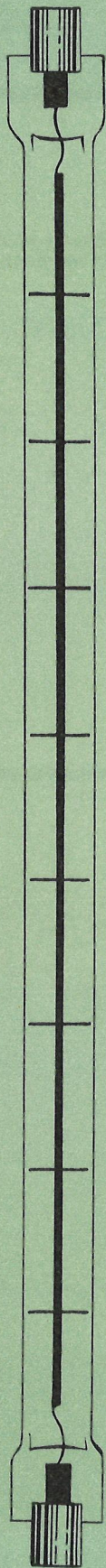
Vehicle bulbs numerical index

Cat. No.	List Price	Description of bulb	Cat. No.	List Price	Description of bulb
	s. d.			s. d.	
5704	29 6	12V 50W Sealed Beam Spot Unit	OS 68	8½	3·5V 0·3 amp. Prefocus Flash
5706	29 6	12V 50W Sealed Beam Fog Unit	OS 69	8	5V 0·15 amp. M.E.S. Flash
5707	29 6	24V 50W Sealed Beam Spot Unit	OS 70	7	6·2V 0·3 amp. M.E.S. Radio Panel
5708	29 6	24V 50W Sealed Beam Fog Unit	OS 71	5	1·5V 0·2 amp. M.E.S. Flash
7002	29 6	12V 60/45W 7 in. Sealed Beam Unit (R.H. Drive)	OS 72	5	1·25V 0·25 amp. M.E.S. Flash
7005	29 6	12V 50/40W 7 in. Sealed Beam Unit (L.H. Drive)	OS 75	7	6·5V 0·3 amp. M.E.S. Radio Panel
7010	32 6	12V 75/50W 7 in. Sealed Beam Unit (R.H. Drive)	OS 76	7	6·3V 0·11 amp. M.E.S. Radio Panel
7014	29 6	12V 60/45W 7 in. Mini Sealed Beam Unit (R.H. Drive)	OS 77	7	6·5V 0·3 amp. M.C.C. Radio Panel
OS A2	3 3	Sealed Beam Adaptor	OS 84	7	6·3V 0·15 amp. M.E.S. Tubular Radio Panel
OS A3	4 10	Mini Sealed Beam Adaptor	OS 85	7	6·2V 0·3 amp. M.E.S. Radio Panel Tubular
OS 43	5	See No. 970	OS 87	7	6·8V 0·3 amp. M.E.S. Radio Panel
OS 45	5	See No. 972	OS 90	7	6·5V 0·3 amp. M.E.S. Radio Panel Tubular
OS 50	5	See No. 974	OS 90M	7	6·5V 0·3 amp. M.C.C. Radio Panel Tubular
OS 55	5	See No. 977	OS 92	7	6·3V 0·15 amp. M.C.C. Radio Panel Tubular
OS 60	5	4V 0·3 amp. M.E.S. Flash	OS 207	3 0	6V 1·0 amp. M.E.S. (Krypton filled)
OS 62	8½	5·5V 0·3 amp. Prefocus Flash	OS 248	2 0	24V 6W M.C.C. Side
OS 64	1 0	6V 0·04 amp. M.E.S. Radio Panel	OS 263	1 6	12V 2·2W M.E.S. Indicator (10 mm.)
OS 65	5	4·5V 0·3 amp. M.E.S. Flash	OS 618	3 6	6V 18W 44×15 mm Festoon
OS 66	1 0	6V 0·06 amp. M.E.S. Radio Panel			
OS 67	8½	2·5V 0·3 amp. Prefocus Flash			

Osram

**Photographic
and
projector
lamps**

**including
Tungsten
Halogen
lamps**



1500W
Tungsten
Halogen
lamp

Tungsten Halogen lamps

The constant current types have been designed for airfield use. The 750/1000/1500W lamps are ideal for large area and building floodlighting.

