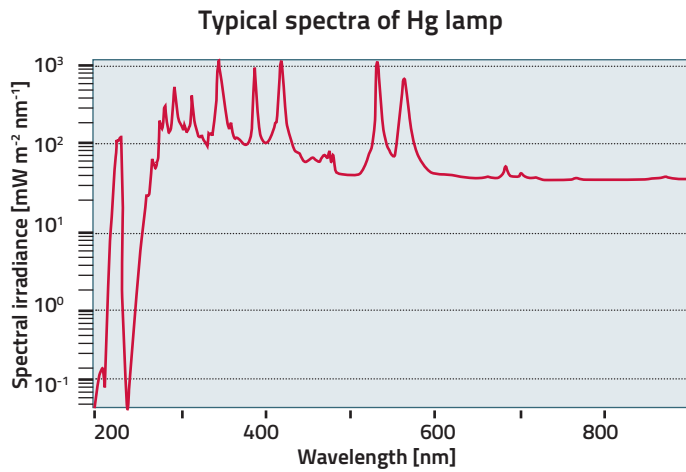


Mercury arc light sources 200-500 W



Fan cooled Hg light source with power supply

- Spectral lines with high output in the UV
- Convection cooled housing
- Precision external lamp adjustment
- Supports wide range of accessories

Mercury short arc lamp

Hg arc lamps contain a base gas (such as Ar or Xe) and liquid Mercury. Hg vaporizes under high pressure up to several 10 bars at the operating temperature. After ignition, a diffuse luminous discharge can be seen in the base gas, which decreases with increasing mercury vapor pressure.

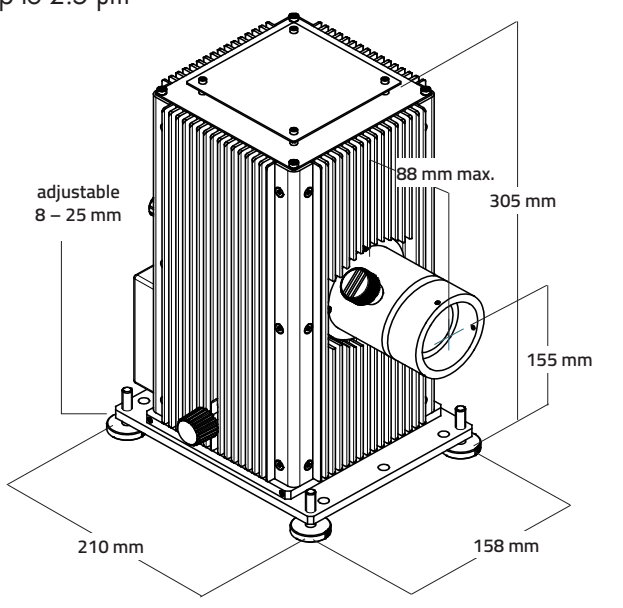
Hg lamps require a start-up time of up to 20 minutes before the mercury is completely vaporized. After that the lamp is in thermal balance and the lamp current is constant. Since the bulb temperature has a great influence on the mercury pressure, these lamps are sensitive to airflow. The output spectrum is dominated by strong Hg lines through the visible and ultraviolet with a weak continuum in the infrared of up to 2.5 μm

Lamp housing

The housing is much more than just a safe enclosure for the lamp. It provides proper cooling which is essential for correct lamp operation. The bulb temperature of arc lamps should not exceed 600 - 900 °C, because at higher temperatures the bulb is not able to withstand the high gas pressure due to a temperature-related change of the quartz structure (recrystallization). Because of potential current conductor oxidation, the socket temperature must not exceed 230 °C. Lamps of 200 W and higher require forced cooling of the base connection parts and bulb cooling is necessary for lamps of even higher wattage. Air blow on only one side of the bulb must be avoided because it generates additional stress in the quartz glass and unbalances the inner convection symmetry, resulting in turbulences. As a consequence, the arc can become unstable. Stress in the quartz glass also results in a risk of lamp burst.

