1064 nm RIO PLANEX™ External Cavity Laser

A high performance narrow linewidth single frequency laser capable for OEM applications suitable for volume production

The 1064 nm PLANEX™ laser product is high performance and industry-proven single frequency External Cavity Lasers (ECL) based on RIO’s proprietary planar technology - PLANEX™. The PLANEX laser consists of a gain chip and a planar lightwave circuit (PLC) that includes a Bragg grating. The coupling of these components forms a cavity with significant benefits: with up to 20mW output power, very low RIN, low phase noise and narrow linewidth, and very low wavelength sensitivity to bias current and temperature.

The 1064 nm PLANEX’s industry-standard footprint 14-pin butterfly package, mounting pattern and electrical connections make it an easy drop-in replacement for existing designs. RIO’s PLANEX lasers are the next generation of optical solutions – combining the high performance of long cavity fiber lasers with the low cost, simplicity and Telcordia GR-468 reliability qualified technology platform semiconductor lasers.

The 1064 nm PLANEX’s higher output power, low noise and narrow linewidth ideally position this semiconductor optical solution for multiple applications where absolute accuracy, lifetime reliability over demanding field conditions, and high resolution are vital, such as seeding of fiber and solid state lasers, Second harmonic Generation (SHG), Optical Parametric Oscillators (OPO), laser spectroscopy, LIDAR and other precision metrology applications.

KEY FEATURES

- Single longitudinal mode
- Center wavelength: 1064 nm
- Narrow linewidth, long coherence length
- Low phase noise
- Wavelength tunability
- Excellent SMSR
- Excellent wavelength stability over life and temperature
- Small form factor, 14 pin butterfly
- Low power dissipation
- SMF and PM fiber pigtail options
- RoHS compliant
**Performance Highlights**

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<th>PARAMETER</th>
<th>MIN</th>
<th>MAX</th>
<th>UNIT</th>
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<tbody>
<tr>
<td>Output Power</td>
<td>10</td>
<td>1066</td>
<td>mW</td>
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<tr>
<td>Center Wavelength</td>
<td>1062</td>
<td>1066</td>
<td>nm</td>
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<tr>
<td>Thermal wavelength tuning range</td>
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<td>15</td>
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<tr>
<td>Linewidth</td>
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<tr>
<td>Side Mode Suppression Ratio</td>
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<tr>
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<td>dB/Hz</td>
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<td>Laser Bias Current</td>
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<td>Polarization Extinction Ratio</td>
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<td>dB</td>
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<td>Optical Isolation</td>
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<td>dB</td>
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<td>Operating temperature range</td>
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<td>°C</td>
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**Pin-Out**

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<td>Thermistor</td>
<td>9</td>
<td>Package</td>
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<td>11</td>
<td>Laser Anode (+)</td>
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<tr>
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<td>PD Cathode (+)</td>
<td>12</td>
<td>Cathode (-)</td>
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<td>TEC +</td>
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<td>Laser Anode (+)</td>
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<td>7</td>
<td>TEC -</td>
<td>14</td>
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**Mechanical Diagram**

Units: mm

**APPLICATIONS**

- Seeding of fiber and solid state lasers
- Second Harmonic Generation (SHG)
- Optical Parametric Oscillators (OPOs)
- Laser spectroscopy
  - LiDAR
  - Metrology

**Ordering Information**

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R|I|O|0|9|X|X|X|1
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**Fiber/Connector**

- 4 SMF/FC-APC
- 5 PMF/FC-APC

**Output Power (min.)**

- 3 10 mW
- 5 20 mW

**Phase Noise / Linewidth**

- Grade 1, Linewidth < 15 kHz

**Laser Safety Information**

The 1064 nm ORION RIO PLANEX is classified as FDA/CDRH Class IIIb laser products per CDRH, 21 CFR 1040 laser safety requirements.

**Oil & Gas**

**Wind**

**Security**

**Infrastructure**

**Metrology**

**For ordering or technical information contact**

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