

**CSI****Compact Source Iodide Sealed Beam Lamp  
(Hot Restrike) 1kW****Identification**

Specification Ref. 99-1422

**Applications**

Floodlighting, especially for film and TV outside broadcasts, suitable for use with daylight colour film stock. Also as a radiation source for solarium and allied applications.

**Description**

The 1kW Sealed Beam Compact Source Iodide Lamp Ref: 99-1422 is a modified form of the standard 1kW CSI Sealed Beam Lamp Ref: 99-1222 (see Data Sheet 4:99.7) in which the construction has been modified to enable the lamp to be restarted immediately when hot. The internal reflector is a dichroic mirror reducing the heat projected by the lamp to give a 'cool beam'.

**Performance****Electrical Characteristics**

Supply volts	220V, 240V A.C.
Arc watts	1000
Arc volts	70/85
Arc current	15 amps approximately
Run-up time	50 secs.
Restarting time	Instantaneous
Starting current (cold)	17 amps approx.

**Physical Dimensions**

Diameter	205 mm
Overall length (max)	175 mm
Caps	Bipost G38

**Luminous Characteristics**

Initial beam candlepower (peak)	1.25 million CDS
Beam spread	1/2 peak    1/3 peak    1/5 peak    1/10 peak
	±3°        ±4°        ±6°        ±9°
Colour rendering, RA Index	RA 80
Chromaticity co-ordinates	x = 0.393 y = 0.395
Life (nominal objective)	1500 hrs
Operating position	Horizontal ± 90°

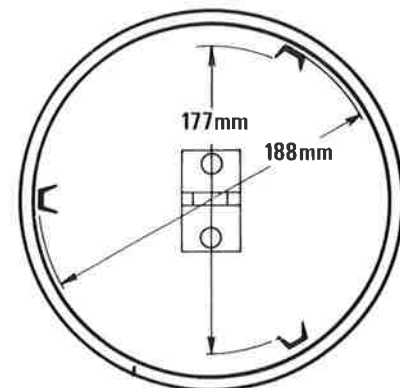
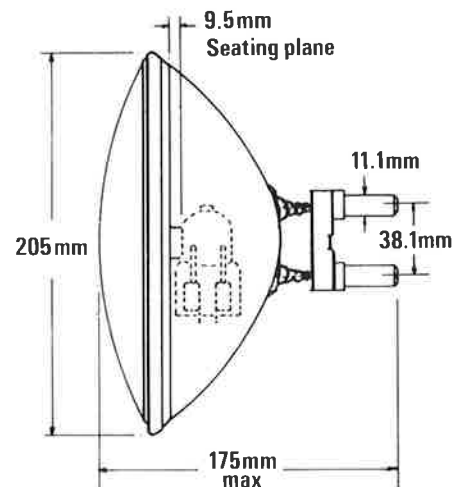
**Control Gear**

One choke G53307T PF correction capacitors and 20 kV minimum output\* starter unit.

Recommended type, see circuit diagram.

Power factor correction capacitors are optional. The use of 175  $\mu$ F capacitors reduces the line current from 15 amps to approx. 5 amp.

\*As measured by a sphere gap to BS358. Spikes approximately double this value may be recorded on an oscilloscope.



## Operation and Maintenance

### Installation

Standard G38 lampholders should not be used with this lamp and circuit as they will not necessarily carry the high pulse voltages required for hot restart. A lamp holder with well insulated sockets is necessary.

Suitable lampholders Ref. GL1198.

Short well insulated leads between starter and lamp are essential to prevent actual arcing and to minimise pulse losses by 'brushing'. The following minimum clearance and creepage distances between the hot lead and any adjacent metal, whether earthed or not, are recommended.

Clearance distance (1) Between smooth surfaces 15 mm.  
(2) Between sharp projections 30 mm.

Creepage distances i.e. bridged by an insulating surface 30 mm.

The dichroic mirror will transmit radiated heat through the reflector directly on to the fitting, which should be designed so that the following operating temperatures are not exceeded.

Lamp ferrule measured at a point 4 mm from the glass — 300°C max.

