



2 Micron Single Frequency Fiber Laser Source

PRODUCT DATA SHEET

Leveraging its expertise in highly doped germanate glass and fibers, NP Photonics offers a 2-um single frequency Ho-doped fiber laser with output powers up to 25 mW. Wavelength operation near 2.05 micron is very attractive for CO₂ detection applications. The design of NP Photonics 2-micron short-cavity laser is similar to NP's Er/Yb and Yb doped phosphate glass fiber laser, which exhibits single-frequency operation with narrow linewidth and excellent frequency-noise properties. A low noise Tm-doped fiber laser pumps the Ho-doped fiber laser – resulting in superior noise properties for the output at 2-micron. An acoustically damped package is used to isolate the DBR laser cavity and results in stable operation over long periods.

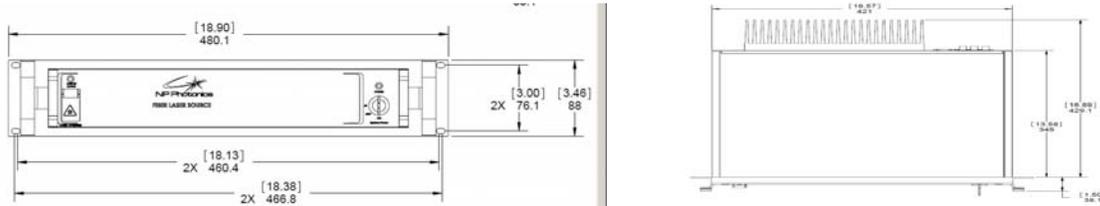
Coherent Doppler Lidar and Differential Absorption Lidar (DIALs), working with 2-micron pulsed lasers, make possible detailed measurements of wind, CO₂, aerosols, clouds and river flow. Next generation LIDARs require a seed laser source with wavelength tunability, frequency stability, narrow linewidth, efficient operation, compact size, and low thermal load. Recently the development of diode-pumped single frequency fiber lasers has drawn more and more attention due to its narrower linewidth, longer coherence length, multiple wavelength choice, reliability, ruggedness, and compactness. The wide range of operating wavelengths of fiber lasers provide the flexibility for those applications where operation wavelength is vital, such as laser spectroscopy, remote sensing, and coherent laser seeding application.

PRODUCT SPECIFICATIONS

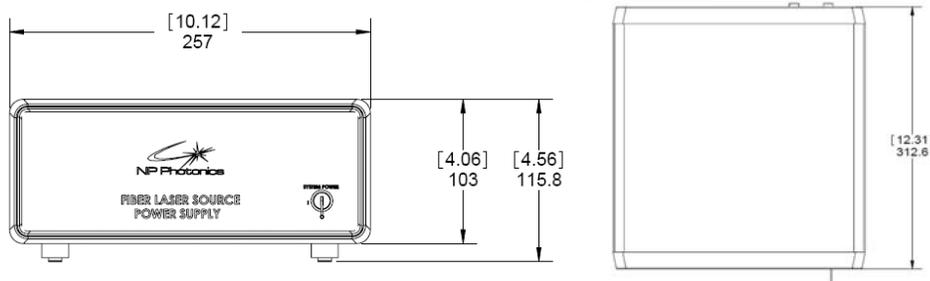
Parameter	Value
Wavelength Range	2050 nm (2030 nm – 2100 nm available on request)
Output Power	up to 25 mW (with no output isolation)
Longitudinal Mode	Single Frequency
Wavelength Set Resolution	50 MHz
Spectral Line Width (Heterodyne)	< 50 kHz
Frequency Stability (*)	< 50 MHz
Relative Intensity Noise (RIN) @ Peak ~ 1MHz	< -90dB/Hz
Relative Intensity Noise (RIN) > 50 MHz	Short Noise Limited
Polarization Extinction Ratio (PER)	> 17 dB (optional)
Tuning Range	10 GHz (thermal)
Power Stability	± 5%
Connector	FC/APC Connector (panel mounted, narrow key)
Package Dimension	382 x 480 x 88 mm (Laser head)

(*) Over 1 hour with base temperature constant to within < 2° c after 30 min warm-up.

Mechanical Outline: Laser Head



Power Supply



FLS

Power	Code	Tunability	Code	Wavelength	Code	Polarization	Code	Isolation	Code
5 mW	5	None	0	Standard	2XXX.YY	Random	0	None	0
10 mW	10	Tuning	1			Linear (LP)	1	Output	1
25 mW	25								

NP Photonics Fiber Laser Sources are protected by a 12 month warranty. All components and assemblies are unconditionally warranted to be free of defects in workmanship and materials for the warranty period, beginning from the date of shipment. This warranty is in lieu of all other warranties, expressed or implied, and does not cover incidental or consequential loss. This warranty does not apply to devices damaged due to operating conditions outside of the specified parameters. Modified warranties for OEM customers are available.

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