MENDOCINO

C-band Femtosecond Fiber Laser Module

Applications

- OEM integration
- Telecommunication components characterization
- Optical high speed sampling
- Terahertz radiation
- Optical switching
- Materials characterization
- Optical metrology

Features

- Small footprint and ruggedized design
- Wavelength selectable from 1535 to 1565 nm
- Pulse width selectable from 0.1 to 15 ps
- Pulse width tunability
- Near transform-limited output
- Minimal pulse pedestal
- Low timing jitter
- RF synchronization output

The C-band femtosecond fiber laser module (FPL-M) is the most compact of commercially available passively mode-locked fiber lasers. The FPL-M series features a robust architecture that is insensitive to shock and vibration, and provides exceptional stability and reliability for demanding OEM applications. Advanced engineering design and consistent manufacturing process ensure the highest quality standards for OEM volume production. The wavelength can be selected throughout the C-band. The pulse width is factory selectable from 0.1 to 15 ps, with near transform-limited pulse shape and a better than 20 dB pedestal. The timing jitter is as low as 60 fs. The repetition rate can be specified from 10 to 50 MHz with either a polarization-maintaining (PM) or non-PM fiber output. With up to 20 mW output power, the FPL series is the most economical solution for applications requiring low power, such as seeding amplifier systems. An RF synchronization output is provided as a trigger signal. The FPL-M series can be used either as a stand-alone laser source with a 5 VDC power supply or separate driver, or for integration as an OEM module.

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FEMTOSECOND FIBER LASER

Technical Specifications

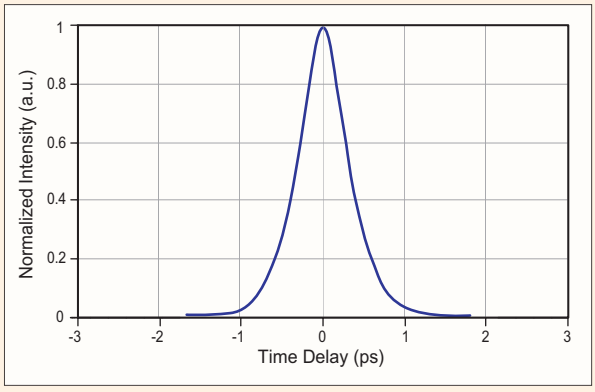
Model Number	FPL-M2CFF	FPL-M3CFF	FPL-M3CFFPM
Pulse Width (ps)*	0.3 ~ 5 (selectable)	0.1 ~ 1 (selectable)	0.1 ~ 1 (selectable)
Wavelength (nm)	1535 ~ 1565 (selectable)		
Repetition Rate (MHz)**	20		
Peak Output Power (W)	300 (typical)	10 K (at pulse width 0.1)	5 K (at pulse width 0.1)
Average Output Power (mW)	4 (typical)	20 (typical)	10 (typical)
Timing Jitter (fs)	60 (carrier offset 100 Hz ~ 1 MHz)		
Spectral Width (nm)	5 (typical @ 0.5 ps)	25 (typical @ 0.1 ps)	25 (typical @ 0.1 ps)
Fiber Type	SMF***	SMF***	Panda PM
Polarization Extinction Ratio (dB)	Not applicable	Not applicable	>20
Operating Temp (°C)	10 ~ 35		
Operating Voltage (VDC)	4.5 ~ 5.5		
Dimensions (cm)	9.5(w) x 12.7(d) x 2.0(h)	9.5(w) x 12.7(d) x 4.0(h)	

** Up to 15 ps pulse width available; once selected it is tunable by adjusting pump current. A sech² pulse shape (convolution factor of 0.65) is used to determine the pulse width for the second harmonic autocorrelation trace.*

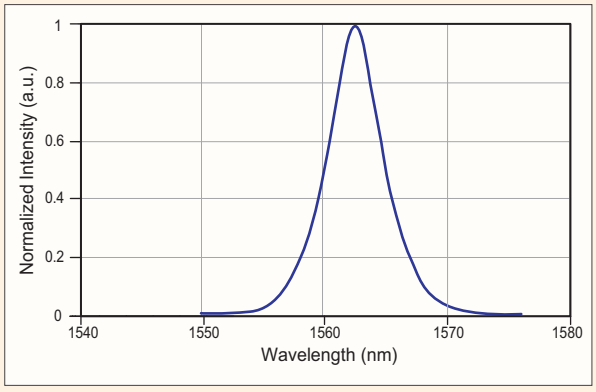
*** Other repetition rates within 10 to 50 MHz are available, specifications may change at different repetition rates.*

**** PM fiber is an option.*

Due to our continuous improvement program, specifications are subject to change without notice.



Autocorrelation Trace Corresponding to a Pulse Width of 0.5 ps



Optical Spectrum Corresponding to a Pulse Width of 0.5 ps

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