

Data Sheet
Discharge Lamps

SOX
low pressure sodium lamps
18W, 35W, 55W, 90W, 135W

Description

SOX lamps consist of a low sodium discharge operating in a U-shaped arc tube enclosed in a tubular outer bulb which has an internal infra-red reflecting coating to provide thermal insulation. The discharge has a characteristic yellow colour, all the visible energy being concentrated at wavelengths of 589 and 589.6nm (see spectral distribution). This radiation occurs close to the peak sensitivity of the eye, thus achieving very high efficacies (lumens per watt).

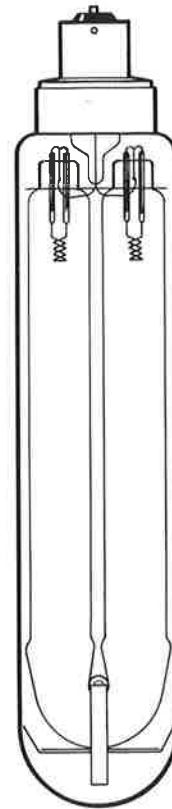
Applications

The high efficacy results in low power costs, particularly useful where long operating hours are involved. The main use is for road and pathway lighting where the poor colour rendering is acceptable.

Suitable also for security lighting, car parks, storage areas, marshalling yards, construction sites etc.

Useful where monochromatic radiation is required for scientific and graphic arts purposes.

SOX lamps should not be used where colour discrimination is required.



Physical Data

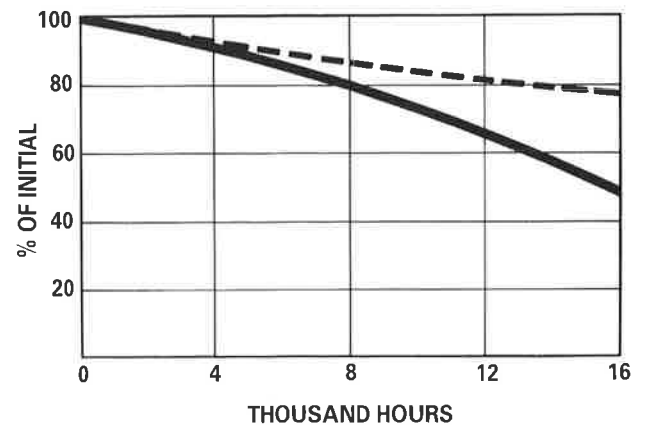
Rating (W)	18	35	55	90	135
Max diam (mm)	53	53	53	67	67
Max. overall length (mm)	216	311	425	528	775
Average weight (g)	150	245	330	500	750

Cap BY 22d

Operating position Horizontal $\pm 20^\circ$
 18, 35 & 55W ratings may also be operated vertically cap up

Maximum permissible cap temperature 150°C
 Maximum permissible bulb temperature 150°C

SOX



— Life survival
 - - - Lumen maintenance

Life survival and lumen maintenance

These curves show the performance to be expected from a representative batch of lamps operating under optimum conditions. Adverse field conditions, particularly prolonged vibration will reduce lamp life.

Nominal Luminous Data

	18W	35W	55W	90W	135W
Lumens at 100 hrs	1800	4600	7650	12750	22000
Lumens at 2000 hrs	1750	4500	7500	12500	21500

Note

Due to the monochromatic nature of the light output, correlated colour temperature and colour rendering index figures are not applicable.

Nominal Electrical Data

	18W	35W	55W	90W	135W
Lamp volts (v)	57	70	109	112	164
Lamp current (A)	0.35	0.6	0.6	0.9	0.9

Starting and Operating

Low pressure sodium lamps are started using high voltages generated by leakage-reactance autotransformers or electronic igniters. The initial discharge occurs in a mixture of neon and argon giving the distinctive red glow. The heat from this discharge vapourises the metallic sodium to give the characteristic yellow colour.

