

1030 nm Low Power Femtosecond Fiber Laser Module



Applications

- Biophotonics
- Photodetector characterization
- Optical metrology
- Materials characterization
- Multiphoton imaging
- Seed source for higher energy laser systems

Features

- Average power > 0.5 mW
- Central Wavelength 1030 nm
- Pulse width < 1 ps
- Robust all-fiber architecture
- Fiber pigtail delivery
- Exceptional long term stability
- RF synchronization output

The 1030 low power femtosecond fiber laser (FPL) is a passively mode-locked fiber laser that provides a stable short pulse output at 1030 nm. The laser utilizes the proprietary Mendocino saturable absorber technology, which has been developed and perfected over a twenty-year period, to deliver reproducible mode-locking at turn-on with excellent stability and reliability. It features a convenient polarization-maintaining (PM) fiber output with power levels greater than 0.5 mW and an optical pulse of less than 1 ps. The laser provides an RF 30 MHz synchronization output as a trigger signal.

The module (FPL-M) series features a robust architecture that is insensitive to shock and vibration. It can be used as a stand-alone laser system with a user-supplied 5 VDC power supply and is the perfect source for integration into demanding OEM applications. An advanced engineering design and consistent manufacturing process ensure the highest quality standards for volume production.

If the performance parameters do not quite fit your application requirements, please contact us at sales@calmarlaser.com to discuss a customized solution.

Technical Specifications¹

Model Number	FPL-M1UFF
OPTICAL	
Central Wavelength (nm)	1030 ± 2
Pulse Width ² (ps)	< 1
Average Power (mW)	> 0.5
Repetition Rate ³ (MHz)	30
Spectral Width (FWHM, nm)	~ 3 - 4
Power Stability over 8 hours ⁴ (% , RMS)	< 1.0
Beam Quality, M ²	< 1.1
Polarization Extinction Ratio (dB)	> 18
Output/Termination ⁵	PM 980 fiber pigtail with FC/APC connector
ELECTRICAL	
Electrical Synchronization (V)	> 0.1, SMA connector
Operating Voltage (VDC)	~ 5
Power Consumption (W)	< 10 W
Electrical Interface	9 pin D-sub connector
Computer Control	No
MECHANICAL	
Operating Temperature (°C)	20 - 35
Dimensions (cm)	9.5(W) x 12.7(D) x 2.5(H)
Weight (kg)	0.3
Mounting	Heat sink for steady state heat load of up to 7 W (up to 10 W at turn-on)
Warm-up Time (min)	< 10

1. Due to our continuous improvement philosophy, all product specifications are subject to change without prior notice. Please contact sales@calmarlaser.com for customized specifications.

2. A sech² pulse shape (deconvolution factor of 0.65) is used to determine the pulse width from the second harmonic autocorrelation trace.

3. For other repetition rates, please contact sales@calmarlaser.com.

4. Requires an ambient temperature control of ± 1.0°C and appropriate mounting with heat sink

5. For free space option, please contact sales@calmarlaser.com.

