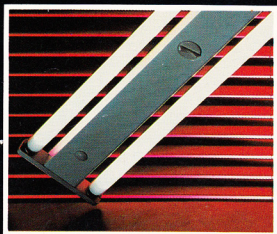
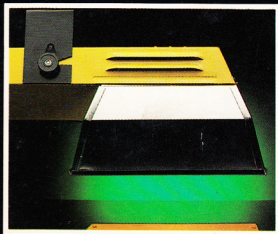
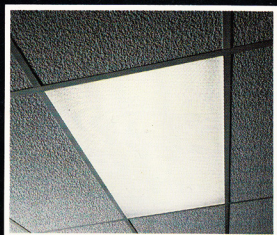
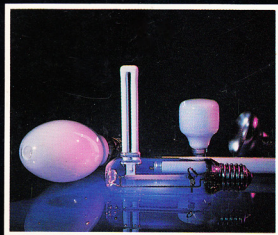
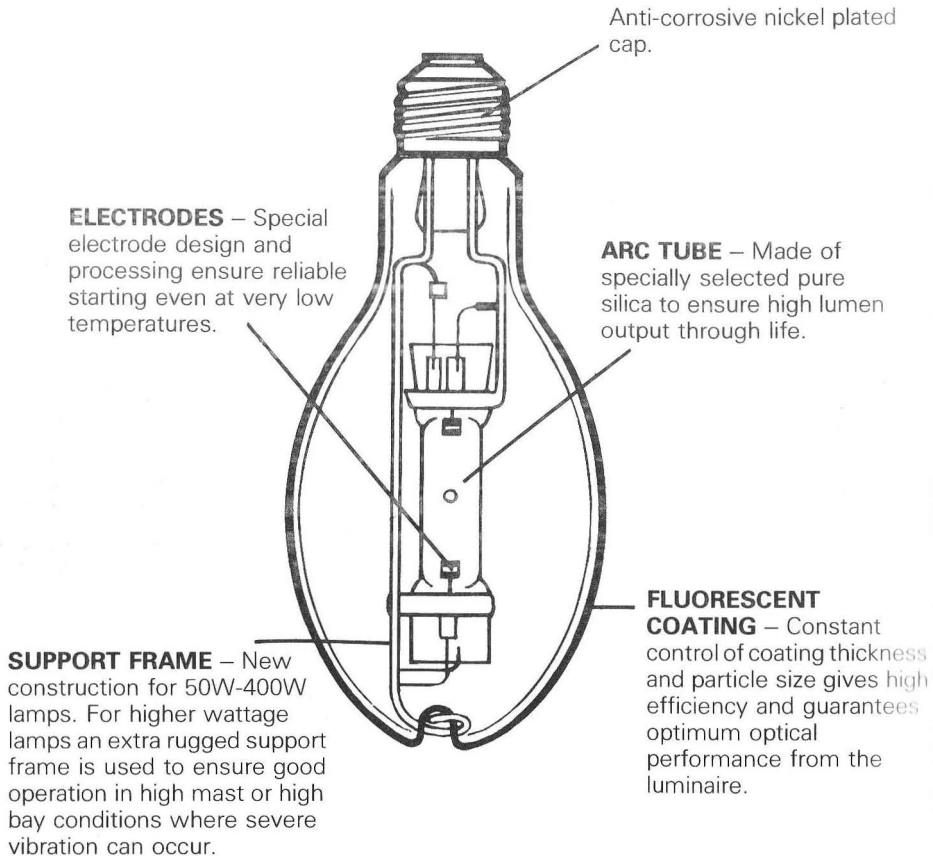


Osram-GEC

LIGHTING CATALOGUE



**LOOKING AT ENERGY SAVING
IN A DIFFERENT LIGHT.**



Symbols used for Mercury Lamps

- M - Mercury
- B - Quartz arc tube
- F - Fluorescent coating
- W - Woods Black Glass
- T - Tungsten Filament Ballast
- R - Internal Reflector
- U - Universal Operating position
- V - Vertical cap up
- D - Vertical cap down
- I - Iodide

High Pressure Mercury Lamps

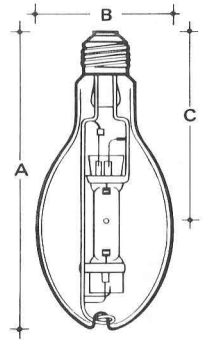
TRUELITE

TRUELITE MBF/U

This range of High Pressure Mercury lamps gives light of acceptable colour rendering due to the use of a Yttrium Vanadate based phosphor coating. This converts the ultra violet component of the Mercury discharge into visible light at the red end of the spectrum.

Watts	Volts	Cap	Std. Pack	Initial Lumens 100 hrs	Lighting Design Lumens 2000 hrs
50	200/250	E27 (ES)	30	1900	1750
80	220/250	E27 (ES) B22d-3 (3 pin BC)	25	3800	3500
125	220/250	E27 (ES) B22d-3 (3 pin BC) E40 (GES)	25	6200	5700
250	220/250	E40 (GES)	25	13000	11500
400	220/250	E40 (GES)	25	22700	21000
700	220/250	E40 (GES)	4	39000	38000
1000	220/250	E40 (GES)	4	56000	53000
1000*	370/410	E40 (GES)	4	58000	54000
1000	400/450	E40 (GES)	4	58000	54000

*Available to special order, minimum quantity 100.



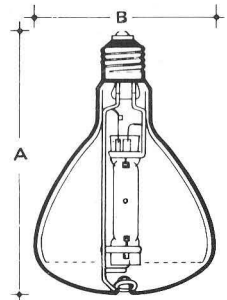
MBF/U

	A	B	C
50W	129	56	89
80W	165	71	103
125W	178	76	112
250W	227	91	150
400W	285	121	177
700W	320	143	208
1000WHV	350	167	212
1000WLV	400	167	261

TOPLITE MBFR/U

Unaffected by dust and dirt, these lamps are ideal for use in industrial installations. The 125 watt version is also suitable for shop window displays and for use in Downlighters.

Watts	Volts	Cap	Std. Pack	Initial Lumens 100 hrs	Lighting Design Lumens 2000 hrs
125	220/250	E27 (ES)	25	5000	4600
250	220/250	E40 (GES)	6	12000	11000
400	220/250	E40 (GES)	6	20000	18000
700	220/250	E40 (GES)	1	34000	32500
1000	220/250	E40 (GES)	1	53000	50000
1000	400/450	E40 (GES)	1	53000	49000



MBFR/U

	A	B
125W	178	127
250W	250	168
400W	275	183
700W	312	203
1000W	357	250.5

Manufactured to BS3677 : IEC 188.

