

Environmental information on short-arc mercury lamps

Product description and operating information

Short-arc mercury lamps are mercury-filled discharge lamps with wattages from 50W to 8000W for dc or ac operation, depending on the type.

When the lamps are in a cold state, in other words at room temperature (21 °C), the mercury is generally present in the form of small metallic droplets in the discharge vessel (bulb). When the lamp is started, the mercury vaporizes as the temperature in the bulb rises and heats up in the arc between the electrodes to around 10,000 °C. The temperature on the inside wall of the bulb is around 800°C. When thermal equilibrium is reached (which may take from 1 to 10 minutes after the lamp has been switched on, depending on the type of lamp) the mercury vapour exerts a pressure of about 30 to 200 bar on the bulb, also depending on the type of lamp.

As with all short-arc lamps, material is lost from the tips of the electrodes in short-arc mercury lamps during normal operation. This not only causes the bulb to blacken but also increases the gap between the electrodes and therefore increases the lamp voltage. To avoid overload operation, dc operated short-arc lamps may only be used with constant output control gear (mains rectifiers); ac operated short-arc lamps may only be used with suitable reactors.

Lamps put on the EU market are in compliance with Directive 2002/95/EC RoHS.

Handling information for broken lamps

The lamp must be switched off immediately when the bulb ruptures. Measures must be taken to ensure that the lamp cannot be switched on again in this state. The metal parts in the lamp are live. Before removing the remains of the lamp, make sure that power is disconnected (risk of fatal electric shock).

To avoid health risks the following procedure is recommended in the event of a lamp breakage:

- Leave the immediate vicinity to avoid inhaling mercury vapour
- Carefully ventilate the room for at least 20 to 30 minutes
- Remove all the lamp and glass fragments, dispose them of as hazardous waste according to national legislation
- Once the luminaire has cooled down and certainly before it is used again, all residual mercury must be thoroughly removed from the inside of the luminaire. To avoid contact with the skin, the use of disposable gloves is recommended. Liquid mercury can be cleared up with commercial adsorption agents.

Health risks

Inhaling mercury or mercury compounds in vapour or powder form can lead to health problems. Mercury can also be absorbed through the skin.

Disposal of used high-pressure sodium lamps

Short arc mercury lamps have to be disposed of in Europe as hazardous waste under EWC Code 20 01 21* "Fluorescent tubes and other mercury-containing waste".

Being in the scope of EU Directive 2002/96/EC - WEEE – short arc mercury lamps at end of life shall not be disposed of together with household waste. Within the EU they are taken back free of charge at certain national collection facilities. More information can be found under www.elcfed.org and your national ELC member partner.

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CONTACT US

ELC Federation asbl/vzw
Diamant Building
Boulevard Reyers 80
B-1030 Bruxelles
Belgium
secretary.general@elcfed.org
Tel: +32 (0)2 706 86 08
Fax: +32 (0)2 706 86 09
www.elcfed.org

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