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

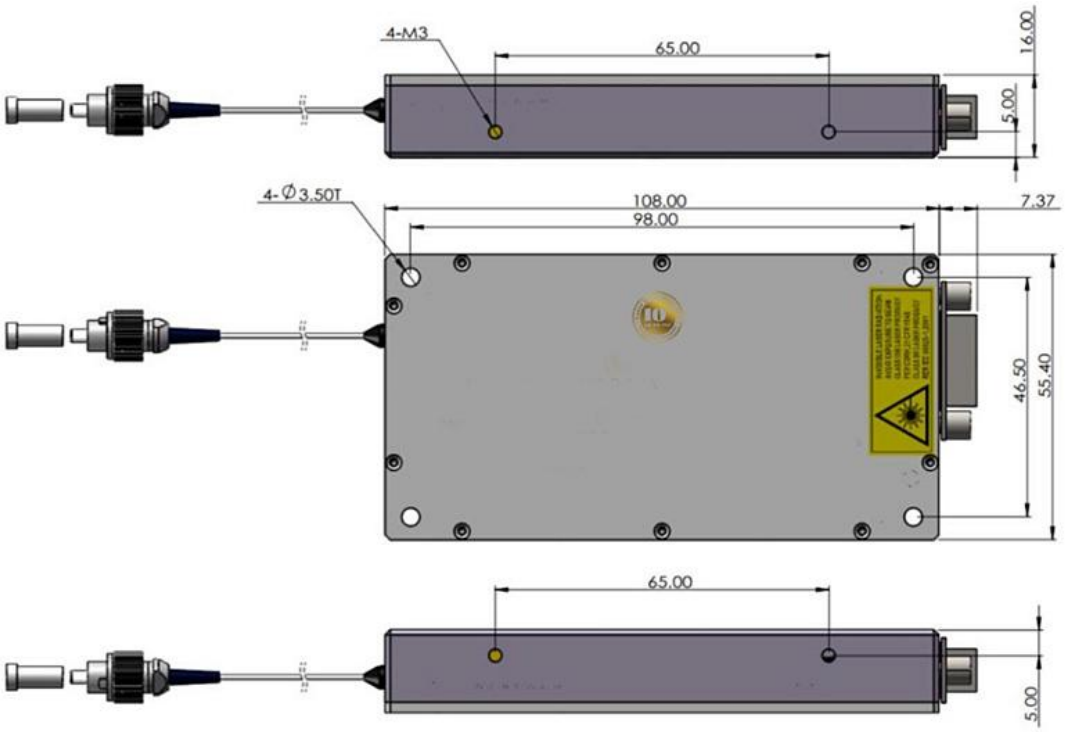
Application area

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



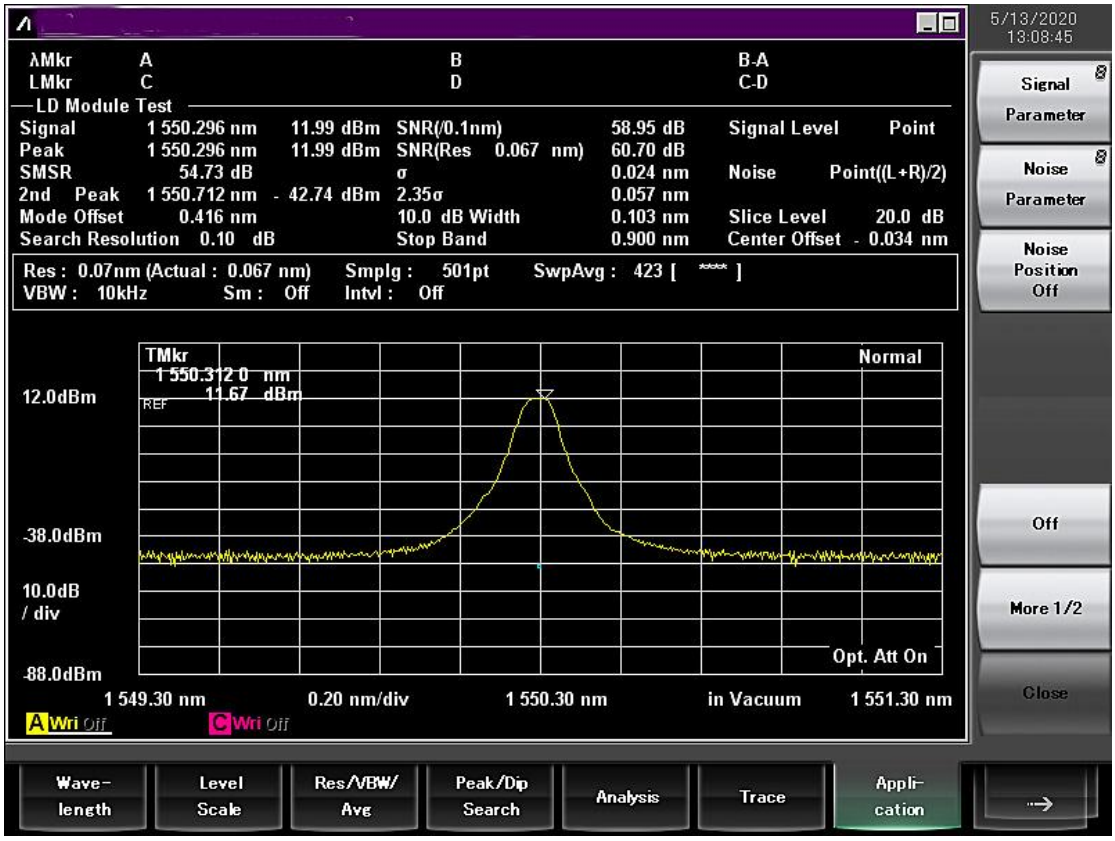
General Parameters

Technical Parameters

