1550nm narrow linewidth single-frequency semiconductor laser module 10mW

- ## Product Description

The Idealphotonics narrow linewidth single-frequency laser features a unique semiconductor external cavity structure. The typical output bandwidth is less than 3 kHz, and its wavelength is less sensitive to vibrations. This device offers a high side-mode suppression ratio, low relative intensity noise, and excellent wavelength stability, making it suitable for various applications in harsh environments. The Idealphotonics

narrow linewidth single-frequency laser has proprietary patents, with high structural stability and mature technology, making it ideal for mass production. This product complies with the Telcordia GR-468 standard and has passed long-term reliability testing.

Product features

Polarization-maintaining fiber output, linewidth less than 3 kHz、 Low phase noise and relative intensity noise 、 Stable structure with low sensitivity to vibrations 、 ITU-T wavelengths from 1530 to 1565 nm, customizable upon request、 Operating temperature range: 0 to 70°C、 Complies with Telcordia GR-468 standard

Part Number

MP-NL-1550-10-3k-PA-M

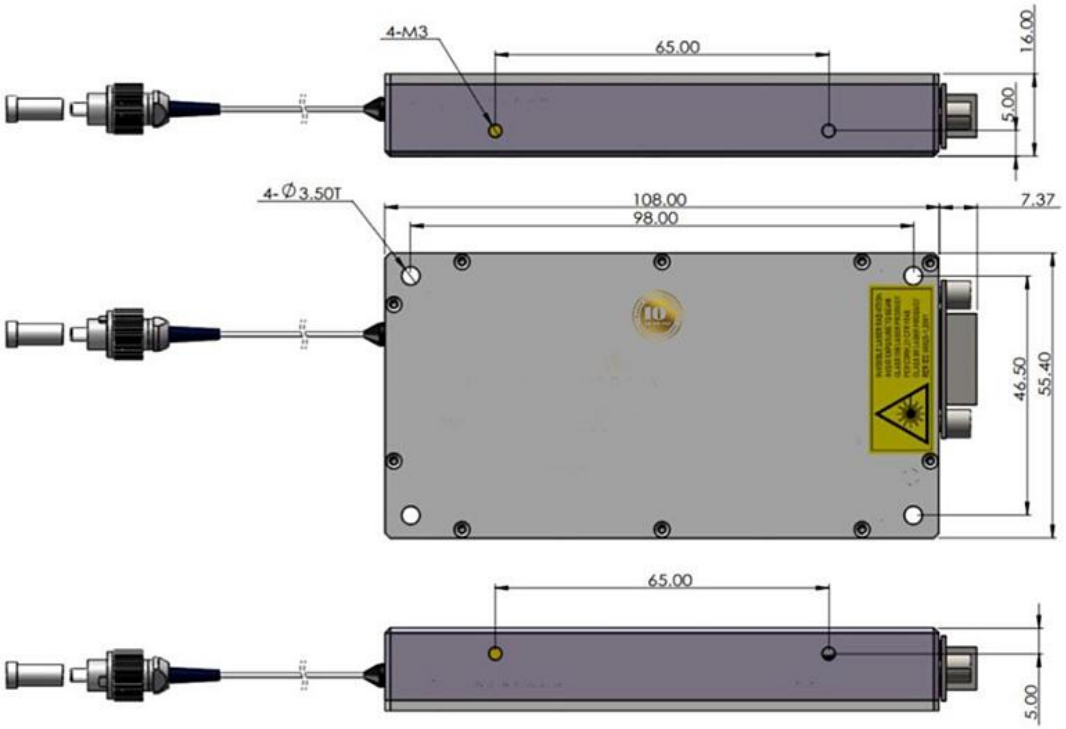
Application area

LiDAR、 Fiber Optic Hydrophone 、 Resonant Fiber Optic Gyroscope 、 Distributed Fiber Optic Sensing、 Coherent Communication 、 Scientific Research

