

## PEN-RAY® LIGHT SOURCES

### Rare Gas Lamps

Pen-Ray light sources are low-pressure, cold cathode mercury UV lamps made of double bore quartz tubing. The lamps are individually created by master craftsmen to ensure quality and reliability. The lamps provide a high degree of stable, isolated spectral line accuracy and long life (3000+ hours).

- A variety of lighted lengths and wavelengths are available
- Lamp uses include:
  - Sterilization
  - Fluorescent inspections
  - Photochemical reactions
  - Interferometry
  - Chromatography
  - Photometric and fluorometric instruments
  - Spectroscopic wavelength calibration
  - Monochromatic sources for optical systems and reference studies

Call UVP for additional models and custom designs

#### Ordering Information - Standard Light Sources

<b>11SC-1</b> 254nm UV Lighted Length/Dia: Volts - Start/Operate:	90-0012-01 2.12/0.256 in. (53.8/6.5mm) 800V/270V
<b>11SC-1L</b> 365nm UV Lighted Length/Dia: Volts - Start/Operate:	90-0019-01 2.25/0.375 in. (57.2/9.5mm) 800V/270V
<b>11SC-2</b> 254nm UV Lighted Length/Dia: Volts: Start/Operate:	90-0020-01 0.75/0.256 in. (19.1/6.5mm) 800V/270V
<b>3SC-9</b> 254nm UV Lighted Length/Dia: Volts: Start/Operate:	90-0004-01 9.0/0.375 in. (228.6/9.0mm) 640V/56V

#### Ordering Information - Power Supply

<b>Power Supply</b> Open Circ. Voltage: 2300 VAC Max. Pri./Lamp Current: 400 ma/18 ma (avg)	99-0055-01 (115V/60Hz) 99-0055-02 (220V/50Hz)
--	--

\* Power supply is ordered separately.

### Rare Gas Lamps



Rare gas lamps incorporate the Pen-Ray model 11SC-1 body but replace the Mercury for other reactive ingredients. Ask about gas combinations and custom designs.

*Rare Gas Lamp are available with Argon, Krypton, Neon or Xenon fills.*

*Select Pen-Ray Lamps are available with a choice of lighted length and diameter, phosphor and handle.*



**Lamp cord length:** 16 in. (406mm) with standard connector; different cable lengths and connectors are available.

**Power supplies:** provide optimum starting and operation of the lamps. Use the recommended power supplies (ordered separately) shown with each lamp.

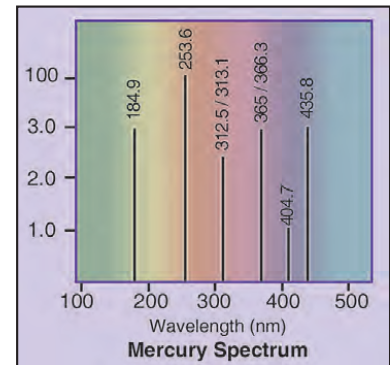
**Filter shields** (optional): direct or modify the emission output for model 11SC-1:

- Shield A provides a 0.04 in. ID hole
- Shield B has 0.31 x 0.63 in. window
- Shield C has a 0.19 x 1.5 in. window

#### Lamp Spectra

The graph below illustrates the relative emission intensities of the mercury Pen-Ray lamps.

*Spectral charts and lamp specifications can be obtained from UVP.*



#### Ordering Information

<b>Argon Fill</b>	90-0013-01
<b>Krypton Fill</b>	90-0014-01
<b>Neon Fill</b>	90-0015-01
<b>Power Supply</b>	99-0057-01 (115V) 99-0057-02 (230V)
<b>Neon-Mercury</b>	90-0016-01
<b>Power Supply</b>	99-0055-01 (115V) 99-0055-02 (230V)
<b>Xenon Fill</b>	90-0017-01
<b>Power Supply</b>	99-0056-01 (115V) 99-0056-02 (230V)

### Zinc and Cadmium Lamps



Zinc and cadmium lamps are designed for use with UV absorption cells and detectors and are often used in air pollution monitoring devices. Zinc lamps can substitute for deuterium lamps due to the zinc lamps' superior thermal stability, long life and prominent 214nm energy peak. Electrical leads are available in either side/radial or end/axial configurations. Use Power supply: 99-0033-01 (115V) or 99-0033-02 (230V)

**Dimensions:**

**Zinc Lamp:** 20mm lighted length, 4.33 in. (110mm) total length, 0.67 in. (17mm) quartz dia.

**Cadmium Lamp:** 24mm lighted length, 4.33 in. (110mm) total length, 0.67 in. (17mm) quartz dia.

### Ordering Information

<b>Zinc Lamps</b>	
Radial lead 8 in. (203mm)	90-0069-05
Axial lead 8 in. (203mm)	90-0069-06
Radial lead 12 in. (305mm)	90-0069-07

<b>Cadmium Lamps</b>	
Radial lead 8 in. (203mm)	90-0071-03
Axial lead 8 in. (203mm)	90-0071-06
Radial lead 12 in. (305mm)	90-0071-07



*Pen-Ray Field Packs provide a portable UV light source.*

### Pen-Ray Fields Packs

Pen-Ray Field Packs combine a light source and a DC power supply (with 9V battery) in a compact, portable package.

- Lightweight and small enough to fit in a pocket
- Field Pack FP-LSD provides two interchangeable light sources (365nm and 254nm)

### Stable Ozone Generators

Stable Ozone Generators (SOG) use the photochemical reaction of oxygen and shortwave (185nm) UV to produce a continuous flow of ozone.

- SOG models use a removable Pen-Ray lamp inserted into the generator box
- The power supply included with the lamp feeds stable power to the lamps for uniform ozone generation
- Ozone generators provide a stable source for water purification, oxidant testing and air pollution studies

### Ordering Information and Specifications

<b>SOG-1</b>	97-0066-01 (115V) 97-0066-02 (220V)
Ozone Production:	0.8 ppm @ 0.5 L/min.
Lighted Length:	2.12 in. (53.8mm)

<b>SOG-2</b>	97-0067-01 (115V) 97-0067-02 (220V)
Ozone Production:	3.0 ppm @ 1.0 L/min.
Lighted Length:	9 in. (228.6mm)

### Field Pack Ordering Information

Lighted Length:	1.75 in. (44.5mm)
Total Length:	4.25 in. (108mm)
Quartz/Handle Dia:	0.375 in. (9.5mm)
Power supply:	3.75L x 2.38W x 1H in. (95.25 x 60.45 x 25.4mm)

<b>FP-L</b> 365nm phosphor jacket	95-0256-01
<b>FP-S</b> 254nm	95-0256-02
<b>FP-LSD</b> 365nm phosphor jacket, 254nm	95-0256-03

*Stable Ozone Generators for calibration of ozone analyzers.*

**Housing dimensions:**

11L x 3.75W x 1.8H in. (279 x 95.25 x 45.7mm)



### Specialty/OEM Light Sources

UVP manufactures a wide range of custom light sources to meet specialty custom and OEM lamp specifications. Additional designs include grid lamps, photochemical quartz, miniature calibration lamps and coil lamps. Contact UVP for additional information.

