MENDOCINO

780 and 1550 nm Femtosecond Fiber Laser

Applications

- High speed receiver conformance testing
- Photodetector characterization
- Optical metrology
- Materials characterization
- Silicon integrated circuit testing
- Seed source for higher energy laser systems

Features

- Average power > 0.5 mW
- Central wavelength 780, and 1550 nm
- Pulse width < 2 ps (780), < 0.5 ps (1550)
- GHz synchronization for low-jitter triggering
- Turnkey benchtop platform
- Convenient fiber pigtail output
- Exceptional long term stability

The benchtop (FPL-0) series is the perfect short pulse optical source for test and measurement applications. Along with a portable design, the series offers user-friendly front panel control knobs for adjustment of the output power and pulse width. Different synchronization outputs are available with GHz (high harmonic) options that can provide a time domain persistent timing jitter of less than 0.25 ps.

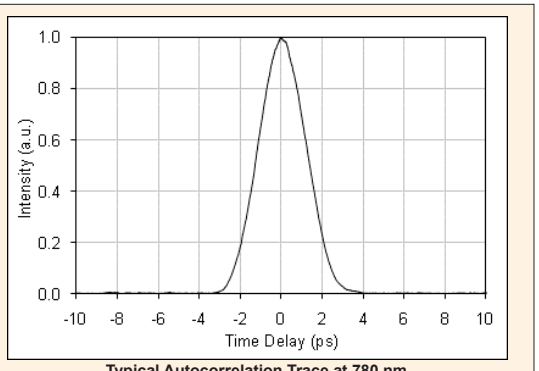
This dual output low power femtosecond fiber laser is a passively mode-locked fiber laser that employs nonlinear wavelength conversion to provide stable short pulse outputs at 780 and 1550 nm. The desired wavelengths need to be specified at the time of purchase. The laser utilizes the proprietary Mendocino 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 convenient fiber pigtail outputs for each wavelength with power levels greater than 0.5 mW and optical pulses of less than 2 ps at 780 nm and less than 0.5 ps at 1550 nm.

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

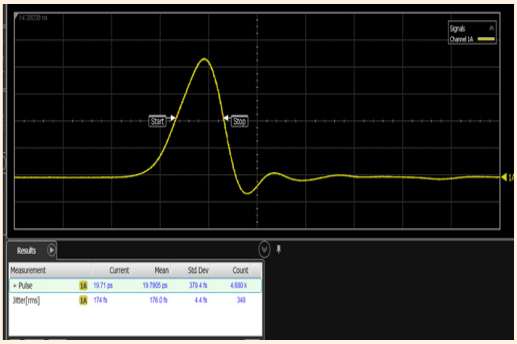
Technical Specifications[1]

Model Number	FPL-01RCFF	
Output	Port A	Port B
OPTICAL		
Central Wavelength[2] (nm)	780 ± 3	1550 ± 2
Pulse Width[3] (ps)	< 2	< 0.5
Average Power (mW)	> 0.5	
Repitition Rate[4] (MHz)	20	
Power Stability over 8 hours[5] (%, RMS)	< 0.5	
Beam Quality, M^2	< 1.1	
Polarization Extinction Ratio (dB)	> 20	
Output	Single mode fiber (HI 780) pigtail	Single mode fiber (SMF-28) pigtail
Termination	FC/APC connector	
ELECTRICAL		
Electrical Synchronization (V)	~ 0.5, SMA connector	
Electrical Synchronization Frequency[6]	Standard Option, 20 MHz	High Harmonic Option, 10 GHz
Persistent Timing Jitter[7] (RMS, ps)	< 2.0	< 0.25
Supply Voltage (VAC)	85 - 264 autoranging	
Supply Frequency (Hz)	47 - 63 autoranging	
MECHANICAL		
Operating Temperature (°C)	15 - 30	
Dimensions (cm)	34.9(W) x 43.7(D) x 10(H)	
Weight (kg)	~ 6	

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. The desired Port A output wavelength needs to be specified at the time of purchase. For more details, please contact sales@calmarlaser.com.
3. A $sech^2$ pulse shape (deconvolution factor of 0.65) is used to determine the pulse width from the second harmonic autocorrelation trace.
4. For other repetition rates, please contact sales@calmarlaser.com.
5. Requires an ambient temperature control of ± 1.0ºC.
6. A 1 GHz high harmonic option with a persistent timing jitter of < 0.5 ps is also available. The desired synchronization output needs to be specified at the time of purchase. For more details, please contact sales@calmarlaser.com.
7. Measured when used as a trigger signal with a high speed sampling oscilloscope.



