

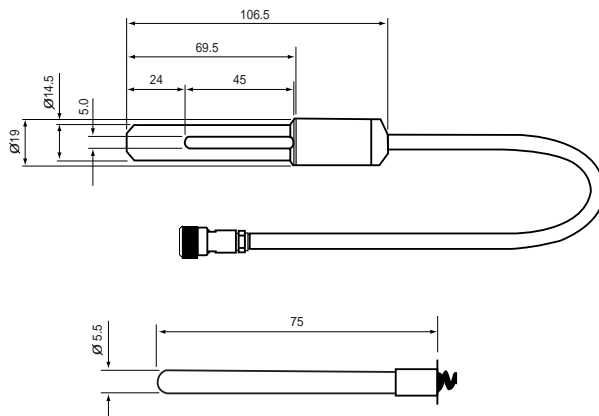
FEATURES

These cool, compact and easy to operate sources provide isolated spectral line outputs for precise optical wavelength calibration in the ultraviolet, visible and near infrared regions of the spectrum. Also available is a dedicated power supply, the C100, which is easy to operate and ensures stable long life lamp operation.

A series of six electrodeless gas discharge lamps provide well over 100 discrete wavelengths in the range 178nm to 843nm. Their low temperature, low pressure operation gives highly stable output spectra at wavelengths which are physical constants for the particular element employed.

For safety and convenience, lamps are used complete with a C150 lamp holder, easily interchangeable via a plug and socket on the rear of the power supply. Alternatively it takes but a few moments to unscrew the holder and change the lamp.

Fig 14 Dimensions of Lamp Holder and Lamp

**SPECIFICATIONS**

Lamp envelope	Quartz
Standard lamp fill	Mercury, Neon, Argon, Xenon, Krypton, Mercury/Iodine.
Non standard lamp fill	Lamp fill to customer specification can be supplied.
Lamp holder construction	Bright steel base and cable entry. Black anodized Aluminium lamp cover.

POWER SUPPLY

The C100 power supply has been designed to offer safe, reliable and convenient operation of the C150 Calibration Line Sources by providing correct starting and operating conditions for all lamps in the range in a single unit. It is simple to operate since the only control is a single on/off switch and lamps are easily and safely connected by a plug and socket, enabling quick changeover of the alternative sources in the range. The spectral line source will operate on either 110 - 130V or 220 - 240V AC, 50/60Hz.

Fig 15 C100 Power Supply With Lamp Holder and Lamp

**SPECIFICATIONS**

Input	Switch selectable 110 - 130V/220 - 240V AC 50/60Hz
Output V	3.2KV peak to peak 180KHz
Output I	300mA peak to peak 90° leading
Output Connector	PET 100 series 50ohm
Dimensions	190mm x 190mm x 108mm high
Weight	2.35Kg

OEM VERSION

The Cathodeon Line Source Power Supply C100 is available for OEM use in board form, for building into original equipment.

The package is available as follows:

C100B2 - Printed circuit board, output transistors on heatsink and mains transformer.

SPECIFICATIONS**DIMENSIONS**

Circuit board	115mm x 121mm x 80mm high
Heatsink	102mm x 32mm x 70mm high
Transformer	69mm x 56mm x 59mm high

WEIGHTS

Circuit board	360g
Heatsink	150g
Transformer	675g

SPECTRAL CALIBRATION LINE SOURCES

APPLICATIONS

These sources may be used directly as wavelength calibration references for a variety of equipment operating in the ultraviolet, visible and near infrared regions of the spectrum.

The wavelength graphs below indicate major transitions only. Many other lines, characteristics of a particular gas fill, may be detected dependent on the sensitivity and resolution of the detecting system.

