

Osram-GEC
Solaroolour

SPECIAL
COLOUR
EDITION

G.E.C.
HPS/3
SOLAROLLOUR
400W 8529
MADE IN ENGLAND

8.085



Solarcolour shows up light in its true colour

What happens to a superbly-
designed shopping precinct when
night falls? Will it still attract the eye
and warm the mind?
Only if the lighting is right for it. And
the colours stay true to nature.
Well, that's what Osram - GEC's
high - pressure sodium Solarcolour
lamps are built to do. They make the
environment look its best.
Warmer, cheerful, more pleasant.
But that, of course, is only half the
story. The other half is just as
important.



Backdrop to Solarcolour

Space research produced a ceramic material which, when intensively researched and developed, gave birth to Osram-GEC, High Pressure Sodium lamps.

Now Osram-GEC have a range of lamps with starters, control gear, fittings and lanterns, to give solutions to most of today's lighting problems.

Solarcolour, apart from its high technical qualities, makes a major contribution to the quality of our living and environment, with its warm sunlight character.

Here are some installations which illustrate Solarcolour's diversity of application.



The first 1000W. Solarcolour installation in Britain at Llanwern BSC Roll Shop; brought increased illuminance and saved power.



Solarcolour enhances the mellow stone of Worcester Cathedral



Solarcolour is lighting for people, giving here lighting for Security, Safety, Amenity and Leisure.



Solarcolour in Dublin provides superb streetlighting and brings harmony to the lighting of buildings and people.



600W Solarcolour lamps in GEC highmast units bring safety and improved vision to a complex motorway interchange at Runcorn.

A colourful long-life

Economic Comparisons

With the continuing improvement of efficiency of Solarcolour lamps, in many cases it is possible to justify the use of Solarcolour as a light source on grounds of sheer economic benefit, expressed either in terms of capital cost or running costs.

The cost comparisons do not bring out another hidden benefit – the high efficiency of Solarcolour means released electrical power capacity in existing buildings and lower capital cost of installation in new buildings.

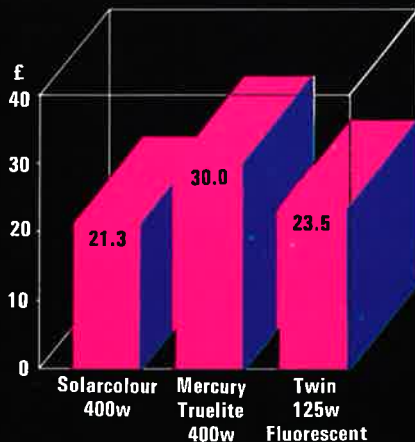
A casual glance at Solarcolour lamp prices might suggest that its cost would be high, both in terms of capital expenditure and in running costs. In fact the very high efficiency and lamp life comparable to other sources reverses the apparent position.

Capital Costs.



A typical medium high bay installation has been compared, using either 400W Solarcolour, 400W Truelite Mercury or twin 8' 125W industrial trough fittings. The results are clear, and no account has been taken in the increased cost of cleaning fluorescent tubes, or the benefit of released mains capacity when using a high efficiency source.

Running Costs for 3,000 hrs/annum



The running cost of an installation, ignoring cleaning, comprises the fixed KVA demand charge, energy cost, and the proportionate cost of the lamp.

The savings are significant in favour of Solarcolour.

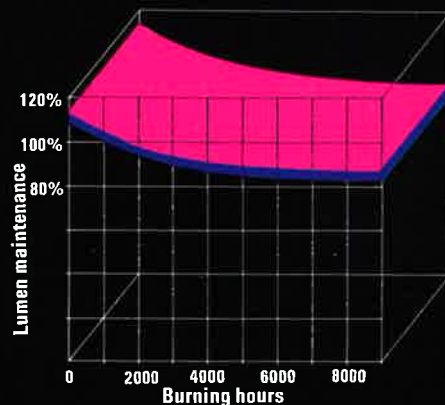
Comparative Sizes

The photograph shows a compact 250 watt Solarcolour SON/T lamp with an array of other light sources which are needed to produce the same lumen output.