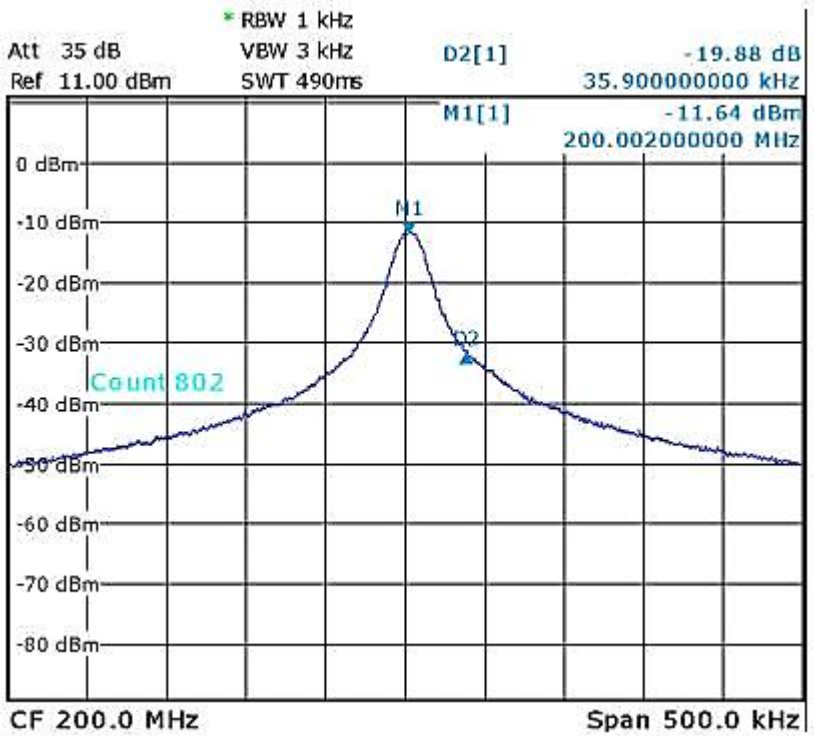
Parameters	Unit	Min.	Typ	Max.	Condition
Output Power	dBm		10		Continuous Wave
Power Stability	%		10		0~70 ℃
				0.3	± 1 ℃
Center Wavelength (ITU-T DWDM)	nm	1530		1565	Standard Development, Std Dev. ± 40 pm
Wavelength	pm		30		Adjust with TEC

