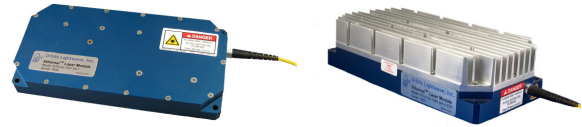


Eternal™ SlowLight™ Lasers

Orbits Lightwave, Inc

The **Eternal™ SlowLight™** laser from Orbits Lightwave is an industry leading ultra-stable, low noise fiber laser. The breakthrough “virtual ring” laser oscillator enables traveling wave and slow light oscillation in a compact, linear, all fiber cavity. Traveling wave oscillation results in higher power, lower noise and a higher side-mode suppression ratio. **SlowLight™** technology effectively increases the cavity lifetime resulting in ultra low FM and AM noise performance.

The **Eternal™ SlowLight™** laser represents a new benchmark in laser performance. The highly integrated and robust fiber laser utilizes passive stabilization and eliminates the need for wavelength and temperature control. **StableLase™** technology greatly reduces the susceptibility to shock and vibration by more than five orders of magnitude. This enables the **Eternal™ SlowLight™** laser to demonstrate unprecedented levels of stability and performance for demanding industrial or military applications.



Fiber Laser Modules



Benchtop Instrument



Multi-Channel Rack Mount System

*Ultra stable & low noise
fiber lasers*

Features:

- Linewidth < 400Hz
- Optical signal to noise > 80dB
- Sidemode suppression ratio > 75dB
- Lowest amplitude and phase noise in the industry
- Compact all-fiber “virtual ring” architecture
- **StableLase™** reduces sensitivity to shock and vibration by five orders of magnitude
- High power single oscillator > 350mW

Applications:

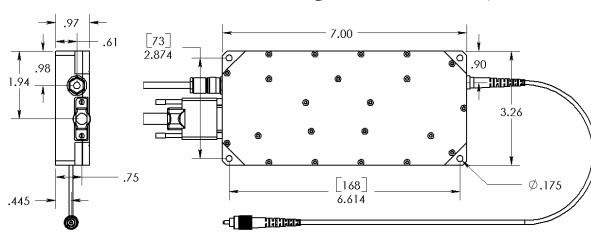
- Acoustic sensing, marine and security applications
- LIDAR, ALSM or laser altimetry
- Injection seed laser
- Coherent Communications
- RF and microwave photonics
- Spectroscopy, gas absorption testing
- Pipeline monitoring, leak detection
- Defense, motion & intrusion detection
- Oil and gas exploration systems
- Metrology

Eternal™ Specifications

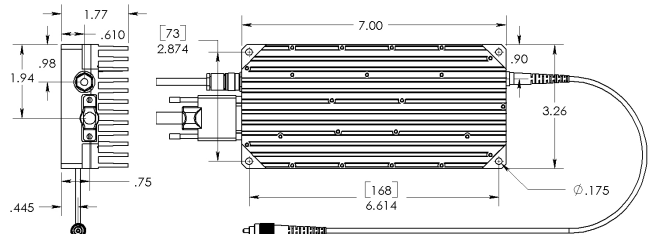
| | | |
|---|---|---------------|
| Wavelength Range (nm) Single Frequency | 1530 to 1565 | 1047 to 1064 |
| Optional fast PZT tuning range (GHz) | 1, 10, 20 | 1, 10, 20, 30 |
| Absolute wavelength accuracy (0.01 nm) | ± 5; (±2 Optional) | |
| Output power (mW) @ 1064nm & 1550nm | 10, 20, 40, 80, 100, 125, 175, 350 [¥] | |
| Power stability (%RMS) | ± 0.10 | |
| RIN (dBc/Hz @ 1MHz) | < -120; (<-130* Optional) | |
| RIN (dBc/Hz @ 100MHz) | -165 † | |
| Linewidth (Hz) | < 400; (< 200* Optional) | |
| Frequency Noise (Hz/√Hz) | 55 @ 100Hz; (30 @ 100Hz* Optional) | |
| Optical S/N (dB) (0.05 nm RBW) | > 80 | |
| SMSR (dB) (3MHz RBW) | > 75 | |
| Frequency stability (MHz): | < ±20; (± 0.25 Optional) ‡ | |
| Polarization Extinction Ratio (dB) | > 23 | |
| Fiber pigtail (PM FC/APC as standard) | 1m, Panda PM (SMF Optional) | |
| Operating temp (°C) | -10 to 55 | |
| Power consumption (W) (10-175mW Output Power) | 5 to 30 | |

* With **SlowLight™** SL130 option
† Shot noise limited RIN @ frequency > 50MHz
‡ After initial warm-up at room temperature ±1°C
¥ Benchtop instrument only

Specifications subjected to change without notice 01-09 Rev. 5



< 100mW Module Dimensions



> 100mW to 175mW Module Dimensions

Ordering Information:

ETH - 40 - 1552.12 - 2 - PZ20 - SL130 - T - SMF

| | | |
|---|--|--|
| Product Name: ETH | | Optional O/P Fiber Type: SMF |
| Power (mW): 10, 20, 40, 80, 100, 175, 350 | | Optional 1MHz Freq Stability T |
| Wavelength (nm): 1530 - 1565 • 1047 - 1064 (In Vac) | | Optional RIN (dBc/Hz@1 MHz) SL120, SL130 |
| Abs λ Accuracy (±0.01nm): 5 (±0.05nm), 2 (±0.02nm) | | Optional PZT Range (GHz) PZ1, PZ10, PZ20, PZ30 |



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www.orbitlightwave.com • sales@orbitlightwave.com



Orbits Lightwave products are protected by a 1yr warranty. This warranty covers all assemblies and components to be free from defects unconditionally for a 1yr period from the date of shipment.

Doc: 420-0001-01