Typical Autocorrelation Trace at 780 nm



< 0.2 ps Jitter for 10 GHz Harmonic Trigger Signal

MENDOCINO

780 nm Femtosecond Fiber Laser

Low Jitter GHz Trigger Option

Applications

- High speed receiver conformance testing
- Photodetector characterization
- Optical metrology
- Materials characterization
- Silicon integrated circuit testing
- Seed source for higher energy laser systems

Features

- Average power > 0.5 mW
- Central Wavelength 780 nm
- Pulse width < 2 ps
- GHz synchronization for low-jitter triggering
- Turnkey benchtop platform
- Convenient fiber pigtail output
- Exceptional long term stability

The benchtop (FPL-0) series is the perfect short pulse optical source for test and measurement applications. Along with a portable design, the series offers user-friendly front panel control knobs for adjustment of the output power and pulse width. Different synchronization outputs are available with GHz (high harmonic) options that can provide a time domain persistent timing jitter of less than 0.25 ps.

The 780 nm low power femtosecond fiber laser is a passively mode-locked fiber laser that employs nonlinear wavelength conversion to provide a stable short pulse output at either 780 nm. The desired wavelength needs to be specified at the time of purchase. 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 fiber pigtail output with power levels greater than 0.5 mW and an optical pulse of less than 2 ps.

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

Technical Specifications[1]

Model Number	FPL-01RFF		
OPTICAL			
Central Wavelength[2] (nm)	780 ± 3		
Pulse Width[3] (ps)	< 2		
Average Power (mW)	> 0.5		
Repitition Rate[4] (MHz)	20		
Power Stability over 8 hours[5] (%, RMS)	< 0.5		
Beam Quality, M^2	< 1.1		
Polarization Extinction Ratio (dB)	> 20		
Output	Single mode fiber (HI 780) pigtail		
Termination	FC/APC connector		
ELECTRICAL			
Electrical Synchronization (V)	~ 0.5, SMA connector		
Electrical Synchronization Frequency[6]	Standard, 20 MHz	High Harmonic, 1 GHz	High Harmonic, 10 GHz
Persistent Timing Jitter[7] (RMS, ps)	< 2.0	< 0.5	< 0.25
Supply Voltage (VAC)	85 - 264 autoranging		
Supply Frequency (Hz)	47 - 63 autoranging		
MECHANICAL			
Operating Temperature (°C)	15 - 30		
Dimensions (cm)	34.9(W) x 43.7(D) x 10(H)		
Weight (kg)	~ 0.6		

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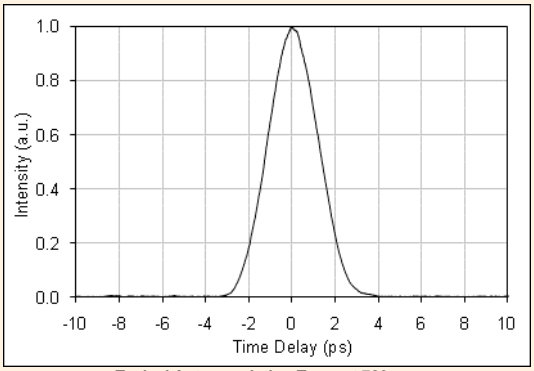
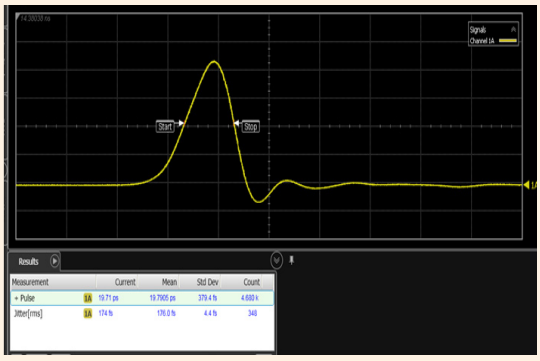
2. The desired Port 1 output wavelength needs to be specified at the time of purchase. For more details, please contact sales@calmarlaser.com.
3. A $sech^2$ pulse shape (deconvolution factor of 0.65) is used to determine the pulse width from the second harmonic autocorrelation trace.
4. For other repetition rates, please contact sales@calmarlaser.com.
5. Requires an ambient temperature control of ± 1.0ºC.
6. The desired synchronization output needs to be specified at the time of purchase. For more details, please contact sales@calmarlaser.com.
7. Measured when used as a trigger signal with a high speed sampling oscilloscope.