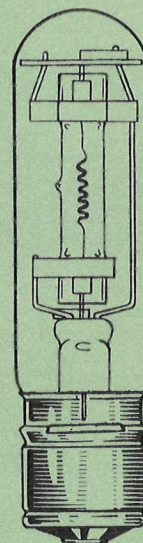
Rating	Standard Voltages	Shape	Finish	Cap	List Price
6.6 A (constant current) 200W	30	Tubular	Clear	Ceramic R7s	£ s. d. 2 10 0
6.6 A (constant current) 200W	30	Tubular	Clear	Medium Prefocus P28s/25	3 10 0
8.33 A (constant current) 200W	24	Tubular	Clear	Ceramic R7s	2 10 0
8.33 A (constant current) 200W	24	Tubular	Clear	Medium Prefocus P28s/25	3 10 0
750W	220 240 250	Tubular	Clear	Ceramic R7s	5 4 0
1000W	220 240 250	Tubular	Clear	Ceramic R7s	5 15 0
1500W	220 240 250	Tubular	Clear	Ceramic R7s	6 5 0

Diameter max.	Length max.	Light Centre Length	Nominal Light Output	Life	Burning Position
mm 12	mm. 60*	mm. N/A	lumens 4200	hours 600	Universal
33	130	55.5	4000	600	Universal
12	60*	N/A	4200	1000	Universal
33	130	55.5	4000	1000	Universal
12	186*	N/A	14,250	2000	Within 4° of Horizontal
12	186*	N/A	20,000	2000	Within 4° of Horizontal
12	251*	N/A	33,000	2000	Within 4° of Horizontal

*Measured between recess of contacts.



200W Tungsten Halogen
Ceramic cap



200W Tungsten Halogen
Prefocus cap

Lamps for photography GROUP ONE

Photoflood Designed for indoor photography with black and white or Type A colour film

Watts	Standard voltages	Standard cap	Finish	Type	Price per lamp	Nominal lumens	Objective average life	Dimensions		Standard packing quantity
								Length max.	Diameter max.	
250	30	E.S.	Pearl	No. 5	s. d. 3 9	8250	hours 5	mm. 121	mm. 66	25
275	{ 230 240 250 }	B.C.	Pearl	" 1	3 0	7700	3	109	61	25
		E.S.	Pearl	" 1	3 0	7700	3	110	61	25
500	{ 230 240 250 }	B.C.	Pearl	" 2	7 6	15,000	10	165	81	25
		E.S.	Pearl	" 2	7 6	15,000	10	166	81	25

Reflector photoflood Designed for indoor photography with black and white or Type A colour film

Watts	Standard voltages	Standard cap	Type	Price per lamp	Peak intensity	Objective average life	Dimensions		Standard packing quantity
							Length max.	Diameter max.	
275	230, 240, 250	B.C. or E.S.	No. 1/R	s. d. 12 6	Candelas 6800	hours 3	mm. 140 142	mm. 96 96	12
375	230, 240, 250	B.C. or E.S.	No. 3/R	14 0	12,500	4	144 146	96 96	
500	230, 240, 250	B.C. or E.S.	No. 2/R	17 6	12,500	6	154 156	112 112	6

Photographic These lamps may be used with 3200°K colour film

Watts	Standard voltages	Standard cap	Finish	Type	Price per lamp	Nominal efficiency Lm/W	Objective average life	Dimensions		Standard packing quantity
								Length max.	Diameter max.	
500	230, 240, 250	E.S.	Pearl	Series B	s. d. 22 0	21	hours 100	mm. 184	mm. 89	12
1000	240	G.E.S.	Pearl	Series B	30 0	24.5	100	275	132	12

Photographic enlarger The specially applied internal white coating gives a diffused light which helps to ensure uniform illumination over the whole negative area.

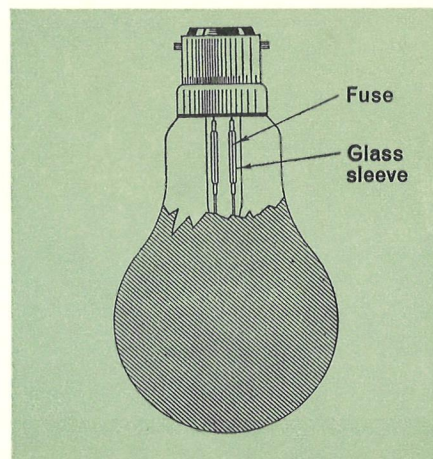
Watts	Standard voltages	Standard cap	Finish	Price per lamp	Nominal efficiency Lm/W	Objective average life	Dimensions		Standard packing quantity
							Length max.	Diameter max.	
75	230/250	B.C.	Internal White Coating	s. d.		hours	mm.	mm.	
100				3 0	9.2	1000	129	69	25
	3 0	10.0		1000	124	69	25		
150	230, 240, 250	B.C.		4 5	15	100	123	69	25
High Intensity									
300	240	E.S.		16 6	17	100	184	91	12
High Intensity									

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 in the smaller B.C. capped lamps.



