

UVH lamps and UV low pressure lamps

UV medium pressure and low pressure mercury vapour lamps

1. About these instructions

These operating instructions are part of the product UV lamp.

uv-technik meyer gmbh does not assume any liability and provides no warranty for damage and consequential damages caused by non-compliance with the operating instructions.


- Please read the operating instructions carefully before using the product.
- Please read the safety instructions.
- Store the operating instructions in a safe and accessible place during the service life of the product.
- Pass the operating instructions to any subsequent owner or user of the product.

1.1 Validity




These operating instructions apply only to the products listed in the title.

1.2 Symbols and labels

Structure of the safety instructions

 SIGNAL WORD
Type and source of danger Possible consequences • Measure to prevent the danger

Danger level

Danger level	Probability of occurrence	Consequences of non-compliance
 DANGER	Immediate	Death, severe bodily harm
 WARNING	Possible	Death, severe bodily harm
 CAUTION	Possible	Slight bodily harm
NOTE	Possible	Material damage

Other symbols and labels

Symbol	Meaning
•	Action step
»	Tip

2. Safety

Please observe the following notes to prevent malfunctioning, damage and health impairments.

2.1 Intended use

The medium pressure mercury vapour lamp is intended for use in specially designed systems and devices or in closed test chambers.

2.2 Inappropriate use

Any use other than the one described in the Section “intended use” is deemed to be inappropriate use. The operator of the UV lamp will be solely responsible for any resulting damage.

2.3 General safety instructions

- Keep packaging material away from children. There is a choking risk.
- Ensure the proper installation of the UV lamp in the application intended for this purpose prior to commissioning.

2.4 Personal protective equipment

All works on or with the UV lamp require wearing personal protective equipment in order to minimize health hazards. Therefore:

- Before starting any work, put on the respective specified protective equipment properly and wear it during work.



Safety goggles

Wear safety goggles.



Chemical-resistant gloves









Wear cut-resistant, non-slip, lint-free chemical-resistant gloves with good tactile sensitivity.






3. Technical specifications

Technical specifications	Value / specification UV medium pressure lamps	Value / specification UV low pressure lamps
Operating pressure p in bar (bar)	1 - 10	some mbar
Power P in watt (W)	500 - 40000	up to 1000
Voltage U_B in volt (V)	100 - 4000	up to 200
Current I_B in ampere (A)	3 - 40	up to 10
Wavelength λ in nanometres (nm)	approx. 200 - 400	(185 nm), 254 nm
Arc length EA in millimetres (mm)	50 - 2600	80 - 2000
Pipe diameter D in millimetres (mm)	13 - 40	15 - 41
Amount of mercury (mg)	< 15	6 - 3500
Litz wires	adjusted to the end device	adjusted to the end device
Base, end contacts	adjusted to the end device	adjusted to the end device

Notes on the components:

According to the CLP Regulation, these labeling requirements apply to the following components [1]:

Component	Note			
Mercury	toxic, dangerous for the environment	 GHS06	 GHS09	
Bromine	very toxic, caustic, dangerous for the environment	 GHS06	 GHS05	 GHS09
Iodine	hazardous to health, dangerous for the environment	 GHS07	 GHS09	
Iron				
Gallium	caustic	 GHS05		

Component	Note			
Thallium	very toxic, hazardous to health	 GHS06	 GHS08	
Lead	toxic, unhealthy, dangerous for the environment	 GHS 08	 GHS07	 GHS09

EU-GHS Hazard statements for mercury (shortened):

H330: Fatal if inhaled.

H310: Fatal in contact with skin.

H300: Fatal if swallowed.

H373: May cause damage to organs through prolonged or repeated exposure .

H410: Very toxic to aquatic life with long lasting effects.

The portions of the components, with the exception of mercury, are extremely low in the UV-lamp and therefore pose no hazard.

Labels on external packaging

The marking is sufficient under the traffic law if the outer packaging of a dangerous substance is subject to both the provisions of the traffic law (see below) and the CLP regulation. The CLP marking does not have to be affixed.



The CLP pictogram does not have to be affixed to the outer packaging if the CLP pictogram is referring to the same danger as in the provisions for the transport of dangerous goods [2].

4. Transport

The UV lamps are transported by a haulier or parcel service.

NOTE

Please have the driver of the parcel service or haulier confirm any visible damage to the outer packaging or audible breakage immediately upon delivery. If transport loss is not noticed until the unit is unpacked, the haulier or parcel service must be notified in writing within 24 hours of delivery in order to hold them responsible for the damage.

Transport by road and by sea

According to the ADR, the European Agreement on the International Carriage of Dangerous Goods by Road (ADR), there is a complete exemption of up to 1 kg of mercury per device (section 3.3.1, special provision 366). Accordingly, UV emitters do not have to be labeled during road transport. [3]

Transport by air

In accordance with IATA-DGR 2013, special requirements A191 stipulate that the packaging does not have to be marked with the hazard mark 6.1 (skull), since the weight is less than 5 kg per device (special provision for UN 3506). In the declaration of consignment, a DGD for Dangerous Goods (Dangerous Goods Declaration = DGD) must be attached to the airway bill (AWG). [4]



5. Installation

Installation must be performed only by trained and instructed technical staff.



DANGER

Danger of death from electrical voltage

Touching live parts will lead to death. Damage to the insulation can be life-endangering.

- Connection, testing, and measuring activities on electrical parts must be carried out only by qualified electricians.
- With defective components, disconnect the voltage supply immediately and arrange for repairs.

Keep moisture away from live parts.



WARNING

Risk of blindness

Looking directly into ultraviolet light can lead to irritate eyes and even blindness.

- Prevent direct looks into the UV light.