Core parameters

Wavelength	Output Power
1550nm	10mW

Dimension Drawing



General Parameters

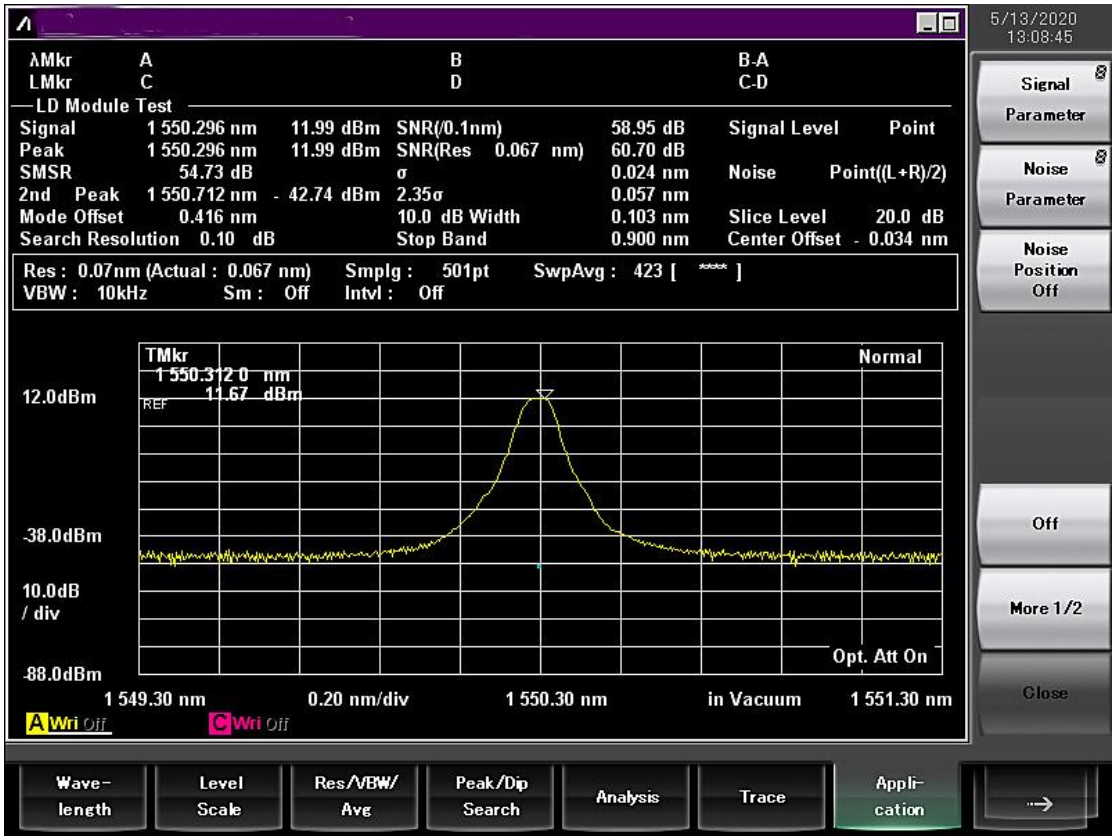
Technical Parameters

Parameters	Unit	Min.	Typ	Max.	Condition
Output Power	dBm		10		Continuous Wave
Power Stability	%		10		0~70 °C