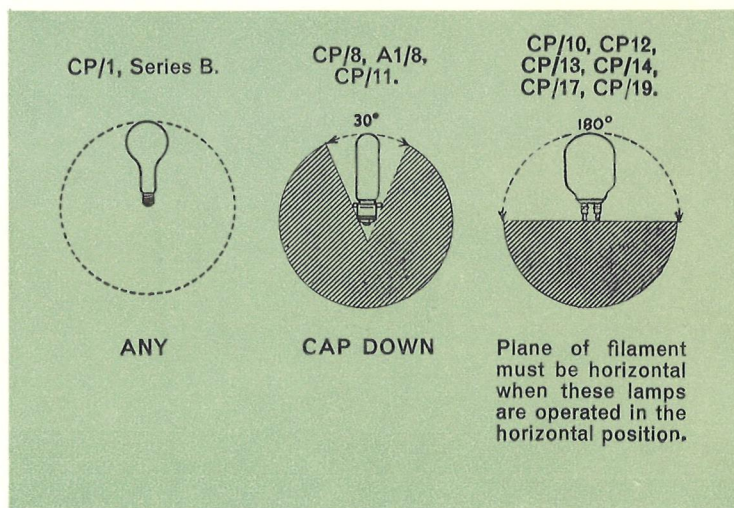
Lamps for colour photography

Controlled colour temperature for film balanced for 3200°K illumination

Watts	Standard volts	Standard cap	Finish	Ref. No.	Price per lamp	Objective average life	Lamp dimensions			Standard packing quantity
							Length max.	Diameter max.	Light centre length max.	
275 500	240 230, 240, 250	B.C. E.S.	Pearl Pearl	CP/1 Series B (replaces CP/2)	s. d. 3 0 22 0	hours 5-8 100	mm. 109 184	mm. 61 89	mm. N/A N/A	25 12
500	115 240	Med. Bipost	Clear	CP/9	92 6	{ 35 25	165	76	63.5	1
500	115 240, 250									
750	115 240, 250	Med. Prefocus	Clear	A1/8 (replaces CP/8) CP/10	33 0	{ 50 35	135	66	55.5	12
750	230, 240									
1000	240	Med. Bipost	Clear	CP/11	53 0	35	140	66	55.5	1
		Med. Prefocus	Clear	Series B	30 0	100	274	132	N/A	1
		G.E.S.	Pearl	(replaces CP/3)						
1000	220, 240	Med. Bipost	Clear	CP/19	130 0	100	165	76	63.5	1
1000	115 240, 250	Bipost	Clear	CP/17	130 0	100	240	154	127	1
2000	115 230, 240, 250									
5000	115 230, 240, 250	Bipost	Clear	CP/12	150 0	100	240	154	127	1
	115									
	230, 240, 250	Bipost	Clear	CP/13	400 0	100	341	205	165	1
	115									
10,000	240	Bipost	Clear	CP/14	760 0	200	490	302	254	1

Burning positions

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

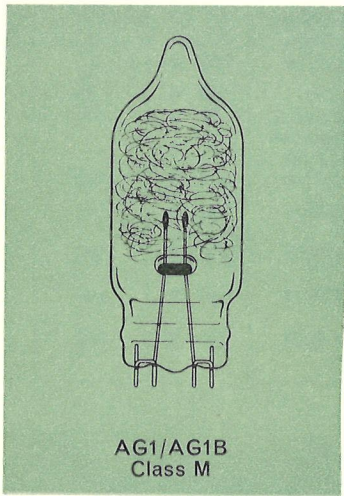


Bulbs for flash photography

Capless photoflash bulbs Class M

G.E.C. flashbulbs are suitable for all synchronised shutters at speeds of 1/30 second or less. At higher speeds M synchronisation is necessary. Blue-coated bulbs are essential for daylight colour film and for colour negative film when used out of doors. They may also be used with black and white film either indoors or out.