Typical Autocorrelation Trace at 780 nm



< 0.2 ps Jitter for 10 GHz Harmonic Trigger Signal

CALMAR LASER

DANGER
INVISIBLE LASER RADIATION
AVOID EYE OR SKIN EXPOSURE
TO DIRECT OR SCATTERED RADIATION
Wavelength 780 nm, 850 nm
Pulse Duration < 2 ps
Maximum Power < 20mW
CLASS IIIb Laser Product

MENDOCINO

850 and 1550 nm Femtosecond Fiber Laser

Applications

- High speed receiver conformance testing
- Photodetector characterization
- Optical metrology
- Materials characterization
- Silicon integrated circuit testing
- Seed source for higher energy laser systems

Features

- Average power > 0.5 mW
- Central wavelength 850, and 1550 nm
- Pulse width < 2 ps (850), < 0.5 ps (1550)
- GHz synchronization for low-jitter triggering
- Turnkey benchtop platform
- Convenient fiber pigtail output
- Exceptional long term stability

The benchtop (FPL-0) series is the perfect short pulse optical source for test and measurement applications. Along with a portable design, the series offers user-friendly front panel control knobs for adjustment of the output power and pulse width. Different synchronization outputs are available with GHz (high harmonic) options that can provide a time domain persistent timing jitter of less than 0.25 ps.

This dual output low power femtosecond fiber laser is a passively mode-locked fiber laser that employs nonlinear wavelength conversion to provide stable short pulse outputs at 850 and 1550 nm. The desired wavelengths need to be specified at the time of purchase. 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 convenient fiber pigtail outputs for each wavelength with power levels greater than 0.5 mW and optical pulses of less than 2 ps at 850 nm and less than 0.5 ps at 1550 nm.

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

Technical Specifications[1]

Model Number	FPL-01RCFF	
Output	Port A	Port B
OPTICAL		
Central Wavelength[2] (nm)	850 ± 3	1550 ± 2
Pulse Width[3] (ps)	< 2	< 0.5
Average Power (mW)	> 0.5	
Repitition Rate[4] (MHz)	20	
Power Stability over 8 hours[5] (%, RMS)	< 0.5	
Beam Quality, M^2	< 1.1	
Polarization Extinction Ratio (dB)	> 20	
Output	Single mode fiber (HI 780) pigtail	Single mode fiber (SMF-28) pigtail
Termination	FC/APC connector	
ELECTRICAL		
Electrical Synchronization (V)	~ 0.5, SMA connector	
Electrical Synchronization Frequency[6]	Standard Option, 20 MHz	High Harmonic Option, 10 GHz
Persistent Timing Jitter[7] (RMS, ps)	< 2.0	< 0.25
Supply Voltage (VAC)	85 - 264 autoranging	
Supply Frequency (Hz)	47 - 63 autoranging	
MECHANICAL		
Operating Temperature (°C)	15 - 30	
Dimensions (cm)	34.9(W) x 43.7(D) x 10(H)	
Weight (kg)	~ 6	

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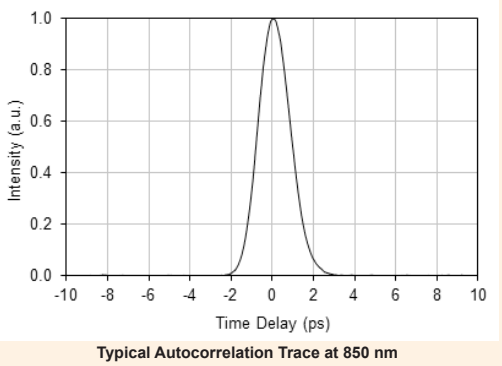
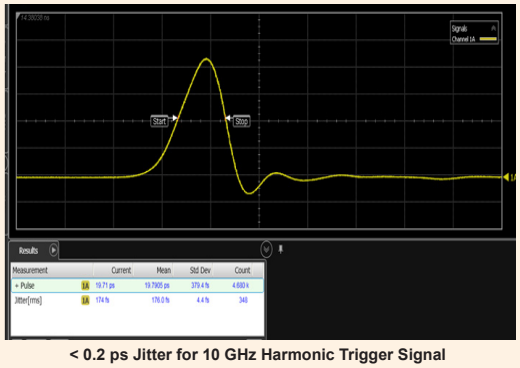
2. The desired Port A output wavelength needs to be specified at the time of purchase. For more details, please contact sales@calmarlaser.com.
3. A $sech^2$ pulse shape (deconvolution factor of 0.65) is used to determine the pulse width from the second harmonic autocorrelation trace.
4. For other repetition rates, please contact sales@calmarlaser.com.
5. Requires an ambient temperature control of ± 1.0ºC.
6. A 1 GHz high harmonic option with a persistent timing jitter of < 0.5 ps is also available. The desired synchronization output needs to be specified at the time of purchase. For more details, please contact sales@calmarlaser.com.
7. Measured when used as a trigger signal with a high speed sampling oscilloscope.