Tunable Range					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			

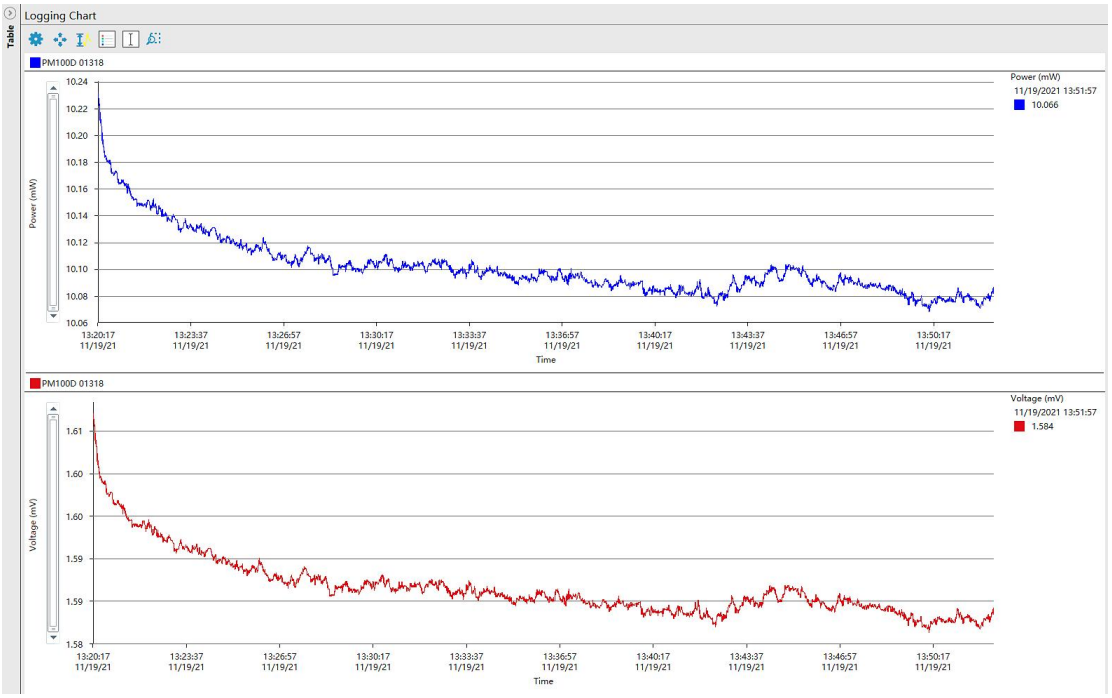
Spectrum



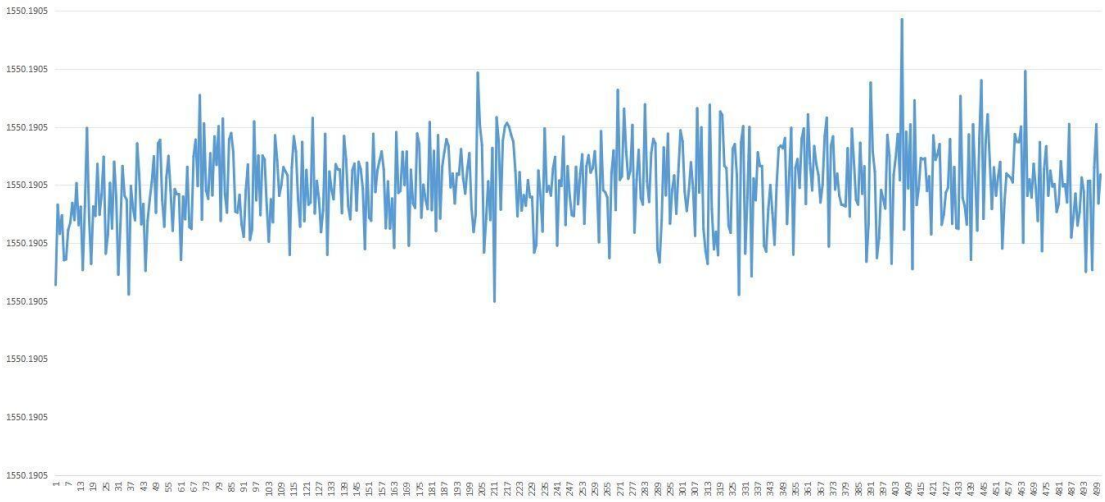
Linewidth characteristics