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	
	d.	lumen seconds	lumens	milli-seconds	milli-seconds	milli-seconds			mm.	mm.	
AG1	9	7000	400,000	16	10	11	Clear	3-42	33	11	6 or 144
AG1B	9	5500	230,000	16	10	11	Blue	3-42	33	11	6 or 144



Lamps for projection for ciné, film strip and slide projectors
CLASS A1

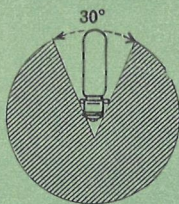
Watts	Standard voltages	Standard cap	Cat. No.	Price	Nominal lumens	Objective average life hours	Lamp dimensions		
							Length mm. max.	Dia. mm. max.	L.C.L. mm. nom.
50	8	Small Prefocus (P30s)	A1/17††	s. d. 35 0	—	25	96	33×44	47
100	12	Special Small Prefocus P35s	A1/203†	38 0	—	25	95	41×50	44
100	240, 250	Med. Prefocus P28s	A1/4	25 0	1500	50	135	26	55·5
100	240, 250	S.C.C. B15s	A1/21	20 0	1500	25	78	26	35
100	12	S.C.C. B15s	A1/186	18 3	2800	25	78	26	35
100	12	BA21s 4-pin	A1/193	18 3	2800	25	78	26	29·5
100	12	2-pin G6·35-1·25	A/215*	39 9	2900	50	44	11	30
150	24	2-pin G6·35-1	A/216*	45 6	4700	50	50	13·5	30†††
150	240, 250	S.C.C. B15s	A1/167	21 9	3000	25	90	26	35
150	240, 250	S.B.C. B15d	A1/168	22 9	3000	25	90	26	35
150	240, 250	Med. Prefocus P28s	A1/175	25 0	3000	25	135	26	55·5
150	240, 250	Pin base G17q	A1/182	30 0	3000	25	76	33	33·4
150	24	Pin base GY17q	A1/212†	33 0	4100	25	103	33	39·7†††

* Pinch not to exceed 350°C.

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

†† Replaces A1/185

††† L.C.L. measured to top of filament.



BURNING POSITIONS (Class A1)

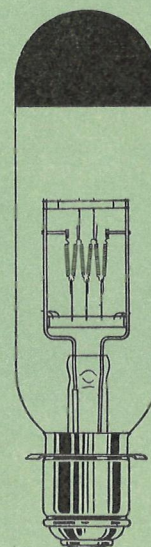
The shaded portion of this diagram shows the position in which the lamps *must not* be mounted.

VERTICAL CAP DOWN

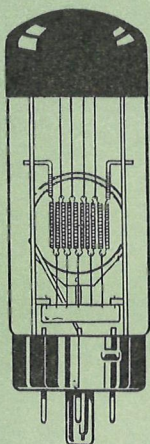
In accordance with International Practice the lumen outputs quoted for A1 lamps include the light absorbed by the gold top.