Lamp pin/lampholder contact — 180°C max.

Glass envelope — 350°C max.

### Electrical Characteristics 220/240V 50Hz

Supply voltage	220	240
Supply frequency (Hz)	50	50
Supply current (A)	5.6	5.0
Total circuit watts (W)	1120	1140
Supply power factor (lagging)	0.91	0.94
Lamp voltage (V)	77	77
Lamp current (A)	14.7	14.7
Lamp wattage (W)	1000	1000
Maximum starting current (A)		
1) line current (175 $\mu$ F PFC)	5	3.5
2) lamp current no PFC	16	16
% 3rd harmonic content (In line current should be 21% for 240V)	18	18
Recommended fuse rating	20A	20A

### Power Factor Correction

Capacitors are connected between phase and neutral for single phase operation. The recommended value of power factor correction is 175  $\mu$ F which results in a supply power factor of 0.94 (lagging) in the 240V circuit and 0.91 in the 220V circuit.

For details of Three Phase Operation and supply voltages other than 220/240V AC 50Hz see Thorn Lighting Data Sheet Ref. 49/T available on request.

### Safety

#### Before Use

Always isolate the equipment from the electricity supply before inserting or replacing a lamp.

Check that the replacement lamp is the correct type for the application, wattage and cap for use in the circuit and with control gear.

Ensure that the lamp is correctly located in the lampholder and the glass outer is not scratched during insertion.

### During Use

If the outer envelope is broken the lamp must not be operated.

Where mercury discharge and metal halide lamps are used for prolonged periods in close proximity to eyes and skin there may be a slight possibility of a low level UV radiation hazard. Suitable protection should be employed.

Certain metal halide lamps have operating restrictions, details of which are specified with the lamps.

### Disposal

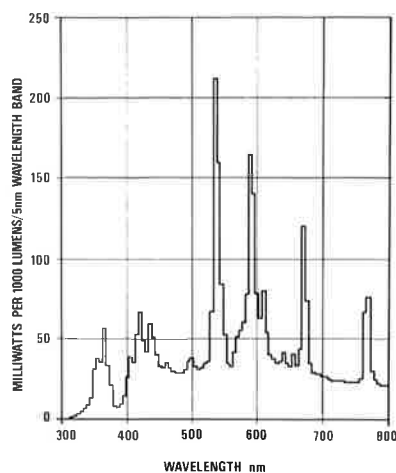
These lamps should be broken in a container. Precautions must be taken against flying glass or other fragments. The operation should be carried out outdoors (or in a well ventilated area). With high pressure mercury lamps it is not necessary to break up the inner arc tube. Where applicable, the debris of large quantities of lamps must be disposed of in accordance with the rules of the Local Authority.

### Warning

The unit generates high voltage pulses for lamp starting. Suitable safety precautions should be taken during installation and operation of the unit.

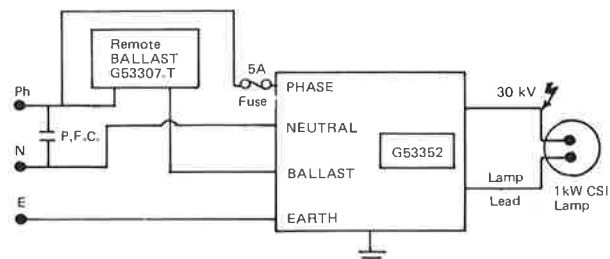
The control unit and associated lamp house must be earthed. The H.V. cable should be protected from accidental damage. The supply must be disconnected before servicing. For outdoor use the lamp must be protected from rain.

SPECTRAL POWER DISTRIBUTION CSI COMPACT SOURCE METAL HALIDE



### Circuit Diagram

1kW Hot Re-start Circuit (for 220/240V 50 Hz supplies)



Schematic wiring diagram for Hot Re-strike with G53352 ignitor

The G53352 consists of a 50/60Hz transformer (T2) high voltage capacitor (C9), spark gap (SG1), output transformer (T3) and control circuitry.

**Thorn Lighting reserve the right to alter the specification without prior notice or public announcement.**