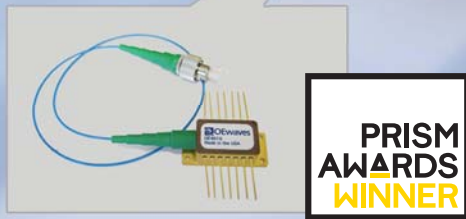


Ultra-Narrow Linewidth Laser Module

Whispering Gallery Mode Micro-Resonator Enabled Laser

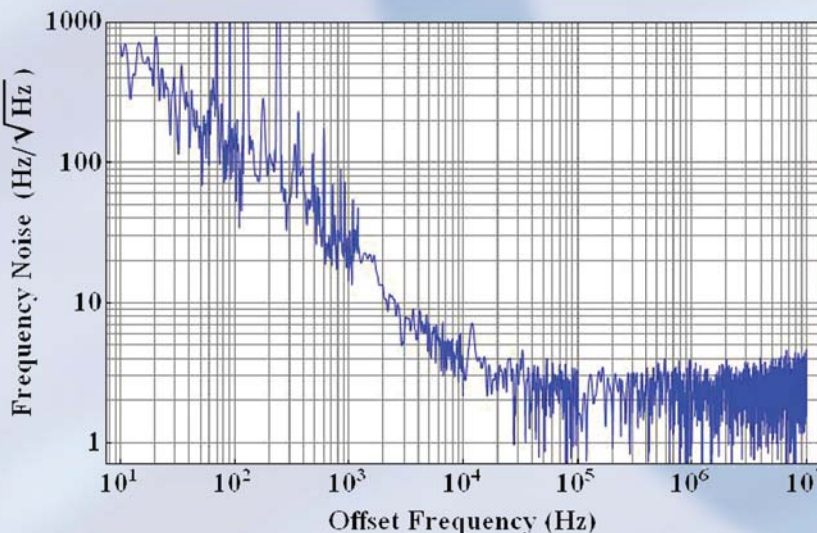
The module offers super-fine instantaneous and dynamic optical spectral linewidth of less than 300Hz and ultra-low phase/frequency noise in a small form factor.



2011 Prism Award Winner in the category of Other Light Sources

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.



Features

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

Applications

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

Specifications

Parameters	OE4020	Notes
Wavelength	C-Band	Single Mode CW
Instantaneous Linewidth	300 Hz	Lorentzian; 10 us
Dynamic Linewidth	300 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	2nm	Full Coverage
	50 GHz	Mode Hop Free
Thermal Tuning Rate	1 GHz/s	
Side-Mode Suppression Ratio	50 dB	Min
RIN	-150 dBc/Hz	10 MHz
Operating Temperature Range	20° to 40° C	Case temperature
Storage Temperature Range	-10° to +50° C	Case temperature
Monitor/Control Interface	USB	
Package	2 1/2" x 4 1/2" x 7/8"	
Fiber Pigtail	PM	PANDA
Optical Connector	FC/APC	
Options		
Other Wavelengths	L-Band	Consult factory
Fiber Pigtail	SMF	
Connector	FC/PC, SC/APC	
Monitor/Control Interface	RS232	OEwaves' external adapter is 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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