

ULTRA-NARROW LINE-WIDTH LIGHT SOURCE

1. Product Description

The 1550nm ultra-narrow line-width light source module is a self-developed low noise fiber laser. The unique designed ultra-narrow optical fiber filter guarantees the single frequency feature of the fiber laser. Besides, it can eliminate the impacts of external temperature change and vibration from the output optical wavelength by adopting unique temperature control technology and vibration proof structure; hence it realizes the stable single longitudinal mode and the single frequency laser output of the ultra-narrow line width.



The monochromatic ultra-narrow line-width fiber laser has excellent properties, the optical output frequency spectrum of which reaches to kHz magnitude. What is more, it has ultra-low frequency noise and intensity noise, and the side mode suppression ratio of its output spectrum is more than 50dB. Moreover, the high-strength packaging with unique design guarantees that the fiber laser modules can adapt different environment well and can realize stable single longitudinal mode output without mode hopping under the influence of the external conditions such as temperature variation, vibration and shock.

The output power of monochromatic ultra-narrow line-width fiber light source can up to 50mW, and the products with higher output power can be provided according to requirements.

2. Features

- Ultra narrow line-width, the line width up to 3kHz
- High output optical power
- Support the adjustability of optical output power;
- Table model and modular structures are optional
- High stability and high reliability
- Excellent thermal adaptability

3. Applications

LIDAR、BOTDR、ΦOTDR

Lidar

Hydrophone

Distributed optical fiber grating sensing

Non-linear research

Coherent optical communication

4. Optical property indexes

Parameter	Unit	Minimum	Typical Value	Maximum
The range of Operating wavelength	nm	-	1550.12	-

Output optical power	dBm	-	13	-
Spectral line width	Hz	3K		
RIN (Relative Intensity Noise)	dB	-	-100	-
The stability of short-term output power (1)	dB	-	-	0.03
The stability of long-term output power (2)	%	-	-	1
Wavelength stability	pm	-0.5	-	0.5
SMSR	dB	-	<55	-
Output isolation	dB	40	-	-
Return loss	dB	55	-	-
Stabilization time	Min	-	<15	-
(1) The stability of the output optical every 15 minutes. (2) 8 hours stability of output optical power.				

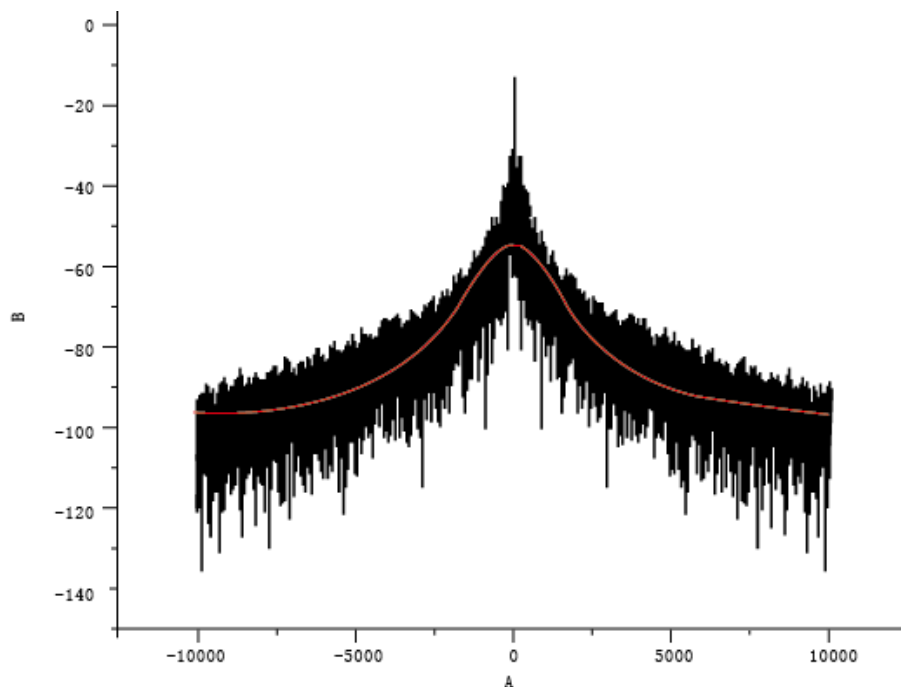
5. Mechanical structure

Structure Type	Parameter	Specification	Unit	Remark
Module	Power supply	DC +5V/GND		
	Power consumption	<15	W	At normal temperature

6. Electrical Properties

Structure type	Parameter	Specification	Unit	Remark
Module	Dimension	180x90x20	mm	The size can be customized
	The type of power interface	DC+5V/GND duplet		Typical
	The type of output tail fiber	SM		

7. Communication type



8. Communication type

Structure type	Parameter	Specification	Remark
Module	Communication interface	DB9 serial port	Customized
	Protocol	RS232	
	Communication user interface	Can read or set optical output power	

9. Ambient condition

Parameter	Minimum	Maximum	Unit
Operating ambient temperature	-10	+55	°C;
Storage temperature	-45	+85	°C;
Humidity	5	90	%