



THORN EMI Lamps and Components Limited

Miles Road Mitcham Surrey CR4 3YX
Telephone 01-640 1221 Telex 25534 Sandby Mitcham

LINEAR SOURCE XENON DISCHARGE LAMP

1kW A.C. TYPE XB Ref: 98 - 0125

98 120

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GENERAL DESCRIPTION

The 1000 watt Xenon Discharge lamp consists essentially of a linear arc burning between tungsten electrodes operating in an atmosphere of pure Xenon contained in a quartz arc tube. It is designed to operate from the a.c. mains in series with an inductive ballast.

The spectrum of the radiation is virtually a continuum extending from the ultra-violet through the visible to the infra-red. There is a pronounced peak in the near infra-red at about 900nm. Thus it can also be used as a powerful source of ultra-violet and infra-red radiation as well as light.

The colour of the visible radiation is very similar to noon sunlight having an approximate colour temperature of 5600°K. Colour rendering is excellent. The light output may be modified over a wide range by adjusting the power input without appreciably altering the colour of the light.

On starting the lamp approximately full light output is given immediately. The linear form of the Xenon Discharge lamp has a higher arc voltage than the compact arc lamps and hence the current for a given power is less. It can therefore be used to advantage in those applications where a small light source is not required.

GENERAL APPLICATIONS

- High speed photography and cinematography.
- Colour matching.
- Fadeometer testing.
- Graphic arts.
- Optical instruments.
- Laboratory and general scientific purposes.

PHYSICAL CHARACTERISTICS

Arc length:	85 ± 2.5mm
Overall length:	300 ± 5mm
LCL from end of lowermost cap:	150 ± 2.5mm
Bulb diam. max.:	30mm
Operating position:	Vertical ± 15°
Weight:	7.5oz. (210gm)
Caps:	At both ends a special cap with a cone centre for mounting and a flexible lead.

ELECTRICAL CHARACTERISTICS

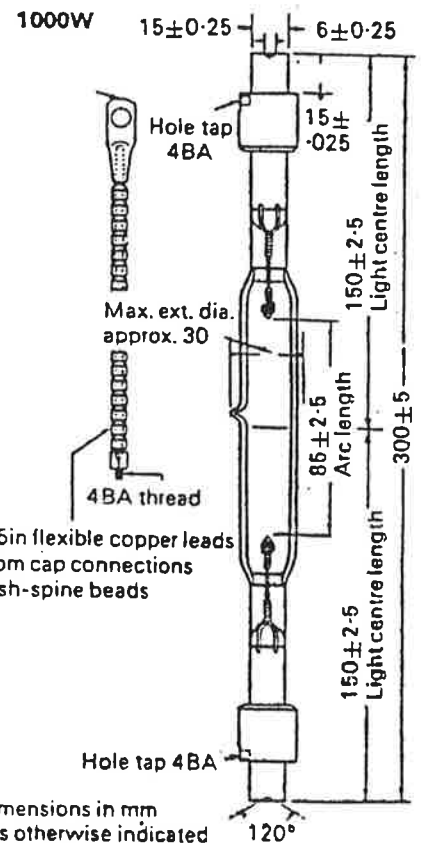
Lamp rating (watts):	1000
Supply voltage:	200/250v a.c.
Lamp operating voltage (volts):	42
Lamp operating current (amps):	25
Mains current with 240mfd P.F.C.	7½ amps
Mains current with 300mfd P.F.C.	5 amps

LIGHT SOURCE CHARACTERISTICS AND PERFORMANCE.

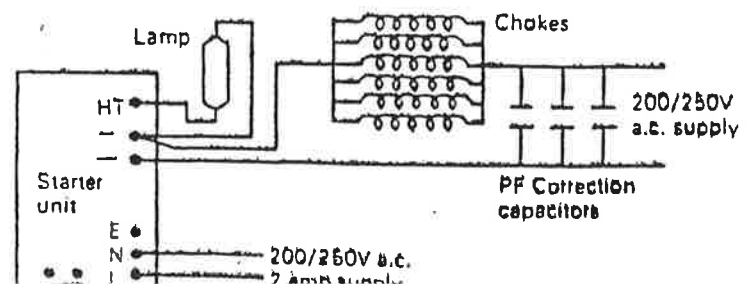
Arc size: (mm)	85 x 10
Light output (lumens):	22,000
Luminous efficiency (lumens per watt):	22
Mean horizontal candle power (cd.):	2000
Average objective life (Hours)	500

CONTROL GEAR

- For operating on 200/250v 50Hz.
- 6 - chokes wired in parallel
- 6 x Cat.No. AME 53235
- 25 amp. starter unit - Cat.No. G 53239
- P.F. capacitors
- 240mfd - 3 x Cat.No. G C2276
- OR
- 300mfd - 3 x Cat.No. G C2276 + 1 x Cat.No. G 53239



CIRCUIT DIAGRAM



TYPICAL SPECTRAL POWER DISTRIBUTION DATA
FOR A 1KW XB XENON LAMP

SPECTRAL BAND nm	SPECTRAL POWER WATTS
250-280	2.20
280-310	2.20
310-340	3.08
340-370	4.50
370-400	7.0
400-430	7.7
430-460	8.55
460-490	11.0
490-520	8.75
520-550	8.75
550-580	8.97
580-610	9.10
610-640	9.30
640-670	9.10
670-700	10.0
700-730	9.8
730-760	10.62
760-790	9.83
790-820	12.75
820-850	21.5
850-880	13.2
880-910	26.4
910-940	17.6
940-970	14.9
970-1000	16.3

NOTE: The above figures are accurate to 10% in the visible, and I.R. regions but may be up to 25% in error in the ultra-violet.