RIO
REDFERN INTEGRATED OPTICS INC.

*LIGHT THAT MAKES PERFECT SENSE™*

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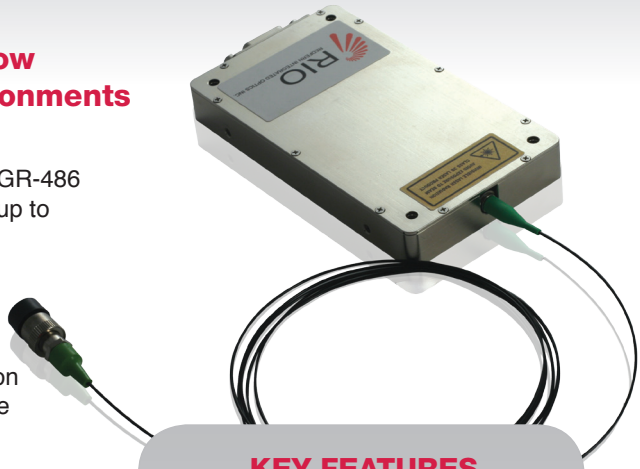
# RIO ORION™ Laser Module

## A compact and industry-proven OEM single frequency low noise source designed for 24/7 operation in harsh environments



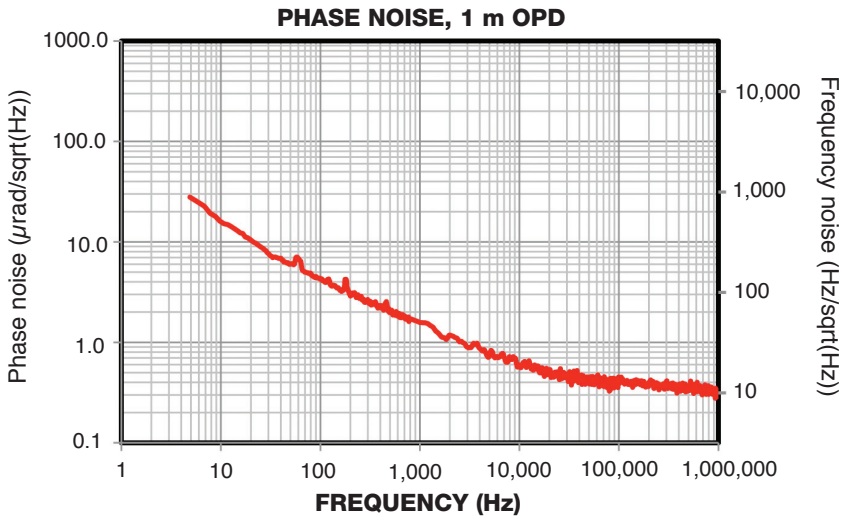
The ORION™ laser module builds upon the proven performance of RIO's game-changing **PLANEX™** product series. In addition to unrivaled reliability (Telcordia GR-486 qualified) and robustness, the ORION laser modules provide superior value with up to 20mW output power, very low RIN, ultra low phase noise and narrow linewidth, exceptional wavelength stability and insensitivity to vibration.

The ORION's packaging was designed with the customer's need in mind: highly integrated, small form factor and self-contained module. This optical solution is positioned for reducing the development cycle time and allow for simple integration into advanced fiber optic sensing systems. External monitoring and control can be achieved via SPI, RS-232 or RS-485 standard interfaces.

The ORION's higher output power, low noise and ultra 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 remote sensing, distributed temperature, strain, or acoustic fiber optic monitoring, high resolution spectroscopy, LIDAR and other precision metrology applications.

## Performance Highlights

| PARAMETER | VALUE | UNITS |
|---|---|---|
| Output Power | up to 20 | mW |
| Spectral linewidth (Lorentzian) | < 3 | kHz |
| RIN (at frequency >1 kHz) | < -140 | dB/Hz |
| Thermal wavelength tuning range | up to 60 | pm |
| Direct frequency modulation range | > 200 | MHz |
| Direct frequency modulation speed | up to 100 | kHz |
| Operating case temperature range | 0 to 70 | °C |
| Power dissipation | < 5 | W |




## KEY FEATURES

- Single longitudinal mode
- Ultra low phase noise and RIN
- Low sensitivity to vibration and acoustic noise
- Narrow linewidth (< 3 kHz), long coherence length
- 1528nm-1565nm, ITU-T DWDM wavelength or custom
- Guaranteed mode hop free operation over life and temperature
- Wavelength tunability
- Unrivaled wavelength stability over life and temperature
- Excellent SMSR
- SMF or PMF pigtail options
- 0 to 70 °C operating case temperature
- Telcordia GR-468 Qualified
- RoHS Compliant

## APPLICATIONS

- Acoustic and seismic sensing
- Defense and security
- Oil & Gas - exploration and production
- LIDAR and remote sensing
- Interferometric fiber optic sensing
- Metrology
- RF and microwave photonics
- Coherent communication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