



Moniteq Ltd.

MONITEQ Ltd., founded in 1976, is rapidly becoming a leader in the development of electro-optical instrumentation for the detection of trace molecular and atomic gases. The current staff of 45 consists of creative and highly qualified scientists and engineers encompassing the disciplines of optical physics, analytical chemistry, electronics and data processing.

MONITEQ's developments include instruments to measure ground level atmospheric pollutants, sensors to remotely measure pollutants and hazardous gas leaks and various electro-optical systems for the detection of specific gases in the atmosphere or from analytical separation processes such as gas chromatography. Many of these developments are now being manufactured and distributed from our 8,000 square foot facility in Concord (Toronto) Ontario.

Included in MONITEQ's manufacturing capability is a line of electrodeless discharge lamps. Developed to provide a source of high resolution, high stability UV radiation in a compact lightweight enclosure, these lamps are finding many applications in atmospheric research, analytical instrumentation and industrial measurement where a high degree of spectral specificity and intensity is required.

ELECTRODELESS DISCHARGE LAMPS

MONITEQ's electrodeless discharge lamps are compact, self-contained sources of vacuum ultra-violet and ultra-violet radiation. In most cases, the lamp emission is in the form of a line spectrum, the specific emission lines being characteristic of a molecular or atomic gas contained within the lamp. The lamp assembly consists of a plasma discharge cavity excited by a 200 MHz source. The discharge cavity, RF source and all associated intensity control electronics are contained within a compact, rugged enclosure.

Two types of lamps are presently available:
Rare Gas Lamps including He, Kr, Xe, Ar, Ne. The

lamp discharge cavity is filled and permanently sealed with the appropriate gas.

Atomic Resonance Lamps including H, D, N, O, Cl. The gas concentration in the cell is controlled by temperature regulation of a source/getter located on a side arm of the lamp cavity. The getter also removes contaminants which may cause spurious spectral output.

Developments under consideration include molecular discharge lamps with emissions in the UV to IR. Continuous sources covering selected wavelength regions and multiple gas lamps are also under development.

FEATURES

Rugged	: Aerospace qualified
Light Weight	: Less than 1.0 kg
Compact	: 14.0 cm x 8.9 cm dia.
Power Consumption	: Typically less than 40 watts at 28v.
Continuous or Pulsed Operation	: DC to 5 KHz
Long Life	: More than 1000 hours for rare gas lamps More than 500 hours for atomic resonance lamps
High Stability	: $\pm 1\%$ per hour for rare gas lamps $\pm 2\%$ per hour for atomic resonance lamps
Complete Factory Calibration	: Absolute intensity, UV spectral scan, emission line intensity ratios

OPTIONS AND ACCESSORIES

Mounting bracket for monochrometers
Photoionization chambers for absolute intensity calibration
Collimation assembly
Feedback intensity control
28 VDC power supply
Compact lamp housing (7.6 cm x 7.6 cm dia.) with external power supply

OUTPUT SPECIFICATIONS

Lamp Type	Principal Wavelengths Emitted (nm)	Typical Intensity (photons/sec/str)
Kr	123.6	10^{15}
Xe	147.0	10^{15}
Cl	118.9/120.1	5×10^{12}
N	119.9/120.0/120.1	5×10^{12}
O	130.2/130.5/130.6	10^{14}
D	121.5	10^{14}
H	121.6	10^{14}
He	Multiple	Depends on Application
Ne	Multiple	Depends on Application
Ar	Multiple	Depends on Application

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