1550nm narrow linewidth frequency stabilized laser module 2kHz-5kHz single mode

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: 2kHz -5kHz、 Optical power: 16dBm、 RIN noise: -165dBc/Hz @100kHz

Part Number

MP-NL-1550-40-2k-SA-M

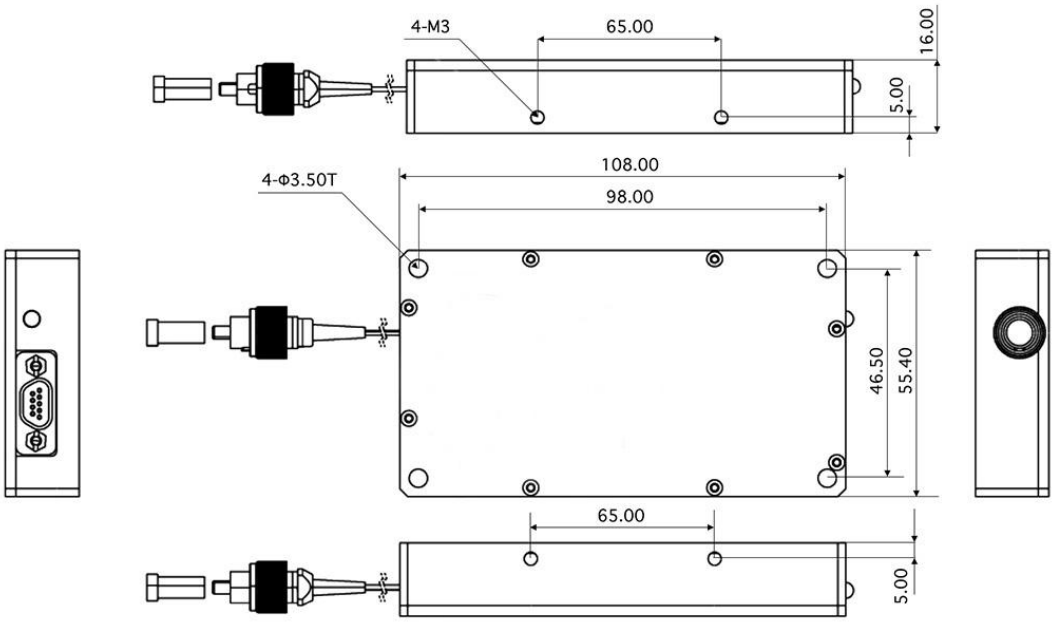
Application area

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

Core parameters

Operating wavelength	Lorentz linewidth	Output power
1550nm	2kHz -5kHz	16dBm

Dimension Drawing



General Parameters

Specifications

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

Operating voltage	4.75	5	5.25	V	
Lorentz linewidth [1]		2	5	KHz	Customizable
Side Mode Suppression Ratio		50		dB	
Output method	Optical fiber output（default）				
Connector type	FC/APC（default）				
Fiber type	SM/PM				