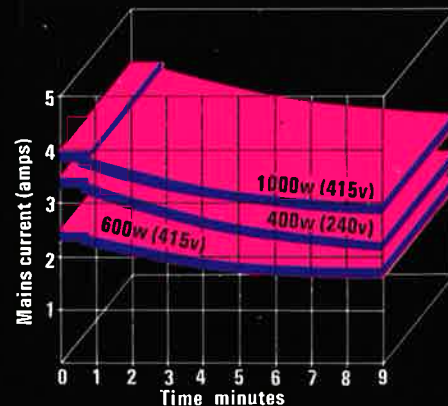
Five 5' 65/80w fluorescent tubes.
 Or one 135w SOX lamp.
 Or one 400w Mercury MBF/U lamp.
 Or one 750 GLS tungsten lamp and one 300 GLS tungsten lamp.



Typical lumen maintenance of Solarcolour lamps.



Typical starting characteristics of Solarcolour lamps



Solarcolour Plug-in Replacement

The Solarcolour range includes a series of lamps that are *direct plug-in replacements* for mercury lamps. Existing installations of mercury lamps, either 250 or 400 watt ratings, can be upgraded *without any capital cost* being incurred. In addition to the colour improvement, the principal benefits are :

- Bonus of additional light.
- No need to change control gear.
- Released mains capacity created.

220w Plug-in Solarcolour

The latest addition to the range – replacing the 250W mercury lamp without change of tapping.

310w Plug-in Solarcolour for maximum economy

Where maximum economy and the releasing of mains energy for other uses is the prime consideration choose the 310W version. It gives an extra bonus of up to 47% extra light.

It should be used where the installation utilises a tapped choke. Tapping should be set 10 volts higher than the actual supply voltage. To achieve 85 power factor it may be necessary to add a small additional capacitor to raise the value to 25 mfd.

360w Plug-in Solarcolour for maximum light increase

Where maximum increase of light output is the major need ; up to 60% while still achieving a reduction in wattage.

No tapping change in the choke is necessary.

Note : Cable insulation between lamp and control switch or cut out must be P.V.C. or similar approved material.

The types - physically same size as the equivalent mercury lamp



Solarcolour SON—Elliptical Diffusing – replaces an MBF/U has similar optical characteristics and will not disturb designed light distribution from lanterns or fittings.



Solarcolour SON/T – Clear Tubular – replaces MB/U or MBF/U if in diffusing fitting.

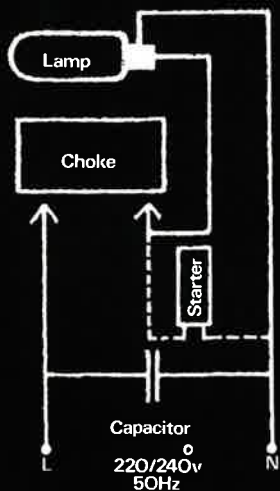
The Plug-in Solarcolour Range

Watts	Type	Replaces Mercury Lamp	Mercury Lamp Design Lumens	Solarcolour Design Lumens
220	Clear Tubular	250W MB/U	11,000	19,000
220	Elliptical Diffusing	250W MBF/U	12,100	18,000
310	Clear Tubular	400W MB/U	20,000	32,000
310	Elliptical Diffusing	400W MBF/U	21,700	30,000
360	Clear Tubular	400W MB/U	20,000	36,500
360	Elliptical Diffusing	400W MBF/U	21,700	34,500