SPECTRAL CALIBRATION LINE SOURCES

Fig 16 Mercury

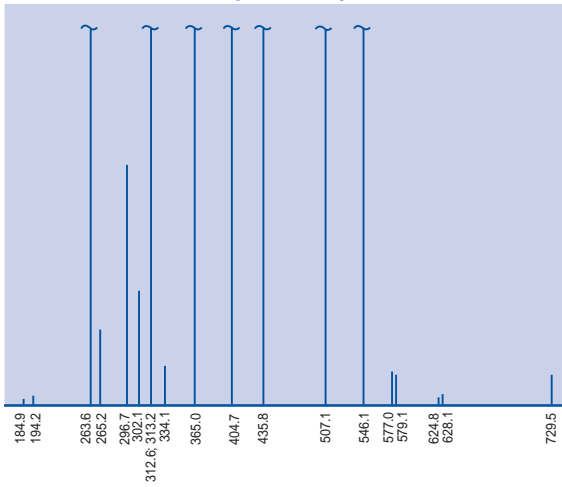


Fig 17 Mercury/Iodine

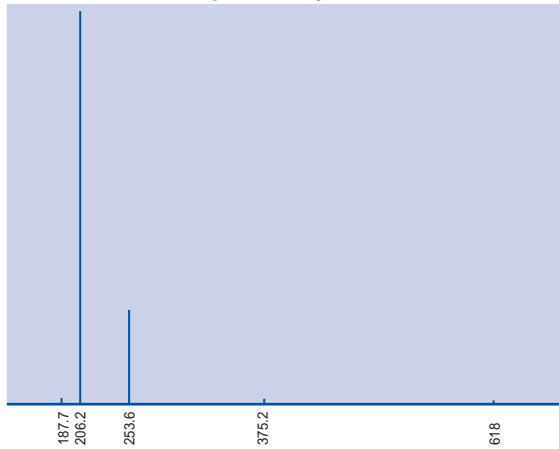


Fig 18 Neon

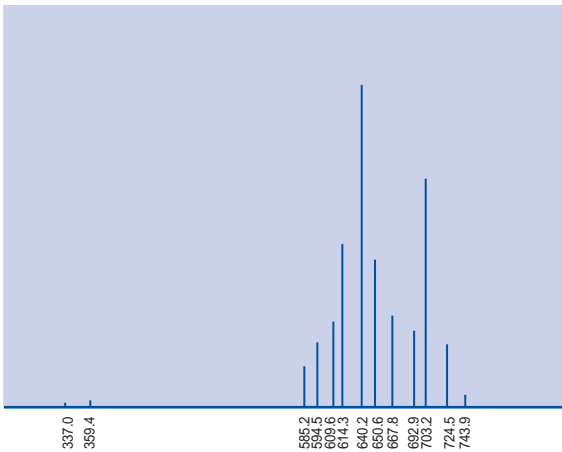


Fig 19 Argon

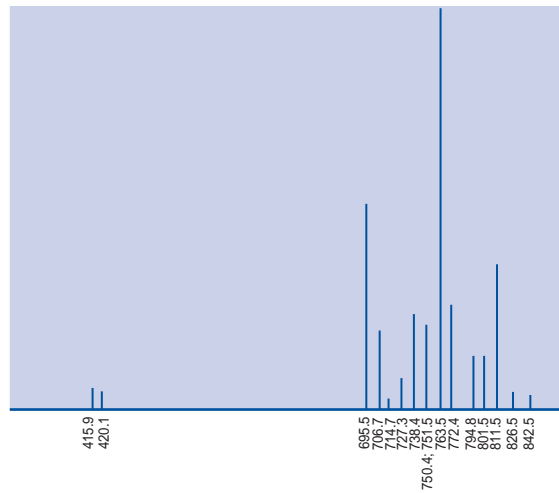


Fig 20 Xenon

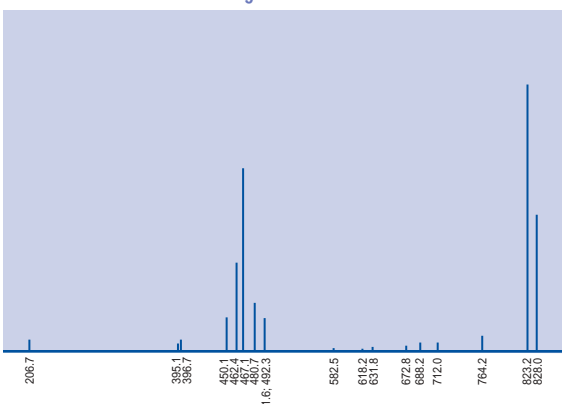
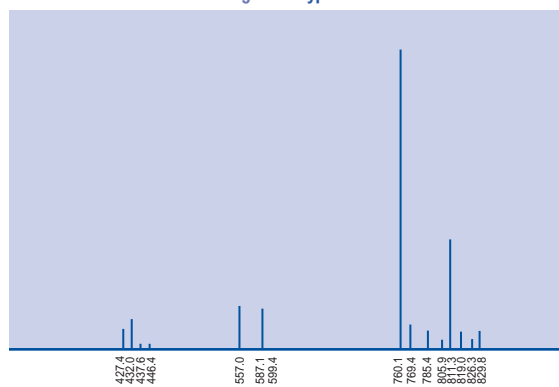


Fig 21 Krypton



ORDERING CODES

ORDERING CODE	PRODUCT	ORDERING CODE	PRODUCT
C150	Lamp holder, lead and plug without lamp	C100	Power Supply
C150/Xe	}	C155/Xe	}
C150/Ne	}	C155/Ne	}
C150/Ar	}Lamp holder, lead and	C155/Ar	} Replacement
C150/Kr	}plug complete with specified lamp	C155/Kr	} Lamp
C150/Hg/I	}	C155/Hg/I	}
C150/Hg	}	C155/Hg	}

800-229-6509

info@hi-techlamps.com

FEATURES

Cathodeon manufactures a range of sources which each emit a number of monochromatic lines of known wavelength. The lamps contain a discharge tube filled with a very pure gas, metallic vapour or a combination of the two and an arc is struck between electrodes that permit a very high current density.

A suitable gas is the rare gas Helium which primarily gives output in the visible region. Alkali metals such as Sodium can be added to the gas filled discharge tube, the metal being vaporised by the heat of the discharge.

The discharge tube is surrounded by a cylindrical outer bulb which may be of quartz for those applications where the ultra violet radiation below 250nm is important.

Fig 22 Line Source Lamp



MERCURY LAMPS

A Cathodeon line source filled with mercury is available in a low pressure version, the low pressure lamp emits the normally expected line spectrum.

