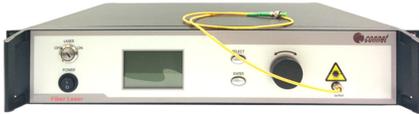


CoSF-D-ER-B-LP Narrow Linewidth Single Frequency Fiber Laser

Description:

Connet CoSF-D is a low-noise Single Frequency Fiber Laser based on Distributed Feedback Bragg Grating (DFB) technology. It has independent intellectual property rights and achieves a stable single-frequency laser output with single longitudinal mode, linear polarization, and narrow linewidth. CoSF-D has very low phase and frequency noise and low relative intensity noise (RIN). Connet uses unique packaging technology to ensure low-noise DFB single frequency fiber lasers with excellent wavelength stability.



Connet uses extra-cavity technology to significantly suppress the relative intensity noise (RIN) of the DFB single frequency fiber laser, ensuring that the resonant cavity of the single frequency fiber laser is not disturbed. Please refer to CoSF-D-RS series products.

CoSF-D-ER-B-LP works in the 1.5um band, and the output power of the benchtop low noise narrow linewidth single frequency fiber laser is up to 200mW. Higher output power products can be provided on request. The standard wavelength is 1550.12nm, and the optional wavelength range is 1535-1605nm, such as the standard wavelength under the ITU framework.

Features:

- Ultra-narrow linewidth <1kHz
- Very low phase noise and frequency noise
- Low relative intensity noise (RIN)
- Stable single frequency, single polarization output
- No mode-hopping
- Benchtop all-in-one package
- High reliability

Applications:

- Distributed optical fiber sensing
- Coherent LiDAR
- Fiber optic hydrophone
- Laser spectroscopy
- Coherent communication
- Gas absorption measurement
- Cold atomic physics
- Other scientific research

Specifications:

| Parameter | Unit | Specification | | |
|-------------------------------------|-----------------|-------------------------------------------------|------|------|
| | | Min | Typ. | Max |
| Part no. | | CoSF-D-ER-B-LP | | |
| Center wavelength | nm | 1530-1572nm fixed, other specify | | |
| Output power | mW | 5 | - | 200 |
| Laser output | | CW, Single frequency & Single longitudinal mode | | |
| Beam quality | M ² | - | 1.05 | 1.1 |
| Linewidth | kHz | - | - | 1 |
| RIN peak frequency | kHz | 300 | 400 | 500 |
| RIN peak | dBc/Hz | - | -145 | -140 |
| RIN @10MHz | dBc/Hz | - | -155 | -150 |
| Phase noise (1m OPD) | urad/√Hz | 70@100Hz | | |
| | urad/√Hz | 7@10kHz | | |
| | urad/√Hz | 0.7@100kHz | | |
| SMSR (50pm resolution) | dB | 60 | >70 | - |
| Output polarization | | Linear | | |
| Polarization extinction ratio (PER) | dB | 20 | 23 | - |
| Output power stability | % | - | 0.5 | 1 |
| Output isolation | dB | 50 | - | - |
| Wavelength thermal tuning | nm | 0.6 | 0.8 | 1.0 |
| PZT wavelength modulation | | Optional | | |
| Modulation frequency (linear) | kHz | DC | 10 | 20 |
| Modulation wavelength range | GHz | - | >8 | >10 |
| Operating temperature | °C | 15 | - | 40 |
| Storage temperature | °C | -20 | - | 60 |
| Power supply | V _{AC} | 100-240V 50/60Hz | | |
| Communication interface | | RS232 | | |
| Output fiber type | | Panda PM1550 | | |
| Output fiber length | m | > 0.5 | | |
| Optical connector | | FC/APC | | |
| Dimension | mm | 430x450x105 | | |
| Weight | kg | <5 | | |

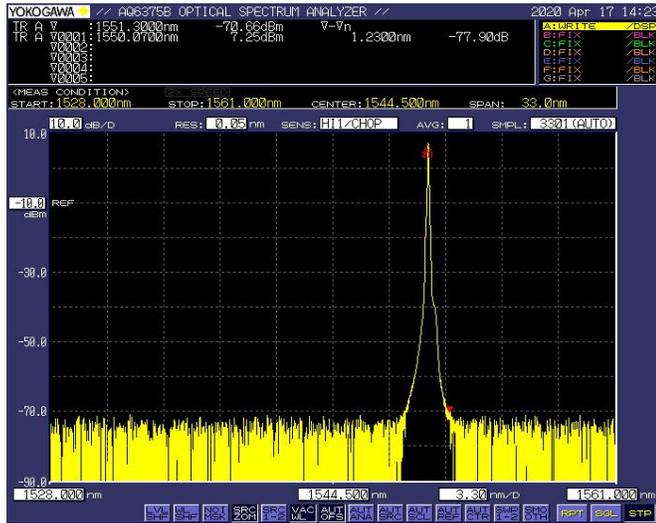
Ordering Information:

CoSF-D-ER-B-LP-<15xx>-<PW>-PMF/SMF-PZT-FA

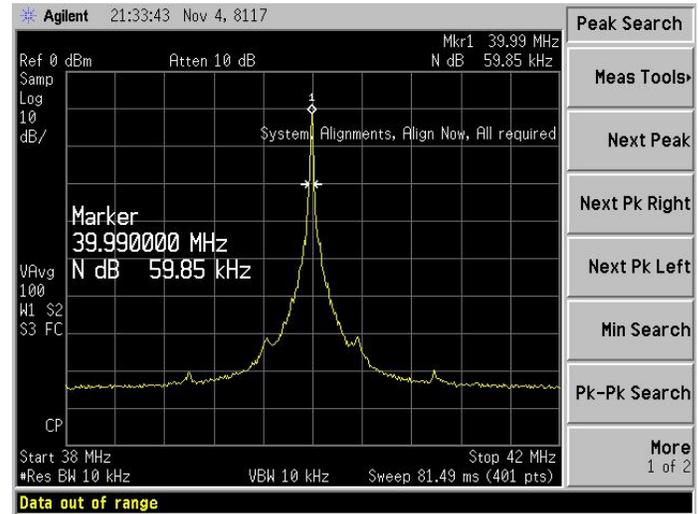
PW: Output power, 5- 20mW is fixed, 50mW, 100mW and 200mW output power are adjustable

Options: 1. SMF output 2. Monitoring output 3. PZT fast modulation

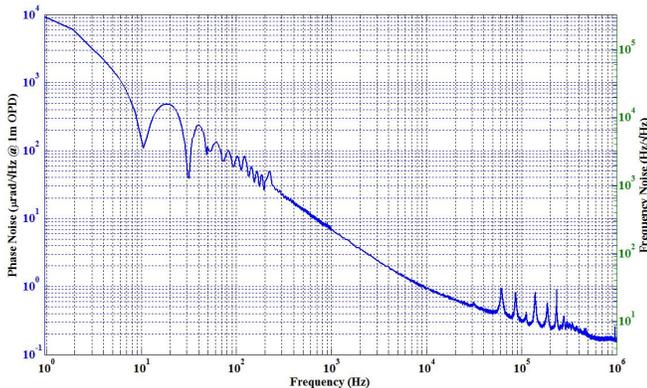
Typical Spectrum:



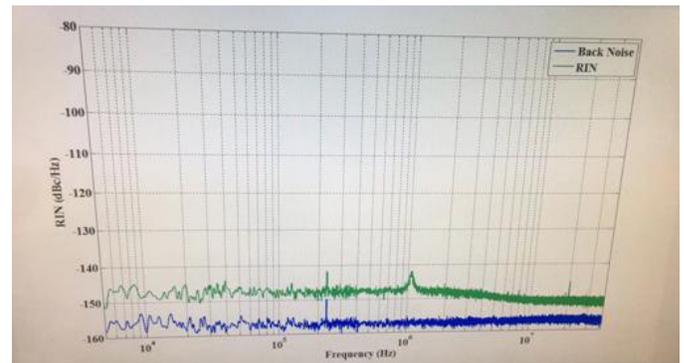
Linewidth:



Phase Noise & Frequency Noise:



Relative Intensity Noise (RIN):



Technical Notes:

1. Typical CoSF-D-ER-B-LP spectrum SMSR>75dB. OSNR is much higher.
2. The linewidth of CoSF-D-ER-B-LP can not be obtained directly from the beat spectrum of linewidth test based on unbalanced M-Z interferometer, which is limited by the resolution of the test platform. Its integral time is 240us.
3. The linewidth of CoSF-D-ER-B-LP is calculated based on the power spectral density of frequency fluctuation.
4. The phase noise and frequency noise tests are based on the normal conditions of the laboratory room temperature, and no sound insulation, vibration isolation and other measures are taken.