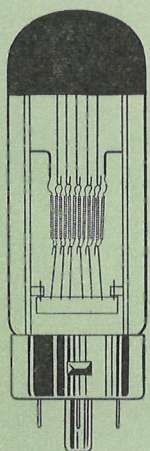
2-Pin base
G6·35-1·25



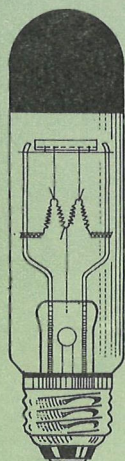
Prefocus cap
P28S and
P40S



4-Pin base
G17q



Pin base
G17q and
GY17q



E.S. cap
E27 E40

Watts	Standard voltages	Standard cap	Cat. No.	Price	Nominal lumens	Objective average life hours	Lamp dimensions		
							Length mm. max.	Dia. mm. max.	L.C.L. mm. nom.
250	50	Med. Prefocus P28s E.S. E27	A1/5	s. d.	6000	50	135	33	55.5
	240, 250		A1/14	31 6	5200	50	135	33	55.5
	240		A1/14	31 6	5200	50	130	33	75
300	115	Med. Prefocus P28s S.C.C. B15s	A1/6†	34 3	7400	25	135	33	55.5
	240, 250		A1/37††	33 0	7400	25	105	28	35
	240, 250		A1/178††	37 6	6900	25	105	28	35
	240, 250	Pin base G17q	A1/183††	33 0	6900	25	103	33	39.7
	240, 250	S.C.C. B15s	A1/183††	33 0	6900	25	81	28	35
	240, 250	Pin base G17q (Proximity Mirror)	A1/201††	37 6	—	25	103	33	39.7
500	115	Med. Prefocus P28s	A1/7†	46 0	12,500	25	135	33	55.5
	230, 240, 250		A1/8	33 0	11,500	50	135	66	55.5
	240, 250		A1/42	33 0	11,000	50	135	66	55.5
	230, 240, 250	Med. Prefocus P28s E.S. E27	A1/180††	55 0	11,000	50	130	66	75
	230, 240, 250	Pin base G17q	A1/205††	55 0	11,400	25	103	33	39.7
	240, 250	Pin base G17q (Proximity Mirror)	A1/205††	55 0	—	25	103	33	39.7
750	115	Med. Prefocus P28s	A1/9†	53 0	19,500	25	140	39	55.5
	240, 250		A1/53†	53 0	18,000	25	140	39	55.5
	240, 250	Bell & Howell P46s	A1/53†	53 0	19,500	25	135	39	59
	115	Med. Prefocus P28s	A1/30	57 0	18,000	25	135	39	59
1000	115	Large Prefocus P40s G.E.S. E40	A1/11	55 0	25,000	100	245	66	84
	230, 240, 250		A1/57	50 0	23,000	100	245	66	84
	240, 250		A1/58†	62 0	25,000	100	240	66	120
	240, 250	Med. Prefocus P28s	A1/58†	62 0	25,000	25	140	66	55.5
	115	Med. Prefocus P28s	A1/59†	62 0	27,000	25	140	39	55.5
	240, 250		A1/59†	62 0	25,000	25	140	39	55.5
	240, 250		A1/91†	62 0	27,000	25	140	39	59
	240, 250	Bell & Howell P46s	A1/91†	62 0	27,000	25	135	39	59
1000	240, 250	Pin base G17q	A1/207†	62 0	—	25	118	39	39.7
	240, 250	Pin base G17q (Proximity Mirror)	A1/207†	62 0	—	25	118	39	39.7

† Forced cooling necessary, wall of bulb not to exceed 500° Centigrade.

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

Standard packing quantities of all Class A1 projector lamps—12

CLASS A1 PROJECTORS
List prices in numerical order

No.	Type	List Price	No.	Type	List Price
		s. d.			s. d.
A1/4	H.V. 100W Med. Prefocus	25 0	A1/167	H.V. 150W S.C.C.	21 9
A1/5	E.L.V. & H.V. 250W Med. Prefocus	31 6	A1/168	H.V. 150W S.B.C.	22 9
A1/6	L.V. & H.V. 300W Med. Prefocus	34 3	A1/175	H.V. 150W Med. Prefocus	25 0
A1/7	L.V. & H.V. 500W Med. Prefocus	46 0	A1/178	H.V. 300W 4 Pin	37 6
A1/8	L.V. & H.V. 500W Med. Prefocus	33 0	A1/180	H.V. 500W 4 Pin	55 0
A1/9	L.V. & H.V. 750W Med. Prefocus	53 0	A1/182	H.V. 150W 4 Pin	30 0
A1/11	L.V. & H.V. 1000W Large Prefocus	55 0	A1/183	H.V. 300W S.C.C.	33 0
A1/14	H.V. 250W E.S.	31 6	A1/185	8V 50W Small Prefocus Replaced by A1/17	
A1/17	8V. 50W Small Prefocus	35 0	A1/186	12V 100W S.C.C.	18 3
A1/21	H.V. 100W S.C.C.	20 0	A1/193	12V 100W B.C. 4 Pin	18 3
A1/30	L.V. 750W Med. Prefocus	57 0	A1/201	H.V. 300W 4 Pin base	37 6
A1/37	L.V. & H.V. 300W S.C.C.	33 0	A1/203	12V 100W Special Prefocus	39 9
A1/42	H.V. 500W E.S.	33 0	A1/205	H.V. 500W 4 Pin base	55 0
A1/53	L.V. & H.V. 750W Bell & Howell	53 0	A1/207	H.V. 1000W 4 Pin base	66 0
A1/57	H.V. 1000W G.E.S.	50 0	A1/212	24V 150W 4 Pin	33 0
A1/58	H.V. 1000W Med. Prefocus	62 0	A1/215	12V 100W 2 Pin	39 9
A1/59	L.V. & H.V. 1000W Med. Prefocus	62 0	A1/216	24V 150W 2 Pin	45 6
A1/91	L.V. 1000W Bell & Howell	62 0			