Fig 23 Spectral Irradiance - Low Pressure Hg

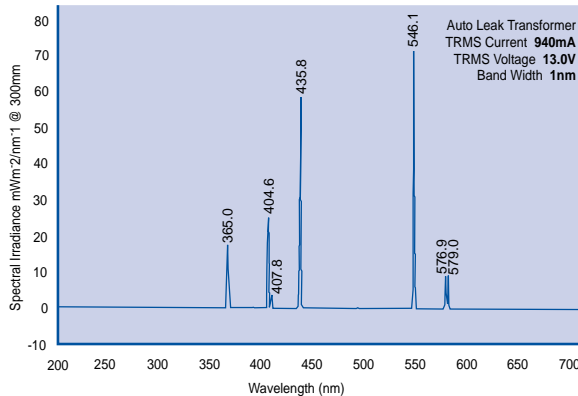


Fig 24 Spectral Irradiance - He

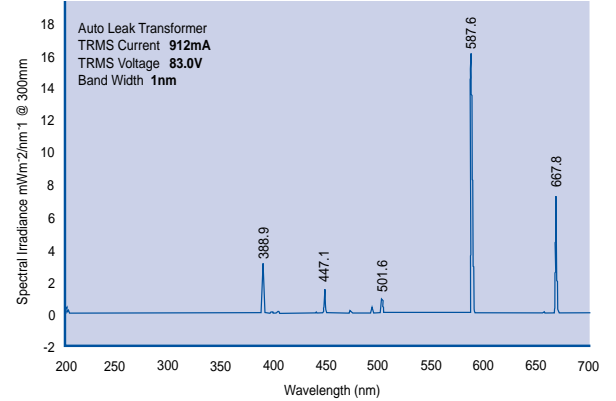
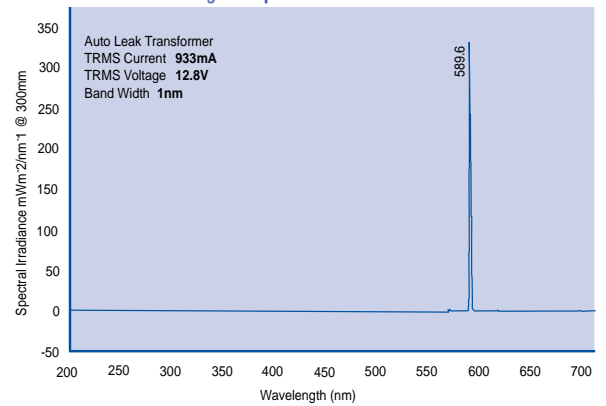


Fig 25 Spectral Irradiance - Na



LINE SOURCES

APPLICATIONS

These lamps are useful as illumination or calibration sources in a wide range of biological and chemical research where visible and ultra violet radiation is necessary. They are additionally used in specific techniques such as interferometry Polarimetry Refractometry and Spectroscopy.

LAMP MOUNTING

While most often run vertically for convenience the Cathodeon line sources may be operated in any orientation. All the lamps have identical electrical and geometrical characteristics including the light centre position, the arc length varying from 25mm to 38mm dependent on the type of lamp.

This uniformity ensures that the differing lamps are speedily interchangeable permitting experimentation over a wide spectral band using several lamps.

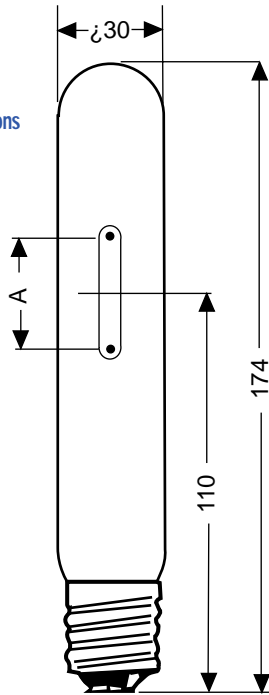


Fig 26 Line Source Lamp Dimensions

SPECTRAL DATA

Measurements were made of spectral irradiance in units of $\text{mW/m}^2\text{nm}^{-1}$ at a distance of 300mm from the horizontal centre of each lamp. The height of each lamp was adjusted so that the vertical centre of the emitting area was coincident with the optical axis of measurement.

The measurement equipment consisted of a spectroradiometer based on a Bentham DM 150 double monochromator. The wavelength accuracy of the spectroradiometer was checked before measurements commenced and found to be within plus or minus 0.25nm over the range used.

Measurements were made at 1nm intervals with 1nm bandwidth over the range 200nm to 700nm.

In each case the specified warm up time was observed.

SPECIFICATIONS

GAS/VAPOUR	ENVELOPE	WATTAGE	ARC LENGTH	CURRENT	WEIGHT
Hg (low pressure)	glass	12	38	940mA	60g
He	glass	60	32	912mA	60g
Na	glass	14	19	933mA	60g

ORDERING CODES

PRODUCT	ORDERING CODE
Gas/Vapour	
Hg (low pressure)	93123
He	93098
Na	93122

POWER SUPPLY

The Cathodeon auto leak transformer C800 can be supplied in both 230v and 110v forms to drive any of the complete range of Cathodeon line sources.

ORDERING CODES

DESCRIPTION	PART NO.
Auto Leak Transformer for 220V	C800
Auto Leak Transformer for 110V	C811