Typical Autocorrelation Trace at 850 nm



< 0.2 ps Jitter for 10 GHz Harmonic Trigger Signal

CALMAR LASER

850 nm Femtosecond Fiber Laser

Low Jitter GHz Trigger Option

Applications

- High speed receiver conformance testing
- Photodetector characterization
- Optical metrology
- Materials characterization
- Silicon integrated circuit testing
- Seed source for higher energy laser systems

Features

- Average power > 0.5 mW
- Central Wavelength 850 nm
- Pulse width < 2 ps
- GHz synchronization for low-jitter triggering
- Turnkey benchtop platform
- Convenient fiber pigtail output
- Exceptional long term stability

The benchtop (FPL-0) series is the perfect short pulse optical source for test and measurement applications. Along with a portable design, the series offers user-friendly front panel control knobs for adjustment of the output power and pulse width. Different synchronization outputs are available with GHz (high harmonic) options that can provide a time domain persistent timing jitter of less than 0.25 ps.

The 850 nm low power femtosecond fiber laser is a passively mode-locked fiber laser that employs nonlinear wavelength conversion to provide a stable short pulse output at either 850 nm. The desired wavelength needs to be specified at the time of purchase. 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 fiber pigtail output with power levels greater than 0.5 mW and an optical pulse of less than 2 ps.

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

Technical Specifications[1]

Model Number	FPL-01RFF		
OPTICAL			
Central Wavelength[2] (nm)	850 ± 3		
Pulse Width[3] (ps)	< 2		
Average Power (mW)	> 0.5		
Repitition Rate[4] (MHz)	20		
Power Stability over 8 hours[5] (%, RMS)	< 0.5		
Beam Quality, M^2	< 1.1		
Polarization Extinction Ratio (dB)	> 20		
Output	Single mode fiber (HI 780) pigtail		
Termination	FC/APC connector		
ELECTRICAL			
Electrical Synchronization (V)	~ 0.5, SMA connector		
Electrical Synchronization Frequency[6]	Standard, 20 MHz	High Harmonic, 1 GHz	High Harmonic, 10 GHz
Persistent Timing Jitter[7] (RMS, ps)	< 2.0	< 0.5	< 0.25
Supply Voltage (VAC)	85 - 264 autoranging		
Supply Frequency (Hz)	47 - 63 autoranging		
MECHANICAL			
Operating Temperature (°C)	15 - 30		
Dimensions (cm)	34.9(W) x 43.7(D) x 10(H)		
Weight (kg)	~ 0.6		

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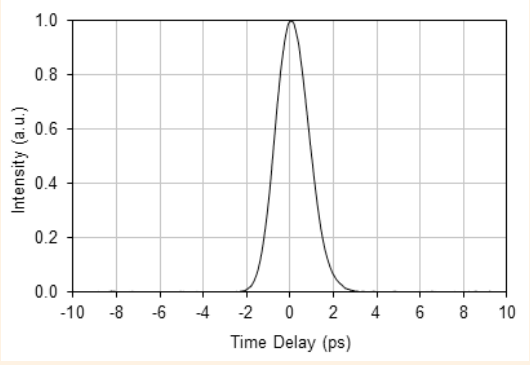
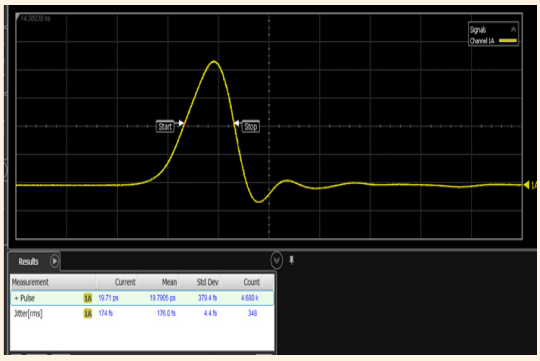
2. The desired Port 1 output wavelength needs to be specified at the time of purchase. For more details, please contact sales@calmarlaser.com.
3. A $sech^2$ pulse shape (deconvolution factor of 0.65) is used to determine the pulse width from the second harmonic autocorrelation trace.
4. For other repetition rates, please contact sales@calmarlaser.com.
5. Requires an ambient temperature control of ± 1.0ºC.
6. The desired synchronization output needs to be specified at the time of purchase. For more details, please contact sales@calmarlaser.com.
7. Measured when used as a trigger signal with a high speed sampling oscilloscope.



