

FEATURES

Cathodeon manufactures a high pressure mercury vapour lamp type HPK for use in scientific instrumentation and other applications requiring high stability UV radiation combined with an accurate position for the arc.

In contrast to the HG2 low pressure lamp the line output from the high pressure lamp provides maximum energy at 365nm with substantial radiation also at 435, 313, 253 and 404nm. In addition there is a continuum from 200 to 600nm peaking at 260nm with approximately 20% of the maximum energy measured in the line spectrum.

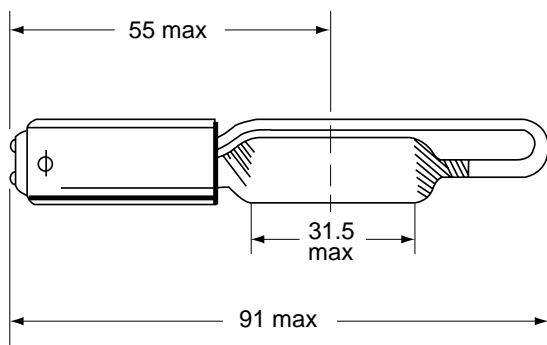
Fig 1 HPK 125W Lamp



LAMP MOUNTING

The lamp should ideally be mounted with the base down and a maximum inclination from the vertical of +- 30. The lamp can be mounted in a BA15d connector. Due to the high level of UV radiation extreme care should be taken in following the local health and safety precautions for operators working in the presence of ultra violet light.

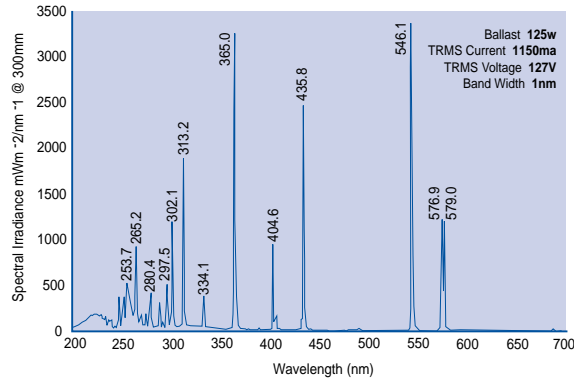
Fig 2 Dimensions of HPK 125W Lamp



SPECIFICATIONS

Wattage	125
Ignition voltage	180V
Running Voltage	125V
Current	1150mA
Stabilisation Time	2 mins
Output drop at 1000Hrs	20%

Fig 3 Spectral Irradiance



POWER SUPPLY

The Cathodeon Ballast C440 is available to drive the HPK mercury lamp

ORDERING CODES

PRODUCT	ORDERING CODE
HPK high pressure mercury lamp	HPK 125W
Ballast	C440

MERCURY VAPOUR LAMPS

APPLICATIONS

The HPK lamp is a high output UV source used for applications such as photochemical processing, fluorimetry, mercury analysers, medical and environmental equipment and fixed wavelength detectors.

hi-Tech lamps

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MERCURY VAPOUR LAMPS

FEATURES

Cathodeon has developed a compact low pressure, low voltage Mercury vapour lamp, type HG2, principally for use in scientific instrumentation.

This lamp has a highly stable output predominantly at the 253.7nm Mercury line. When used with the Cathodeon C430 power supply the line output is much higher than, and the stability comparable to, that of a Deuterium arc lamp. Other lines, which total 20% of the output, are at 313nm, 365nm, 404nm and 435nm.

The HG2 lamp has a strike voltage requirement of just 21V and a typical power requirement of 2.7W, making this lamp especially suitable for use in portable instruments.



Fig 4 HG2 Lamp

LAMP MOUNTING

It is advisable that the lamp should be mounted with the base and leads uppermost. Any clamp around the lamp envelope should be at the base end of the lamp. The clamp should be of low thermal capacity and poor thermal conduction. If the mount is such that it cools the lamp significantly Mercury can be condensed in this region, adversely affecting the performance of the lamp. The lamp, which is temperature sensitive, must be protected from draughts if optimum stability is to be achieved.