Circuitry

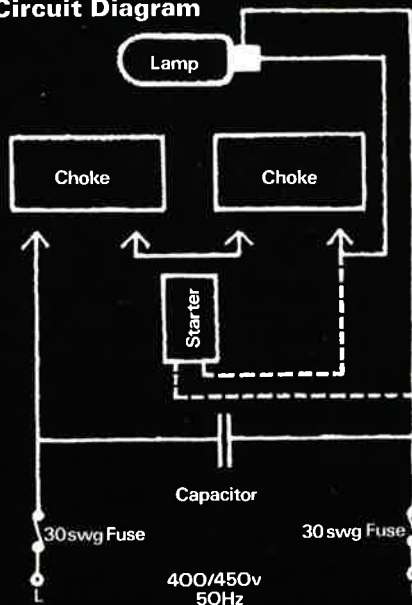
250W/400W/310W

Circuit Diagram



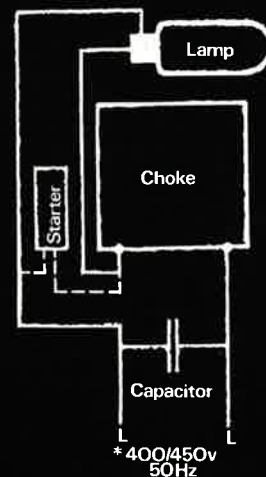
600W

Circuit Diagram



1000W

Circuit Diagram



Control Gear



Capacitor



Gear Box

	250W		400W		310W		600W		1000W	
	Ins	mm	Ins	mm	Ins	mm	Ins	mm	Ins	mm
	Z1883YK		Z1884YK		Z1681		2 Z1884YK		F8135	
a	4 $\frac{1}{4}$	108	4 $\frac{1}{4}$	108	3 $\frac{1}{8}$	79	—	—	5 $\frac{1}{2}$	140
b	4 $\frac{11}{16}$	119	4 $\frac{11}{16}$	119	3 $\frac{1}{4}$	82.6	—	—	10 $\frac{11}{16}$	271
c	7 $\frac{1}{8}$	181	7 $\frac{1}{8}$	181	8 $\frac{7}{8}$	225	—	—	7 $\frac{5}{8}$	194
	Z1781XL		Z1784L		Z1784L		1 Z1790XL 10mfd 2 F8566 14mfd		2 x F8566	
a	3 $\frac{1}{8}$	79	2 $\frac{5}{8}$	66.7	—	—	3 $\frac{1}{8}$	79	—	—
b	5 $\frac{3}{4}$	146	3 $\frac{5}{8}$	92	—	—	4 $\frac{3}{8}$	121	—	—
c	2 $\frac{1}{8}$	54	6 $\frac{1}{2}$	165.1	—	—	2 $\frac{1}{8}$	54	—	—
	Z1908		Z1908		Z1908		F62336		F62336	
a	6 $\frac{1}{2}$	165	—	—	—	—	—	—	7 $\frac{1}{2}$	184
b	17 $\frac{3}{16}$	437	—	—	—	—	—	—	19 $\frac{11}{16}$	500
c	8 $\frac{1}{4}$	210	—	—	—	—	—	—	11 $\frac{7}{8}$	300

*Note: The 1000W lamp can be used with a 240V supply; details on application.

Supplementary Starter

All Osram Solarcolour lamps have a simple and reliable internal snap starter which generally starts the lamp after 40 secs.



For complete certainty of starting after opening of the snap-starter contacts and faster restriking after temporary interruption of supply; an external starter may be fitted to a strategic few, or all lamps of an installation.

For 400W lamps and below
- OS17S
For 600W lamps and above
- OS19S

Characteristics

Starters are of identical size, in circular cross-section aluminium can, with 2 flying leads 6" long for connection across the lamp. The OS17S is compatible with all known types of high pressure sodium lamps.

Mode of Operation

It generates a high voltage pulse of very short duration, in short bursts of low energy and low repetition rate - This gives increased electrical safety and minimal radio interference. See graph 1.

Operating Position

Universal

Temperature Limits

+70°C to -30°C

Cable Type Required

Because of the short bursts of energy, 250V grade of cable may be used, this *must* be PVC insulated.