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

Laboratory test data 20220523

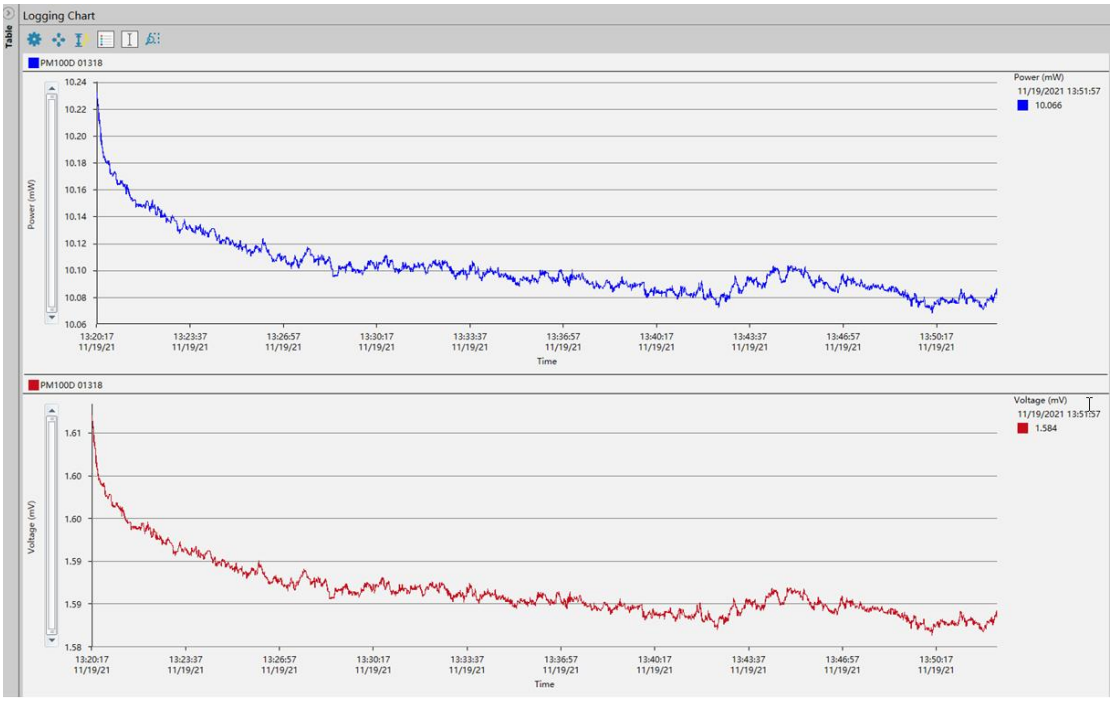
Specifications

Parameter	Unit	Min.	Typical	Max.	Test Value
Output Power	mW		10		66.6
Power Stability	%	Refer to the table below			
Center Wavelength (ITU-T DWDM)	nm	1530		1565	1550.218
LD Current	mA			350	281
Linewidth	kHz	A:<3			2.4
Relative Intensity Noise	dBc/Hz				

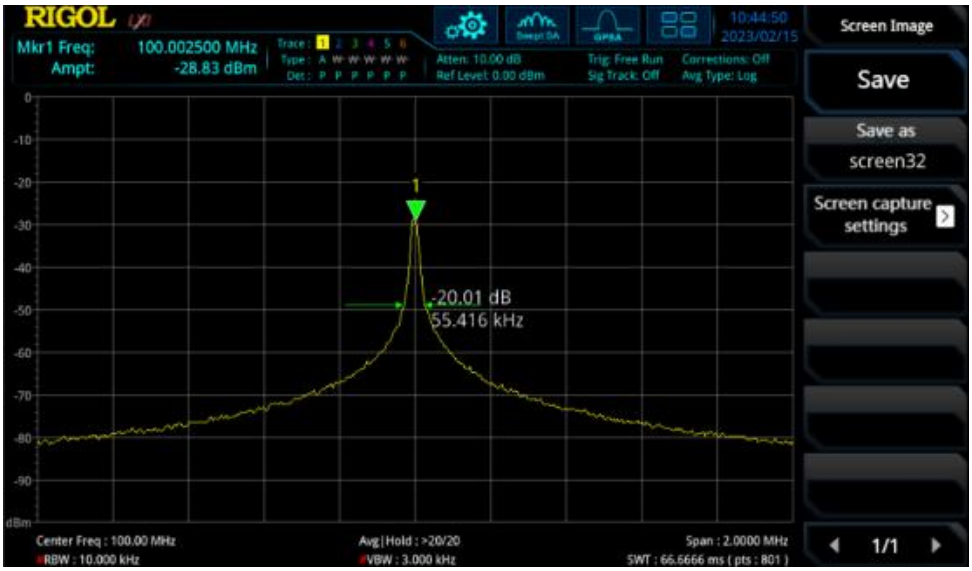
SMSR	dB	50			70.95
Polarization Extinction Ratio	dB	20			
Input Current	A			3	0.51
Voltage	V	4.75	5	5.25	
Fiber Type and Connector	NA	PM1550 FC/APC			
Test Tem	℃		25		
Dimensions	mm	100 ×57 × 12			