For technical specification see pages 214 and 217

For details of control gear see sections 13 and 14.

BLEND AND HALIDE *High Pressure Mercury Lamps*

BLEND TRUelite MBFT/V

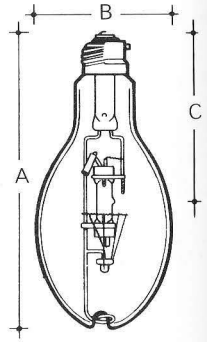
No control gear is needed for this range of Mercury lamps – they operate directly from the supply. The elliptical outer bulb is coated with a phosphor to improve colour rendering and light output.

Nominal Life: 200/230V – 6000 hours. 240/250V – 8000 hours.

Watts	Volts	Cap	Std. Pack	Initial Lumens 100 hrs	Lighting Design Lumens 2000 hrs
160	220/230	E27 (ES) or	25	2800	2500
	240/250	B22d (BC)		2900	2560
250	220/230	E40 (GES)	20	5500	4840
	240/250			4700	4100
500*	240/250	E40 (GES)	20	12500	11500

Operating Position – Cap up or down $\pm 45^\circ$.

*220/230 volt versions available, minimum quantity.



MBFT/V

	A	B	C
160W	178	76	130
250W	227	91	150
500W	285	121	177

MERCURY HALIDE MBI

The 2kW lamp has colour rendering characteristics ideal for colour television requirements with a correlated colour temperature of 5000°K.

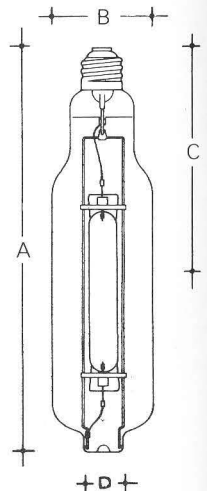
Nominal life – 2000 hours.

The 400 watt lamps are available in a choice of two saturated colours, blue or green. Ideal for decorative floodlighting to enhance the colour of trees or grass at night or to provide colour features for architecture.

Watts	Colour	Volts	Cap	Std. Pack	Initial Lumens 100 hrs	Lighting Design Lumens 2000 hrs
400	Blue	220/240	E40 (GES)	1	8000	6000
400	Green	220/240	E40 (GES)	1	26000	23000
2000	White	380/440	E40 (GES)	1	180000	160000*

*1000 hour only.

Operating position – 400W Vertical cap up to cap down $+20^\circ$ above horizontal.
2000W Horizontal $\pm 20^\circ$.



MBI

	A	B	C	D
400W	285	66	177	-
2000W	426	103	258	40

2kW

For technical specification see pages 214 and 217

For details of control gear see pages 164 and 165 and section 13

High Pressure Mercury Lamps

BLACK MAGIC AND LABORATORY LAMPS

BLACK MAGIC MBW/U and MBWT/V

Only long wave ultra violet radiation at 365 nanometres is transmitted by the 'Black glass' bulb. They are therefore suitable for special effects in discotheques, theatres and other entertainment areas. They also have commercial and security uses when discreet markings need to be read e.g. Laundry markings, forgeries and post coding of valuable items.

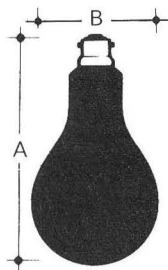
MBW/U lamps must be used in conjunction with suitable control gear.

The MBWT/V requires no control gear and can simply replace tungsten lamps wherever these special effects are required.

Type	Watts	Volts	Cap	Std. Pack
MBW/U	125	220/250	B22d-3 (3 pin BC) or E27 (ES)	25
MBWT/V	175	220/250	B22d (BC) or E27 (ES)	25

Operating Position – MBW/U: Universal.

MBWT/V: Vertical cap up or down ± 45 .



MBW/U, MBWT/V

	A	B
125W, 175W	180	89

LABORATORY LAMPS

A wide range of lamps is available, designed to provide sources of radiation either monochromatic or of specific wavelengths for use in diverse scientific fields from industrial to teaching and university experimental work. Details on application.

LAMPS FOR PHOTOCHEMICAL, PRINTING AND GERMICIDAL APPLICATIONS

A large range of long arc lamps is available suitable for diazo copying, litho platemaking, air and water sterilisation, printers circuit manufacture, ink drying, lacquer curing, photobiological and chemical processes. Details on application.

1. Ambient Temperature

Once the lamp has struck high ambient, temperature has little effect on performance or characteristics except where the temperature is high enough to affect lamp making materials such as capping cement. Low temperatures increase the striking voltage. Standard lamps will strike at -20°C provided the voltage is not lower than 220. For temperatures below -20°C special lamps can be made.

2. Vibration

GEC mercury discharge lamps are designed to withstand severe conditions of vibration with the exception of MBFT/V and MBWT/V. Their internal filaments render them unsuitable for rough service conditions.

3. Caps

GES (E40) ES (E27) 3 pin BC (B22d-3) Nickel plated brass
Flying lead
12mm dia.
1mm pitch

4. Outer Bulbs

50W, 80W, 125W MBF, MBFR, 160W, 250W MBFT
250W, 400W, 700W, 1000W MBF MBI
Soft glass
Borosilicate glass
125W MBW and 175W MBWT
MEI
'Woods' glass
Quartz
5. Hot Re-strike Times:
All types except MEI
MEI
10-15 minutes
Instant

Electrical Characteristics

Lamp Wattage	Supply Voltage	Arc Tube		
		Voltage (Objective)	Starting Current Amps	Running Current Amps
MBF, MBFR, MBW				
50	240	95	0.8	0.6
80	240	115	1.3	0.8
125	240	125	1.7	1.15
250	240	130	3.75	2.15
400	240	135	5.5	3.25
700	240	140	8.0	5.45
1000				
(220/250V)	240	145	11.5	7.75
(380/410V)	380	265	7.0	4.0
(400/450V)	415	300	7.0	3.3

MBI

400				
Green & Blue	240	120	5.5	3.6
2000	415	240	13.5	9.1

MBFTV

160	240/250	—	0.90	0.65
250	240/250	—	1.50	1.05
500	240/250	—	3.0	2.2
160	220/230	—	0.98	0.71
250	220/230	—	1.60	1.11
500	220/230	—	3.2	2.3

