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Low Pressure Mercury Lamps

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Low pressure mercury lamps have been manufactured in Jelight Company Inc. since 1978 for a variety of applications such as: HACH Replacement UV for TOC Analyzers, Arc imaging, Chromatography, Photochemistry, Calibration of UV Detectors, Calibrations of Spectrophotometer, and more.

Low pressure mercury vapor lamps are a highly efficient source of UV light, particularly short wavelength UV light (254nm and 185nm). Often called germicidal or ozone absorption lamps, they are very stable light sources. These types of lamps are available in **ozone producing** and **ozone-free** quartz, with a variety of **phosphors**. Power supplies are also available for each lamp.

At Jelight Company, we also manufacture low pressure mercury **Grid Lamps**. The grid design allows for uniform exposure of the UV light, and is available in a variety of sizes. Custom sizes are also available.



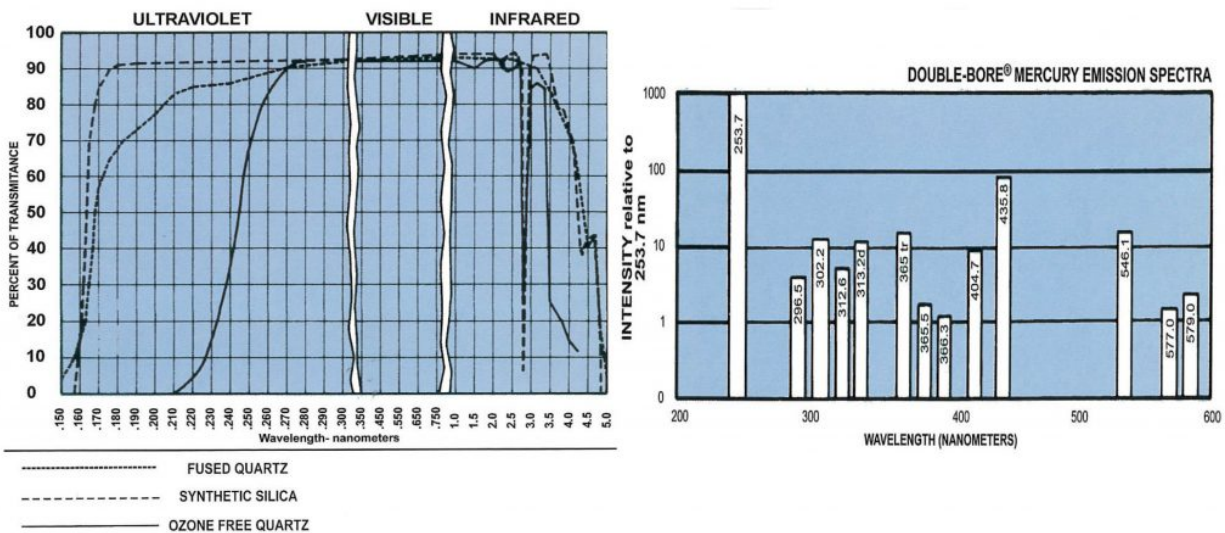


Figure 1. Emission spectra for different types of quartz and Double-Bore Mercury
Emission Spectra

Low Pressure Double-Bore UV Lamps

The name “double-bore” comes from the special quartz used to make the Ultraviolet lamps. This glass consists of quartz tubing with a quartz partition, or septum, through the center (see drawing below). This allows the plasma to ignite at one electrode and travel around the septum back down to meet the other electrode creating an arc of U.V. energy. These bulbs are low pressure, cold cathode, mercury vapor lamps which are manufactured from either fused quartz (ozone-producing) or ozone-free quartz. (ozone-free quartz lamps can replace an ozone-free sleeve for most applications).

The specialized design of this mercury bulb eliminates dangling lead wires because of their location at only one end of the lamp. This feature is ideal for such applications as submerging the lamp into a liquid or inserting the lamp into small apertures. The double-bore has strong isolated spectral lines that are well separated from the others and the bulbs are free from contaminants which are harmful to the operation of the lamp. Jelight Company takes extra, unique steps in the manufacturing process to ensure that each lamp is free of contamination. These processes improve the quality, stability, uniformity, and lifetime of the lamps. When operated properly, the lamp is extremely stable which is important for accurate calibration and instrumentation applications where this stability is vital. In comparison to other UV light

sources, the double-bore lamps are very cool burning; the temperature rarely exceeds 100° C. This is important in processes where the components or substances must not be heated by the light source used.

