

## CoSF-D-Tm-M Single Frequency Fiber Laser Module



### Description:

Connet CoSF-D narrow linewidth single frequency fiber laser is a low-noise single frequency fiber laser independently developed by patent technology. It adopts the distributed feedback Bragg grating (DFB) fiber laser technology and has the independent intellectual property rights. The single frequency fiber laser has a stable single polarization, single longitudinal mode, ultra-narrow linewidth single frequency laser output.

For the relaxation oscillation peak of the single frequency fiber laser, Connet uses the relative intensity noise (RIN) suppression technology outside the cavity to ensure the low noise operation of the CoSF-D single frequency fiber laser. The CoSF-D single frequency fiber laser has excellent performance, with very low phase noise and frequency noise. The basic module of the CoSF-D narrow linewidth single frequency fiber laser has a small size, a sturdy package, and strong anti-interference ability.

The output power can reach 20mW or higher. The CoSF-D-TM-M module is based on Thulium-doped fiber, and the operating wavelength range can be selected from 1900nm to 2051nm, and the typical linewidth is less than 15kHz.

### Features:

- Narrow linewidth <15kHz
- Customizable operating wavelength
- Stable single frequency, single polarization output
- Superior low noise operation
- High reliability

### Applications:

- Distributed optical fiber sensing
- Coherent LiDAR
- Laser spectroscopy
- Gas absorption measurement
- Scientific research

**Specifications:**

Parameter	Unit	Specification		
		Min	Typ.	Max
Part no.		<b>CoSF-D-Tm-M</b>		
Center wavelength <sup>1</sup>	nm	1900-2100 nm fixed, other specify		
Output power <sup>2</sup>	mW	20		
Laser output		CW, Single frequency & Single longitudinal mode		
Beam quality	M <sup>2</sup>	-	1.05	1.1
Linewidth	kHz	-	10	15
RIN peak	dBc/Hz	-	-120	
RIN @10MHz	dBc/Hz	-	-150	
SMSR (50pm resolution)	dB	45	50	-
Polarization extinction ratio (PER)	dB	20	22	-
Output power stability	%	-	±1	±2
Output isolation	dB	30	35	-
Wavelength thermal tuning	nm		0.6	0.8
PZT wavelength modulation		Optional		
Modulation frequency (linear)	kHz	DC	10	20
Modulation wavelength range	GHz	-	8	10
Operating temperature	°C	0	-	+60
Storage temperature	°C	-40	-	+85
Power supply	V <sub>DC</sub>	12		
Communication interface		RS485		
Output fiber type		Panda PM1950		
Output fiber length	m	>0.5m		
Optical connector		FC/APC		
Dimension	mm	200x135x50		
Weight	kg	<0.5		

**Notes:**

1. Typical wavelength: 1908nm, 1940nm, 1950nm, 2051nm. The other wavelengths are available.
2. Higher or lower power available, 20mW is fixed, 50mW and 100mW output power are adjustable.

**Ordering Information:**

**CoSF-D-Tm-M-  
<xxxx>-  
<PW>-PMF/SMF-PZT-FA**

xxxx: Center wavelength

PW: Output power, 20mW is fixed, 50mW and 100mW output power are adjustable.

SMF output is upon request, PZT fast modulation is on option. Monitoring output is upon request.