MBWT/V

175	240	—	0.93	0.77
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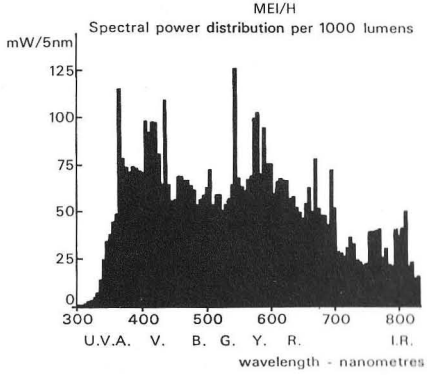
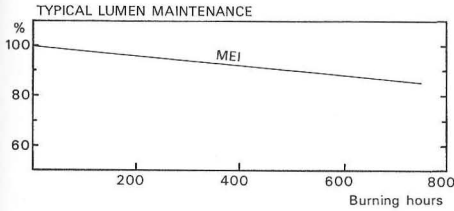
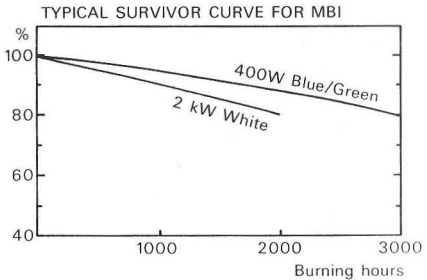
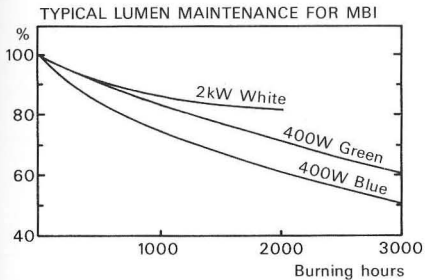
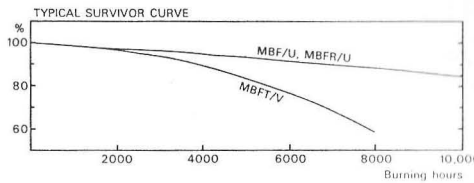
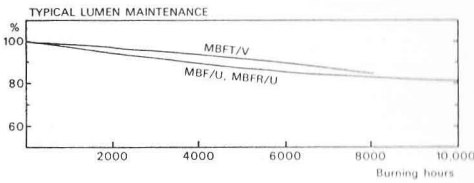
MEI HV 2.5 kW

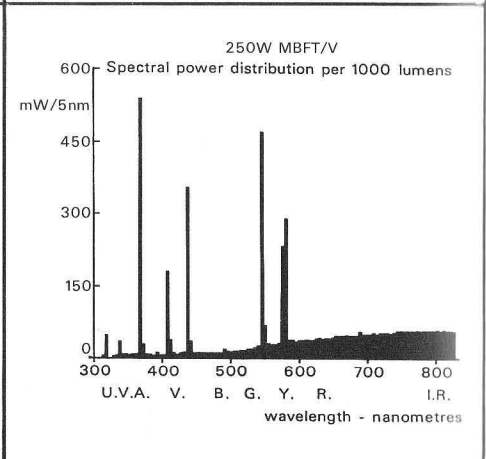
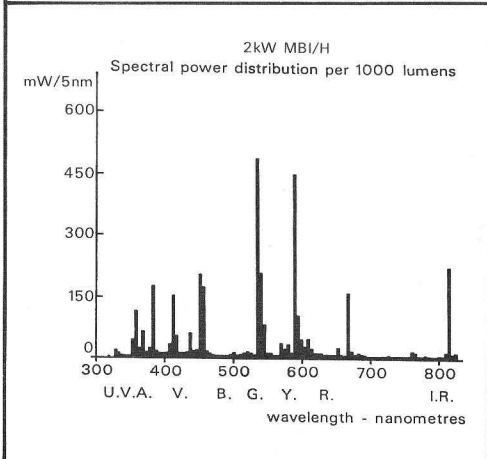
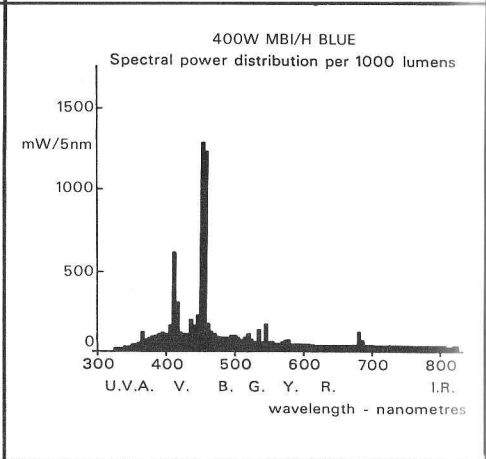
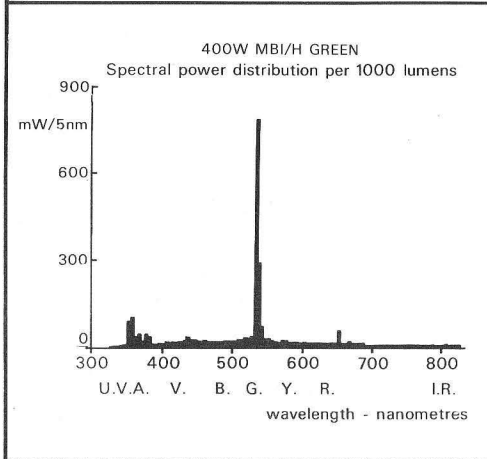
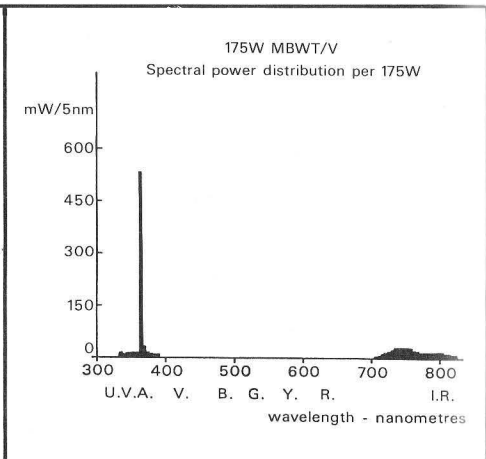
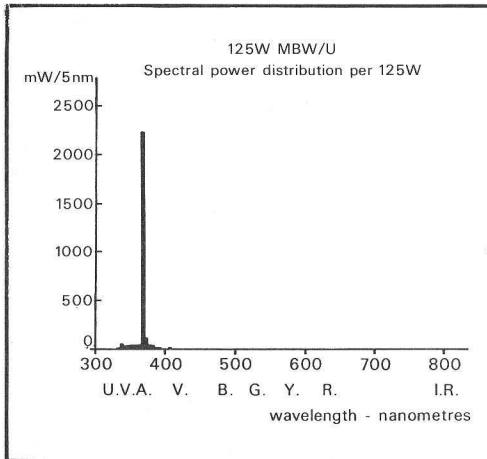
2500	415	190	25	14.8
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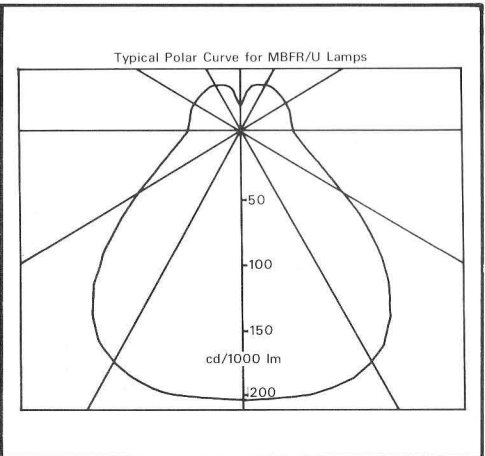
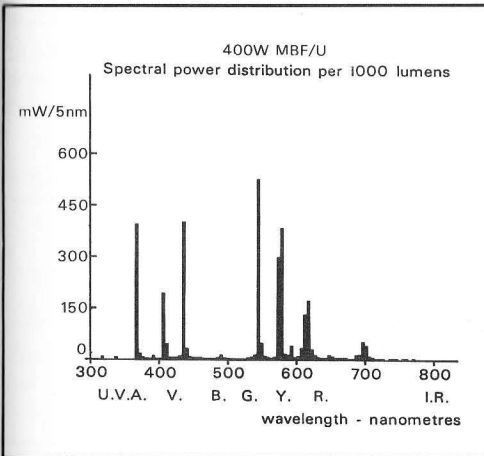
Starting current is taken 15 seconds after the lamp has struck.
Measurements have been taken with power factor correction.