The double-bore mercury bulbs are long lasting UV light sources with a lifetime of 5000 hours under optimal conditions. However, some lamps have operated continuously for as long as 30000 hours. All of the double-bore bulbs can be filled with a variety of gases such as **argon, krypton, neon, xenon, and helium.**

Applications:

- HPLC
- TOC Analyzer
- Calibration of Photometers
- Mercury Analyzer
- Photochemistry
- Atomic Absorption
- Spectrometry
- Ozone Monitor
- Ozone Generator
- Immunoassays
- Calibrations of Spectroscopes
- Medical Instruments
- Fluorimicroscopy
- Pollution Instrumentations
- Spectrophotometry
- Interferometry
- Fluorescence
- UV Curing and Drying
- And More...

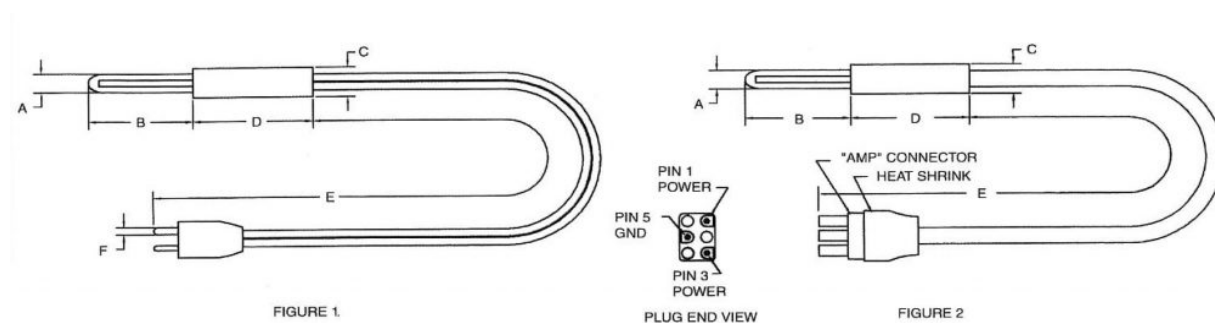


Figure 2. A diagram of a double-bore lamp. The letters correlate to the data sheet values.

✕ [Click Here to View our Double Bore and Phosphor Coated Lamp Data Sheets](#)