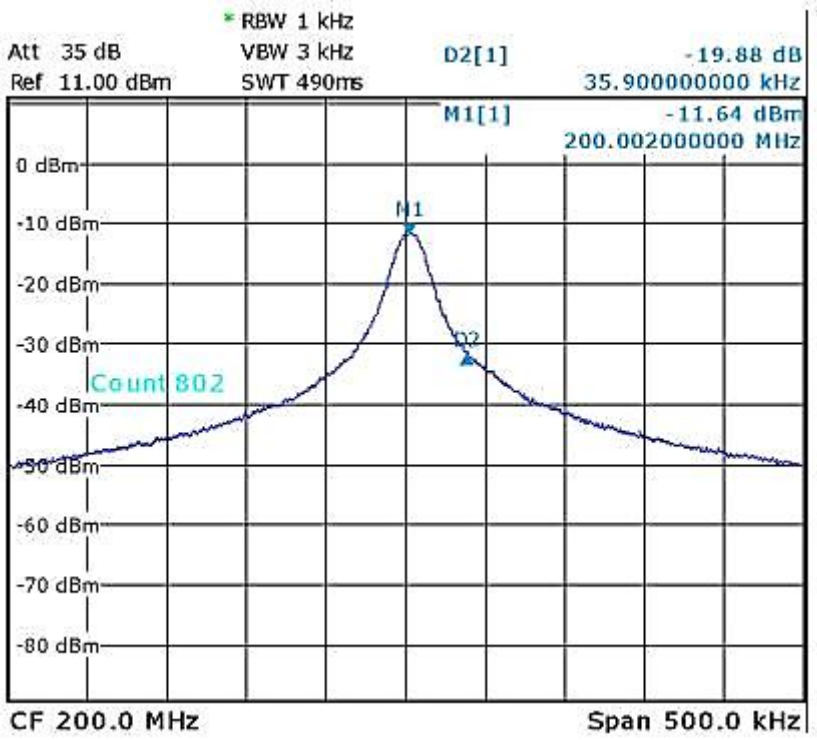
				0.3	± 1 ℃
Center Wavelength (ITU-T DWDM)	nm	1530		1565	Standard Development, Std Dev. ± 40 pm
Wavelength Tunable Range	pm		30		Adjust with TEC temperature
Line Width	kHz	A:<3,B:<5,C:<10,D:<100			
Relative Intensity Noise	dBc/Hz	-165			@100kHz
Optical Frequency Stability	MHz		3		8-hour in incubator (from two narrow linewidth single-frequency lasers' beat frequency)
SMSR	dB	50			
Optical Signal-to-Noise Ratio	dB	60			
Polarization Extinction Ratio	dB	20			Slow Axis Alignment
Optical Isolation	dB	40			

Voltage	V	4.75	5	5.25	
Power Consumption	W			6	0~70 ℃
Operating Temperature	℃	0		70	
Dimensions	MM	100 × 57 × 12			