Class B1 and B2 Floodlights, theatre spots and floods and display lighting


Watts	Standard voltages	Standard cap	Cat. No.	Price per lamp	Nominal Lumens	Objective average life	Lamp dimensions		
							Length max.	Diameter max.	Light centre length nom.
100	240, 250	E.S. E27	B1/1	s. d. 16 0	900	hours 800	mm. 125	mm. 81	mm. 75
250	{ 115 240, 250 }	E.S. E27	B1/2	25 0	{ 3600 3100 }	800	125	81	75
250	{ 115 230, 240, 250 }	Medium Prefocus P28s	B1/7	26 3	{ 3600 3100 }	800	130	81	55.5
500	{ 115 230, 240, 250 }	G.E.S. E.40	B1/3	34 0	{ 8000 7250 }	800	190	132	115
1000	{ 115 230, 240, 250 }	G.E.S. E.40	B1/4	52 6	{ 18,000 16,500 }	800	190	132	115
1000	240	Large Prefocus P.40s	B1/15	46 6	16,500	800	200	132	84
500	240, 250	G.E.S.	B2/1	34 0	7250	800	275	132	202
1000	240, 250	G.E.S.	B2/2	42 0	16,500	800	309	152	225
1500	210, 240, 250	G.E.S.	B2/3	56 0	26,000	800	344	172	250
1500	210, 240	Large Prefocus	B2/8	56 0	26,000	800	344	172	212

Class E Specially designed for epidiascopes

Watts	Standard voltages	Standard cap	Cat. No.	Price per lamp	Nominal Lumens	Objective average life	Lamp dimensions		
							Length max.	Diameter max.	Light centre length nom.
500	240, 250	{ Medium prefocus P28s }	E/1	s. d. 37 6	1100	hours 100	mm. 145	mm. 102	mm. 60
500	240, 250	E.S.E.27	E/3	36 6	1100	100	145	102	85

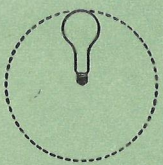
Packing—Lamps on this page will be packed to individual requirements.

Class B1



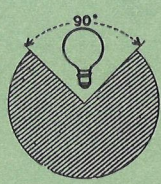
Burning positions
The shaded portions of these diagrams show the positions in which the lamps *must not* be mounted.

Class B2



Designed for burning in any position

Class E



Class F Micro-projection, microscope illumination

Watts	Standard cap	Volts	Cat. No.	Price per lamp	Nominal lumens	Objective average life	Lamp dimensions			Burning position
							Length max.	Diameter max.	Light centre length nom.	
24	S.E.S.	6	F10	s. d. 10 0	410	hours 100	mm. 65	mm. 39	mm. 10*	2
24	S.B.C.	6	F17	10 0	410	100	65	39	10*	1
24	S.B.C.	12	F/3	10 0	440	100	65	39	10*	2
24	S.E.S.	12	F/10	10 0	440	100	65	39	10*	2
30	S.E.S.	6	F/1	14 0	600	25	62	37	10*	2
30	E.S.	6	F/23	14 0	450	200	68	37	10*	2
30	E.S.	6	F/25	14 0	600	25	68	37	10*	2
30	S.E.S.	6	F/26	14 0	450	200	62	37	10*	2
48	S.E.S.	12	F/4	15 0	950	100	81	52	40	1
48	E.S.	12	F/13	15 0	950	100	81	52	38	1
48	S.E.S.	6	F/52	15 0	800	100	65	37	49	2
100	E.S.	12	F/14	20 0	2250	100	91	62	55	1
100	Medium prefocus	12	F/63	25 0	2250	100	98	62	37	1

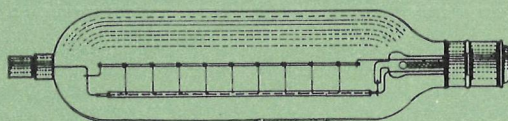
* Light centre length is measured from crown of bulb.