The module comes with software on a USB stick

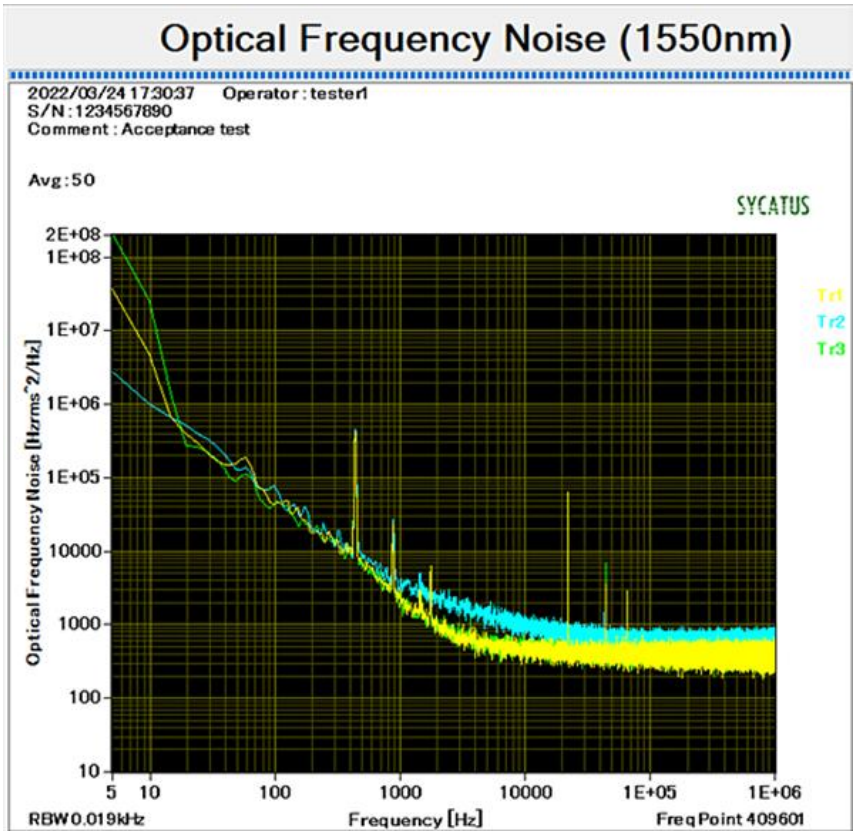
Power stability



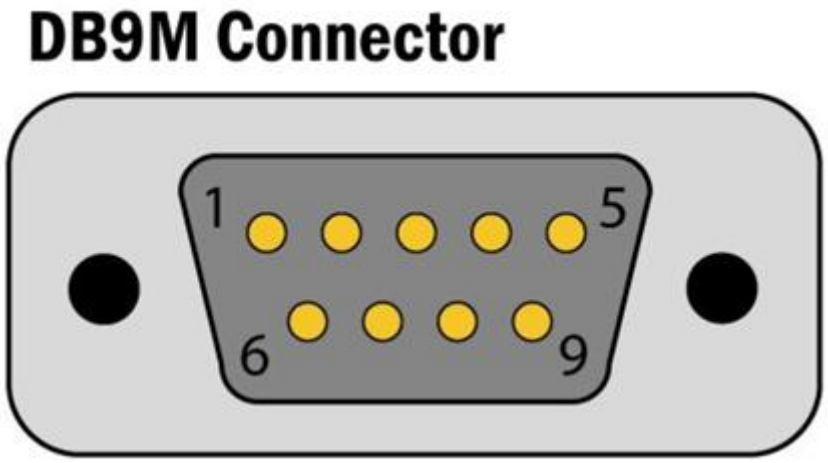
Line width characteristics



Optical frequency comparison test



Interface Definition



Remarks: 7 and 8 pin can only use positive level (Note: 7 and 8 pins can only use positive level)

PIN#	NAME	Function and Note
5	Vcc	4.75Min, 5.25V Max, 3A, Low noise
4	Tx(output)	Data output, RS232/3.3 to5V TTL232 (Default)
3	Rx(input)	Data input, RS232/3.3 to5V TTL232(Default)
2	/	Amplitude modulation(customer)
1	Gnd	Gnd
9	Ready (output)	Ready output, Active low, needs external pull up Ready output, low level is valid, requires external pull-up

8	Mod +(input)	Modulation input +
7	Mod-(input)	Modulation input -
6	Enable(input)	Active low (Default)