Our fan cooled housings provide baffled air flow to maintain the correct operating conditions in normal laboratory ambient. Overheating due to blocking of the cooling vents or an inoperative fan activates a thermostat interlock which shuts the system off.

The housing has also precise external lamp adjusters that allow you to place the arc where you want it. This is important for simplifying fiber and slit illumination. For many applications, this eliminates the need to readjust optics located in the beam path outside the housing.



Dimensions Hg light source, fan cooled

Mercury arc light sources 200-500 W

Power supply

Our power supplies are easy to use. A self-explaining menu navigation allows easy setup of the light source and safe lamp operation. The power supply comes factory-preset for the specific lamp ordered. The lamp is automatically operated within its admissible current/voltage range and spares you extensive adjustments through the lamp's warm-up period to establish the operating power.

Condensing optics

We offer a variety of different condensers with 25 mm, 35 mm or 50 mm nominal aperture. They differ in:

- Lens material and therefore usable spectral range
- F/number and therefore beam quality and collection/collimation efficiency

The condensers are intended for collimated beams but can also be positioned for compensating focal length change due to dispersion and to produce a more diverging or converging beam. For best uniformity use a slightly diverging beam. For best quality images use the condenser as a collimator and a secondary focusing lens. The condenser lenses are made of high-quality UV quartz for transmissions down to 200 nm, or optical borosilicate glass (BK7; B270) for applications, where an output below 360 nm is not required.

Rear reflector

The optional reflector assembly collects additional radiation from the source, thus increasing the output by up to 50 % for arc lamps. The reflector assembly has a wideband AlMgF₂ coated mirror, usable from the UV to the IR. Control knobs provide x, y, and z adjustments for tilt and focus.

A word on safety

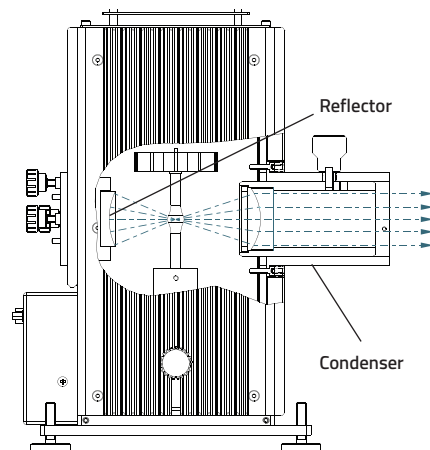
When using arc lamps, you have to operate the housing only with a condenser or window because of possible lamp burst! Even with these low powered sources, UV radiation and ozone are a concern. The easiest solution to the ozone problem is to use an ozone-free arc lamp if you do not need output below ~260 nm. If that is not an option, vent the ozone. Take appropriate UV safety precautions; enclose the beam or wear UV protective eyewear and gloves.

Learn more about UV safety: "[Ultraviolet safety considerations](#)".

| Ordering information | |
|---|----------------------------|
| The LSxxx light source includes almost everything needed for proper operation (lamp housing, power supply, cables and adapters). | |
| Only select lamp and condensing optic according to your requirements to complete. | |
| The optional rear reflector is strongly recommended to maximize output power. | |
| Part number | Description |
| LS200Hg | 200 W Mercury light source |
| → LSB620 | 200 W Hg lamp |
| LS350Hg | 350 W Mercury light source |
| → LSB630 | 350 W Hg lamp |
| LS500Hg | 500 W Mercury light source |
| → LSB640 | 500 W Hg lamp |

| Condensing optics | | | |
|-------------------|----------------|----------|---------------|
| Part number | Nominal Ø [mm] | f-number | Lens material |
| LSC205 | 25 | 1,2 | UV quartz |
| LSC215 | 35 | 1,3 | UV quartz |
| LSC210 | 35 | 1,0 | UV quartz |
| LSC216 | 35 | 1,3 | glass |
| LSC315 | 50 | 1,3 | UV quartz |
| LSC310 | 50 | 1,0 | UV quartz |
| LSC311 | 50 | 1,0 | glass |

| Rear reflector | |
|----------------|----------------|
| Part number | Description |
| LSC321 | Rear reflector |



Functional diagram Hg light source