6. Run-up times

- Types MBF, MBFR 80% light output in 3½ mins.
100% light output in 6 mins.
- Type MBFT 130% light output on commencement.
100% light output after 4 mins.
- Type MBI 80% light output in 2 mins.
100% light output in 5 mins.
- Type MEI 80% light output in 50 seconds.
100% light output in 2 minutes.







Changes of lamp characteristics with variation of mains voltage

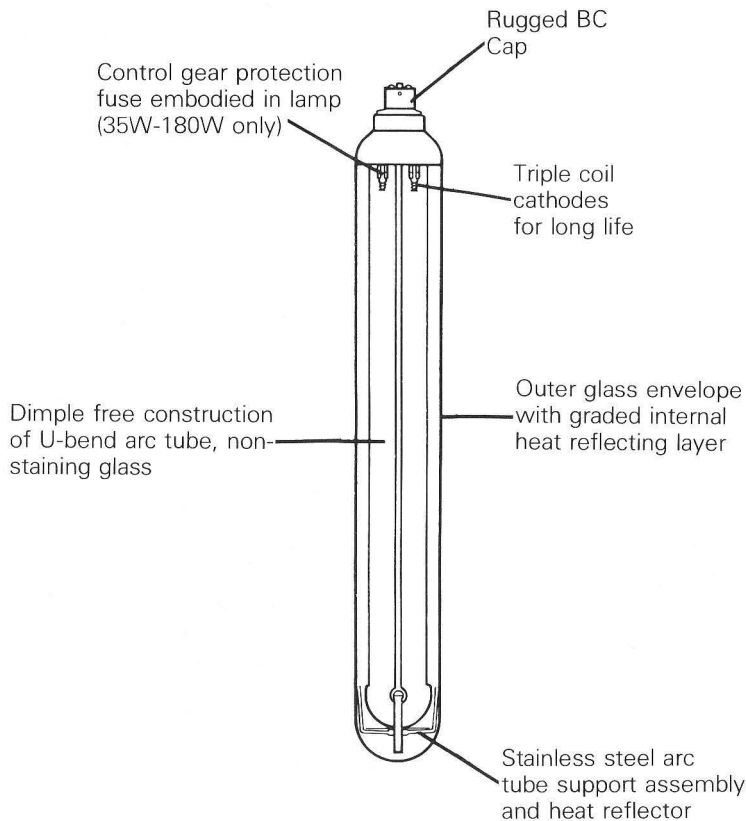
Percent change at 110% and 90% of nominal mains voltage	MBF MBFR MBI 400W	MBFT* MBWT*	MBI 2kW	MEI HV 2.5kW
Lumens	+25% -26%	+28% -28%	+27% -27%	+20% -15%
Arc current	+20% -18%	+ 5% - 5%	+16% -15%	+13% -13%
Arc volts	+ 2% - 4%	- -	+ 4% - 5%	+ 6% - 5%
Arc watts	+20% -22%	+20% -14%	+15% -19%	+19% -16%

*These lamps will have short lives if operated for long periods at voltages above the nominal.

	MBF	MBFR	MBFT	MBI Green	MBI Blue	MBI White	MEI HV 2.5kW
Colour Rendering Indices Ra	40-49	35-45	44-50	-	-	56	90-95
Chromaticity Co-ordinates	x	0.380	0.395	0.370	0.260	0.200	0.350
	y	0.380	0.400	0.400	0.560	0.140	0.390
Correlated Colour temperature K	4000	3800	4400	-	-	5000	5400

SUPER SOX

The inside story



Manufactured to BS3767 : IEC192.

For further technical information see pages 220 and 221.

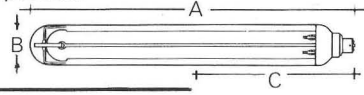
For details of control gear see pages 168 and 169.

LOW PRESSURE SODIUM

SUPER SOX

A range of very high efficiency lamps with the lowest running cost possible. Ideal not only for street lighting but makes lighting for security an economic proposition.

Operating Position – Horizontal ± 20 .



Super SOX Range

Watts	Volts	Cap	Std Pack	Initial Lumens 100 hrs	Lighting Design Lumens 2000 hrs	SUPER SOX			
						A	B	C	
10	200/250	B22d (BC)	25	1000	950	10W	150	41	95
18	200/250	BY22d (BC)	25	1800	1600	18W	210	54	130
35	200/250	BY22d (BC)	25	4600	4500	35W	311	54	180
55	200/250	BY22d (BC)	25	7650	7500	55W	425	54	235
90	200/250	BY22d (BC)	12	12750	12500	90W	528	68	290
135	200/250	BY22d (BC)	12	22000	21500	135W	775	68	410
180	200/250	BY22d (BC)	9	32000	31500	180W	1120	68	585

SOX-ECONOMY (SOX-E)

Dimensionally identical to the equivalent SOX lamps, SOX-E lamps have a much improved thermal conservation allowing them to run at a lower power with increased efficacy. Although designed to operate on circuits delivering much lower currents, SOX-E lamps are compatible with existing SOX circuits.

