

1064nm(1.0um)Single-Frequency narrow linewidth Fiber Laser Basic Module



Description

Idealphotonics Laser CoSF-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 CoSF-1 series of 1.0um 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, CoSF-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 CoSF-1 series of 1.0um SF 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 1000-1200nm range such as 1018nm, 1030nm, 1053nm, 1083nm, 1178nm etc.

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
- Smart module, solid packaging

Application

- Fiber optic sensing
- LiDAR
- Atomic trapping
- Laser spectroscopy
- Wavelength references
- Research & development

Specification

Parameter	Unit	Specification		
		Min	Typ.	Max
Part NO.		COSF-1-1064-M-SF		
Center Wavelength ¹	nm	1000-1200nm		
Output power	mW	-	5	10
Output laser type		single frequency & single polarization		
Beam quality	M ²	<1.05		
Linewidth ² (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	dBC/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	-5	-	50
Storage temperature	°C	-20	-	65
Power supply	VDC	5		
Output fiber type		PM980-XP		
Length of the output fiber	m	> 0.5		
Optical connectors		FC/APC(option)		
Dimension	mm	175(L)×130(W)×20(H)		

1.The center wavelength is selectable within the specified range. Other wavelength is available.

2.Lorentzian line shape with optical delay of 120us.

Ordering Information :

IDP-1-1xxx-M-<PW>-SF

1xxx : wavelength in nm, Standard wavelengths: 1064nm, 1018nm, 1030nm, 1053nm, 1083nm, 1178nm ect.

M:Module

PW:Output power in mW. Example: 5-5mW, 10-10mW