Burning positions: 1 :—Vertical cap down $\pm 135^\circ$. 2 :—Horizontal $\pm 30^\circ$.

Class FL Theatre and Aerodrome Floodlights

Watts	Standard voltages	Standard cap	Cat. No.	Price per lamp	Nominal lumens	Objective average life	Lamp dimensions	
							Length max.	Diameter max.
500	{ 115 240	{ G.E.S.	FL/1	s. d. 85 0	7250	hours 1000	mm. 365	mm. 91
1000	{ 115 240, 250	{ G.E.S.	FL/2	90 0	18,000	1000	405	91
1000	{ 115 210, 230, 240	{ special double ended	FL/6	95 0	18,000	1000	430	91
2000	240	special double ended	FL/3	142 0	45,000	200	430	91

Class FL. Horizontal only



Lamps for projection GROUP ONE

Class G Sound film production

Amp.	Volts	Standard cap	Cat. No.	Price per lamp	B.S. No.	Nominal lumens	Objective average life	Lamp dimensions			Burning position
								Length max.	Diameter max.	Light centre length nominal	
0.75	4	Small prefocus P30s	G/1	s. d. 12 9	E.L.10A	30	hours 50	mm. 51	mm. 26	mm. 28.5	1
0.75	4	S.C.C. B15s	G/19	11 6	E.L.11	30	50	51	16	31.8	1
0.75	4	Small prefocus P30s	G/29	11 6	E.L.13A	30	50	60	16.5	28.5	1
1	6	S.C.C. B15s	G/4	12 9	E.L.9	80	100	42	16.5	21.5	1
1	6	Small prefocus P30s	G/5	12 9	E.L.14A	80	100	60	16.5	28.5	2
4	8	S.C.C. B15s	G/8	12 9	E.L.1	650	100	78	26	44.5	2
4	8.5	S.C.C. B15s	G/9	12 9	E.L.2	680	100	78	26	44.5	2
5	10	S.C.C. B15s	G/11	14 9	E.L.4	1050	100	78	26	40.5	2
6.5	5	Small prefocus P30s	G/23	14 9	—	600	50	78	26	41	2
7.5	10	Small prefocus P30s	G/13	15 9	E.L.6A	1650	100	78	26	37.3	2
7.5	10	S.C.C. B15s	G/14	14 9	E.L.6	1650	100	78	26	41	2

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

Class G not subject to purchase tax.

Burning positions: 1:—Any 2:—Vertical cap down $\pm 30^\circ$.

BIPOST STUDIO LAMPS.

Class CP/S are suitable for use with black and white or 3200°K colour film and for television.

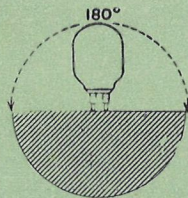
Class S are suitable for television and black and white film only.

Watts	Standard voltages	Standard cap	Cat. No.	Price per lamp	Nominal lumens	Objective average life	Lamp dimensions		
							Length max.	Diameter max.	Light centre length nominal
500	{ 115 240, 250	} Med. bipost (Bi 22)	S/3	s. d. 92 6	11,000 10,250	hours { 100 100	mm. 165	mm. 76	mm. 63.5
750	240, 250	Med. bipost (Bi 22)	S/6	100 0	16,000	100	165	76	63.5
1000	220, 240	Med. bipost (Bi 22)	CP/19	130 0	23,000	100	165	76	63.5
1000	{ 115 240, 250	} Bipost (Bi 38)	CP/17/S/4	130 0	{ 26,000 23,000	100	240	154	127
2000	{ 115 230, 240, 250	} Bipost (Bi 38)	CP/12/S/1	150 0	{ 52,000 50,000	100	240	154	127
5000	{ 115 230, 240, 250	} Bipost (Bi 38)	CP/13/S/2	400 0	{ 140,000 132,000	100	341	205	165
10,000	115	\ Bipost (Bi 38)	CP/14	760 0	300,000	200	490	302	254

Class S and CP Bipost

Burning position

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



Plane of filament must be horizontal when this lamp is operated in the horizontal position.