SOX-E Range

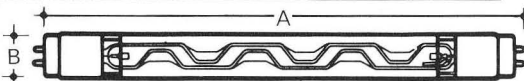
Lamp Type	Volts	Cap	Std Pack	Initial Lumens 100 hrs	Lighting Design Lumens 2000 hrs	SOX-E			
						A	B	C	
26	200/250	BY22d (BC)	25	4030	3900	26W	311	54	180
36	200/250	BY22d (BC)	25	6050	5900	36W	425	54	235
66	200/250	BY22d (BC)	12	10900	10400	66W	528	68	290
91	200/250	BY22d (BC)	12	16500	15600	91W	775	68	410
131	200/250	BY22d (BC)	9	26600	25300	131W	1120	68	585

These lumen figures relate to the use of SOX-E lamps on standard SOX control gear.

SLI/H Linear

These lamps are now normally used only for replacement purposes.

Watts	Volts	Cap	Std Pack	Initial Lumens 100 hrs	Lighting Design Lumens 2000 hrs	SLI/H		
						A	B	
60	200/250	G13 (Bi pin)	25	6000	5700	60W	419	38
160	200/250	G13 (Bi pin)	12	18500	18000	160W	902	38
200	200/250	G13 (Bi pin)	12	20500	20000	200W	902	38



1. Ambient Temperature

Only under conditions of extreme temperature variations will low pressure sodium lamps fail to strike. Such conditions will not normally be encountered.

2. Vibration

Mechanically the low pressure sodium lamp is strong and is not affected by normal vibration. Due to the sodium being molten when the lamp is running, under conditions of severe vibration, the lamps are best operated in a near horizontal position. Preferably the lamp cap should be above the horizontal.

3. Caps

BC: 10W B22D; 18-180W BY22D

4. Outer bulbs

Soft glass. Due to their design the outer bulb remains cool and will not shatter due to droplets of water or moisture.

5. Hot Restrike Time

This depends on the control gear used (and mains voltage). Ignitor circuits – generally immediate restrike.

Non-ignitor circuits – may be up to ten minutes in some cases.

6. Run-up time

See adjacent graph.

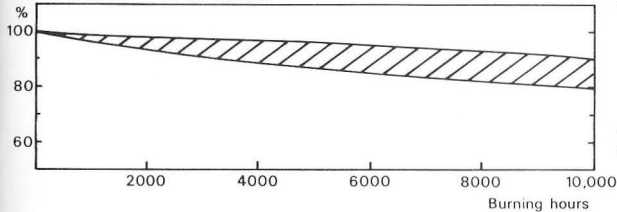
Typical Lamp Electrical Data

Lamp Type	Lamp Power Rating (W)	Lamp Voltage (V)	Lamp Current (A)
SUPER SOX	10	55	0.20
	18	57	0.35
	35	70	0.60
	55	109	0.59
	90	112	0.94
	135	164	0.95
	180	240	0.90

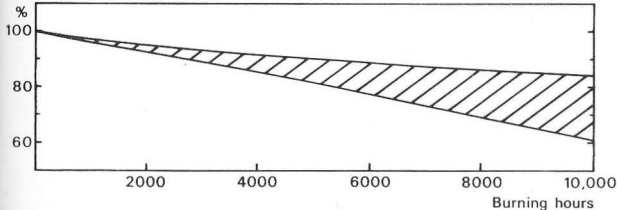
Lamp Type	Lamp Power Rating (W)	Running on GEC SOX Gear Type	Lamp Voltage (V)	Lamp Current (A)
SOX E	26	(35)	58	0.62
	36	(55)	79	0.61
	66	(90)	90	0.95
	91	(135)	122	0.98
	131	(180)	187	0.96

Low Loss Gear
 Low Loss Gear
 Leak Transformer Gear
 Leak Transformer Gear
 Leak Transformer Gear

TYPICAL LUMEN MAINTENANCE

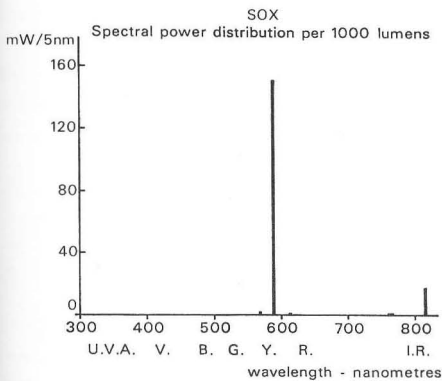
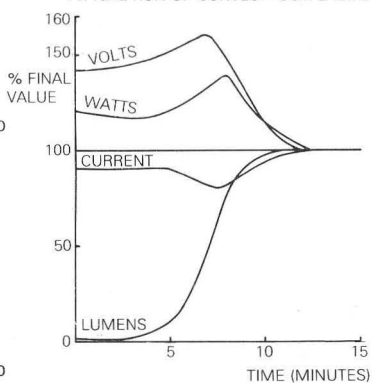


TYPICAL SURVIVOR CURVE



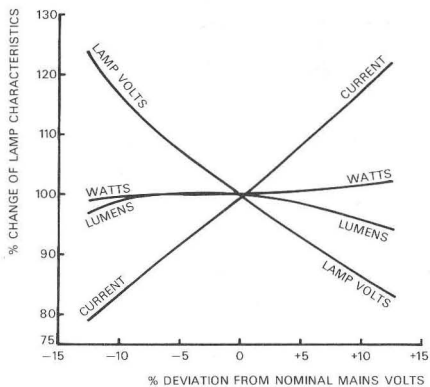
Leak Transformer Gear

TYPICAL RUN-UP CURVES – SOX LAMPS



Leak Transformer Gear

TYPICAL SOX LAMP VARIATIONS WITH MAINS VOLTAGE



Chromaticity	x	0.574
Co-ordinates	y	0.425
Colour rendering		
Index Ra		Not relevant
Colour Temp.		Not relevant

Changes will be greater when using low loss gear.

Lamps run for long periods at less than nominal volts will have shorter lamp lives. Lamp life will not be adversely affected by running at higher than nominal mains voltage.

