780 nm Femtosecond Fiber Laser OEM Module

Applications

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

Features

- Wavelength 780 nm typical
- Pulse widths as short as 0.1 ps
- Near transform-limited output
- Linearly polarized output
- Minimal pulse pedestal
- Low timing jitter
- RF synchronization output
- Compact and ruggedized OEM package
- Driven by +5VDC power
- No electrical driver and no adjustment required
- High stability

The OEM module type 780 nm femtosecond fiber laser FPL-M2R is a second harmonic generation (SHG) product of Calmar's passively mode-locked fiber laser in C-band. All the optical and electrical parts are integrated into a compact package. End user needs simply apply a +5VDC power to it to obtain ultra short pulses at 780 nm. No electrical driver and no any adjustment are needed.

It has excellent stability and reliability. 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. An RF synchronization output is provided as a trigger signal.

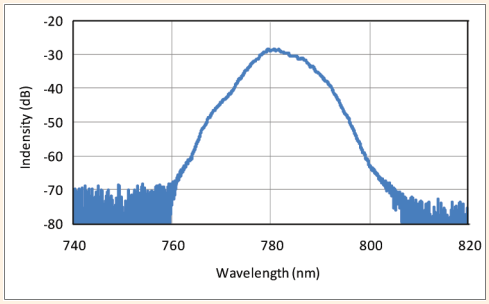
Calmar's FPL operation is highly stable, which significantly differentiates us from our competitors. Whenever our laser is turned on, it always starts in the same operation state. Calmar's laser enables end users to focus on their work, not on the laser itself, while our competitors' laser startup status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

Technical Specifications

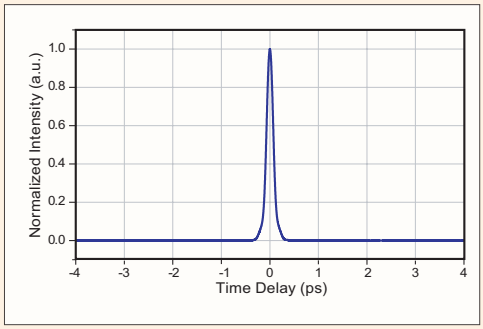
Model Number	FPL-M2RFF
Pulse Width (ps)*	< 0.1
Wavelength (nm)	780 (typical)
Repetition Rate (MHz)**	50
Average Output Power (mW)	> 15
Timing Jitter (fs)	~ 60 (carrier offset 100 Hz ~ 1 MHz)
Spectral Width (nm)	~ 8
Optical Output	Free space (collimated beam)
Beam Quality	M^2 < 1.1
Beam Diameter ($1/e^2$, mm)	< 2.0
Operating Temp (°C)	15 ~ 35
Operating Voltage (VDC)	5.0 ± 0.5
Dimensions (cm)	19.7(w) x 12.7(d) x 7(h)

** 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 are also available.*

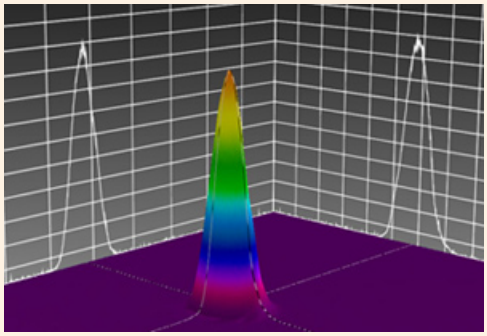
Due to our continuous improvement program, specifications are subject to change without notice.



Typical Optical Spectrum



Typical Autocorrelation Trace.
Pulse Width = 93 fs



Typical Beam Profile