



NLIR | Mid-Infrared Sensors



MANUAL – L1280 IR Light Source

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1 Device description

This device emits infrared radiation in the wavelength bandwidth 1.2 μm –8.0 μm . The radiation is generated by heating a Silicon carbide filament to approx. 1400 °C and coupled into a fiber for easy utilization in an optical setup.

The amount of radiation coupled into the fiber scales with the core area up to approx. 1 mm core size. Due to the broad emission bandwidth of the light source, the total amount of radiation going through the fiber depends severely on the fiber core material.

The device is temperature stabilized by a fan on the inside so no parts are too warm to touch on the outside.

2 Cautions

- Do not remove open the device without explicit instructions from NLIR. Very warm elements inside.
- Handle instrument with care to maintain performance.

3 How to operate



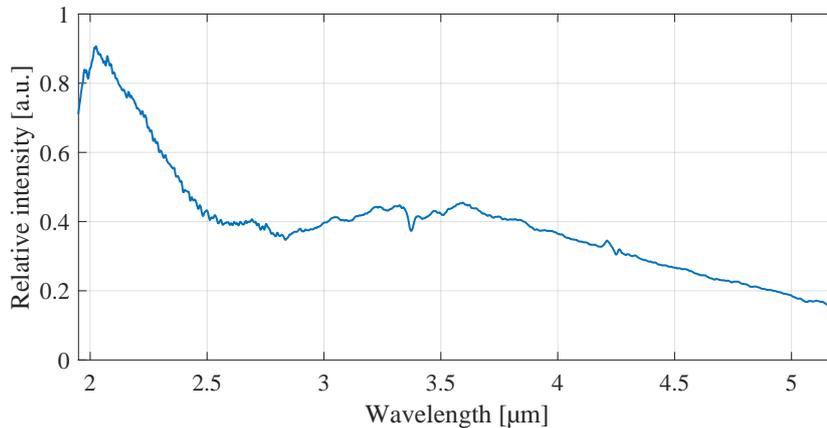
Follow these steps to connect and operate the device.

- Insert the cable from the 19 V power supply in the power supply plug or the AUX cable included with an NLIR Spectrometer in the AUX plug.
- Insert an IR fiber with an SMA connector in the fiber port on the front of the device.
- Turn on the device by switching the state button on the back from "OFF" to "ON".
- The device turns on immediately and starts emitting radiation.

4 Specifications

Quantity	Value	Unit
Wavelength range	1.2 – 8.0	μm
Power out [†]	> 5	mW
Stability	± 0.5	%
Fiber connector	SMA	
Operating temperature	20–30	$^{\circ}\text{C}$
Dimensions	$160 \times 140 \times 91$	mm^3

[†] Power out of 500 μm core diameter Chalcogenide fiber



Spectrum of emitted light from L1280 between 1.95 μm and 5.2 μm . The light source does not imitate a black-body emitter perfectly, but it resembles a black-body emitter with a temperature of approx. 1200 $^{\circ}\text{C}$.

5 Error handling

The device has a fail-safe feature installed that monitors the temperature inside the device. The diode on the front side shows the current status of monitor:

- **Solid green:** Device is stable and works as it should.
- **Flashing green:** Temperature control is stabilizing device.

- **Flashing red and green:** Malfunction detected. Running the fan for 10 seconds with the bulb off. Do not turn off.
- **Flashing red:** Note the type of malfunction and then turn off: 1 flash: Open circuit bulb. 2 flashes: Short circuit bulb. 3 flashes: Fan malfunction. 4 flashes: High temperature. 5 flashes: Low temperature.

If the front diode keeps flashing green even if operated within operating temperature or if the diode becomes red immediately or very shortly after turning on the spectrometer, even after being shot down for a while, turn it off, unplug the power, and contact NLIR at support@nlir.com.