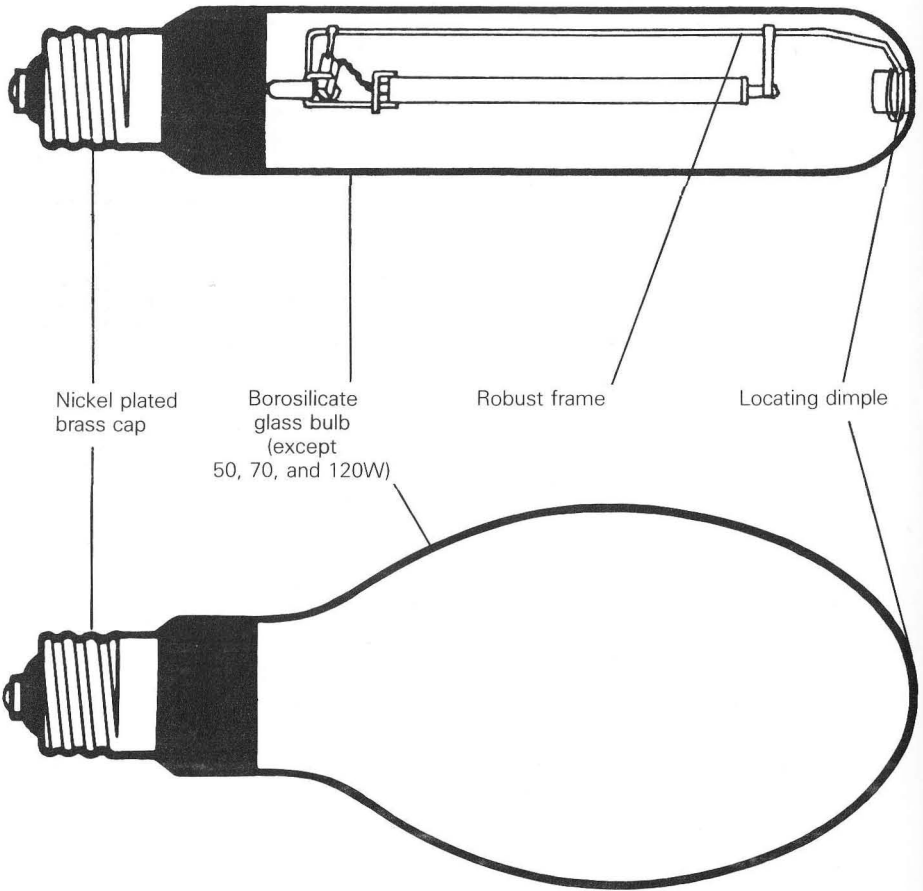
HIGH PRESSURE SODIUM (SON)

SOLARCOLOUR

The most extensive range of high pressure sodium lamps available from one manufacturer. Solarcolour lamps are available in four shapes each with its own function, for use in specialised luminaires.

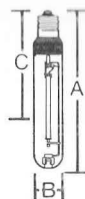
There are two colours (Standard and De Luxe). De Luxe for areas where better colour rendering is required, e.g. offices and shops etc.

The unique Plus range now not only offers between 10 to 20% more light than its standard equivalent, but maintains its light output better, and in addition Plus lamps last longer.



Clear Tubular SON-T (with starter)

Watts	Minimum Nominal Supply Volts	Cap	Std Pack	Initial Lumens 100 hrs	Lighting Design Lumens 2000 hrs
120	220	E27 (ES)	10	10500	10000
150	220	E40 (GES)	10	16000	15250
220	220	E40 (GES)	10	24000	22500
250	220	E40 (GES)	10	28000	27000
310/360	220	E40 (GES)	10 @ 310W	37000	35500
	230		@ 360W	43500	41500
400	220	E40 (GES)	10	50000	48000
600	380	E40 (GES)	10	70000	65000
1000	380	E40 (GES)	4	135000	130000



SON-T, SONP-T, SONDL-T

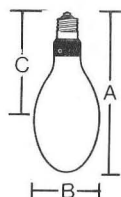
	A	B	C
120W	178	76	100
150W	211	52	130
220-250W	257	52	158
310-400W	285	52	175
600W	328	67	200
1000W	400	67	240

Clear Tubular SON-T (without starter)

Watts	Minimum Nominal Supply Volts	Cap	Std Pack	Initial Lumens 100 hrs	Lighting Design Lumens 2000 hrs
150	220	E40 (GES)	10	16000	15250
250	220	E40 (GES)	10	28000	27000
400	220	E40 (GES)	10	50000	48000
600	220	E40 (GES)	10	74000	70000
1000	220	E40 (GES)	10	132000	127000

Elliptical Diffused SON-E (with starter)

Watts	Minimum Nominal Supply Volts	Cap	Std Pack	Initial Lumens 100 hrs	Lighting Design Lumens 2000 hrs
50	220	E27 (ES)	40	3500	3100
70	220	E27 (ES)	40	6000	5500
120	220	E27 (ES)	10	10500	10000
150	220	E40 (GES)	10	15250	14500
220	220	E40 (GES)	10	23000	21500
250	220	E40 (GES)	10	27000	26000
310/360	220	E40 (GES)	10 @ 310W	36000	34500
	230		@ 360W	42000	40000
400	220	E40 (GES)	10	48500	46500




SON-E, SONP-E, SONDL-E

	A	B	C
50-70W	157	72	100
120W	178	76	112
150-250W	227	91	150
310-400W	285	121	175

Elliptical Diffused SON-E (without starter)

Watts	Minimum Nominal Supply Volts	Cap	Std Pack	Initial Lumens 100 hrs	Lighting Design Lumens 2000 hrs
150	220	E40 (GES)	10	15250	14500
250	220	E40 (GES)	10	27000	26000
400	220	E40 (GES)	10	48500	46500

 This international symbol which is marked on all Solarcolour lamps which have an internal snap starter switch, indicate that they can be used in luminaires whether or not they have an external starter fitted.

 Lamps marked with this symbol can only be used in luminaires fitted with an external starter.

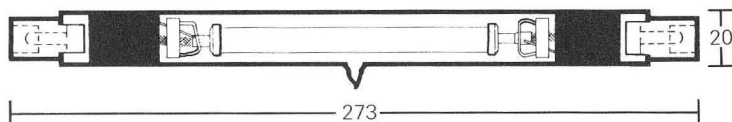
Manufactured to IEC662.

For further technical information see pages 226 and 227.

For control gear to operate these lamps see pages 160 and 166.

