Ultra-Narrow Linewidth Laser

1. Product Description

Beogold's 1550nm ultra-narrow linewidth laser is a proprietary low-noise fiber laser source. The uniquely designed ultra-narrow fiber filter ensures single frequency operation of the laser. Its unique temperature control and anti-vibration design eliminates impact of changing external temperature and vibration, thus achieving a stable longitudinal single mode and single frequency output.

The laser offers excellent performances. It features KHz-level linewidth, low frequency noise and intensity noise, and SMSR more than 50 dB. In addition, the uniquely designed high-strength package ensures that the fiber laser module can better adapt to changing environmental conditions, such as temperature, vibration and impact, achieving longitudinal single mode, free of mode-hops.

Beogold's single-frequency narrow linewidth fiber laser source delivers output power up to 50mW and higher.

2. Features

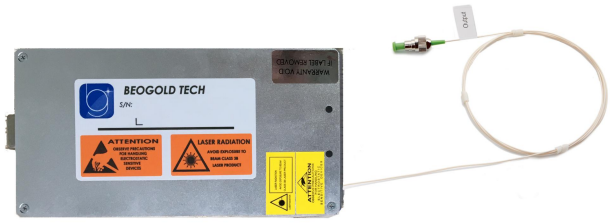
Ultra narrow linewidth < 3kHz

High output power

Tunable output power

High stability and reliability

Excellent thermal adaptability



3. Applications

LIDAR, BOTDR, φOTDR

Hydrophone

Distributed fiber optic sensing

Non-linear research

Coherent optical communication

4. Optical Specifications

Parameter		Unit	Minimum	Typical	Maximum
Operating Wavelength Range		nm	-	1550.12	-
Output Power		dBm	-	13	17
Spectral Linewidth		KHz		<3	
RIN		dB/Hz	-	-100	-
Output Power Stability (Short Term)		dB	-	-	0.03
Output Power Stability (Long Term)		%	-	-	1
Wavelength Stability	25℃	pm	-0.5	-	0.5
	-10-50℃	pm	-10	-	10
SMSR		dB	55	-	-
Output Isolation		dB	40	-	-
Return Loss		dB	55	-	-
Stabilization Time		Min	-	<15	-
(1) Test under single temperature for a period of 15 minutes. (2) Test under single temperature for a period of 8 hours.					

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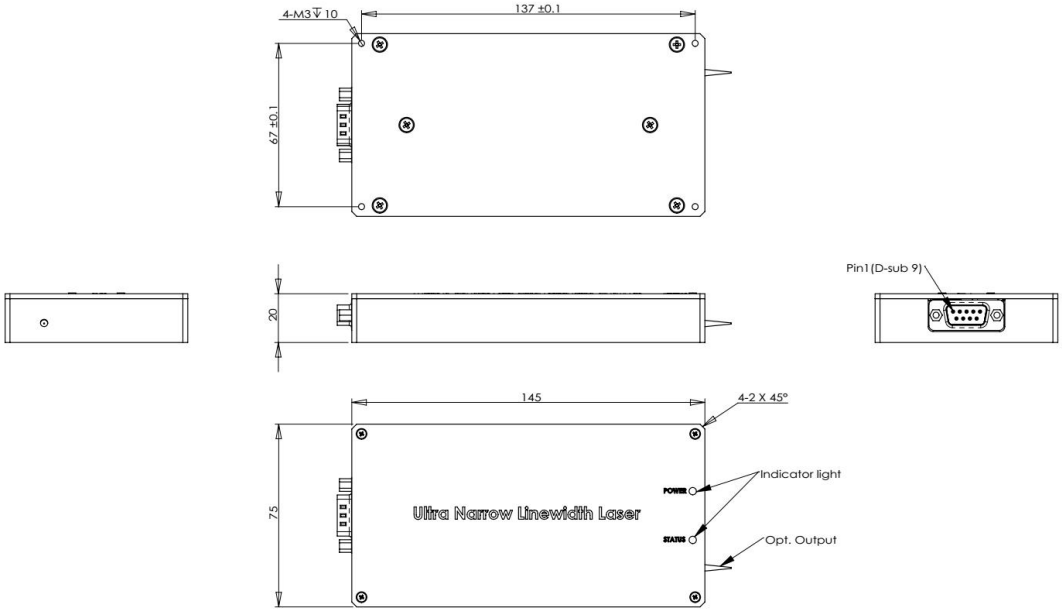
5. Electrical Specifications

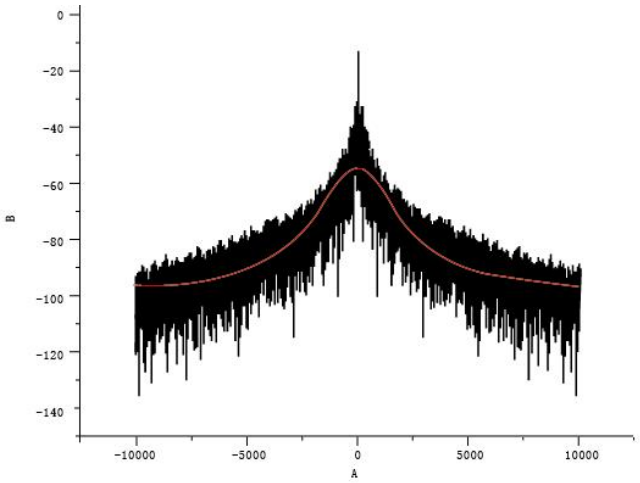
Structure Type	Parameter	Specification	Unit	Remarks
Module	Power Supply	DC +5V/GND		
	Power Consumption	<15	W	At room temperature

6. Mechanical Structure

Structure Type	Parameter	Specification	Unit	Remarks
Module	Dimensions	145x75x20	mm	Custom design
	Power Interface	DC+5V/GND		Typical
	Pigtail Fiber	SMF		



7. Laser Source Output Spectrogram and Lorentz Linewidth Diagram



8. Communication Type

Structure Type	Parameter	Specification	Remarks
Module	Communication Interface	DB9 serial port	Can be customized
	Protocol	RS232	
	Communication User Interface	Read and set output power	

9. Working Environment

Parameter	Minimum	Maximum	Unit
Operating Temperature	-10	+50	℃
Storage Temperature	-45	+85	℃
Humidity	5	90	%

10. Ordering Information