

780 nm Femtosecond Fiber Laser With Free Space Output



Applications

- Biophotonics
- Terahertz radiation
- Seeding Ti:sapphire amplifiers
- Materials characterization
- Optical metrology
- Multiphoton imaging microscopy

Features

- Pulse energy up to 1 nJ
- Peak power up to 10 kW
- Wavelength selectable from 775 to 785 nm
- Pulse widths as short as 0.1 ps
- Near transform-limited output
- Linearly polarized output
- Minimal pulse pedestal
- Low timing jitter
- RF synchronization output
- Turnkey operation
- High stability

The 780 nm femtosecond fiber laser is a second harmonic generation (SHG) product of Calmar's passively mode-locked fiber laser in C-band. It has excellent stability, reliability and turnkey operation, based on the proven C-band laser. Along with a portable design, this FPL series offers user-friendly front panel control knobs for flexible adjustment of output power. The wavelength can be selected from 775 to 785 nm range. The pulse width is as low as 0.1 ps with near transform-limited pulse shape and a negligible pedestal. The timing jitter is as low as 60 fs. The repetition rate can be specified from 10 to 50 MHz with a polarization-maintaining (PM) output. With up to 50 mW output power at 50 MHz and 0.1 ps pulse width, the laser provides as high as 1nJ pulse energy and 10 kW peak power. Both free space output and fiber-coupled output are available for the convenience of end users. An RF synchronization output is provided as a trigger signal.

Calmar's FPL operation is highly stable, which significantly differentiates us from our competitors. Whenever our laser is turned on, it always starts in the same operation state. Calmar's laser enables end users to focus on their work, not on the laser itself, while our competitors' laser startup status is unpredictable, requiring constant adjustment during operation.

Mendocino 780 nm Technical Specifications

Specifications	Free Space Output	
Central Wavelength (nm)	775 - 785 (selectable)	
Average Power (mW)	10 - 20	Up to 50
Pulse Width (fs) *	~ 100	
Repetition Rate (MHz)	Typical 30 (10 - 50 available)	Typical 50 (< 50 available)
Spectral Width (nm)	~ 8	
Polarization Extinction Ratio (dB)	> 18	
Beam Quality	$M^2 < 1.2$	
Beam Diameter (mm)	< 2	
Operating Temp (°C)	15 - 35	
Operating Voltage	Desktop: 85 - 264 VAC Module: 5 VDC	Desktop: 85 - 264 VAC
Dimensions (cm)	Desktop: 34(w) x 30(d) x 9(h) Module: 18.4(w) x 15.9(d) x 6.5(h)	Laser Head: 15.2(w) x 12.7(d) x 6(h) Controller: 34(w) x 30(d) x 9(h)

* A sech^2 pulse shape (convolution factor of 0.65) is used to determine the pulse width for the second harmonic autocorrelation trace.

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

