

50W SON

High Pressure Sodium Lamp

Identification

Applications

Group B streetlighting.
 Concourse, shopping and city centre lighting.
 Bulkhead lighting.
 Cold store lighting.

Description

The 50W SON lamp consists of an alumina arc tube mounted in an elliptical soft glass diffusing bulb.

Advantages

High luminous efficacy.
 Long life – external electronic ignitor ensures reliable starting.
 Good lumen maintenance.
 Starts in temperatures down to -40°C .
 Pleasant golden white colour appearance.

Dimensions (mm)

Bulb diameter (max) 71
 Overall length (max) 154
 Cap E 27/27 (ES)

Operating Position

Universal: Lamps may be operated in any position.

Performance

Photometric Characteristics

Light output – lumens at 100 hrs – 3,500
 – lumens at 2000 hrs – 3,100
 Nominal chromaticity co-ordinates $x = 0.529$
 $y = 0.414$
 Correlated colour temperature 2000K

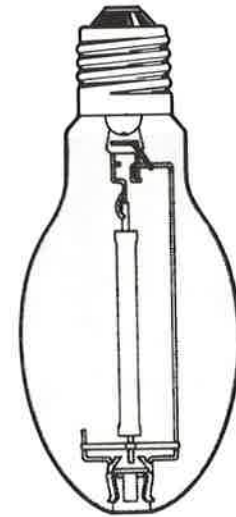
Nominal Electrical Characteristics (50Hz)

	Supply		Lamp
	220	240	
Volts	220	240	85
Watts	63	64	50
Starting Current (amps)	0.42	0.35	0.96
Running Current (amps)	0.32	0.3	0.76
Power Factor (@ 8 μF)	0.9	0.9	
Capacitor Current (amps)	0.55	0.6	
Minimum Starting Voltage	198	198	

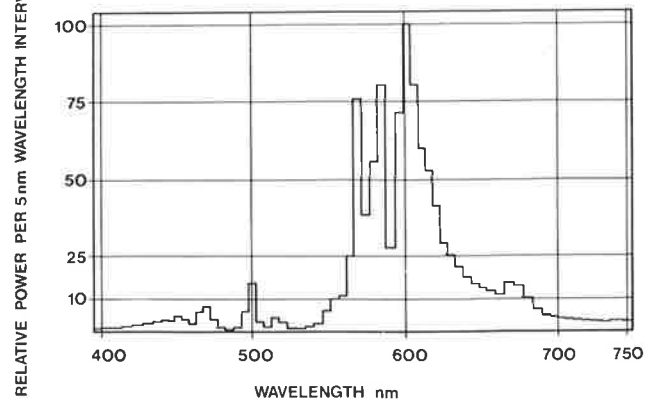
Control Gear (50Hz)

	240V	220V
Supply	240V	220V
Ballast	G53389.T	G53389.T
Ignitor	G53353.4	G53353.2
Capacitor	GC2383(8 μF)	GC2383(9 μF)

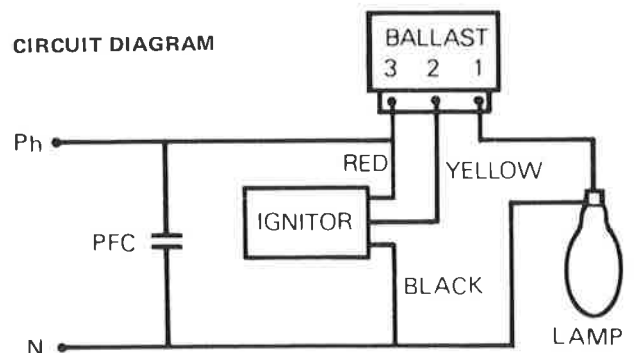
Mineral insulated cable should not be used between lamp and ignitor.



SPECTRAL POWER DISTRIBUTION



CIRCUIT DIAGRAM



Note: For 220V operation, connect phase to terminal 2 on ballast.

Starting and Operating

The lamp is started by a high voltage pulse applied by an ignitor which ceases to function once the lamp has started. External starting simplifies lamp construction and is very reliable. The lamp takes approximately 5 to 6 minutes to run up to full brightness. SON lamps will normally restrike within one minute of extinction and rapidly regain full light output. This is a most important feature and a considerable improvement on the restrike time of mercury lamps. Lamp starting is not affected by ambient temperatures down to -40°C .

Fuse Ratings

Recommended fuse ratings (amps)

Miniature circuit breaker, HRC fuse rating 4
Rewireable fuse rating 5

Guidance for Luminaire Manufacturers

It is a characteristic of high pressure sodium lamps that there is a rise in arc voltage when run in an enclosure over that obtained when running in free air. It is important that for maximum life performance the luminaire is so designed that this arc voltage rise is limited to the value shown in the table below. It is the change in voltage that is important, not the absolute magnitude, as with all lamps there is an allowable manufacturing tolerance in their electrical characteristics. A true RMS reading instrument should be used to measure this voltage.

Rating	Permissible Voltage Rise
50W	5 Volts

Temperature Limits 50W

Maximum bulb temperature 370°C
Maximum cap temperature 210°C

British and International Standards

Lamps conform to the following standards where applicable:--

IEC 662	High Pressure Sodium Lamps
BS5101	Part 1 Lamp Caps
IEC 61-1	Lamp Caps

Packing

Individual Carton Dimensions mm	70x70x165
Individual Weight kg	0.08
Bulk Pack Dimensions mm	445x445x185
No. in outer Pack	36
Weight kg	3.13

Operation and Maintenance

Guide for the installation, operation and disposal of high pressure sodium lamps (SON).

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. This includes checking that the lamps voltage (if applicable), wattage and cap are suitable for use in the circuit and with the control gear.

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

During Use

For all lamps (unless indicated to the contrary by the manufacturer) prevent rain, snow, condensation droplets or water, splashing on the lamp as these may cause the bulb to shatter.

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

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 sodium lamps it is not necessary to break up the inner arc tube. The debris of large quantities of lamps must be disposed of in accordance with the rules of the Local Authority.

THORN EMI Lighting Limited reserve the right to alter the specification without prior notice or public announcement.