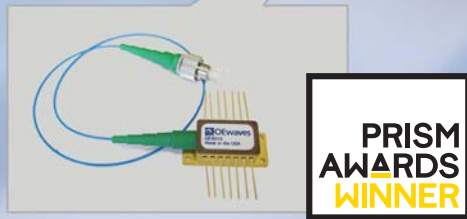


Ultra-Narrow Linewidth Laser Module

Whispering Gallery Mode Micro-Resonator Enabled Laser

The module offers super-fine instantaneous and dynamic optical spectral linewidth of less than 200Hz and ultra-low phase/frequency noise in a small form factor.



2011 Prism Award Winner in the category of Other Light Sources

Features

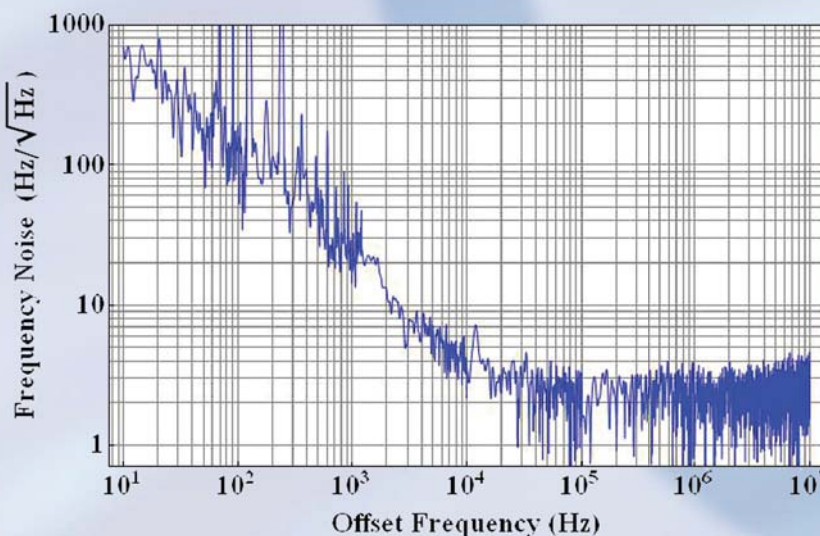
- Ultra-Narrow Instantaneous and Dynamic Laser Linewidth
- Ultra-Low Phase/Frequency Noise
- C Band Wavelength Support
- Wide Thermal Tuning Range
- Low Vibration Sensitivity
- Low Residual Amplitude Modulation
- Wavelength Stability
- Compact Package
- Integrated Driver/Controller
- USB or RS232 Control Interface

OEwaves Ultra-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 in C band.

The unique technology of the OEwaves Ultra-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.

Applications

- Interferometric Optical Sensing
- LIDAR
- B-OTDR Temperature and Strain
- Gas Sensing
- Optical Metrology and Spectroscopy
- Acoustic Sensing
- Oil and Gas Exploration
- Coherent Communication
- Test and Measurement



Specifications

Parameters	OE4020	Notes
Wavelength	C-Band	Single Mode CW; Vacuum
Instantaneous Linewidth	200 Hz	Lorentzian; 10 us
Dynamic Linewidth	200 Hz	
Output Power	10 mW	At center wavelength
Frequency Noise	200 Hz/rt(Hz)	100 Hz Offset
	40 Hz/rt(Hz)	1 kHz Offset
	5 Hz/rt(Hz)	100 kHz Offset
Short Term Stability	10^{-9} @ 1s	At constant case temperature
Frequency Stability	+/- 15 MHz/day	At constant case temperature
Thermal Tuning Range	50 GHz	Mode hop free
Thermal Tuning Rate	1 GHz/s	Mode hop free
Side-Mode Suppression Ratio	50 dB	Min
RIN	-150 dBc/Hz	10 MHz
Operating Temperature	20 ^o to 40 ^o C	Case temperature
Storage Temperature	-10 ^o to 50 ^o C	Case temperature
Monitor/Control Interface	USB	
Package	2 1/2" x 4 1/2" x 7/8"	
Fiber Pigtail	PM 15 dB PER	PANDA Slow axis; Straight fiber
Optical Connector	FC/APC	
Options		
Extended Tuning Range	1-2 nm	Consult Factory
Frequency Modulation	DC-100kHz	
PM Fiber PER	>18 dB	Consult Factory
Connector	FC/PC, SC/APC	
Monitor/Control Interface	RS232	OEwaves' external adapter required
	External Control Module	Via USB

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: 6A995.b1



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