6 Contact

In case of malfunction or questions, contact NLIR at

NLIR Aps

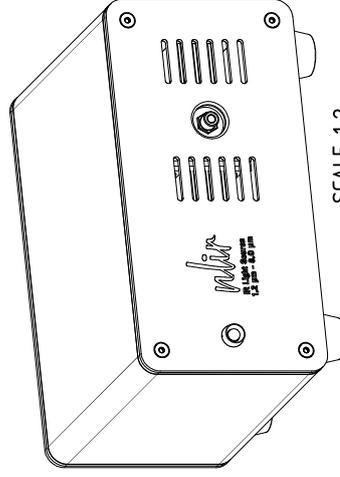
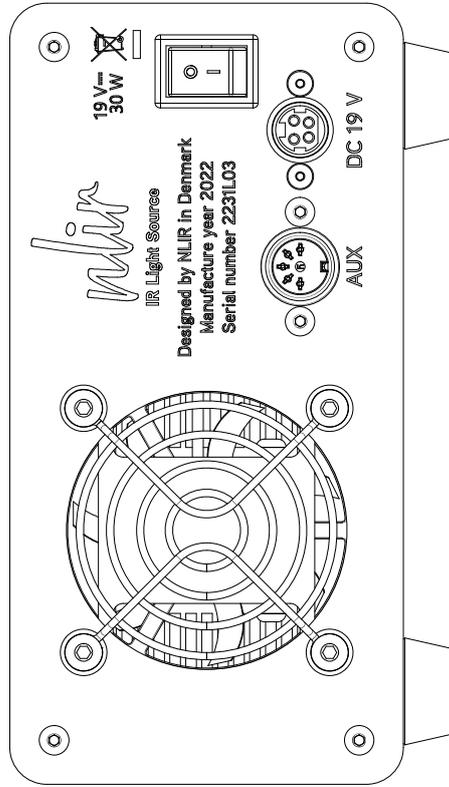
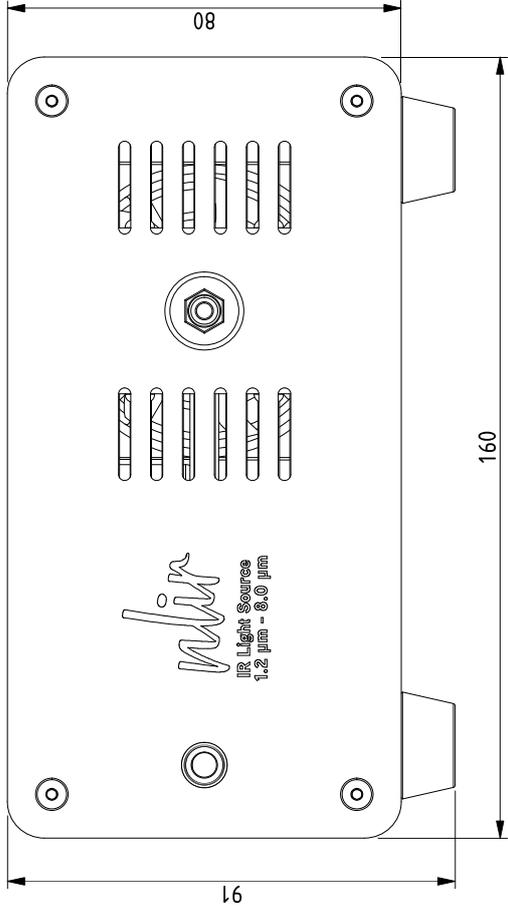
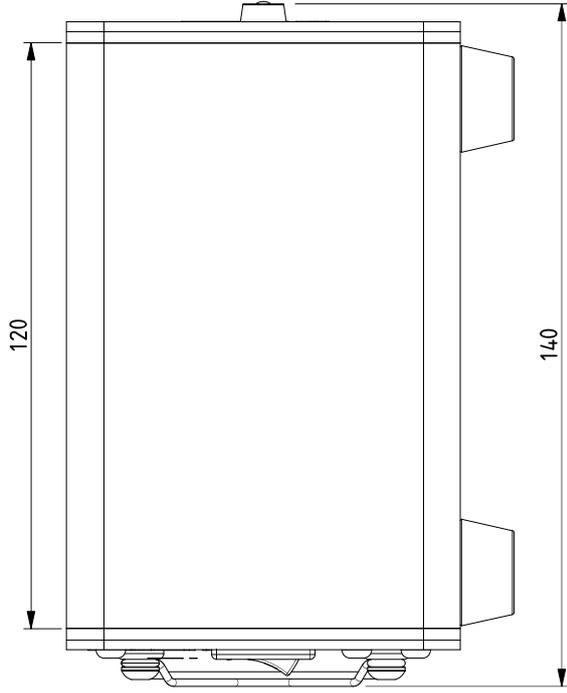
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SCALE 1:2

MATERIAL:	MGCB	NLIR A/S Hirseshæken 1 5200 Tørum Denmark Phone: +45 7174 1870	
Quantity:	01MAR2022	NLIR	
Treatment:		Light Source	
Surface:		Part no. -	
REMARKS:	Undimensioned geometry. Refer to 3D file. EPS not defined. Tolerances: ISO 2768-m.	Projection	Scale
		Sheet	1:1
		1 of 7	Rev
			X04