

## Mercury Safety Instructions for Short Arc Lamps

### Product & Operation Description

Lumen Dynamics short-arc lamps for AC or DC operation burn in an atmosphere of mercury vapor at high pressure. In cold lamps (i.e. at room temperature) metallic droplets of mercury can be seen in the lamp envelope. During operation of the lamp; the mercury vaporizes due to heating of the discharge tube (lamp body) and the gas between the electrodes approaches temperatures of up to 10,000 degrees C. The temperature of the discharge tube reaches approximately 800 degrees C. After the lamp has reached thermal equilibrium (5 to 10 minutes after ignition), the vaporized mercury gives rise to a pressure of 30 to 75 times the atmospheric pressure.

### Health Hazards

Inhaling mercury vapor or small particles of mercury or its compounds can be harmful to lungs, kidneys and the nervous system. Injuries to one's health can also arise due to penetration of the skin or absorption via the gastro enteric tract.

### Lamp Breakage

In the rare case that short-arc lamps break or burst and the mercury content is released, we recommend the following safety instructions:

- All personnel should leave the surrounding area at once, to prevent inhalation of mercury.
- The area should be ventilated thoroughly (at least 20 minutes)\*.
- The current Occupational Safety and Health Administration (OSHA) permissible exposure limit (PEL) for mercury vapor is 0.1 milligram per cubic meter (mg/m<sup>3</sup>) of air. See: <http://www.osha.gov/SLTC/healthguidelines/mercuryvapor/recognition.html> for further details.
- Mercury analyzers are available to measure the amount of mercury in the air, such as example: *Jerome 431-X Mercury Vapor Analyzer* (source Arizona Instruments, Tel: 800-390-1414 [http://www.azic.com/products\\_431.asp](http://www.azic.com/products_431.asp))
- After the lamp housing has cooled, any mercury residue should be picked up with a special adsorbent such as, *Mercon Mercury Spill Kit 2* (source EPS Chemicals, 1-800-663-8303, [www.epsross.com](http://www.epsross.com)) or *Mercurisorb* (source Karl Roth GmbH & Co. KG) or *SpillSolv, Mercury Spill Kit* (source EMD Chemicals) or *Mercury Spill Clean-Up Kit* (source Mallinckrodt)

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Lumen Dynamics test results on mercury release from a lamp breakage show that the mercury vapor concentration exceeds the allowable limits by a factor of two after approximately 45 seconds and typically falls below the OSHA permissible exposure limits within a very short time. However since this is dependent on room volume, air circulation and air venting system, the 20 minute time required is recommended as a conservative safety measure.

**Disposal of Short Arc Lamps**

HG – LAMP CONTAINS MERCURY, manage in accord with Disposal Laws, see:

[www.lamprecycle.org](http://www.lamprecycle.org) or 1-800-668-8752

**Mercury content for Lumen Dynamics short-arc lamps:**

Wattage/Mercury (mg)

50W – versions 9.54

100W – versions Max. 20

120W – versions Max. 20

200W – versions Max. 42

Lamps may be returned to Lumen Dynamics in their original packaging for proper environmental disposal.

**Contact Lumen Dynamics – Technical Support**

For information on lamp disposal, or in the case of a lamp burst please contact:

Technical Support & Service Department

Email: [techsupport.lsi@ldgi.com](mailto:techsupport.lsi@ldgi.com)

Tel: +1 905 821-2600 (option 6)

Toll Free: +1 800 668-8752 (option 6)