Lamps will start at ambient temperatures down to -20°C . 18W, 35W and 55W lamps which are subject to a momentary interruption to the supply voltage will re-start immediately. 90W and 135W lamps will take about 10 minutes to re-start.

See graph for run up characteristics

Operation and Maintenance

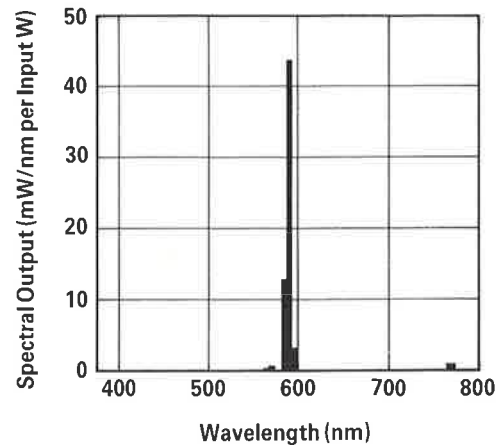
Guide for the Safe Use and Disposal of SOX lamps.

1. Always isolate the equipment from the electricity supply before inserting or replacing a lamp.
2. Check that the replacement lamp is the correct type, including cap and wattage for use in the circuit and with appropriate control gear for the application.
3. Ensure that the lamp is correctly located in the lampholder and the glass bulb is not scratched during insertion.
4. Lamps require protection from rain, snow, condensation, droplets of water, as any liquid splashing on the lamp may cause the bulb to shatter.

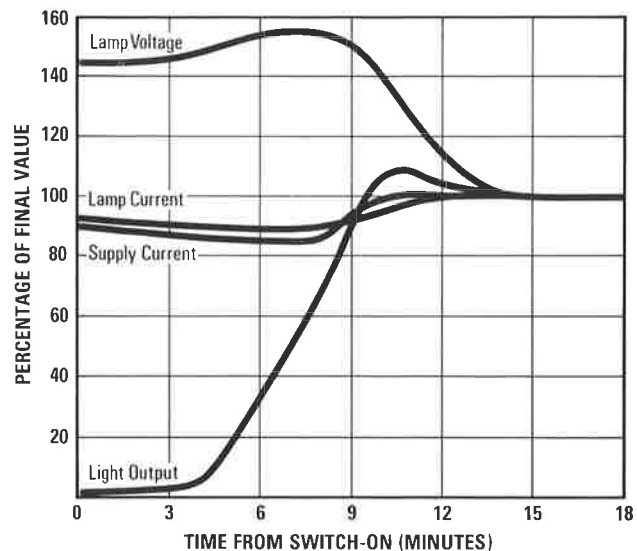
Disposal

Low pressure sodium lamps should be broken into small pieces within a large dry container, in a well ventilated area outdoors, in a dry atmosphere. Precautions must be taken against the risk of fire (from the reaction of water with sodium), flying glass and other fragments. No more than 20 lamps should be broken into the same container at any one time. When the container is no more than one-quarter full, the operator should use a hose from a safe distance to fill the container with water. The liquid may then be disposed of as a very weak solution of caustic soda and the debris as glass.

SPECTRAL DISTRIBUTION



RUN UP CHARACTERISTICS



Packaging

Rating	Individual Carton		Outer Box	
	dimensions mm	quantity	dimensions mm	weight kg
18W	55×55×399	9	175×175×320	1.7
35W	60×60×390	9	190×190×400	2.7
55W	65×65×490	9	210×210×510	3.8
90W	80×80×600	9	245×245×610	5.8
135W	80×80×880	9	280×280×900	9.5

British and International Standards

Lamps conform to the following standards where applicable.
 BS 3767 Low pressure sodium vapour lamps
 IEC 192 Low pressure sodium vapour lamps
 BS 5101 Part 1 Lamp Caps
 IEC 61-1 Lamp Caps

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

Made in the United Kingdom.