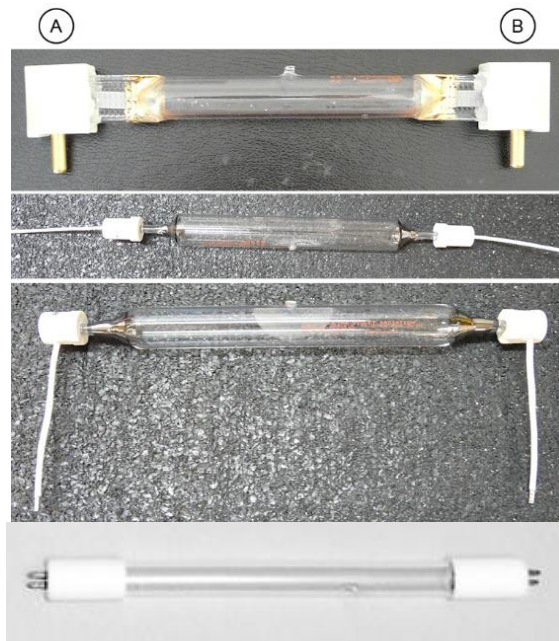
WARNING

Hazard from a contaminated surface of the UV lamp, which can lead to bursting.



A bursting UV lamp can cause cutting injuries and be dangerous to health due to the escaping mercury.

- Wear the stipulated personal protective equipment.
- Clean the UV lamps with a suitable cleaning cloth before installation.
- After a hot UV lamp has burst, leave the workplace immediately and ensure sufficient supply of fresh air. Consult a physician even if there are no symptoms
- » Replace clothing that has come into contact with mercury immediately. Clean the affected skin immediately and thoroughly with soap under running water.



- Clean the UV lamp with a suitable cleaning cloth before installation.
- » Do not touch the UV lamp with bare hands. Wear lint-free gloves (Level 1 cut resistance, grip, good tactile sensitivity). Wearing safety goggles is required.
- Connect side (A) and side (B) to end device at depending on the version.
- Check the function of the UV lamp after installation.

6. Operation



Danger of exposition to ultraviolet (UV) light

- » The manufacturer of the end device must reduce the emitted UV radiation until it is below the limit value. The operating instructions of the end device must provide information about the hazards of UV radiation.



Risk of inhaling ozone

- » The manufacturer of the end device must point out the risk of the development of high ozone concentration. Suitable suction must be used for protection.



Risk of burns

- » The manufacturer of the end device must point out the hazards posed by the UV radiation along with the “hot surface” of the UV lamp in its operating instructions.

7. Maintenance

The safety instructions for installation also apply to maintenance.
Check the UV lamp regularly for cleanliness and functionality.

8. Disassembly and disposal

The safety instructions for installation also apply to disassembly.
Disassembly must be performed only by trained and instructed technical staff.
Please note the regional and country-specific disposal regulations.
Defective UV lamps are hazardous waste. They must be turned over to the responsible collection point as mercury waste.
Broken UV lamps must be transported only shrink-wrapped.
You can return used UV lamps in transport-safe packaging to uv-technik meyer at a small surcharge. We will dispose of them properly.

9. Lamp breakage

UV lamps contain mercury, which is enclosed in the UV lamp. In this condition, there is no immediate danger from the mercury. In this condition, there is no immediate danger from the mercury. If a UV lamp breaks, the mercury, which is liquid at room temperature, can escape and gradually evaporate.

In such a case, the leaked mercury must be removed with suitable equipment, e.g. our 'UV Lamp Service and Safety Kit'.



If such a service kit is not available, in emergency case the mercury can be covered with sand and placed in a tight-fitting PVC container [5].

Mercury soiled cloths should be changed immediately. If skin has been in contact with mercury, it must be thoroughly cleaned with soap under running water.

If a UV lamp bursts in operation burst (for example due to mechanical activity), the mercury exits as a gas. Since UV lamps are usually built in in a UV module / reflector unit (often called lamp housing), the mercury gas is sucked off in the presence of a suction device (lamp cooling by a fan), or it condenses in the lamp housing. The condensed mercury has to be completely removed as described above. The working area must be left immediately and sufficient fresh air supply must be ensured. Medical treatment should be ensured, even if no symptoms appear first. [5].

A detailed description of how mercury is removed can be found in our manual of the 'UV Lamp Service and Safety Kit':

[» Manual UV Lamp Service and Safety Kit](#)



First aid with leaked mercury:

After skin contact: wash off immediately with soap and water, remove affected clothing.

After eye contact: with open eyelid and the outer eyelid gap rinse under running water for ten minutes, consult an eye specialist

After swallowing allow water to swallow in small sips; do not induce vomiting, doctor.

After inhalation: fresh air, seek medical advice immediately.

References

- [1] Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
- [2] European Chemicals Agency (ECHA) – Kennzeichnung eines Stoffes bzw. eines Gemisches in einer Verpackung vor dem Inverkehrbringen nach Maßgabe der CLP-Verordnung; <https://echa.europa.eu/de/regulations/clp/labelling>
- [3] Accord européen relatif au transport international des marchandises Dangereuses par Route (Economic commission for Europe Inland Transport Committee) – European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR); Vol. 1, 01.01.2017, 599.
- [4] Werny, Jürgen - Übersicht über die Neuerungen IATA-DGR 2012 (53. Ausgabe) vs. IATA-DGR 2013 (54. Ausgabe), 01.11.2012;
http://www.verkehrsrundschau.de/fm/3578/IATA_Aenderungen_2013_Tabelle.pdf
- [5] Berufsgenossenschaft Energie Textil Elektro Medienerzeugnisse (BG ETEM) – Reinigung und Wechsel von UV-Lampen, No. 543, 08/2010, 2.
<http://dp.bgetem.de/pages/service/download/medien/543.pdf>