DOUBLE-BORE® MERCURY LAMPS DATA SHEET

OZONE PRODUCING DOUBLE-BORE® LAMPS (SYNTHETIC SILICA)													
PART NO.	FIG.	A	B	C	D	E	F	INTENSITY mW/cm ²	STARTING VOLTAGE	OPERATING VOLTAGE	POWER SUPPLY RECOMENDATION		
											120V 60Hz	220V 50Hz	12 VDC
95-2100-1	1	6.5mm ± .6mm	1 in 2.54 cm	.375 in .95cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32cm	3.5	800	220	PS-2000-20	PS-2013-20	DC-1260-20
953-2100-1	2	6.5mm ± .6mm	1 in 2.54 cm	.375 in .95cm	2 in 5.08 cm	8 in ± .5 in		3.5	800	220	PS-2001-20	PS-2005-20	DC-1260-20
95-2100-2	1	6.5mm ± .6mm	2.125 in 5.4 cm	.375 in .95cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32cm	6.0	800	270	PS-2000-20	PS-2013-20	DC-1260-20
953-2100-2	2	6.5mm ± .6mm	2.125 in 5.4 cm	.375 in .95cm	2 in 5.08 cm	8 in ± .5 in		6.0	800	270	PS-2001-20	PS-2005-20	DC-1260-20
96-2100-1	1	9mm ± .9mm	1 in 2.54 cm	.5 in 1.27cm	2.5 in 6.35 cm	17 in ± 1 in	.125 in .32cm	4.5	800	220	PS-3000-30	PS-3004-30	DJ24-8000-30
963-2100-1	2	9mm ± .9mm	1 in 2.54 cm	.5 in 1.27cm	2.5 in 6.35 cm	8 in ± .5 in		4.5	800	220	PS-3001-30	PS-3005-30	DJ24-8000-30
96-2100-2	1	9mm ± .9mm	2.125 in 5.4 cm	.5 in 1.27cm	2.5 in 6.35 cm	17 in ± 1 in	.125 in .32cm	9.0	800	270	PS-3000-30	PS-3004-30	DJ24-8000-30
963-2100-2	2	9mm ± .9mm	2.125 in 5.4 cm	.5 in 1.27cm	2.5 in 6.35cm	8 in ± .5 in		9.0	800	270	PS-3001-30	PS-3005-30	DJ24-8000-30
OZONE PRODUCING DOUBLE-BORE® LAMPS													
78-2046-1	1	6.5mm ± .6mm	1 in 2.54 cm	.375 in .95 cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32cm	3.5	800	220	PS-2000-20	PS-2013-20	DC-1260-20
783-2046-1	2	6.5mm ± .6mm	1 in 2.54 cm	.375 in .95cm	2 in 5.08 cm	8 in ± .5		3.5	800	220	PS-2001-20	PS-2005-20	DC-1260-20
78-2046-2	1	6.5mm ± .6mm	2.125 in 5.4 cm	.375 in .95cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32cm	6.0	800	270	PS-2000-20	PS-2013-20	DC-1260-20
783-2046-2	2	6.5mm ± .6mm	2.125 in 5.4 cm	.375 in .95cm	2 in 5.08 cm	8 in ± .5 in		6.0	800	270	PS-2001-20	PS-2005-20	DC-1260-20
80-2049-1	1	9mm ± .9mm	1 in 2.54 cm	.5 in 1.27cm	2.5 in 6.35 cm	17 in ± 1 in	.125 in .32cm	4.5	800	220	PS-3000-30	PS-3004-30	DJ24-8000-30
803-2049-1	2	9mm ± .9mm	1 in 2.54 cm	.5 in 1.27cm	2.5 in 6.35 cm	8 in ± .5 in		4.5	800	220	PS-3001-30	PS-3005-30	DJ24-8000-30
80-2049-2	1	9mm ± .9mm	2.125 in 5.4 cm	.5 in 1.27cm	2.5 in 6.35 cm	17 in ± 1 in	.125 in .32cm	9.0	800	270	PS-3000-30	PS-3004-30	DJ24-8000-30
803-2049-2	2	9mm ± .9mm	2.125 in 5.4 cm	.5 in 1.27cm	2.5 in 6.35 cm	8 in ± .5 in		9.0	800	270	PS-3001-30	PS-3005-30	DJ24-8000-30
VYCOR FILTER DOUBLE-BORE® LAMPS													
79-7910-1	1	9mm ± .1mm	1 in 2.54 cm	.4375 in 1.11 cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32cm	3.5	800	220	PS-2000-20	PS-2013-20	DC-1260-20
793-7910-1	2	9mm ± .1mm	1 in 2.54 cm	.4375 in 1.11 cm	2 in 5.08 cm	8 in ± .5 in		3.5	800	220	PS-2001-20	PS-2005-20	DC-1260-20
79-7910-2	1	9mm ± .1mm	2.125 in 5.4 cm	.4375 in 1.11 cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32cm	6.0	800	270	PS-2000-20	PS-2013-20	DC-1260-20
793-7910-2	2	9mm ± .1mm	2.125 in 5.4 cm	.4375 in 1.11 cm	2 in 5.08 cm	8 in ± .5 in		6.0	800	270	PS-2001-20	PS-2005-20	DC-1260-20
OZONE FREE DOUBLE-BORE® LAMPS													
81-3306-1	1	6.5mm ± .6mm	1 in 2.54 cm	.375 in .95 cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32cm	3.5	800	220	PS-2000-20	PS-2013-20	DC-1260-20
813-3306-1	2	6.5mm ± .6mm	1 in 2.54 cm	.375 in .95 cm	2 in 5.08 cm	8 in ± .5 in		3.5	800	220	PS-2001-20	PS-2005-20	DC-1260-20
81-3306-2	1	6.5mm ± .6mm	2.125 in 5.4 cm	.375 in .95 cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32cm	6.0	800	270	PS-2000-20	PS-2013-20	DC-1260-20
813-3306-2	2	6.5mm ± .6mm	2.125 in 5.4 cm	.375 in .95 cm	2 in 5.08 cm	8 in ± .5 in		6.0	800	270	PS-2001-20	PS-2005-20	DC-1260-20
83-3309-1	1	9mm max.	1 in 2.54 cm	.4375 in 1.11 cm	2.5 in 6.35 cm	17 in ± 1 in	.125 in .32cm	4.5	800	220	PS-3000-30	PS-3004-30	DJ24-8000-30
833-3309-1	2	9mm max.	1 in 2.54 cm	.4375 in 1.11 cm	2.5 in 6.35 cm	8 in ± .5 in		4.5	800	220	PS-3001-30	PS-3005-30	DJ24-8000-30
83-3309-1	1	9mm max.	1 in 2.54 cm	.4375 in 1.11 cm	2.5 in 6.35 cm	17 in ± 1 in	.125 in .32cm	9.0	800	270	PS-3000-30	PS-3004-30	DJ24-8000-30
833-3309-2	2	9mm max.	2.125 in 5.4 cm	.4375 in 1.11 cm	2.5 in 6.35 cm	8 in ± .5 in		9.0	800	270	PS-3001-30	PS-3005-30	DJ24-8000-30
82-3309-1	1	9mm ± .9mm	1 in 2.54 cm	.5 in 1.27cm	2.5 in 6.35 cm	17 in ± 1 in	.125 in .32cm	4.5	800	220	PS-3000-30	PS-3004-30	DJ24-8000-30
823-3309-1	2	9mm ± .9mm	1 in 2.54 cm	.5 in 1.27cm	2.5 in 6.35 cm	8 in ± .5 in		4.5	800	220	PS-3001-30	PS-3005-30	DJ24-8000-30
82-3309-2	1	9mm ± .9mm	2.125 in 5.4 cm	.5 in 1.27 cm	2.5 in 6.35 cm	17 in ± 1 in	.125 in .32cm	9.0	800	270	PS-3000-30	PS-3004-30	DJ24-8000-30
823-3309-2	2	9mm ± .9mm	2.125 in 5.4 cm	.5 in 1.27 cm	2.5 in 6.35 cm	8 in ± .5 in		9.0	800	270	PS-3001-30	PS-3005-30	DJ24-8000-30

