1 µm Femtosecond Fiber Laser Module

Applications

- OEM integration
- Biomedical instrumentation
- Optical high speed sampling
- Terahertz radiation
- Optical switching
- Materials characterization
- Optical metrology

Features

- Small footprint and ruggedized design
- Wavelength selectable from 1030 to 1065 nm
- Pulse width selectable from 0.4 to 10 ps
- Pulse width tunability
- Near transform-limited output
- Linearly polarized output
- Minimal pulse pedestal
- Long term reliability
- RF synchronization output
- Cost effective
- Fiber-based architecture

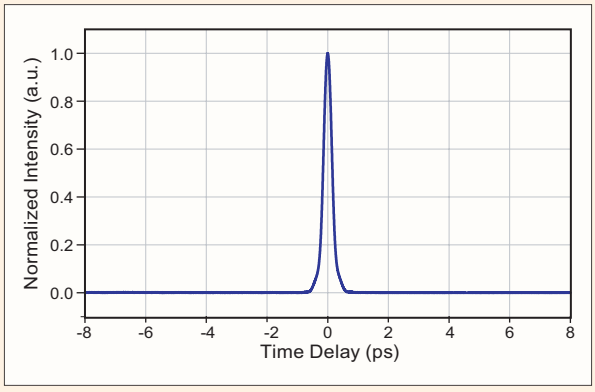
The 1 µm femtosecond fiber laser module (FPL-M) is the most compact commercially available passively mode-locked fiber laser. The FPL-M series features a robust architecture that is insensitive to shock and vibration and provides exceptional stability and reliability for demanding OEM applications. Advanced engineering design and consistent manufacturing process ensure the highest quality standards for OEM volume production. The wavelength can be selected from 1030 to 1065 nm. The pulse width is factory selectable from 0.4 to 10 ps, with near transform-limited pulse shape. The timing jitter is as low as 60 fs. The repetition rate can be specified from 10 to 50 MHz. With up to 20 mW output power, the FPL-M 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 a separate driver, or for integration as an OEM module.

Technical Specifications

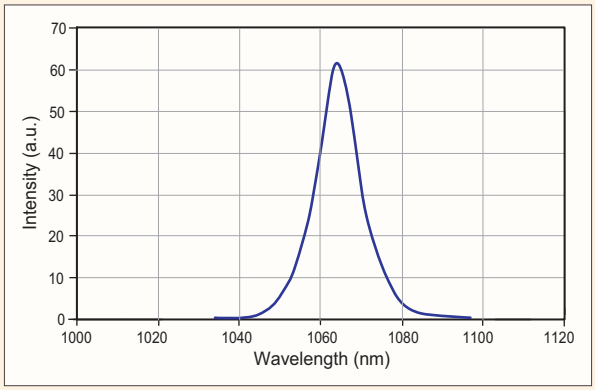
Model Number	FPL-M1UFF	FPL-M2UFF
Pulse Width (ps)*	0.4 ~ 10 (selectable)	0.8 ~ 10 (selectable) ***
Central Wavelength (nm)	1030 ~ 1065 (selectable)	
Repetition Rate (MHz)**	40	
Average Output Power (mW)	>0.5 (1 typical)	>10 (20 typical)
Timing Jitter (fs)	60 (carrier offset 100 Hz ~ 1 MHz)	
Polarization Extinction Ratio (dB)	>20	
Spectral Width (nm)	5 ~ 20	
Operating Temp (°C)	10 ~ 35	
Operating Voltage (VDC)	4.5 ~ 5.5	
Dimensions (cm)	9.5(w) x 12.7(d) x 2.5(h)	9.5(w) x 12.7(d) x 4.0(h)

** Once pulse width is selected, it is tunable by adjusting pump current. A Gaussian pulse shape (convolution factor of 0.7) 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.*
**** Compressible by end user to 0.2 ps for output pulses longer than 4 ps.*

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



Autocorrelation Trace Corresponding to a Pulse Width of 0.27 ps



Optical Spectrum Corresponding to a Pulse Width of 0.27 ps

CALMAR LASER