Lamps for projection

Class S Black and White Film and T.V. studio lighting.

Watts	Standard voltages	Standard cap	Cat. No.	Price per lamp	Nominal lumens	Objective average life	Lamp dimensions		
							Length max.	Diameter max.	Light centre length nominal
500	{ 115 240, 250 }	{ Med. bipost Bi 22 }	S/3	s. d. 92 6	{ 11,000 10,250 }	{ hours 100 }	mm. 165	mm. 76	mm. 63.5
750	{ 115 230, 240, 250 }	{ Med. bipost Bi 22 }	S/6	100 0	{ 16,500 16,000 }	{ 100 }	165	76	63.5

Class T Theatre spotlights

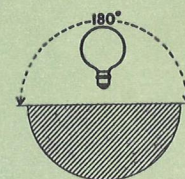
Watts	Standard voltages	Standard cap	Cat. No.	Price per lamp	Nominal lumens	Objective average life	Lamp dimensions		
							Length	Diameter	Light centre length
250	230, 240, 250	Medium prefocus P28s	T/3	s. d. 25 0	4250	hours 200	mm. 124	mm. 77	mm. 55.5
500	{ 115 230, 240, 250 }	{ Medium prefocus P28s }	T/1	35 0	{ 10,000 9,500 }	200	140	96	55.5
1000	230, 240, 250	Large prefocus P40s	T/2	45 0	20,000	200	200	132	87
1000	240	Medium prefocus P28s	T/6*	80 0	20,000	200	140	102	55.5
1000	240	Medium prefocus P28s	T/4	80 0	20,000	200	155	39	89

*Replaces T/5

Burning positions

Plane of filament must be horizontal when these lamps are operated in the horizontal position, except T4 within 15° from the vertical, cap up. T6 within 75° from the vertical cap down.

Class T



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/in², corresponding to a depth of about 1,200 ft. These lamps are made to order only.

Watts	Standard voltages	Standard cap	Price per lamp	Nominal lumens	Objective average life	Dimensions		
						Length max.	Diameter max.	Light centre length nominal
1000	{ 110 220, 230, 250 }	{ E.S. }	s. d. 50 0	{ 23,500 17,000 }	{ hours 50 300 }	mm. 189	mm. 102	mm. 129

Lamps for airfields

Approach See also page 56—for Tungsten Halogen versions

Watts	Standard current	Standard cap	Ref. No.	Price per lamp	Nominal lumens	Objective average life at nominal current	Lamp dimensions		
							Length max.	Diameter max.	Light centre length nominal
200	6·6A	Med. prefocus P28s	E.L.55*	s. d. 25 6	3700	hours 150	mm. 130	mm. 81	mm. 55·5
200	6·6A		—†	25 6	4200	40	146	38	55·5
200	8·33A		E.L.39*	25 6	3700	200	130	81	55·5
200	8·33A		E.L.60†	25 6	3700	150	130	81	55·5
300	8·33A		—	39 0	5700	500	130	81	55·5

* Coiled coil filament

† Flat grid filament

Airfield runway

Watts	Standard current	Standard cap	Ref. No.	Price per lamp	Nominal lumens	Objective average life at nominal current	Lamp dimensions		
							Length max.	Diameter max.	Light centre length nominal
30	6·6A	Med. prefocus	—	s. d. 12 0	420	hours 400	mm. 103	mm. 33	mm. 38
45	6·6A	Med. prefocus	—	16 0	650	400	103	32	38
45	6·6A	Bosch	—	16 0	640	150	68	38	30
100	6·6A	Bosch	—	21 8	2200	40	95	61	43
100	6·6A	Med. prefocus	—	22 8	1400	400	100	36	38·5
100	8·33A	Bosch	E.L.41	21 8	2100	50	76	51	35
100	8·33A	Bosch	E.L.50	21 8	2100	50	90	61	43
100	8·33A	Med. prefocus	E.L.56	21 8	2100	50	112	66	55·5