

Mazda LAMP DATA SHEET

Sodium Discharge

Linear Type

60W SO/H

Lamp No. 96-8023

General Description

The linear sodium lamp incorporates the following essential features.

- (1) A discharge tube of special glass and of special formation with regard to both shape and cross section, containing metallic sodium and inert gas.
- (2) An electrode sealed into each end.
- (3) An outer envelope containing the discharge tube, with the intervening space evacuated to provide the necessary thermal insulation to maintain the sodium in a fully vaporised condition.
- (4) Means of connection to the supply.

The inert gas filling is for the purpose of initiating the discharge prior to the vapourisation of the sodium.

As the lamp operates at a low vapour pressure, there is no delay in starting, even in the event of the lamp being switched on while still warm from previous operation. The brightness of the lamp under the latter condition will depend upon the amount the lamp has cooled since being switched off.

The starting and running of the lamp is unaffected by ambient temperature.

The luminous radiation is concentrated at 5890\AA - 5896\AA and the colour may be described as monochromatic yellow.

The entirely new design of this lamp makes best use of the following features:

- (a) a discharge tube shaped to provide a large surface area with small volume content,
- (b) optimum metal temperature,
- (c) controlled sodium location,

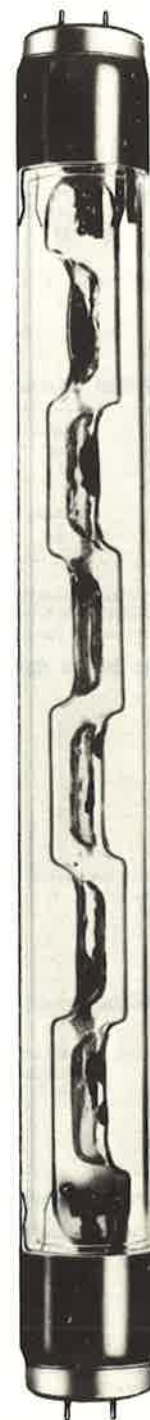
all of which combine to provide high luminous efficiency and life maintenance.

The advantages of the linear sodium lamp over existing types may be briefly summarised as follows :

- (1) a more convenient light source shape for many applications.
- (2) robust construction and compact dimensions for storage and handling.
- (3) high lumen output capable of giving higher lighting intensities with greater economy

General Applications

Street Lighting, and the lighting of other areas where colour discrimination is of no importance.



Physical Characteristics

Rated Watts	Dimensions						Cap	Bulb shape
	Bulb diameter (mm.)	Overall length (in.)	Length excluding pins at one end (in.)	Length excluding pins at both ends (in.)	Arc length (mm.)	Arc diameter (mm.)		
60	38 ± 1.5	16.78 -0.125+0	16.5 -0.125+0	16.22 maximum	290 nom.	18-20	G13/35 (Medium Bi-pin)	Tubular

Electrical Characteristics

Rated Watts	Supply volts with series inductive choke:	Lamp operating volts Nominal	Lamp current (amps.) Nominal		Apparent power factor
			Starting	Operating	
60	200/250	80	0.83	0.83	0.9 nom.

Wattage dissipation of this lamp will increase slightly during its normal life, tending to compensate for any slight reduction in lamp efficiency during life. Total lumen output should therefore remain substantially constant during life.

Light Source Characteristics and Performance

Rated Watts	Lumens per watt		
	@ 100 hrs.	Average through life	@ 4000 hrs.
60	100	95	92

The time taken for the lamp to reach full light output is of the order of 15 minutes.

Operating Position

Normal: Horizontal ± 20°. For operation in any other position, advice should be obtained from the A. E. I. Lamp and Lighting Co.

Operating Conditions

The lamp should be adequately protected against the possibility of condensed moisture or rain falling on it during operation.

Circuit and Control Gear

The 60 watt sodium linear lamp is used in conjunction with appropriate control gear. For a c. 50 c. p. s. circuits this takes the form of a choke unit, glow switch and also a capacitor for power factor correction to 0.8 lagging.

