



CoSF SERIES

CoSF-D-ER-M

CoSF-D-EY-M

Features:

- Ultra-narrow linewidth
- Stable single-frequency & single polarization operation
- No mode hopping, No bursting noise
- Low phase noise and low relative intensity noise
- Flexible design, multiple wavelengths optional
- Linear polarization output, high PER
- Mini size, robust package

Applications:

- Optical fiber sensing
- LiDAR
- Hydrophone
- Laser spectroscopy
- Coherent communication
- Gas absorption measurement
- Other scientific research

1.5um CoSF-D Narrow Linewidth Single Frequency Fiber Laser Basic Module

Connet CoSF-D narrow linewidth single frequency fiber laser is a low-noise fiber laser independently developed by patented technology. It adopts the Distributed Feedback Bragg Grating (DFB) type fiber laser technology and has independent intellectual property to achieve stable linear polarization, single longitudinal mode and ultra-narrow linewidth single-frequency laser output. The unique Relative Intensity Noise (RIN) suppression technique guarantees the low noise operation of the CoSF-D series high power narrow linewidth single frequency fiber laser.

Connet CoSF-D narrow linewidth single frequency fiber laser has excellent performance with the output optical spectrum linewidth of kHz level and the ultra-low frequency noise and intensity noise. The basic module of the CoSF-D series narrow linewidth single frequency fiber laser is compact and robust with strong environmental interference capability. The output power can be up to 10mW or more.

Connet 1.5um CoSF-D narrow linewidth single frequency fiber laser basic module has two types of products based on different optical configuration. Each types of product has its own unique characteristics, suitable for different applications.

CoSF-D-ER-M: based on Er-doped fiber, ultra-narrow linewidth(<1KHz) and low phase noise.

CoSF-D-EY-M: based on Er-Yb Co-doped fiber, narrow linewidth(<15KHz) and low RIN.

The standard wavelength of 1.5um CoSF-D narrow linewidth single frequency fiber laser is 1550.12nm. The center wavelength can be chosen freely in the 1530-1570nm range, such as the standard wavelengths of ITU.

Specifications:

Parameter	Unit	Specification	
Part no.		CoSF-D-ER-M	CoSF-D-EY-M
Center wavelength	nm	1530 ~ 1570	
Output power ¹	mW	10	
Laser emission		CW, Single frequency & Single longitudinal mode	
Beam quality	M ²	<1.05	
Linewidth ²	kHz	<1	<15
OSNR (50pm resolution)	dB	>50 (>55dB typical)	>55 (>60dB typical)
Relaxation oscillation peak frequency	KHz	~600	~800
Relative intensity noise (RIN) Peak	dB/Hz	-100	-110
Relative intensity noise (RIN)	dB/Hz	< -135@10MHz	< -140@10MHz
Output polarization		Linear Polarization	
PER	dB	>23 (25 typical)	
Output power stability	%	<1	
Wavelength thermal tuning range ³	nm	>0.7	>0.8
Fast PZT modulation		Optional	
Piezo-electric tuning range (0-10V) ⁴	MHz	600	
PZT modulation frequency	kHz	DC to 20	
Output isolation	dB	>35	
Output fiber type		PM1550-XP	
Output fiber length	m	> 0.5	
Optical connector		FC/APC	
Output fiber for monitor		Optional	
Interface		RS485	
Operation voltage	V _{DC}	12	
Operating temperature	°C	0 ~ +50	
Storage temperature	°C	-20 ~ +65	
Dimension	mm	145(L)x100(W)x25(H)	

Specifications:

- 1.Output power is not adjustable. For other requirements of output power, please contact Connet.
- 2.The linewidth is based on self-heterodyne measurement with optical delay of 120us
- 3.Ambient operating temperatures may affect the function and range of wavelength thermal tuning.
- 4.The high voltage PZT driver needs to be externally connected.

Ordering information:

- CoSF-D-ER-M-15xx-FA
- CoSF-D-EY-M-15xx-FA
- FA: FC/APC

Optional:

- Fast PZT Modulation
- The external PZT drive required high voltage.



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