Also available: Lighted lengths up to 48 inches, customized handle dimensions, customized cable length, and the variety of connectors.

INERT GAS DOUBLE-BORE® LAMPS (CALIBRATION LAMPS)													
PART NO.	FIG.	A	B	C	D	E	F	INTENSITY mW/cm ²	STARTING VOLTAGE	OPERATING VOLTAGE	POWER SUPPLY RECOMMENDATION		
											120V 60HZ	220V 50Hz	12 VDC
78-ARGON-1	1	6.5mm ± .6mm	1 in 2.54 cm	.375 in .95 cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32cm	3.5	800	220	PS-2000-20	PS-2013-20	DC-1260-20
78-ARGON-2	1	6.5mm ± .6mm	2.125 in 5.4 cm	.375 in .95 cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32cm	6.0	800	270	PS-2000-20	PS-2013-20	DC-1260-20
78-NEON-1	1	6.5mm ± .6mm	1 in 2.54 cm	.375 in .95cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32cm	3.5	800	220	PS-2000-20	PS-2013-20	DC-1260-20
78-NEON-2	1	6.5mm ± .6mm	2.125 in 5.4 cm	.375 in .95 cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32cm	6.0	800	270	PS-2000-20	PS-2013-20	DC-1260-20
78-KRYPT-1	1	6.5mm ± .6mm	1 in 2.54 cm	.375 in .95 cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32cm	3.5	800	220	PS-2000-20	PS-2013-20	DC-1260-20
78-KRYPT-2	1	6.5mm ± .6mm	2.125 in 5.4 cm	.375 in .95 cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32cm	6.0	800	270	PS-2000-20	PS-2013-20	DC-1260-20
78-XENON-1	1	6.5mm ± .6mm	1 in 2.54 cm	.375 in .95 cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32cm	3.5	800	220	PS-2000-20	PS-2013-20	DC-1260-20
78-XENON-2	1	6.5mm ± .6mm	2.125 in 5.4 cm	.375 in .95 cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32cm	6.0	800	270	PS-2000-20	PS-2013-20	DC-1260-20
PHOSPHOR COATED LAMPS*													

