CoSF-R-TM-M Single Frequency Fiber Laser Module

Description:
Connet CoSF-R optimized traveling wave cavity ultra-narrow linewidth single-frequency fiber laser is a low-noise ultra-narrow linewidth fiber laser independently developed by patented technology. CoSF-R single-frequency fiber laser uses a unique "optimized traveling wave cavity" design. The design eliminates the standing wave space hole burning phenomenon which is easy to occur in the linear cavity fiber laser. In conjunction with the ultra-narrow bandwidth fiber filter designed by Connet, the single longitudinal mode output is selected and the single frequency operation of the fiber laser is guaranteed. The polarization control technology eliminates the polarization hole burning effect based on the all-fiber design, thereby achieving stable linear polarization, single longitudinal mode, and ultra-narrow linewidth single-frequency laser output.

CoSF-R ultra-narrow linewidth single-frequency fiber laser has excellent performance, the linewidth is far less than 1kHz, and has ultra-low phase noise and frequency noise. The ultra-long laser cavity design makes the overall noise level of CoSF-R significantly lower than other commercial short-cavity single frequency lasers.

CoSF-R-TM-M works in the 1.9-2.0um band, and the output power of the basic module is optional from 5mW to 200mW. Higher output power products can be provided on request. The standard wavelength includes 1908nm, 1940nm, 1950nm, 1960nm, and the optional wavelength range is 1900-2090nm.

Features:
- Ultra-narrow linewidth < 1kHz
- Ultra-low phase noise and frequency noise
- Low relative intensity noise (RIN)
- Stable single frequency, single polarization output
- No mode-hopping
- Small sized package 175x130x29mm
- 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:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Specification</th>
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<tbody>
<tr>
<td><strong>Part no.</strong></td>
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<td><strong>CoSF-R-TM-M</strong></td>
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<tr>
<td>Center wavelength</td>
<td>nm</td>
<td>1900-2090 fixed, other specify</td>
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<td>Output power</td>
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<td>5</td>
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<td>Laser output</td>
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<td>CW, Single frequency &amp; Single longitudinal mode</td>
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<tr>
<td>Beam quality</td>
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<tr>
<td>Linewidth</td>
<td>kHz</td>
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<tr>
<td>RIN peak frequency</td>
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<tr>
<td>RIN peak</td>
<td>dBC/Hz</td>
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<tr>
<td>RIN @10MHz</td>
<td>dBC/Hz</td>
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<tr>
<td>SMSR (50pm resolution)</td>
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<td>Output polarization</td>
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<td>Polarization extinction ratio (PER)</td>
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<td>Output power stability</td>
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<td>Output isolation</td>
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<td>PZT wavelength modulation</td>
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<tr>
<td>Weight</td>
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</table>

### Ordering Information:

**CoSF-R-TM-M-<10xx>-<PW>-PMF/SMF-PZT-FA**

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

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