nlir

MEMBER OF THE NYNOMIC GROUP

FIBER
LIGHT SOURCE

- 1.2 - 8.0 µm Wavelength Range
- 1050 °C Silicon Carbide Source
- SMA-905 Fiber Connector
- Active Temperature Stabilization

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THE TECHNOLOGY

LIGHT SOURCE | FIBER

High-temperature mid-infrared (MIR) light sources are relatively cheap and require only simple electronics; they emit light of high power and are stable and robust.

However, due to the nature of the warm emitter, the light is incoherent and emitted in all directions, which makes it difficult to guide and focus the light onto a sample with high intensity.

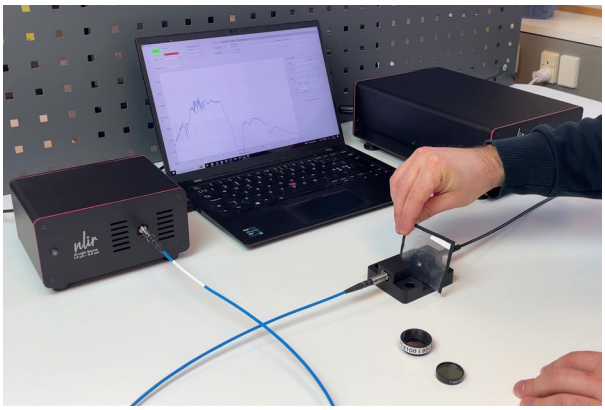
NLIR's FIBER Light Source makes it easy to bring MIR light to a sample, either by positioning the fiber tip close to the sample or by using commercially available fiber-probes.

The light source is plug-and-play. It turns on in a few seconds and has temperature actively stabilized, meaning that no parts are too warm to be touched.

The light source filament in the light source can easily be replaced because of its modular design ■

DETAILS

Optical coating characterization using NLIR's MIDWAVE Spectrometer COLLIMATOR Accessory and FIBER Light Source.



Foil characterization in Transmission Measurement System using NLIR's MIDWAVE Spectrometer, TRANSMISSION Interface and FIBER Light Source.

	FIBER Light Source
Optical Bandwidth	1.2 - 8.0 µm
Source	1050 °C Silicon Carbide
Output Power[1]	5 mW
Optical Output	SMA-905 Fiber Connector
Lifetime[2]	> 1800 hours
Power Consumption	22 - 25 W
Supply Voltage[3]	19 V
Measurements (L × W × H)	130 × 160 × 90 mm
Weight	1.5 kg

[1] In 500 µm core size 0.3 NA chalcogenide fiber
[2] Typical point of time where output starts to decrease, source will show end-of-life status
[3] Delivered with the included 19 V supply or an interconnect cable to the MIDWAVE Spectrometer

THE TECHNOLOGY AND TECH DRAWINGS

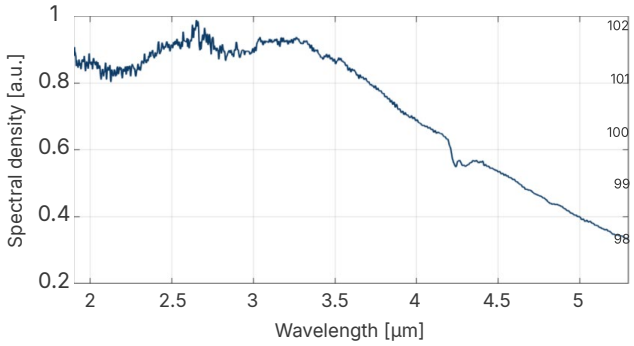
EMISSION SPECTRUM AND STABILITY

Density:

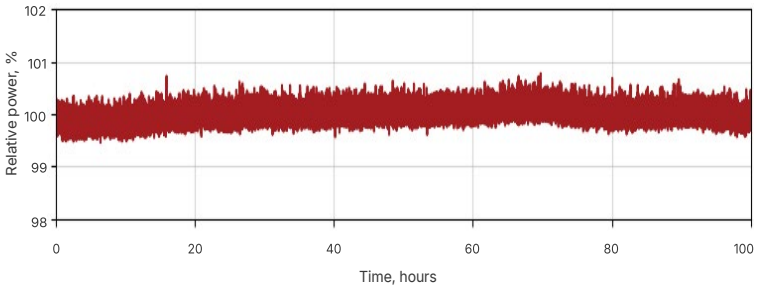
The figure below (see Spectrum 1) shows the spectral density of NLIR's FIBER Light Source in the 1.9 to 5.3 µm range. While the emission partially resembles that of a blackbody radiator, the SiC emitter exhibits a broader and more uniform spectral shape, particularly at shorter wavelengths. The light source extends its emission down to approximately 1.2 µm.

Stability:

The curve below (see Graph 1) shows a stability measurement of NLIR's FIBER Light Source conducted over 100 hours with a bolometer at constant temperature.



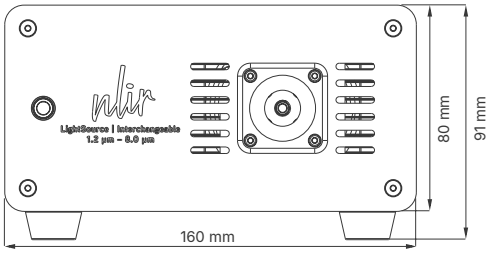
Spectrum 1. Spectral density of the FIBER Light Source.



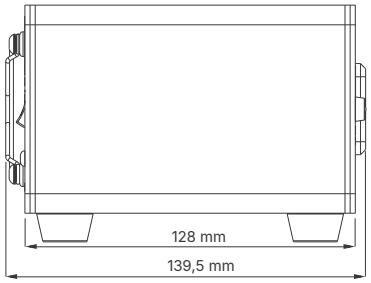
Graph 1. The stability of NLIR's FIBER Light Source when used over a period of 100 hours.

TECH DRAWINGS

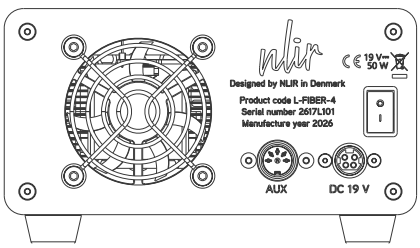
FRONT



SIDE



BACK



DESCRIPTION

The drawings provide detailed dimensions and an overwiev of NLIR's FIBER Light Source design.

NLIR's FIBER Light Source is equipped with a green LED on the front panel to indicate proper operation. It features an SMA fiber connector at the output port on the front for easy connection to optical fibers. On the back it has a 19 V DC power supply input and an AUX port, allowing it to receive power directly from NLIR spectrometers for seamless integration.

Note that all measurements are in mm ■