



# 1550nm narrow linewidth single-frequency laser module <20kHz polarization maintaining



## ● Product Description

Idealphotonics' narrow linewidth semiconductor laser module has the characteristics of ultra-low RIN noise and ultra-narrow linewidth, and is currently widely used in automotive lidar and fiber optic sensor detection

systems.

- **Product features**

Linewidth: < 20kHz、 Optical power: 16dBm、 RIN noise: -165dBc/Hz  
@100kHz

- **Part Number**

MP-NL-1550-40-20k-PA-M

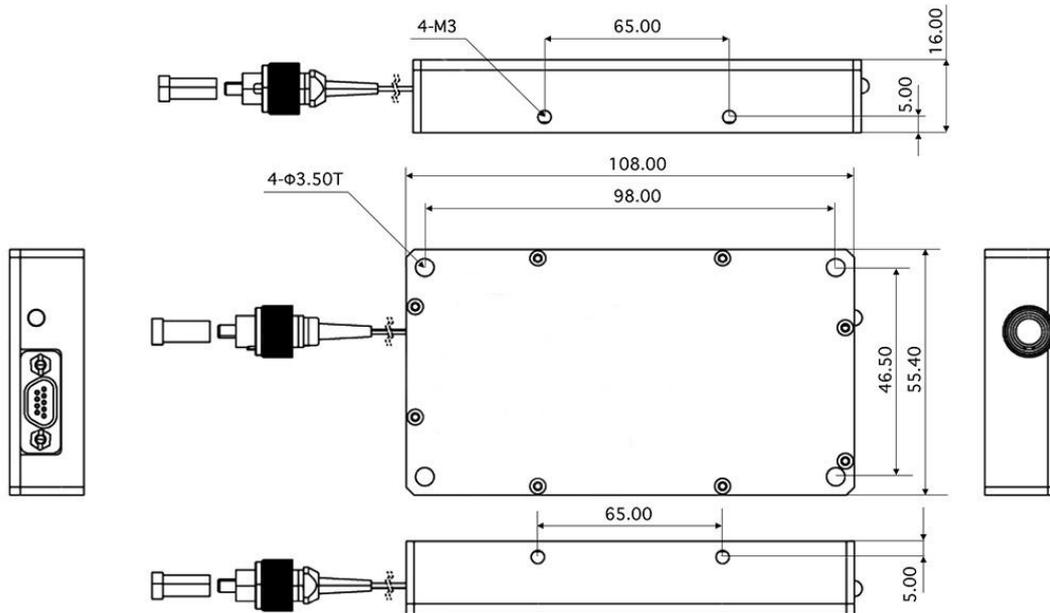
- **Application area**

Quantum Communication | Fiber Optic Sensing | Coherent Optical  
Communication | Optical Frequency Standard Transfer | Gravitational Wave  
Detection

- **Core parameters**

Operating wavelength	Lorentz linewidth	Output power
1550nm	<20kHz	16dBm

## ● Dimension Drawing



## ● General Parameters

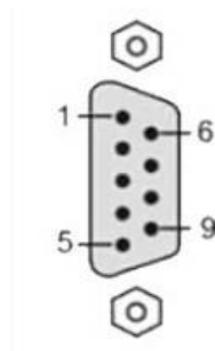
### Specifications

Parameter	Min.	Typical	Max.	Unit	Notes
wavelength	1530	1550	1570	Nm	Customizable
Operating temperature	-10		70	°C	
Output power		16	17	dBm	Customizable
RIN noise		-165	-163	dBc/Hz @100kHz	
Operating current		400	2000	mA	

<b>Operating voltage</b>	<b>4.75</b>	<b>5</b>	<b>5.25</b>	<b>V</b>	
<b>Lorentz linewidth <sup>1</sup></b>		<b>10</b>	<b>20</b>	<b>KHz</b>	<b>Customizable</b>
<b>Side Mode Suppression Ratio</b>		<b>50</b>		<b>dB</b>	
<b>FM range</b>		<b>3</b>	<b>5</b>	<b>GHz</b>	
<b>Modulation rate</b>	<b>1</b>	<b>100</b>	<b>200</b>	<b>KHz</b>	
<b>FM linearity</b>		<b>1%</b>			
<b>Output method</b>	<b>Optical fiber output (default)</b>				
<b>Connector type</b>	<b>FC/APC (default)</b>				
<b>Fiber type</b>	<b>SM/PM</b>				

