

# LAMP DATA SHEET

## Mercury Discharge Extra-High Pressure Projection Type ME/D—185W

### General Description

Mercury vapour discharge lamps with quartz arc tubes loaded above 100 watts/cm of arc length and operating at a pressure of about 30 atmospheres.

The arc operates between solid tungsten electrodes contained in a quartz bulb, and provides a compact stable light source of high brightness.

The arc tube is enclosed in a tubular hard glass envelope mounted on a 3 pin 5 amp base or a large prefocus cap.

The radiations have much photochemical value and little heating effect.

This lamp is physically and electrically interchangeable with the 250W ME/D lamp giving a lower light output but longer life.

### General Applications

For use in monochrome slide and film projection, in film printing and in conjunction with projection microscopes and other specialised apparatus. This lamp is also of use in a variety of industrial inspection procedures.

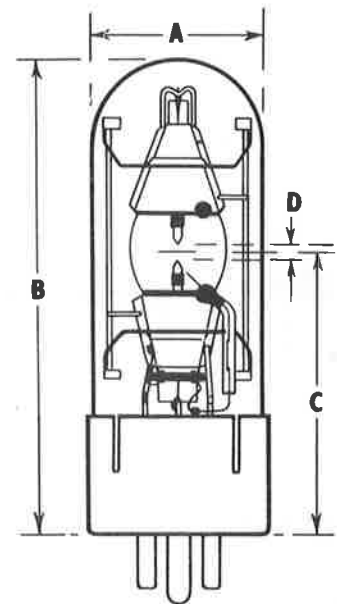
### Standard Ratings

Watts	Volts	Base	A.E.I. L. & L. Ref. No.
185	200/250 a. c.	3 pin 5 amp*	94 - 0055 43
		Large prefocus (P40/41)	94 - 0056 44

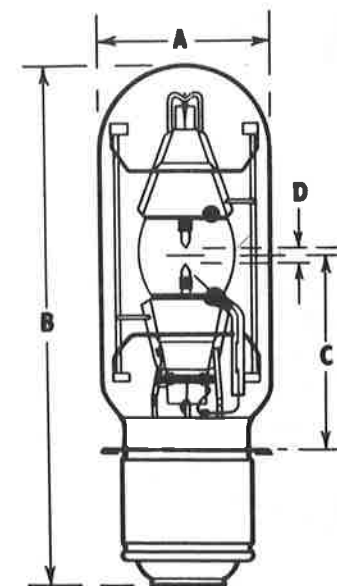
### Physical Characteristics

Base	Dimensions (mm)			Arc Length D
	Diameter A	Overall Length B	L. C. L. C	
3 pin 5 amp* To B.S. 546	50 ± 2	141 ± 3 excluding pins	85 ± 1 excluding pins	3.75 ± 0.35
P40/41 To B.S. 1164	50 ± 2	156 ± 3	65 ± 1	3.75 ± 0.35

\* The 3 pin 5 amp plug fits the corresponding socket specified in B.S. 546.



3-PIN BASE LAMP



PREFOCUS BASE LAMP

**A.E.I. Lamp and Lighting Co. Ltd.**  
**Melton Road, Leicester**

**94-110**  
Sept., 1963

### Electrical Characteristics

Rated watts	185W
Supply volts	200/250V a. c.
Lamp operating volts	42 - 54V
Lamp operating current	4.3 amps nominal
Starting current	4.5 - 5.5 amps
Apparent lamp power factor	0.9

### Light Source Characteristics and Performance

Arc length	$3.75 \pm 0.35$ mm
Effective arc width	1.5 mm
Initial brightness	12,000 candelas/sq.cm
Initial mean horizontal candle power	900 candelas
Average life	1000 hours

Light distribution - see polar curve.

Brightness distribution - see curve.

Note. The brightness distribution curve is measured across the arc at the centre of the arc length. The distribution along the arc is almost constant except in the regions adjacent to the electrodes.

