



CoSF SERIES

CoSF-1-1550-M-SF

Features:

- Ultra narrow Lorentzian linewidth <1 kHz
- 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, robust package

Applications:

- Fiber Optic Sensor
- LiDAR
- Acoustic sensing and pipeline monitoring
- Laser spectroscopy
- Coherent Communications
- Gas absorption measurement
- Metrology
- RF and microwave photonics

1.5um Single Frequency Fiber Laser Basic Module

Connet Laser CoSF-1 is a low noise single frequency fiber laser module based on Connet'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.

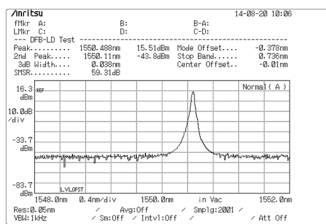
The CoSF-1 series of 1.5um SF fiber laser basic module features ultra-narrow linewidth in the kHz range, extremely low RIN and intensity noise and excellent SMSR more than 50dB. In addition, CoSF-1 takes unique high-intensity package to ensure that it can normally operate in the different kinds of environment 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 1.5um 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.

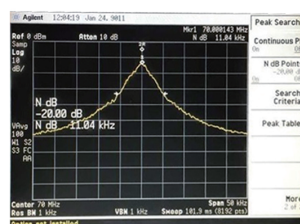
Specifications:

Parameter	Unit	Specification		
		Min	Typ	Max
Part NO.		CoSF-1-1550-M-SF		
Center wavelength ¹	nm	1530-1605nm		
Output power	mW		5	10
Laser emission		CW, single frequency & single polarization		
Beam quality	M ²	<1.05		
Linewidth ²	kHz	-	<1	-
Side Mode Suppression Ratio (50pm res.)	dB	55	58	-
Phase noise	μRad/rt(Hz)	30		
RIN	dB/Hz	< -120@500Hz; <-110@10Hz		
Output polarization		Linear		
Polarization Extinction Ratio(PER)	dB	20	-	-
Output power stability (PV)	%	-	±0.5	±1.0
Temperature tuning (standard)	nm		±0.15	±0.3
Fast PZT tuning range (optional)	pm	-	15	-
Output light isolation	dB	35	-	-
Output power tunable range	%	10		100
Operating temperature	°C	-5	-	50
Storage temperature	°C	-20	-	65
Humidity	%RH	0-70 (non condensing)		
Power supply	VDC	5		
Output fiber type		PM1550-XP (SMF-28 optional)		
Length of the output fiber	m	> 0.5		
Optical connectors		FC/APC		
Dimensions	mm	175(L)×130(W)×29(H)		

Optical spectrum shows high SMSR/OSNR:



Self-heterodyne, 50km SMF-28 fiber delay line, 70MHz frequency shifting with AOM. Typical linewidth is 552Hz.



Beat frequency test shows very good frequency stability

Specifications:

- The center wavelength is selectable within the specified range.
- Other wavelength is available.
- Lorentzian line shape with optical delay of 120us

Ordering information:

- CoSF-1-15xx-M-<P>-SF
- 15xx: Wavelength in nm, standard wavelength 1550nm
- M: Module
- P: Output power in mW. Example: 5-5mW; 10-10mW



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