Limitation

Separation of lamp and control gear should be less than 20 metres unless the booster choke F8147 is fitted - see the Fittings companion leaflet for full details.

Reliability

Extremely high due to well proven solid state electronics.

Radio Interference

Design of starters is remarkable for extremely low levels of radio interference, well below the B.S.I. limit and other electronic starters. See Graph 2.

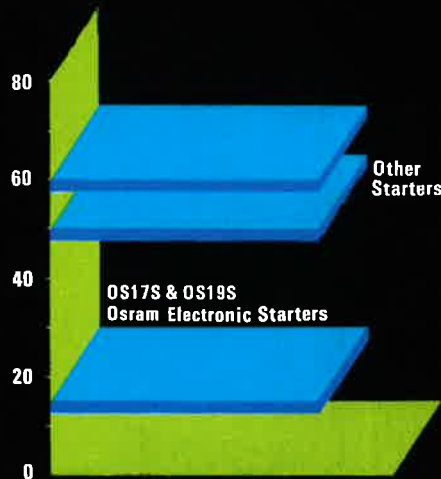
Reaction to Failed Lamp

Starters have the unique capacity to sense a failed lamp, and switch off after under 3 minutes. See Graph 3.

Restarting Lamps

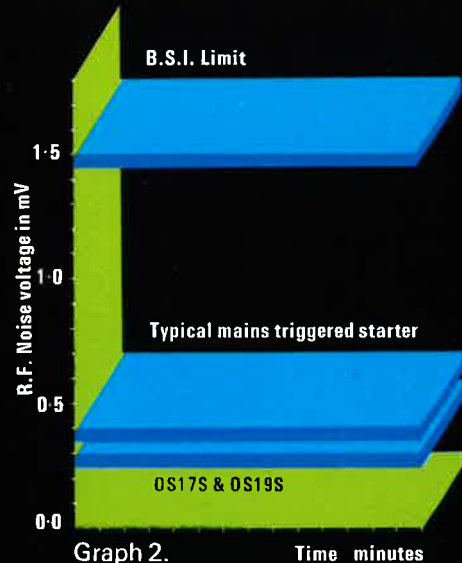
If the supply is interrupted briefly and restored before the internal snap starter contacts close, the lamp will restart almost immediately, owing to the high pulse voltage output.

Typical chart of pulse rate at 50-60 Hz Mains.



Graph 1.

Radio interference without suppression (mains line carried) (at a typical frequency in range 0.5-10.0 MHz)



Graph 2.

