

## 1550nm(1.5um )Single-Frequency Narrow linewidth Fiber Laser



### Description

Idealphotonics Laser SFNL-1 is a low noise single frequency fiber laser module designed based on Idealphotonics's proprietary technology, a patent pending "Optimized Ring Cavity" designed to eliminate the standing wave Spatial Hole Burning (SHB) phenomenon which appears easily in short linear cavity. It comes with particular ultra narrow filter and polarization controlling technology to realize PM, Single Longitudinal Mode, ultra-narrow linewidth output.

The SFNL-1 series of 1.5um SF fiber laser basic module features ultra-narrow linewidth in the kHz range, extremely low RIN and intensity noise and excellent SMSR more than 50dB. In addition, SFNL-1 takes unique high-intensity package to ensure that it can normally operate in the different kinds of environment and achieve Single Longitudinal Mode output without mode-hopping even under bad condition such as the temperature changes, vibration, shocking etc.

The SFNL-1 series of 1.5um single frequency fiber laser basic module with mW range output power and higher output power can be customized. The center wavelength can be chosen freely in the 1535-1605nm range such as the standard wavelengths of ITU.

### Feature

- Ultra narrow linewidth
- Stable single frequency & single polarization operation
- No mode-hopping, No out-bursting noise
- Low phase and intensity noise
- Flexible design, various wavelengths optional
- PM output, high PER

## Application

1. The fiber optic length is selectable within the specified range. Other wavelength is available;

- LiDAR
- Sounding
- Laser spectroscopy
- Wavelength references
- Research & development

Parameter	Unit	Specification		
		Min	Typ.	Max
Part NO.		IDP-1550-B-SF		
Center Wavelength <sup>1</sup>	nm	1530-1575nm		
Output power <sup>2</sup>	mW	5	-	200
Output laser type		CW, single frequency & single polarization		
Beam quality	M <sup>2</sup>	<1.05		
Linewidth <sup>3</sup> (FWHM)	kHz	-	1	-
Side Mode Suppression Ratio(SMSR)	dB	50	55	-
Phase noise	Rad/rt(Hz)	< -120@500Hz; <-110@10Hz		
RIN peak	MHz	1		
RIN	dB/Hz	<-120@1MHz; <-140@10MHz		
Output polarization type		Linear polarization		
Polarization Extinction Ratio(PER)	dB	20	-	-
Output power stability(15min)	%	-	±0.5	±1.0
Output power stability(8hours)	%	-	±1	±2
Output light isolation	dB	35	-	-
Output power tunable range	%	10		100
Operating temperature	°C	-25	-	50
Storage temperature	°C	-40	-	85
Power supply	VAC	220		
Output fiber type		PM1550-XP		
Length of the output fiber	m	> 0.5		
Optical connectors		FC/APC(option)		
Dimension	mm	19" 2U		

2. Output power is optional;
3. Lorentzian line shape with optical delay of 120us.

## **Ordering Information :**

IDP-15xx-B-<PW>-SF

15xx:wavelength in nm,standard wavelength 1550nm;

B: Benchtop;

PW: Output power in mW, example: 5-5mW, 200-200mW.