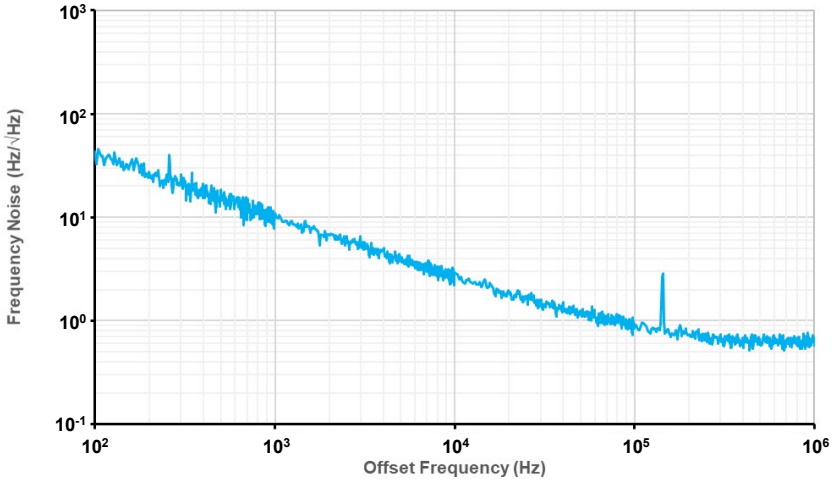
OEwaves
INVENT ▪ DEVELOP ▪ DELIVER

HI-Q® 2 MICRON LASER *ULTRA-NARROW*

HI-Q® Laser offers ultra-narrow Lorentzian linewidth of **less than 80Hz** and low phase/frequency noise in a compact form factor.

This HI-Q® Laser 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 available at a variety of wavelengths within 1900 – 2100 nm.

The unique technology of the OEwaves HI-Q® Laser leverages the self-injection locking capability of a suitable commercially available laser diode via 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 Laser Linewidth
- Ultra-Low Phase/Frequency Noise
- 1900 – 2100 nm
- Wide Thermal Tuning Range
- Low Vibration Sensitivity
- Low Residual Amplitude Modulation
- Wavelength Stability
- Compact Package
- Integrated Driver/Controller
- USB or RS-232 Control Interface

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

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HI-Q® 2 MICRON LASER SPECIFICATIONS

ULTRA-NARROW

OE4226

Wavelength	1900 – 2100 nm	Single Frequency, CW; Vacuum
Spectral Linewidth	< 80 Hz	Lorentzian; Instantaneous
Output Power	1 – 2 mW	
Frequency Noise	50 Hz/√Hz 20 Hz/√Hz 5 Hz/√Hz	1 kHz 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	10 MHz/s	Mode Hop Free
Side-Mode Suppression Ratio	50 dB	
Relative Intensity Noise	- 140 dBc/Hz	At 10 MHz
Vibration / Acceleration Sensitivity	5×10^{-11}/g	
Operating Temperature	+20°C to +35°C	Case Temperature
Monitor / Control Interface	USB	
Package	2.3” x 6” x 1”	Including Driver Electronics
Fiber Pigtail	PM-FC/APC	PANDA fiber
Polarization Extinction Ratio	20 dB	

OPTIONS

Frequency Modulation	DC-10 kHz DC-100 kHz	5 – 15 MHz/V; > ±100 MHz Range 5 – 15 MHz/V; > ±100 MHz Range
Monitor / Control Interface	RS-232	External Adaptor Required

Tech Notes: Instantaneous Linewidth* is computed from the noise floor of the power spectral density of frequency noise (PSDFN).

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. 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: EAR99

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RIDE THE WAVE OF INNOVATION

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