

1 Micron Narrow Linewidth Laser Module

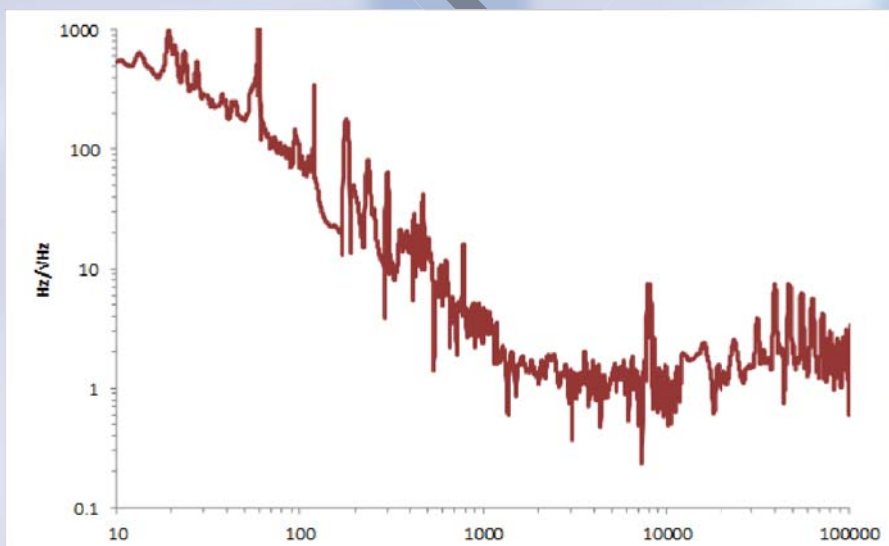
Whispering Gallery Mode Micro-Resonator Enabled Laser

The module offers ultra-narrow Lorentzian linewidth of less than 200Hz and low phase/frequency noise in a compact form factor.



The 1 Micron Narrow Linewidth Laser Module houses a proprietary driver/controller and the OEwaves laser source which is based on a high quality factor (Q) Whispering Gallery Mode (WGM) micro-resonator. The laser is scalable to a variety of wavelengths within 980-1080 nm range.

The unique technology of the 1 Micron Narrow Linewidth Laser Module leverages the self-injection locking of a suitable commercially available laser diode via a resonant optical feedback from a high-Q WGM micro-resonator. Its monolithically integrated approach, along with micro-scale mass and volume, make the laser virtually insensitive to environmental vibrations.



Features

- Ultra-Narrow Lorentzian Laser Linewidth
- Ultra-Low Phase/Frequency Noise
- Wide Thermal Tuning Range
- Low Vibration Sensitivity
- Low Residual Amplitude Modulation
- Wavelength Stability
- Frequency Modulation Option
- Compact Package
- Integrated Proprietary Driver/Controller
- USB or RS232 Control Interface
- Available within 980-1080nm range

Applications

- LIDAR
- Laser seeding
- Optical Metrology and Spectroscopy
- Second Harmonic Generation
- Optical Parametric Oscillator
- Test and Measurement

Specifications

Parameters	OE4110	Notes
Wavelength	980-1080	Single Frequency CW; Vacuum
Spectral Linewidth	200 Hz	Lorentzian; 10 μ s
Output Power	5-10 mW	
Frequency Noise	200 Hz/vHz 10 Hz/vHz 5 Hz/vHz	100 Hz Offset 10 kHz Offset 1 MHz Offset
Short Term Stability	2×10^{-9} @1 s	At constant case temperature
Thermal Tuning Range	10 GHz	Mode hop free
Thermal Tuning Rate	200 MHz/s	Mode hop free
Side-Mode Suppression Ratio	30 dB	Min
Relative Intensity Noise	-140 dBc/Hz	10 MHz
Operating Temperature	20° to 35°C	Case temperature
Monitor/Control Interface	USB	
Package	6" x 2.3" x 1"	Including driver/controller
Fiber Pigtail	PM 15 dB PER	PANDA
Optical Connector	FC/APC	
Options		
PM Fiber PER	>18 dB	Consult Factory
Frequency Modulation	DC-10 kHz	Consult Factory
Monitor/Control Interface	RS232	OEwaves' external adapter required
	External Control Module	Via USB
Extended Tuning Range	20 GHz	

Laser Safety: This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR) 1040 and is classified as a FDA/CDRH Class 3b laser product.

Note: These specifications are subject to change without notice. Unless otherwise noted, all specifications in this document are to be treated as "typical." This product line is covered by one or more of the following U.S. patents: 6,871,025; 6,879,752; 7248,763; 7991,025; 7869,472. Other patents pending. ECCN: TBD



For ordering or other inquiries contact:



465 N. Halstead Street, Suite 140 : P 626 351 4200

Pasadena, California 91107 USA : E sales@oewaves.com