Fig 5 Dimensions of HG2 Lamp

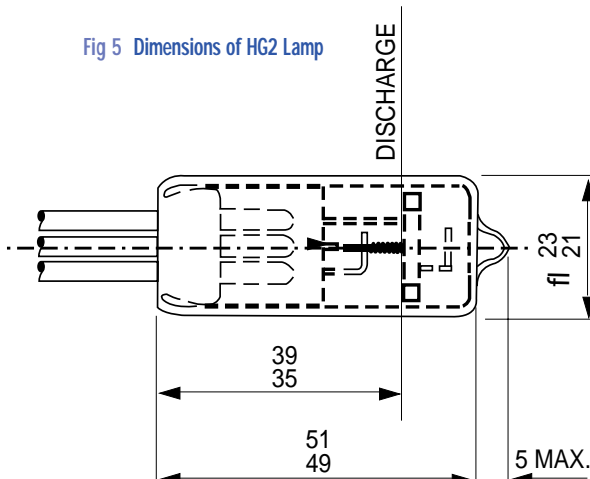
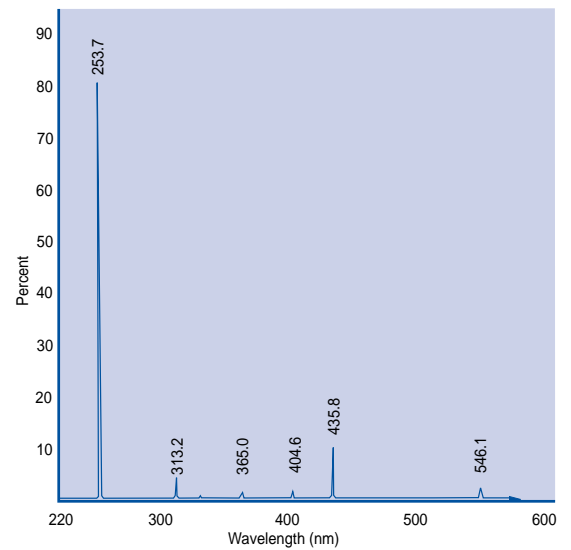


Fig 6 Percentage Output Power



APPLICATIONS

The HG2 lamp can be used for applications such as

- Mercury Analyzers,
- Fluorimetry,
- Pollution Analyzers,
- Fixed Wavelength Detectors and Calibration Equipment.

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MERCURY VAPOUR LAMPS

SPECIFICATIONS

Anode strike voltage 21V DC max,
18V DC typical

**Anode running voltage
at 150mA** 8 - 14V DC

Anode current 100 - 300mA,
150mA recommended

Filament strike voltage 5 - 7V DC

Filament running voltage 3 - 4.5V DC

**Filament running voltage
at 150mA anode current** 3.5V DC nominal

The heater (blue lead) should be positive with respect to the cathode (black lead).

Filament strike current 400mA at 6V DC nominal

Filament run current 250mA at 3.5V DC nominal

Power dissipation at strike 8.7W max

Power dissipation during run 2.7W typical

Warm up time 15 - 30 minutes

If lamps are unused for several weeks a burn-in period up to several hours is recommended to reach full specification.

Output at lamp surface at 253.7nm

With 150mA anode current 15mW/cm²

With 300mA anode current 30mW/cm²

Output at lamp surface at 365nm

With 150mA anode current 1.0mW/cm²

With 300mA anode current 2.4mW/cm²

**Noise at 253.7nm, 150mA
and constant temperature** 1 - 2% typical

Drift/hour (initial) <5%

Lifetime at 150mA 4000 hours typical
2000 hours minimum

**Centre of gas discharge
position** 35 - 39mm above
base line

Output viewing angle 140° cone angle about
lamp centre line (highest
intensity nearest filament)

Temperature Envelope optimum 55-60°C
Fluctuation 1°C

POWER SUPPLY

The Cathodeon Mercury Lamp Power Supply C430 is available for OEM use in board form, for building into original equipment.

It has been designed specifically to operate the Cathodeon low pressure Mercury lamp HG2 under optimum conditions.

This constant current power supply is intended for scientific use where maximum lamp stability is required.

SPECIFICATIONS

Cathode Heater Supply Heater supply constant
current 400mA in starting
phase 250mA in run phase

Anode Supply 150mA constant current

Stability

Anode current Noise and ripple better than
0.2% Long term drift better
than 1%

Operation At switch on the heaters are
run at 400mA constant current.
This gives a "soft start" to the
heaters and so prolongs the
lamp life. After a short delay
the lamp strikes and anode
current flows in the heater
return. This has the effect of
dropping the heater current
supplied to 250mA. Feedback
between anode and heater
supplies acts to further stabilize
the lamp output.

Input Requirements 110, 130, 220, 240V ±10% rms
50/60Hz

Lamp Connections Board connections via Molex
0.156" KK plugs

Dimensions 150mm x 76mm x 50mm (max)

Weight 600g (max)

ORDERING CODES

PRODUCT	ORDERING CODE
Mercury vapour lamp	HG2
OEM power supply	C430 B2

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