**Note:** The line width test solution is a delayed self-heterodyne beat frequency test

## Pin defination





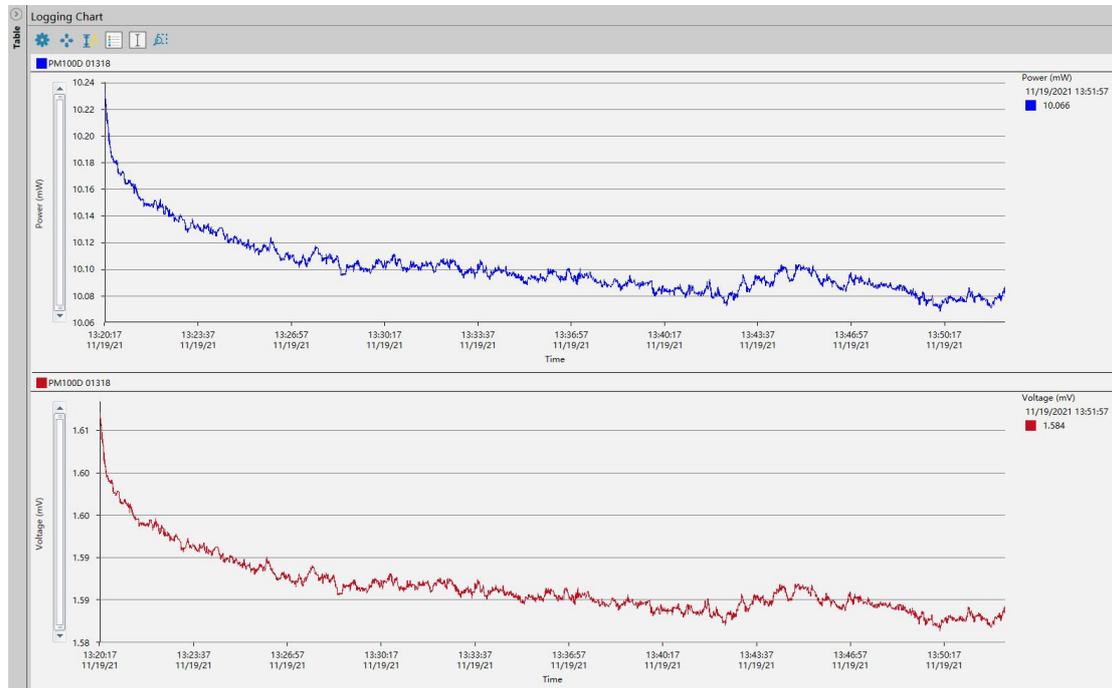
PIN#	Name	Function / specificiaion
1	V <sub>cc</sub>	Input power 5V/3A, low noise
2	Tx(output)	Data output, RS232/3.3 to5V TTL232 (default)
3	Rx(input)	Data input, RS232/3.3 to5V TTL232 (default)
4	Gnd	Ground
5	Gnd	Ground
6	V <sub>cc</sub>	Input power 5V/3A, low noise
7	Mod+(input)	N/A
8	Mod-(input)	N/A
9	Enable(input)	Laser output enable, low level on (default on)

The following was filled out by AOL Labs staff:

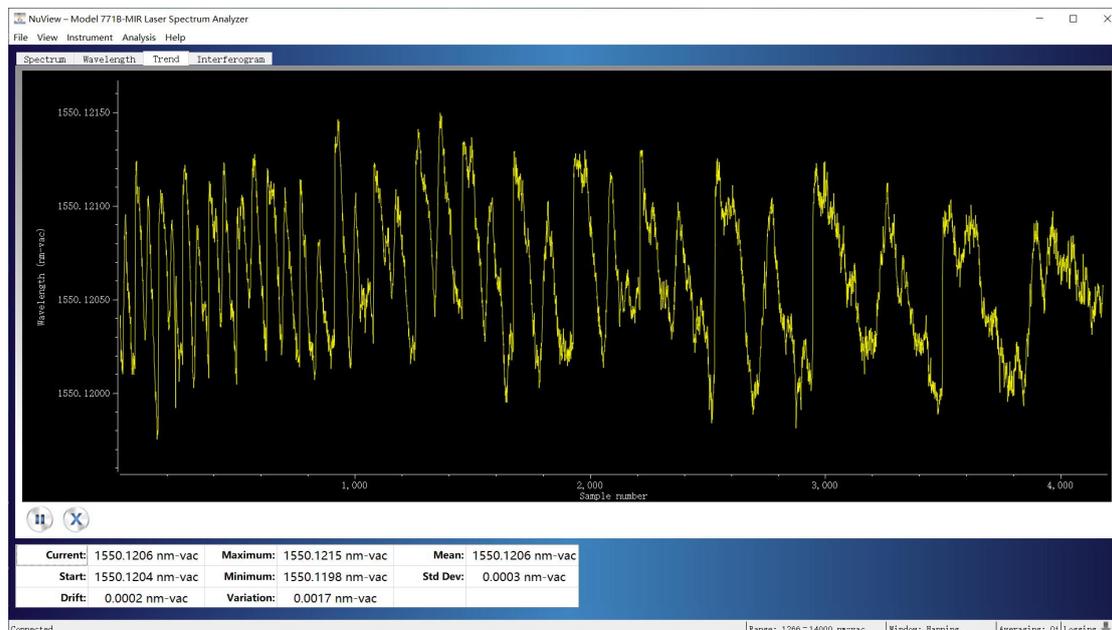
Test date	2021.11.19	Test engineer	Yang Guang, Dai Jiahao, Chen Hongyu
Test production	1550nm narrow linewidth laser	Review	Wang Xiuxiang
Experimental purpose	Test power stability, line width and wavelength stability		
Experimental equipment	Power meter, wavelength meter, 1550nm laser		



## Power stability



## Wavelength stability





## Linewidth