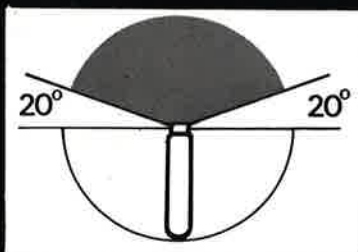
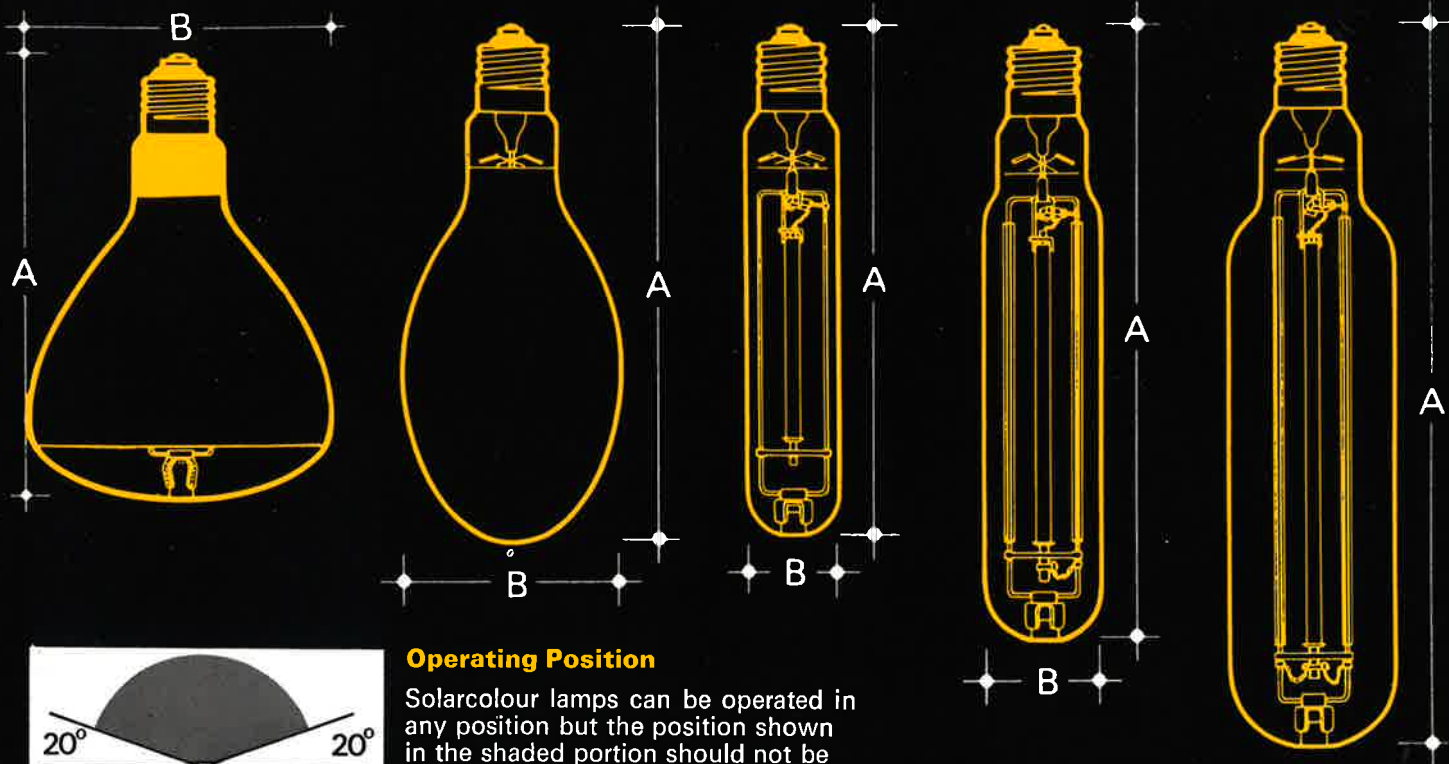
Sensing a failed lamp.



Graph 3.

The Solarcolour Lamp Range

Watts	Bulb Shape	Initial Lumens	Lighting Design Lumens	Lamp Dimensions in mm	
				O/all Length (Max) A	Bulb Diameter B
220	Clear tubular	20,000	19,000	257	50 ± 2
220	Elliptical Diffusing	19,000	18,000	230	90 ± 2
310	Clear tubular	33,500	32,000	292	50 ± 2
310	Elliptical Diffusing	31,500	30,000	292	120 ± 2
360	Clear tubular	38,000	36,500	292	50 ± 2
360	Elliptical Diffusing	36,000	34,500	292	120 ± 2
250	Clear tubular	23,500	22,500	257	50 ± 2
250	Elliptical Diffusing	22,000	21,000	230	90 ± 2
250	Reflector	20,500	18,900	260	166 ± 2
400	Clear tubular	44,000	42,000	292	50 ± 2
400	Elliptical Diffusing	42,000	40,000	292	120 ± 2
600	Clear tubular	65,000	62,000	340	65 ± 2
1000	Clear tubular	125,000	120,000	410	90 ± 2



Operating Position

Solarcolour lamps can be operated in any position but the position shown in the shaded portion should not be used in conditions of severe vibration.

For further publications on Solarcolour fittings and streetlighting contact:

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