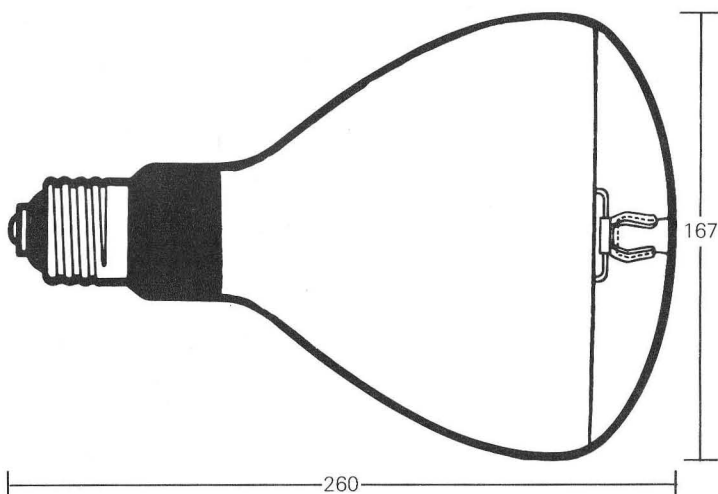
Double-ended Linear SON-L (without starter)

Watts	Minimum Nominal Supply Volts	Cap	Std Pack	Initial Lumens 100 hrs	Lighting Design Lumens 2000 hrs
250	220	R12.5S	10	28000	26500
310	220	R12.5S	10	37000	35000
400	220	R12.5S	10	50000	47000



Reflector SON-R (with starter)

Watts	Minimum Nominal Supply Volts	Cap	Std Pack	Initial Lumens 100 hrs	Lighting Design Lumens 2000 hrs
250	220	E40 (GES)	1	23000	21500
310/360	220	E40 (GES)	1 @ 310W	31500	29500
	230		@ 360W	37000	34000
400	220	E40 (GES)	1	42500	39000



Manufactured to IEC662.

For full technical specification see pages 226 and 227.

For details of control gear see pages 166 and 167 and section 13.

SOLARCOLOUR PLUS LAMPS

Between 10 and 20% fewer luminaires would be required when using Solarcolour Plus, compared with standard high pressure sodium lamps of the same wattage. Longer life and improved lumen maintenance are also featured of these second generation SON lamps. Suitable external starters are required with Plus lamps.

Clear Tubular SONP-T (without starter)

Watts	Minimum Nominal Supply Volts	Cap	Std Pack	Initial Lumens 100 hrs	Lighting Design Lumens 2000 hrs
150	220	E40 (GES)	10	17500	17000
250	220	E40 (GES)	10	33000	32500
310	220	E40 (GES)	10	41000	40000
400	220	E40 (GES)	10	56500	55000

Elliptical Diffused SONP-E (without starter)

150	220	E40 (GES)	10	16500	16000
250	220	E40 (GES)	10	31500	31000
310	220	E40 (GES)	10	39500	38500
400	220	E40 (GES)	10	55000	53500

SOLARCOLOUR DE LUXE LAMPS

Improved colour rendering is the main benefit of De Luxe lamps. With increased sodium pressure compared with standard lamps, some of the yellow radiation is converted towards the red and blue ends of the spectrum

Clear Tubular SONDL-T (without starter)

Watts	Minimum Nominal Supply Volts	Cap	Std Pack	Initial Lumens 100 hrs	Lighting Design Lumens 2000 hrs
150	220	E40 (GES)	10	12500	11500
250	220	E40 (GES)	10	23700	22000
400	220	E40 (GES)	10	38500	36000

Elliptical Diffused SONDL-E (without starter)

150	220	E40 (GES)	10	12000	11000
250	220	E40 (GES)	10	21750	20000
400	220	E40 (GES)	10	37000	34500

Manufactured to IEC662.

For full technical specifications see pages 226 and 227.

For details of control gear see pages 166 and 167 and section 13.

1. Ambient Temperature

The light output of the lamp will not be adversely affected in the range -40°C to 100°C . However, in the design of luminaires the guide lines of IEC662 should be followed so that radiant heat rays from the lamp are not reflected by the luminaire optic back on to the arc tube.

2. Vibration

GEC Solarcolour lamps are designed to withstand conditions of severe vibration. In extreme cases, however, vertical cap-up is recommended.

3. Caps

GES (E40) ES (E27) Nickel plated brass.
R12.5s silver plated copper surrounded by a ceramic hood.

4. Outer bulbs

SON-E, SON-T 50W	Soft glass
70W, 120W	Borosilicate
Remainder	glass
SON-L	Quartz

5. Hot Restrike time

- (a) Lamps with electronic starter – 30-60 seconds.
- (b) Lamps with internal starter – 15-20 minutes.

6. Run-up time²

80% Light output in 3 minutes.
100% Light output in 6 minutes.

Electrical Characteristics

Lamp Wattage	Minimum Nominal Supply Voltage ¹	Arc Tube		
		Voltage \pm	Starting Current ²	Running Current
50	220	85 15	0.87	0.76
70	220	90 15	1.3	1.0
120	220	100 15	1.8	1.4
150	220	100 15	2.4	1.8
220	220	105 15	3.7	2.5
250	220	100 15	4.1	3.0
310/360 at 310	220	110 15	4.8	3.4
310/360 at 360	240	120 15	5.4	3.7
400	220	105 15	6.6	4.45
600	380	200 30	5.0	3.7
600	220	110 15	7.65	6.2
1000	380	200 30	7.5	5.7
1000	220	110 15	13.0	10.3

Percent change at 110% and 90% of Nominal Mains Voltage².

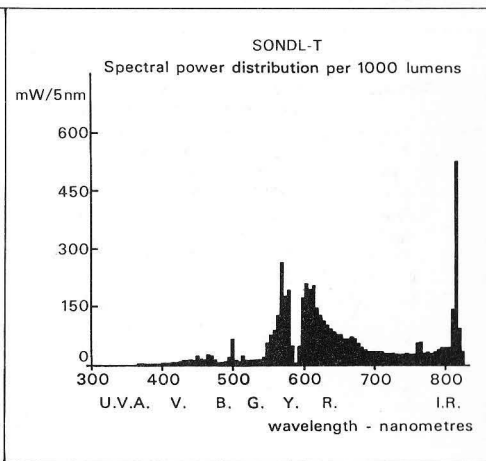
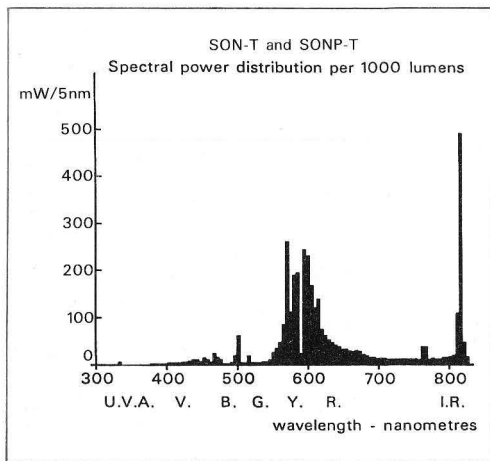
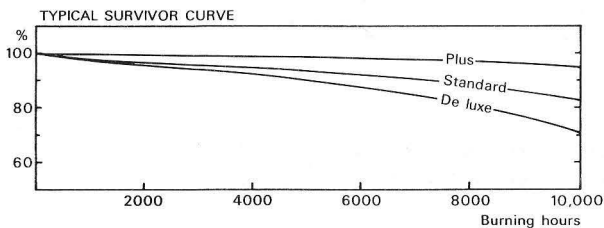
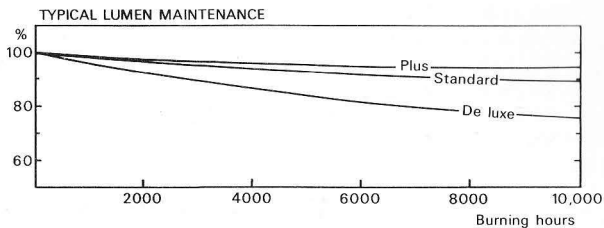
	110%	90%
Lumens	+18%	-26%
Arc current	+3%	-4%
Arc voltage	+26%	-22%
Arc watts	+22%	-23%

