

Halogen light sources

10 - 150 W halogen source

- Stable VIS-NIR sources
- Convection cooling
- Precision external lamp adjustments
- Choice of different UV-NIR condensing optics for collimated beam
- Supports wide range of accessories

Modular construction

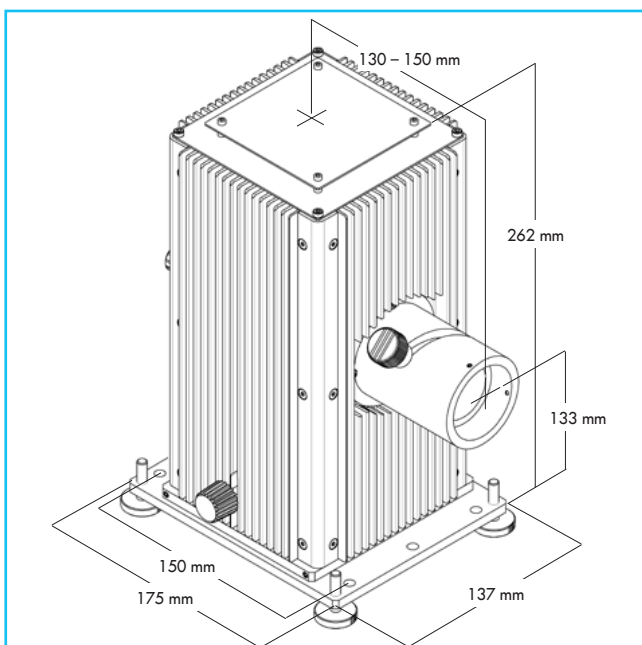
This housing was especially designed for arc lamps. But it also operates other sources like:

- Halogen lamps up to 150 W
- 30 W deuterium lamps

Switching within the same lamp category requires only a new lamp adapter to position the lamp in the center of the housing.

Switching from one category to another, for example from arc lamps to halogen lamps, requires a simple change of interface to meet the different electrical requirements of the different lamp types. Halogen lamps need two voltage connections. Deuterium lamps need three connectors. All interfaces include cables to connect to the appropriate power supplies.

Our lamp housings have height-adjustable feet which allow adjusting the optical axis by 15 mm. You can take the feet off and hard mount the housing to a bench, rail or optical table with the optics axis centered over the hole pattern to allow for easy integration with the rest of your setup. The height of the optical axis is then 133 mm.



Convection cooling

Unlike fan cooled housings, this housing uses natural convection cooling. This type of cooling is acoustically quiet and vibration free, which results in the most stable lamp output.

Openings in the bottom and top of the housing allow air to enter and circulate through the housing without excessive light leakage. The ribbed exterior improves cooling efficiency.

Condensing optic

We offer a variety of different condensers with 35 mm 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 for producing a more diverging or converging beam.

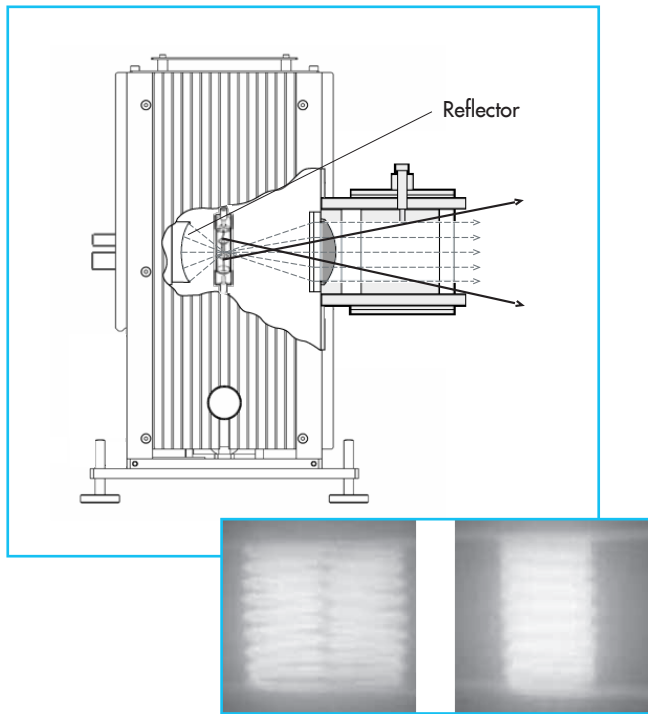
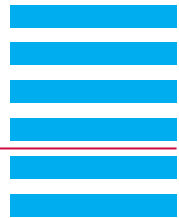
For best uniformity use a slightly diverging beam. For best quality images use the condenser as a collimator and a secondary focusing lens.

The condenser lenses are made of high-quality UV quartz for transmission down to 200 nm, or optical borosilicate glass (BK7; B270) for applications, where output below 360 nm is not required.

For the transmittance of these materials go to "Transmittance of optical materials" on www.lot-qd.com/light-sources ("Basics").

Halogen light sources

10 - 150 W halogen source



Reflector

An optional spherical reflector assembly with AlMgF2 coating collects additional radiation from the lamp. Lamp and mirror must be adjusted to each other so that the image of the filament lies beside the actual filament (see fig. above). Reproducing an image of the filament on itself must be avoided as it would lead to overheating of the filament, increased vaporization and shorter lamp life.

Lamp adjustment

The housing has precise external lamp adjusters. They let you place the filament where it is needed. This is important for simplifying fiber and slit illumination. In many applications this eliminates the need for readjusting any optics located in the beam path outside the housing.

Power supply

The power supply is a highly regulated constant current source specifically designed for 10 - 150 W halogen lamps. It uses a digital meter to ensure repeatable current or voltage settings. This supply includes a circuitry that gradually applies power on start-up. This prevents lamp damage from in-rush current. The reduction in thermal shock to calibrated lamps ensures longer validity of the calibration.

A word on safety

Although compared to arc and deuterium lamps it is only a little, tungsten halogen lamps still produce UV radiation. Especially in the high wattages the ultra-violet radiation is hazardous. Always wear protective eyewear. When imaging the filament to small probes you will even need welding goggles during adjustments because of glare.

Tungsten halogen lamps reach surface temperatures up to 900° C during operation. So the cooling period can last up to 15 minutes! Only then is it safe to touch the lamp.

Ordering information

To build a complete light source you will need: Lamp housing, condensing optics, lamp with appropriate adapter, electrical interface and power supply. As an option you might choose the rear reflector for more output.

Housing and optics

LSH102	Housing
LSC115	UV quartz condenser, F/1.3; 35 mm aperture
LSC110	UV quartz condenser, F/1.0; 35 mm aperture
LSC114	IR quartz condenser, F/1.3; 35 mm aperture
LSC116	Glass condenser, F/1.3; 35 mm aperture
LSC111	Glass condenser, F/1.0; 35 mm aperture
LSC121	Rear reflector assembly

For transmittance of materials go to "Transmittance of optical materials" on www.lot-qd.com/lightsources, ("Basics").

Lamps and adapters

	Halogen lamps	Required adapter
LSB110/5	10 W	LSA130
LSB111/5	20 W	LSA130
LSB114/5	50 W	LSA132
LSB117/5	100 W	LSA132
LSB116/5	100 W, long life	LSA132
LSB121/5	150 W	LSA132

For lamp specifications go to "Tungsten halogen lamps, specifications" on www.lot-qd.com/lightsources, ("Halogen light sources").

Power supply and interface

LSN111	Power supply for halogen lamps up to 150 W
LSE120	Interface for halogen lamps

For specifications of the power supply go to "Power supplies for halogen lamps" on www.lot-qd.com/lightsources ("Halogen light sources").