C + L Band Tunable Wavelength Laser

The Optilab TWL-CL-R is a high spectral purity and stable tunable wavelength laser source. The TWL-CL-R features wide wavelength tuning range, narrow laser linewidth, high Side Mode Suppression Ratio (SMSR), excellent wavelength stability and optical output level exceeding 30mW. With the standard Polarization Maintaining (PM) fiber output, the TWL-CL-R offers a linearly polarized output. These features make the cost-effective TWL-CL-R well-suited for many different applications, including DWDM device testing, optical sensing, and laboratory measurement applications. The TWL-CL-R tunable laser is available in a standard 3U rack-mountable housing, and includes an easy-to-use LabVIEW control software and RS232 Interface for remote operation in laboratory environments. Contact Optilab for more information.

- Narrow laser linewidth of 100 kHz
- Excellent Side Mode Suppression Ratio of 55 dB
- High optical output power of 30 mW
- Wavelength range from 1530 to 1607 nm
- Polarization Maintaining (PM) Output
- Intuitive and easy to use USB interface
- Laboratory testing and measurement
- Fiber Optics Components

**FUNCTIONAL DIAGRAM**

- Control
- Linewidth Adjustment
- Wavelength Setting
- Output Level Control
- Tunable Laser
- RS-232 Input
- PM Fiber
- Output

Product specifications and description are subject to change without notice. © 2020 Optilab, LLC. TWL-CL-R May 2020 Rev. 1.0.2
## SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laser Wavelength Range</td>
<td>1530 nm to 1607 nm</td>
</tr>
<tr>
<td>Wavelength Accuracy</td>
<td>± 1.5 GHz</td>
</tr>
<tr>
<td>Wavelength Stability</td>
<td>± 1 pm over 24 hours</td>
</tr>
<tr>
<td>Output Power Level</td>
<td>30 mW min., 40 mW typ.</td>
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<tr>
<td>Output Stability</td>
<td>0.02 dB over 8 hours</td>
</tr>
<tr>
<td>Laser Linewidth</td>
<td>&lt;100 KHz</td>
</tr>
<tr>
<td>Relative Intensity Noise</td>
<td>-145 dB/Hz typ.</td>
</tr>
<tr>
<td>Side Mode Suppression Ratio</td>
<td>55 dB typ.</td>
</tr>
<tr>
<td>Polarization Extinction Ratio</td>
<td>20 dB typ.</td>
</tr>
<tr>
<td>Optical Isolation</td>
<td>30 dB min.</td>
</tr>
<tr>
<td>Fiber Type</td>
<td>Panda 1550 PM Fiber</td>
</tr>
<tr>
<td>Optical Connectors</td>
<td>PM Narrow Key, FC/APC or Customer Specified</td>
</tr>
</tbody>
</table>

## GENERAL

- **Base Frequency Range**
  - C-Band: 196.1 THz to 191.5 THz
  - L-Band: 191.1 THz to 186.4 THz
- **Channel Spacing**: 25 GHz (0.2 nm)
- **Channel Grid**: 1 to 192
- **Channel Setting Time**: 10 sec. typ.
- **Output Power Adjustment**: 5 dB from max.
- **Dithering Frequency**: 0 to 375 MHz
- **Remote Control Interface**: LabView includes RS-232

## MECHANICAL

- **Operating Temperature Range**: 0°C to +40 °C
- **Storage Temperature Range**: -40°C to +70°C
- **Power Supply**: 80–240 V, 43–63 Hz AC, 2 A max.
- **Power Consumption**: 160 W max.
- **Display**: Output Power Level, Wavelength
- **Controls**: Output Power Level, Laser Wavelength, Dithering Freq.
- **Communication Interface**: RS 232, Labview software via laser linewidth
- **Alarm**: Over Temperature, Over Current
- **Dimensions**: 19" (W) x 14" (D) x 1.75" (H)

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ADDITIONAL INFORMATION

TWL-CL-R has built-in wavelength locker also ensures precise wavelength setting of 10 pm over life time of the device, which is over 15 years. The laser linewidth can be broadened up to 750 MHz to address a variety of applications. Utilizing Telcordia qualified components, TWL-CL-R tunable laser offers exceptional reliability.

C-BAND CHANNEL (1531.91 NM)

L-BAND CHANNEL (1607.08 NM)

TWL LABVIEW INTERFACE