

FIBER LIGHT SOURCE

- 1.2 - 8.0 μm Wavelength Range
- SMA-905 Fiber Connector
- 1375 $^{\circ}\text{C}$ Silicon Carbide Source
- 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

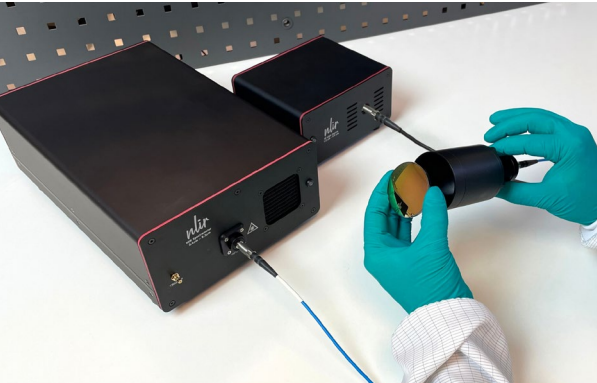
by using commercially available fiber-probes.

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 ■



DETAILS



Optical coating characterization using NLIR's MIDWAVE Spectrometer and NLIR's 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	1375 °C Silicon Carbide
Output Power ¹	5 mW
Optical Output	SMA-905 Fiber Connector
Lifetime	5000 hours
Power Consumption	22 - 25 W
Measurements (L × W × H)	130 × 160 × 90 mm
Weight	1.5 kg

¹ In 500 μm core size 0.3 NA chalcogenide fiber

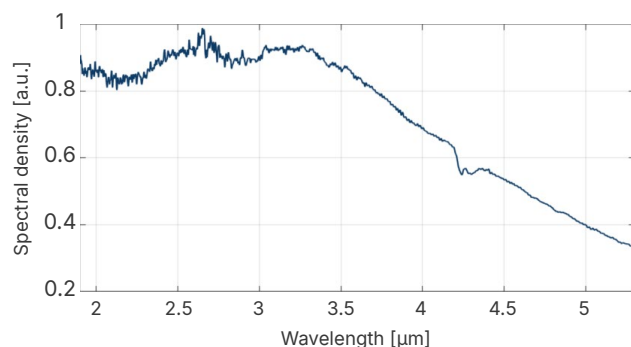
THE TECHNOLOGY AND TECH DRAWINGS

EMISSION SPECTRUM AND STABILITY

Density:

The graph 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

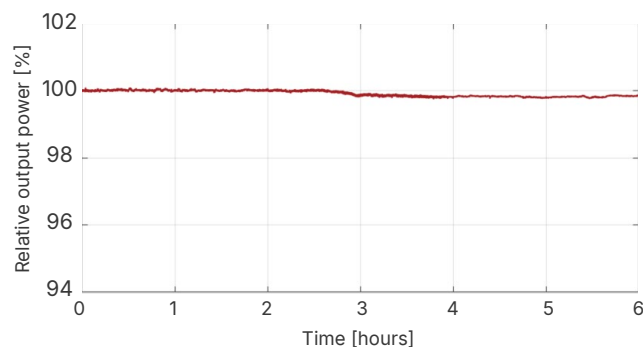
emitter exhibits a broader and more uniform spectral shape, particularly at shorter wavelengths. The light source extends its emission down to approximately 1.2 μm .



Spectrum 1. Spectral density of the FIBER Light Source.

Stability:

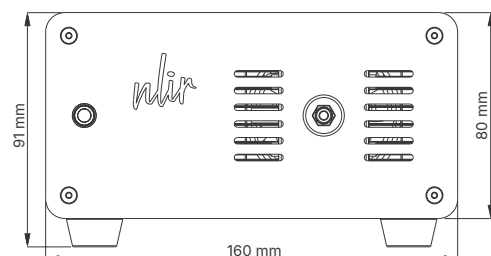
The curve below (see Spectrum 2) shows a stability measurement of NLIR's FIBER Light Source conducted with a bolometer at constant temperature.



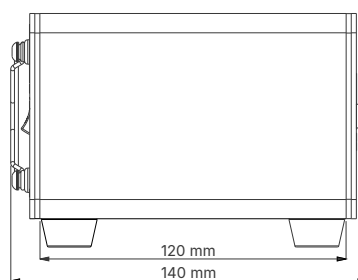
Spectrum 2. Stability measurement of the FIBER Light Source.

TECH DRAWINGS

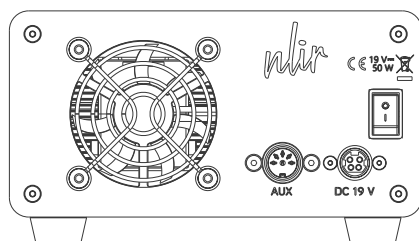
FRONT



SIDE



BACK



DESCRIPTION

The drawings provide detailed dimensions and an overview 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 ■