

January 2012

RIO GRANDE High Power Narrow Linewidth & Low Phase Noise Laser Module

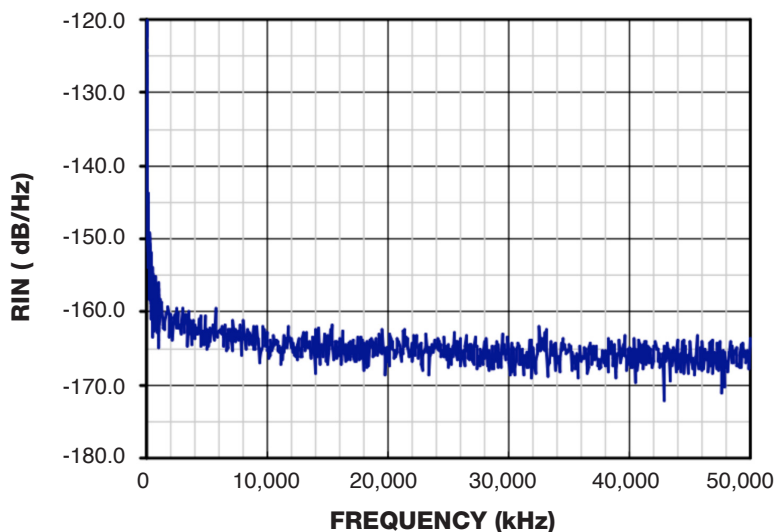
The RIO Grande high power laser module builds upon the proven performance of RIO's game-changing ORION™ product series. In addition to the ORION's unrivaled reliability and robustness, along with the integration of a high performance and low noise EDFA, the RIO Grande laser modules provide superior value with up to 2W output power, very low RIN, ultra low phase noise and narrow linewidth, exceptional wavelength stability and insensitivity to vibration.

The RIO Grande'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 and LIDAR systems. External monitoring and control can be achieved via a RS-232 standard interface.

The RIO Grande'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 2 | W |
| Spectral linewidth (Lorentzian) | < 3 | kHz |
| RIN (.5 – 50 MHz) | < -160 | dB/Hz |
| Optical S/N ratio | > 60 | dB |
| Output power adjustment range | 10-100 | % |
| Power stability | ± 1 | % |
| Operating case temperature range | -10 to 70 | °C |
| Power dissipation | < 25 | 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
- 1540nm-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
- -10 to 70 °C operating case temperature
- Compact and rugged OEM design
- 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