

## Femtosecond Pulsed Laser

Calmar's femtosecond pulsed fiber lasers FPL series feature wide range of pulse width and wavelength, and high output power.

FPL can generate optical pulses in the range of 0.1 – 20 ps. The optical wavelength can be tuned throughout the C-band. The direct output from the laser produces high quality optical pulses with characteristics of near transform-limited and low pedestals. The direct output offers high peak power of 10 kW at sub 100fs. Yet timing jitter from this passively mode-locked fiber laser is as low as 60 fs. The fixed repetition rates are available in the range of 10 ~ 100 MHz.

FPL is simple and intuitive to operate. The unique pulse width adjustment for FPL-02TT and FPL-03TF is through front panel knobs. The operation is turn-key and requires no external RF source or warm-up. By simply pushing a switch, FPL can be used as a stand-alone CW tunable fiber laser.

The optional synchronization output frequency can be the fundamental or harmonics of the repetition rate of the laser.

FPL is a versatile optical source. It is ideal for characterizing the femtosecond time response of opto-electronic components and systems. Other applications include optical sampling, optical switching, optical nonlinearity study and material characterization and material processing.



- Pulse widths 0.1 ~ 20 ps adjustable
- Wavelength 1535 – 1560 nm tunable
- Front panel pulse width adjustment
- Transform-limited output
- Low pedestals
- No warm-up time required
- No external RF source required

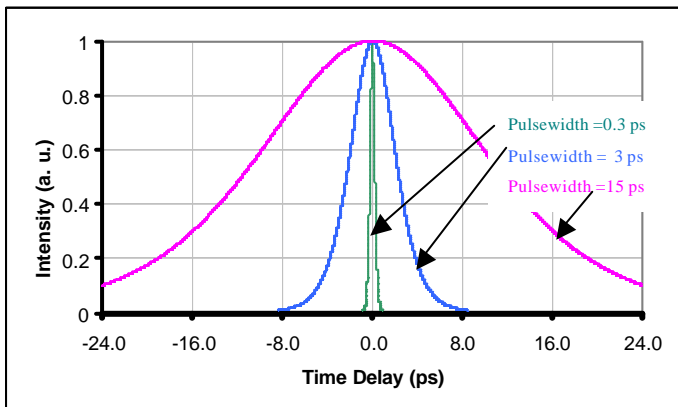
### Optional Upgrades

- Repetition rate stabilizer
- Tunable repetition rate
- PM output
- CW output
- Pulse compression
- Enhanced output power
- Phase locking to external clock
- Multiple repetition rate within 10 –100 MHz
- Synchronization output with bandwidth >3 GHz or customized

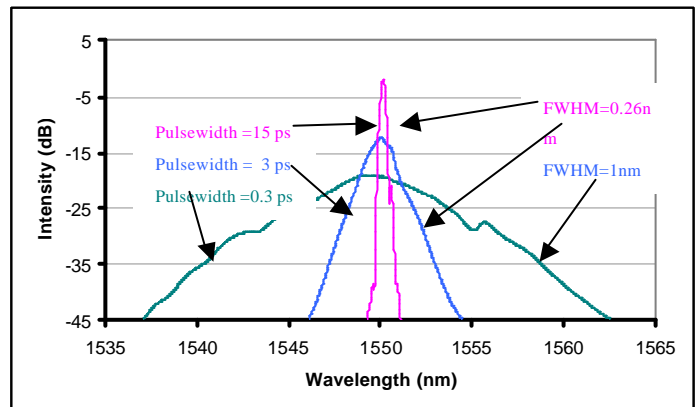
### Technical Specifications

Model Number	FPL-01CAF	FPL-02CTT	FPL-03CTF	FPL-04CTF
Pulse width (ps)	0.5	0.3 ~5 adjustable*	0.1 ~ 1 Selectable	0.3 ~ 1.0 selectable
Wavelength (nm)	Fixed within 1535 – 1560	1535 – 1560	Fixed within 1535 – 1560	
Repetition Rate (MHz)	20 (Other repetition rate within 10 ~ 100 MHz available)			
Peak Output Power (W)	40	300	10K (at 0.1 ps)	> 7K (at 0.3 ps)
Average Output Power (mW)	0.4 (typical)	5 (typical)	20 (typical)	100 (typical)
Timing Jitter (fs)	<70 (Carrier offset 100 ~ 1M Hz)			
Spectral Width (nm)	5.0 (at 0.5 ps, transform limited)		2~40 (Near transform limited)	~ 40
Operating Temp (° C)	5 - 40			
Operating Voltage (V)	85 - 264 AC			
Dimensions (cm)	34(w) x 42(d) x 9(h)			

\* There may be gaps of pulse width. Up to 20 ps achievable. Specifications are subject to change without notice. 9/1 /2005



Autocorrelation trace under different pulsewidth



Optical spectrum trace under different pulsewidth

Safety information: The product complies with FDA radiation performance standards 21 CFR 1040.10 and 1040.11



[www.calmaropt.com](http://www.calmaropt.com)

Tel: +1 (408) 733-7800  
 Fax: +1 (408) 733-3800  
 sales@calmaropt.com