84-2011-1	1	9 mm ± .1 mm	1 in 2.54 cm	.4375 in 1.11 cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32 cm	3	800	220	PS-2000-20	PS-2013-20	DC-1260-20
843-2011-1	2	9 mm ± .1 mm	1 in 2.54 cm	.4375 in 1.11 cm	2 in 5.08 cm	8 in ± 1 in		3	800	220	PS-2001-20	PS-2005-20	DC-1260-20
84-2011-2	1	9 mm ± .1 mm	2.125 in 5.4 cm	.4375 in 1.11 cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32 cm	5	800	270	PS-2000-20	PS-2013-20	DC-1260-20
843-2011-2	2	9 mm ± .1 mm	2.125 in 5.4 cm	.4375 in 1.11 cm	2 in 5.08 cm	8 in ± 1 in		5	800	270	PS-2001-20	PS-2005-20	DC-1260-20
APERTURE PHOSPHOR COATED LAMPS*													
85A-2011-1	1	9 mm ± .1 mm	1 in 2.54 cm	.4375 in 1.11 cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32 cm	3	800	220	PS-2000-20	PS-2013-20	DC-1260-20
853A-2011-1	2	9 mm ± .1 mm	1 in 2.54 cm	.4375 in 1.11 cm	2 in 5.08 cm	8 in ± 1 in		3	800	220	PS-2001-20	PS-2005-20	DC-1260-20
85A-2011-2	1	9 mm ± .1 mm	2.125 in 5.4 cm	.4375 in 1.11 cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32 cm	5	800	270	PS-2000-20	PS-2013-20	DC-1260-20
853A-2011-2	2	9 mm ± .1 mm	2.125 in 5.4 cm	.4375 in 1.11 cm	2 in 5.08 cm	8 in ± 1 in		5	800	270	PS-2001-20	PS-2005-20	DC-1260-20
PHOSPHOR COATED LAMPS WITH BLACK LIGHT BLUE GLASS SLEEVE													
86B-2011-1	1	9 mm ± .1 mm	1 in 2.54 cm	.4375 in 1.11 cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32 cm	2	800	220	PS-2000-20	PS-2013-20	DC-1260-20
863B-2011-1	2	9 mm ± .1 mm	1 in 2.54 cm	.4375 in 1.11 cm	2 in 5.08 cm	8 in ± 1 in		2	800	220	PS-2001-20	PS-2005-20	DC-1260-20
86B-2011-2	1	9 mm ± .1 mm	2.125 in 5.4 cm	.4375 in 1.11 cm	2 in 5.08 cm	17 in ± 1 in	.125 in .32 cm	3.5	800	270	PS-2000-20	PS-2013-20	DC-1260-20
863B-2011-2	2	9 mm ± .1 mm	2.125 in 5.4 cm	.4375 in 1.11 cm	2 in 5.08 cm	8 in ± 1 in		3.5	800	270	PS-2001-20	PS-2005-20	DC-1260-20

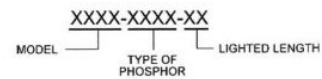
NOTES:

1. Also available: Lighted lengths up to 48 inches, different handle diameters and lengths, different cable lengths, and various connectors.

2. Nominal intensities are measured at a distance of 3/4 of an inch at 365 nm.

* - 2011 is the 365 nm phosphor. For other phosphors create your own part number using example.

For further phosphor listings and information refer to Aperture Lamp catalog sheets.



