



## CoSF SERIES

CoSF-D-YB-B-HP1

CoSF-D-YB-B-HP2

CoSF-D-YB-B-HP3

### Features:

- Ultra-narrow linewidth < 20kHz
- 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

### Applications:

- Optical fiber sensing
- LiDAR
- Cold atom physics
- Laser spectroscopy
- Coherent communication
- Other scientific research

## 1.0um CoSF-D High Power Narrow Linewidth Single Frequency Fiber Laser

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 narrow linewidth single frequency fiber laser.

The CoSF-D narrow linewidth single frequency fiber laser of Connet has excellent performance with the output optical spectrum linewidth of kHz level and the ultra-low frequency noise and intensity noise. The output OSNR can be up to 45dB or more.

The 1.0um CoSF-D high power narrow linewidth single frequency fiber laser uses the main oscillator power amplifier (MOPA) structure design. Based on CoSF-D basic module and Integrated cascaded low noise fiber amplifier, the output power can be up to 50W. Using the all polarisation-maintaining fiber design, the laser can achieve high output polarization extinction ratio (PER), the other higher output power can be provided as required. The center wavelength can be freely selected in the range of 1015nm to 1110nm, such as 1018nm, 1030nm, 1053nm, 1064nm and 1083nm, etc.

## Specifications:

Parameter	Unit	Specification		
Part no.		CoSF-D-YB-B-HP1	CoSF-D-YB-B-HP2	CoSF-D-YB-B-HP3
Center wavelength	nm	1015-1110		
Output power <sup>1</sup>	W	2	10	50
Laser emission		CW, Single frequency & Single longitudinal mode		
Beam quality	M <sup>2</sup>	1.1		1.3
Linewidth <sup>2</sup>	kHz	< 20		
Relaxation oscillation peak frequency	MHz	1.0 ~ 1.2		
Relative intensity noise (RIN) Peak	dB/Hz	<-105		
Relative intensity noise (RIN)(>3MHz)	dB/Hz	<-140		
OSNR (50pm resolving power)	dB	>45		>35
Output polarization		Linear Polarization		
PER	dB	>20	>20	>17
Output power stability (RMS)	%	± 1	± 2	± 2
Output isolation	dB	>35		
Output power tunable range	%	30 ~ 100		
Wavelength thertmal tuning		Standard		
Wavelength thermal tuning range <sup>3</sup>	nm		0.8	
Fast PZT modulation		Optional		
Piezo-electric tuning range(0-150V) <sup>4</sup>	GHz		6	
PZT response frequency	kHz	DC ~ 20		
Output fiber type		PM980-XP	PM10/125	PM25/250
Output fiber length	m	> 0.5		
Output connector		FC/APC		Collimator
Output fiber for monitor		Standard		
Output power for monitor	mW		~ 1	
Output fiber type for monitor		PM980-XP		
Output fiber length for monitor	m	> 0.5		
Output fiber connector			FC/APC	
Operating temperature	℃	+15	-	+35
Storage temperature	℃	0	-	+60
Operation voltage	V <sub>AC</sub>	100 ~ 240V 50/60Hz		
Dimension		19"2U		19"3U

## Specifications:

- 1. The output power of short wavelength and long wavelength may be lower than nominal power due to different working wavelength.
- 2. The linewidth is based on self-heterodyne measurement with optical delay of 120us.
- 3. The thermal wavelength tuning range will change as the operating temperature changes.
- 4. The internal integrated PZT drive voltage is 10V with the typical PZT wavelength tuning range of 200-300MHz and the high voltage PZT driver needs to be externally connected.

## Ordering information:

- CoSF-D-YB-B-HP1-1xxx-<P>-FA: Output power can up to 2W
  - CoSF-D-YB-B-HP2-1xxx-<P>-FA: Output power can up to 10W
  - CoSF-D-YB-B-HP3-1xxx-<P>-Col: Output power can up to 50W
- <P>: Output Power, Unit: W, 05-0.5W; 10-1.0W; 100-10W.  
Wavelength 1015-1110nm can be customized.

## Options:

- PZT fast wavelength tuning function.
- External PZT high voltage driver



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