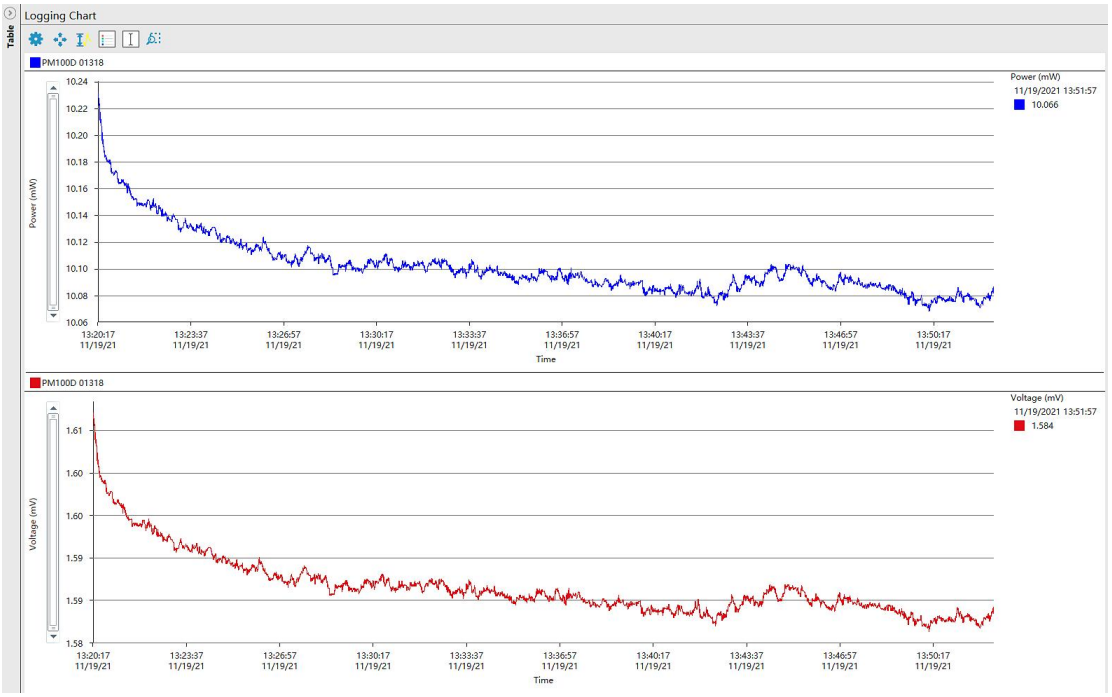
Spectrum



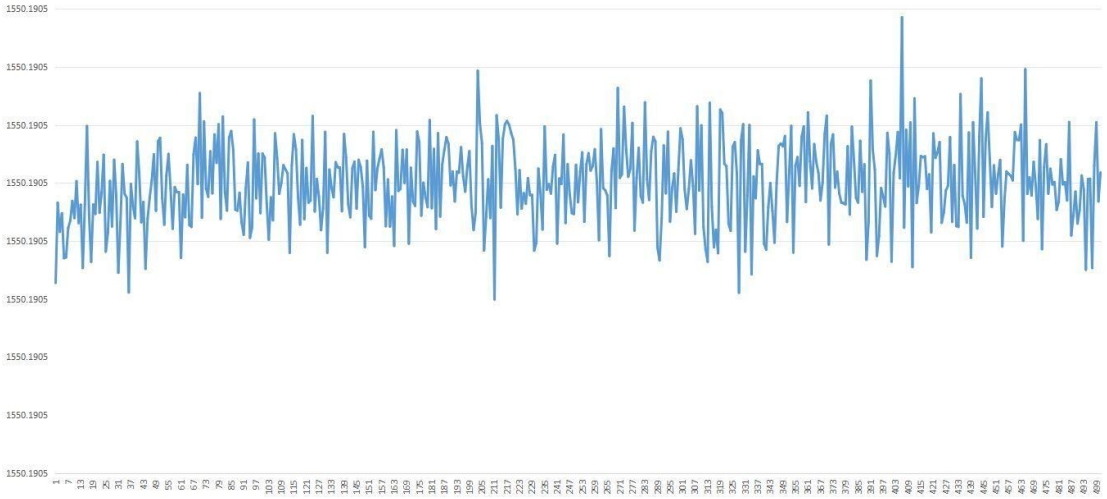
Linewidth characteristics



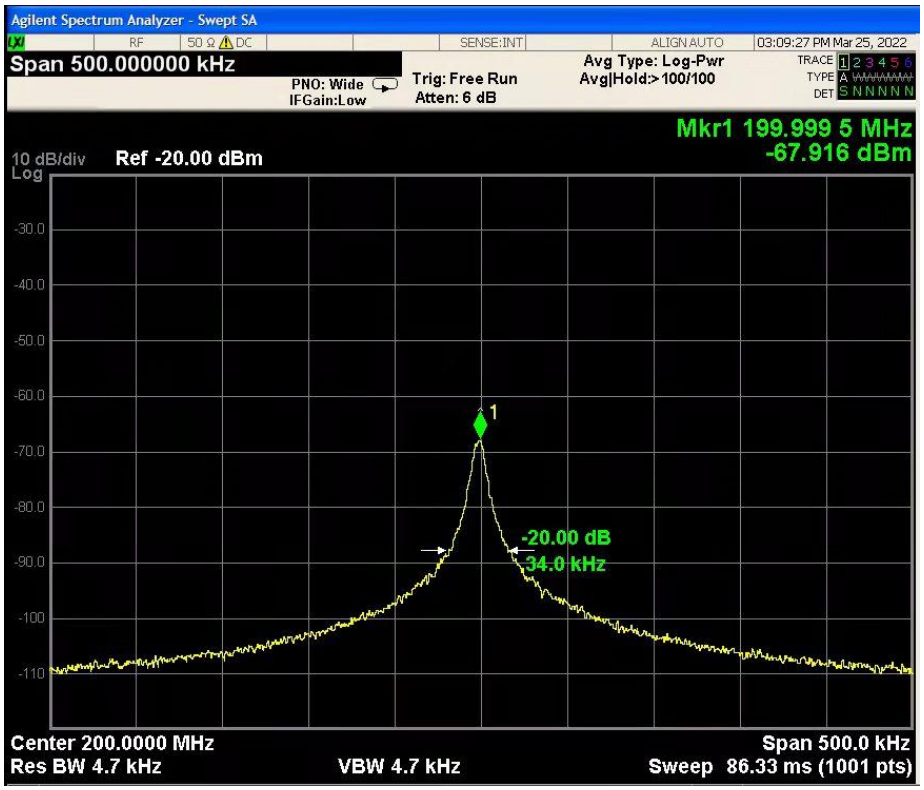
Power stability



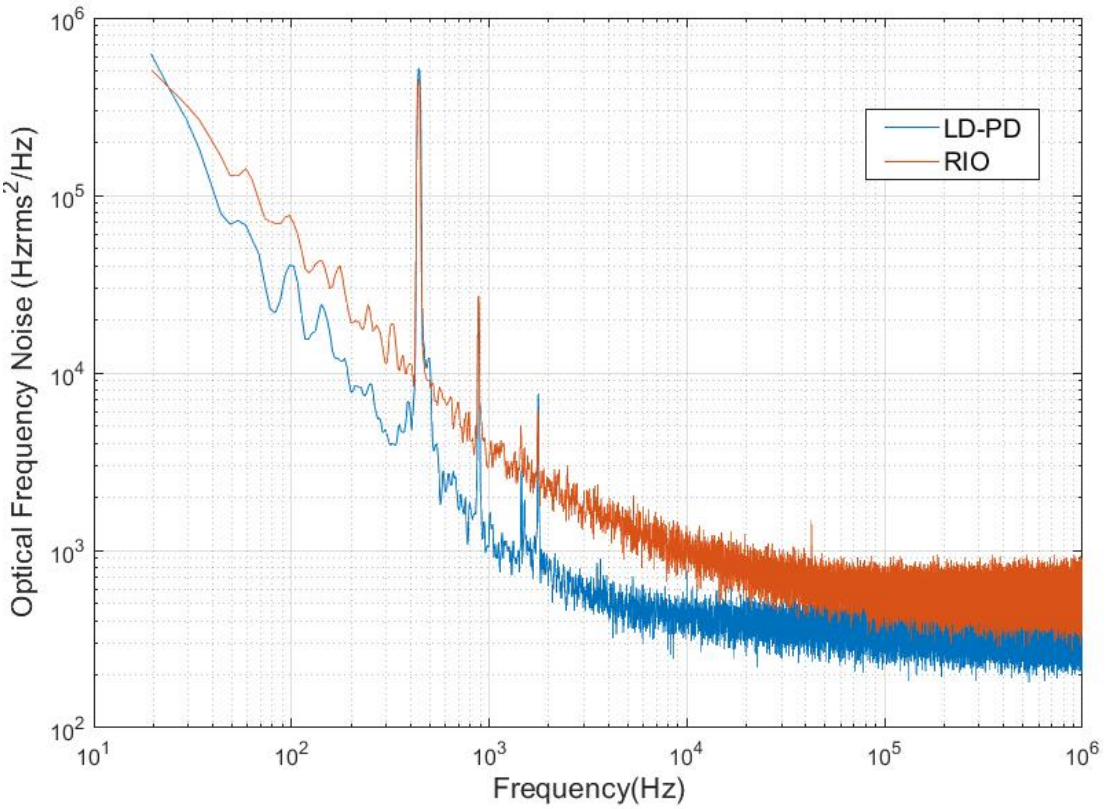
Wavelength stability



Line width chart



RIO Phase Noise Comparison Chart



Ordering Info

MP-NL- □□□□-☆- ▽- XX-XXX-M

□□□□: Wavelength

530~1565nm ITU-T DWDM, optional

☆: Output Power

A: 5mW

B: 10mW

C: 20mW

D: 40mW

▽: Modulation Type

1: DM (Direct Modulation)

2: CW (Continuous Wave)

XX: Fiber and Connector Type

SA = SMF-28E + FC/APC

SP = SMF-28E + FC/PC

PP = PM fiber + FC/PC

PA = PM fiber + FC/APC

XXX: Module Grade

A:<3kHz

B:<5kHz

C:<10kHz

D:<100kHz

M: Modular