For maximum lamp and control gear life and efficacy the average supply voltage **during the hours of use** should be within +5 volts of the rated voltage of the choke tapping.

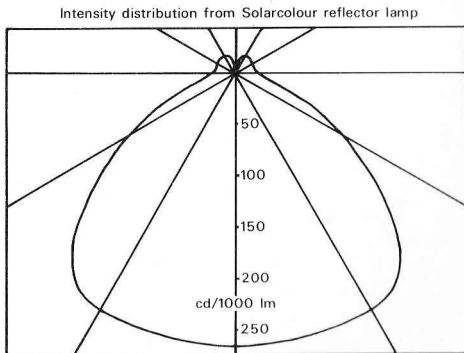
Extended periods of use when the supply voltage is more than 5% above the nominal may result in significant shortening of lamp and control gear life.

NOTE: The characteristics given in the above table have been measured with power factor correction in a typical luminaire. In free air the arc tube voltage of clear lamps will be approximately 5% lower (Solarstream 20% lower). The starting current is measured 10 seconds after the lamp has struck.

- The lamp will operate successfully at supply voltages less than the minimum nominal if appropriate control gear is used.
- Values are typical and will depend on control gear and supply voltage.



	Standard	Plus	De Luxe
Colour rendering Indices Ra	23	25	70
Chromaticity Co-ordinates			
x	0.526	0.534	0.506
y	0.418	0.431	0.418
Correlated Colour Temp.			
K	2100	1900	2300



Most Solarcolour lamps have an internal starter switch but recent introductions such as the Plus and De Luxe ranges as well as our Linear (SON-L) and a supplementary range of standard lamps which are now available without starter require an electronic starter to initiate the discharge.

These starters provide the high voltage pulses necessary to start those High Pressure Sodium (SON) and MBI lamps which are not fitted with internal starter switches. They are also used to shorten hot re-strike time on those lamps with internal starters.

Two types of starter are available, a new range of plastic cased three-lead devices for use in those circuits where the ballast has a 20V tap and a reduced range of two lead starters in aluminium cases for use in conjunction with tapless ballasts. Both types have an 8mm threaded fixing stud.

All these starters cease to operate once the lamp has struck, and part of the two-wire range is available with a cut-out which operates if the lamp fails to strike after a pre-set time.

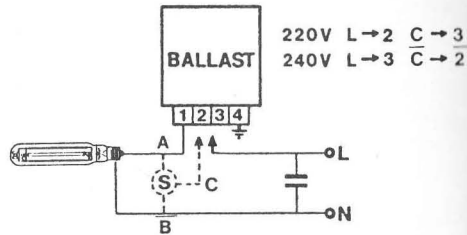
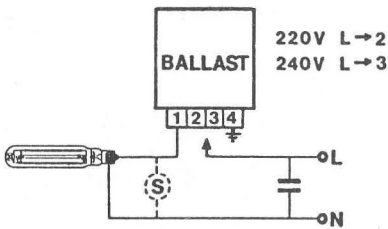
The two-wire starters are provided with flying leads (280mm) and the three-lead types have an integral terminal block.

Two-wire starters and three-lead starters have different nominal supply voltage ranges and the accompanying table should be consulted for further information.

The two-wire starters are designed to operate with a maximum capacitive load of 3500 μ F and the three-lead starters are divided into a lantern and short column range (maximum capacitive load 1000pF) and a general column range (maximum capacitive load 3000pF choke to lampholder).

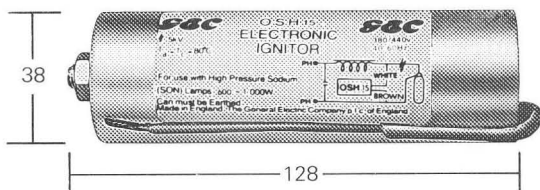
For guidance flat twin and earth PVC insulated and sheathed 300/500V 1.5mm² or 2.5mm² cable can be assumed to impose a capacitive loading of 100pF per metre. Single conductor versions of a similar cable would present a capacitive loading of approximately 70pF per metre in random lay.

TYPICAL TWO LEAD AND THREE LEAD CIRCUITS



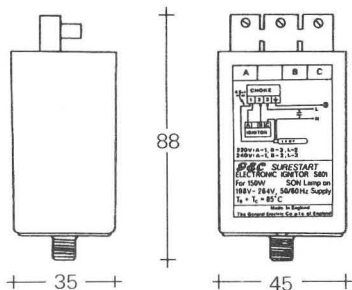
RANGE (Two lead starters)

Lamp Wattage	Nominal Supply Volts	Order Reference Numbers	
		Standard	With Cut-out
220, 250, 310/360, 400, 600, 1kW	240/250	OSH30	OSH40
600 1kW	380/440	OSH15	
2kW MBI	380/440	OSH15	



RANGE SURESTART ELECTRONIC STARTERS (Three lead)

Lamp Wattage	Nominal Supply Volts	Order Reference Numbers	
		Integral 1000pf max	Remote 3000pf max
50	220/240	S607	S616
70, 120	220/240	S603	S611
150	220/240	S601	S610
250, 310/360, 400	220/240	S602	S609
600, 1kW	220/240	S604	S612
600, 1kW	380/440	S605	S613
2kW MBI	380/440	—	S615



All starters are suitable for use on 50Hz or 60Hz.