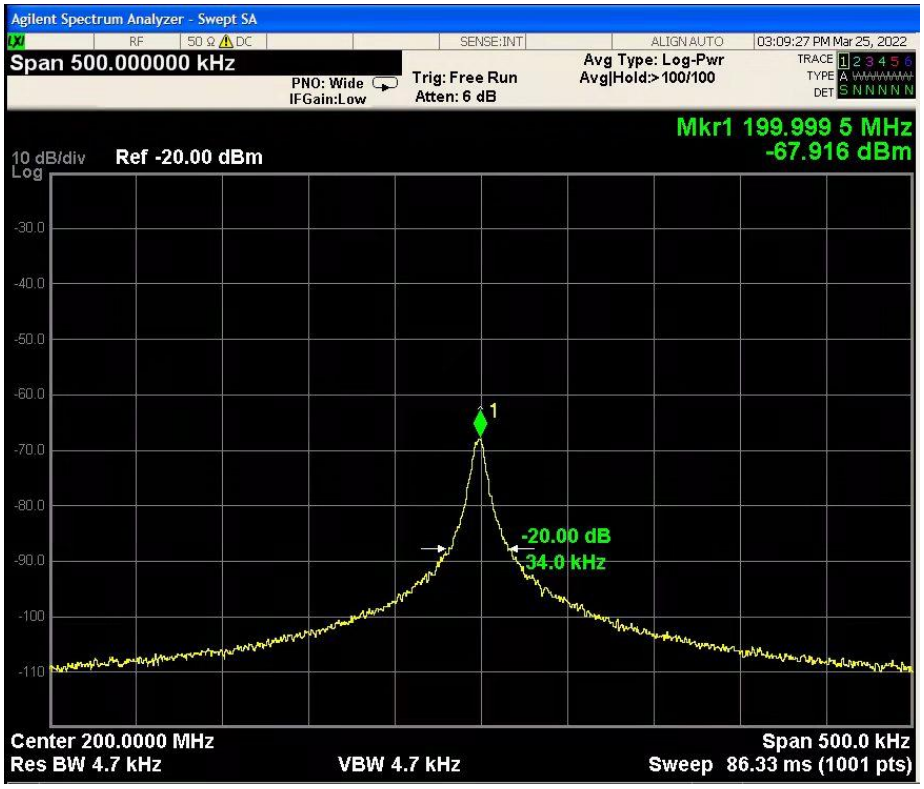
Power stability



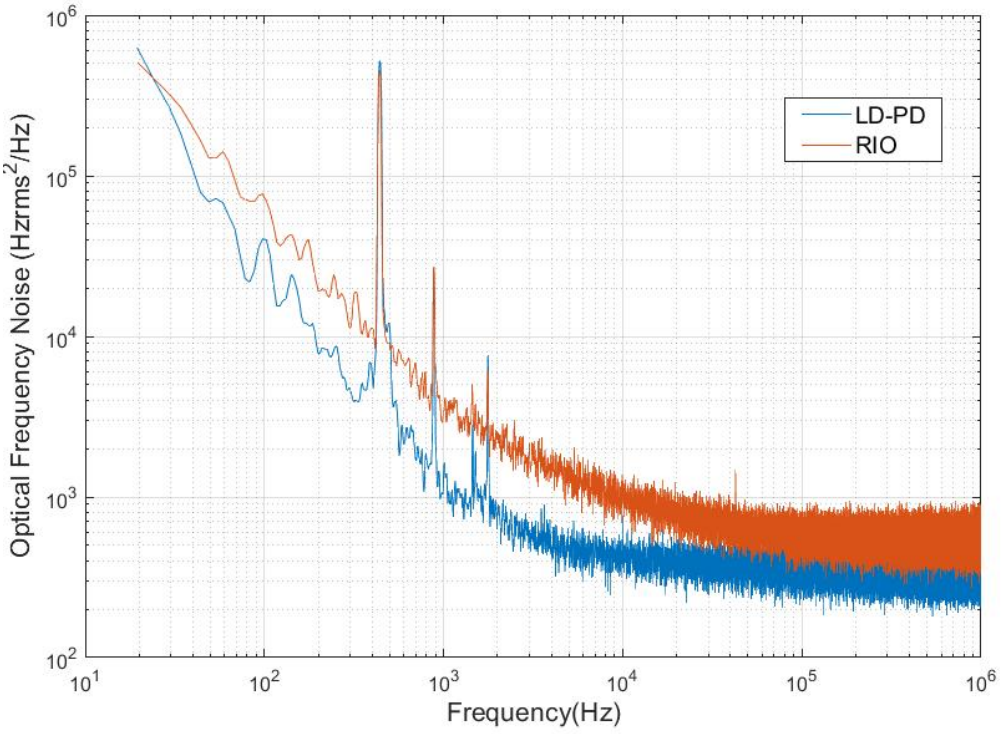
Wavelength stability



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