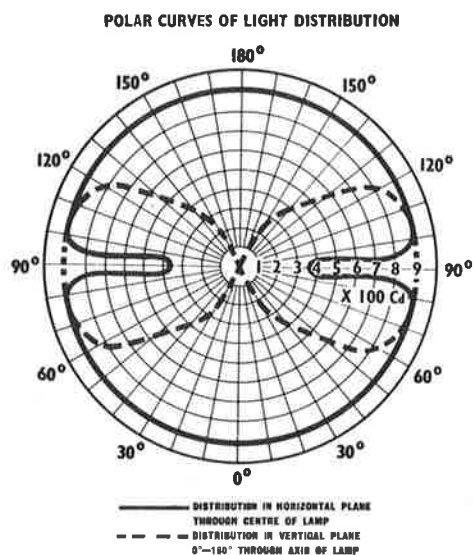
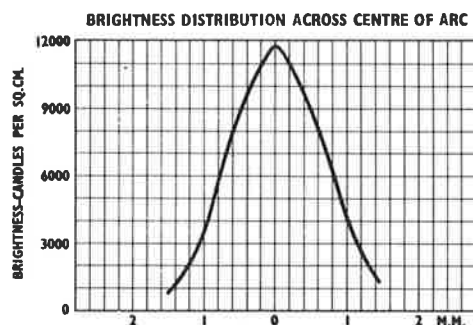
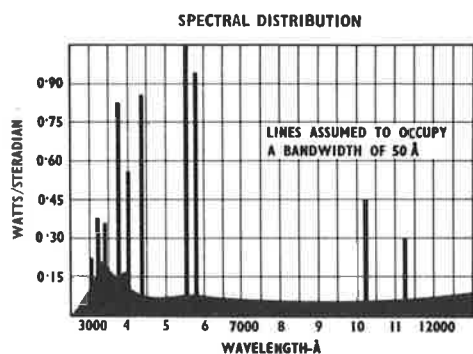
The diagram of spectral distribution shows an appreciable level of continuous radiation with a number of line radiations, the strongest of which lie at 3650 Å (ultra-violet), 4046 Å and 4358 Å (blue), 5461 Å (green), and 5790 Å (yellow). It should be noted that the diagram illustrated shows the spectral distribution of radiation through the bare quartz tube. The glass envelope filters out progressively those radiations with wavelengths shorter than 3500 Å until there is virtually no transmission at wavelengths of 3000 Å and below.

### Operating Conditions

Lamps must be operated in a vertical position, base downwards. A tilt of more than about 10° from the vertical will take convection currents of ionized gas against the walls of the quartz bulb with damaging effect.

During the first 10 minutes of operation the light output gradually increases as the lamp warms up. In the event of the lamp being extinguished by an interruption in the supply, a delay of some 10 to 15 minutes will occur while the lamp cools down, restrikes and runs up again.

The lamp should be operated in some form of housing, sufficient to afford protection should the bulb burst for any reason.



### Cooling

A lamp operating in free air does not normally need supplementary cooling. If operated in a housing forced air cooling may be required and should be effected by a movement of a large volume of air. A high pressure jet directed onto the lamp will cause mercury to condense giving a reduction in light output.

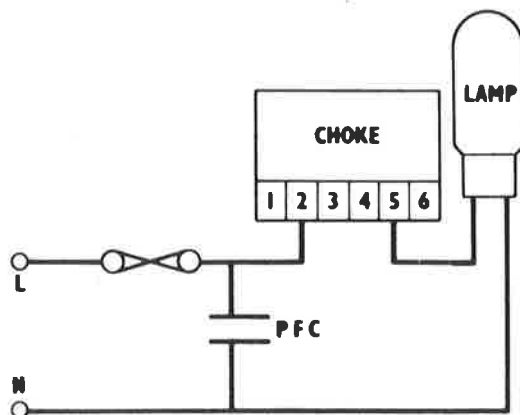
As a rough guide to the need for cooling, the cap temperature at the junction with the glass envelope should not exceed 250°C.

### Warning

Should the glass envelope be broken and the arc tube continue to operate, the lamp should not be used as without the protection of the glass the ultra-violet radiations from the arc-tube are harmful to the eyes and skin.

### Circuit and Control Gear

The lamp must be operated on 190-260V alternating current supplies, in series with a choke, while a capacitor for the correction of power factor should be connected across the supply leads, as shown in the circuit diagram.



Supply Voltage	Choke		Capacitor	
	Type	Prod. No.	Prod. No.	Capacitance
200-250 a. c.	MR 583	61/50583	62/66202	60 Mfd

Minimum power factor correction 0.85.

The wiring should be connected to the choke tapings appropriate to the supply voltage as shown below.

Supply voltage	190	200	210	220	230	240	250	260
Tappings	2-4	1-4	3-5	2-5	1-5	3-6	2-6	1-6

Approximate total power consumption 220 watts.