

January 2011

RIO PLANEX™ External Cavity Laser

A high performance single frequency source capable of deployment in OEM applications suitable for volume production

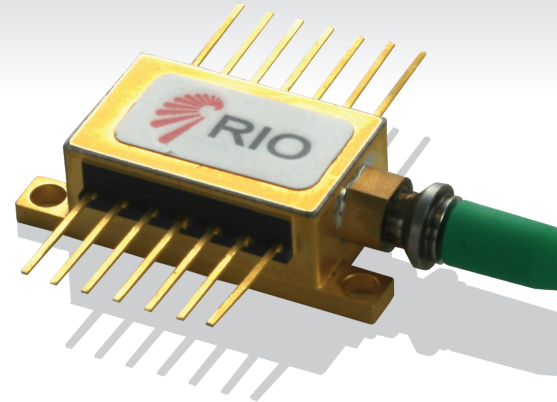
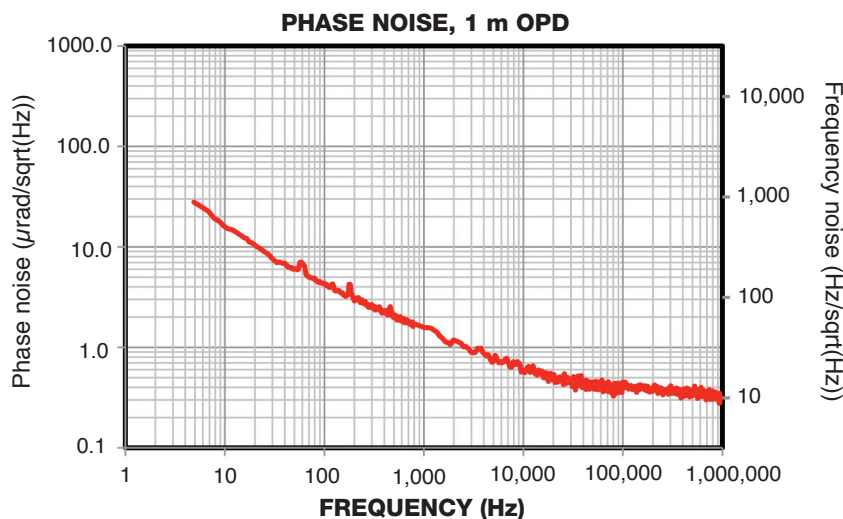
The PLANEX™ product series are high performance and industry-proven single frequency External Cavity Lasers (ECL) based on RIO's proprietary planar technology - **PLANEX™**. The PLANEX laser consists of a gain chip and a planar lightwave circuit (PLC) that includes a Bragg grating. The coupling of these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

The PLANEX's industry-standard footprint, mounting pattern and electrical connections make it an easy drop-in replacement for existing systems, or upgrading in performance grades within the PLANEX family. 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-qualified reliability of semiconductor lasers.

The PLANEX'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
Wavelength change vs. TEC temperature	12	pm/°C
Direct frequency modulation range	> 200	MHz
Direct modulation bandwidth	> 1	GHz
Operating case temperature range	-5 to 75	°C



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
- 1530nm-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
- 5 to 75 °C operating case temperature
- Telcordia GR-468 Qualified
- RoHS Compliant
- CW, modulated and pulsed operations

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