Phosphor Coated Aperture Lamps

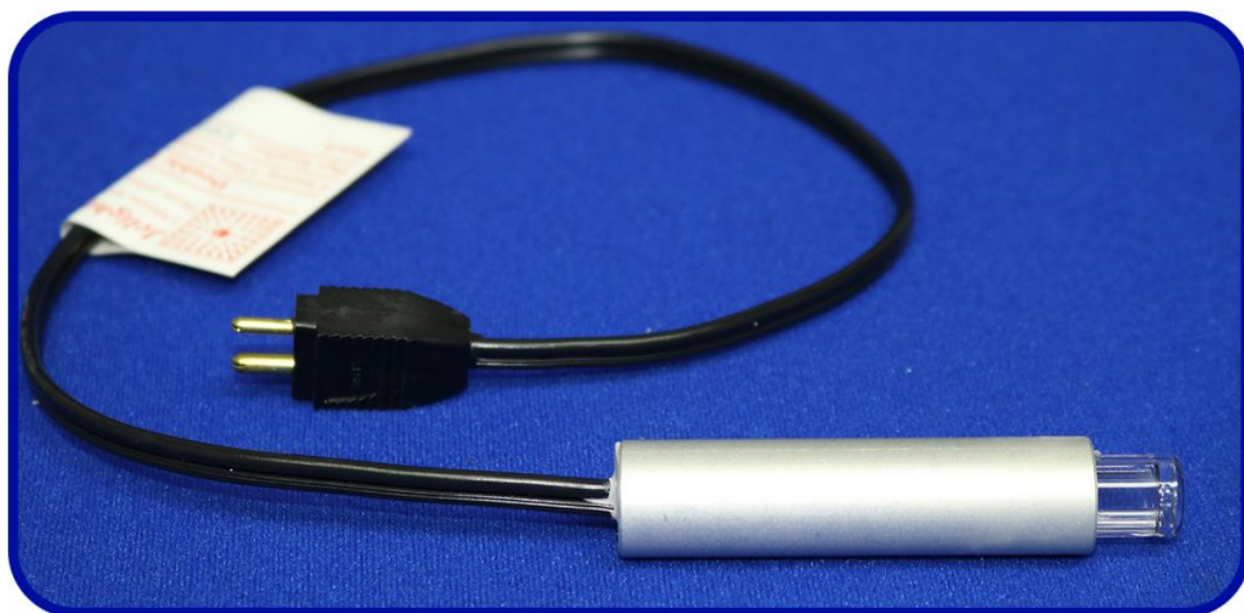
The aperture phosphor-coated lamps that Jelight Company produces employ the same basic design as the double-bore, low-pressure mercury vapor lamps with the exception of a special phosphor coating. This coating covers more than 70% of the diameter of the lighted length of the lamp. Selected phosphors are used, which are then excited by mercury spectral emission lines. Lamps can be made with outputs ranging from approximately 280-1000 nm. The unique concept behind the aperture lamps is that phosphor lines are detected from the reflections; therefore the same lamp exhibits all the spectral lines of the low-pressure mercury as well as the phosphor lines. Custom coatings, such as the option of mixing two or more phosphors together, can also be supplied to meet specific applications. Jelight Company Inc. has perfected a special coating process which provides excellent phosphor adhesion, light uniformity, and long life.

Aperture phosphor coated lamps can also be supplied with a black light blue glass filter which serves to eliminate visible light.



Capillary Lamps

Jelight Company also offers capillary lamps. This special lamp with mercury produces three times the intensity of the 254nm wavelength compared to the standard double-bore® lamp. The unique quality of the capillary lamp is that the entire arc is concentrated into a 1 or 2 mm capillary. This is beneficial as it makes the light exceptionally intense, uniform, and stable. The actual detection of the light is from the end of the capillary and therefore it causes a detector to “view” the diameter of the arc instead of the width of the arc. The Capillary Lamp is available with an ozone free quartz window where vacuum U.V. lines are not desirable, or with a synthetic silica window for transmitting UV. Our capillary lamps are available with a variety of options such as having one or two capillaries, 1 or 2 mm in diameter, various fill gases such as argon, neon, helium, krypton, or xenon, and different phosphor coatings.



[+ Click Here to View Our Capillary Lamp Data Sheets](#)

Photochemical Lamps

Jelight Company also manufactures custom photochemical lamps with some examples shown below. If you have any inquiries please [contact us](#).