Typical Autocorrelation Trace at 850 nm


< 0.2 ps Jitter for 10 GHz Harmonic Trigger Signal

CALMAR LASER

MENDOCINO

1030 or 1064 nm High Power Femtosecond Fiber Laser

Applications

- Biomedical instrumentation
- Seed source for high power lasers
- Optical high speed sampling
- Terahertz radiation
- Materials characterization
- Optical metrology

Features

- Average power > 100 mW
- Central Wavelength of 1030 or 1064 nm
- Pulse width compressible to < 100 - 300 fs
- Convenient fiber pigtail output
- Turnkey benchtop platform
- Integral optical monitor port

The benchtop (FPL-0) series is the perfect, economical, short pulse optical source for a variety of test and measurement applications. Along with a portable design, the series offers user-friendly front panel control knobs for adjustment of the output power. Different synchronization signals are available through a front panel RF output and an optical monitor port.

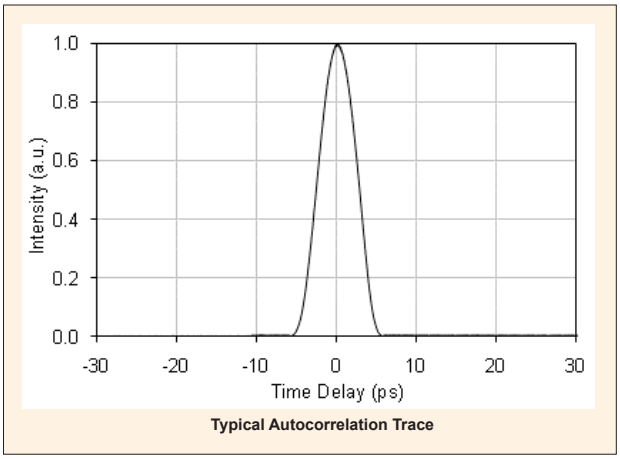
The 1 µm high power femtosecond fiber laser is a passively mode-locked fiber laser that provides a stable pulse output at either 1030 or 1064 nm. The laser utilizes the proprietary Mendocino saturable absorber technology, which has been developed and perfected over a twenty-year period, to deliver reproducible mode-locking at turn-on with excellent stability and reliability. It features a convenient fiber pigtail output with power levels up to greater than 100 mW and optical pulses that are compressible to less than 100 fs. The repetition rate can be specified as 27, 55, or 100 MHz..

If a free-space compressed short pulse output is required or the performance parameters do not quite fit your application requirements, please contact us at sales@calmarlaser.com to discuss a customized solution.

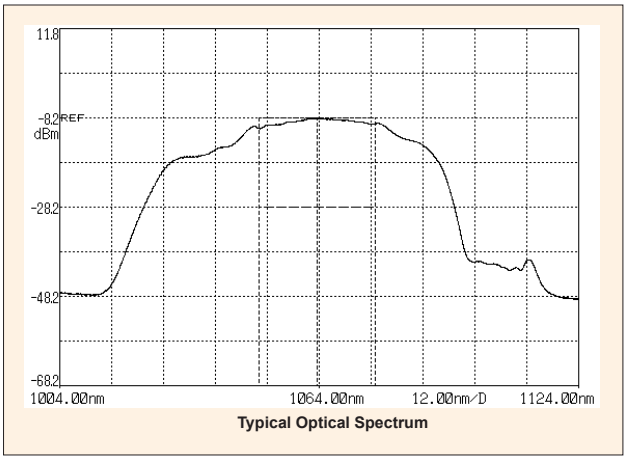
Technical Specifications[1]

Model Number	FPL-04UFF
OPTICAL	
Central Wavelength[2] (nm)	1030 or 1064
Pulse Width[3] (ps)	~ 3 - 6 (compressible to 0.1 - 0.3)
Average Power[4] (mW)	> 100
Spectral Width (FWHM, nm)	> 20
Repitition Rate[5] (MHz)	27, 55, 100
Power Stability over 8 hours[6] (%, RMS)	< 1.0
Beam Quality, M^2	< 1.1
Polarization Extinction Ratio (dB)	> 20
Output/Termination	PM-980 or HI-1060 fiber pigtail with FC/APC connector, key to slow axis
ELECTRICAL	
Electrical Synchronization (V)	~ 0.5, SMA connector
Supply Voltage (VAC)	85 - 264 autoranging
Supply Frequency (Hz)	47 - 63 autoranging
MECHANICAL	
Operating Temperature (°C)	15 - 30
Dimensions (cm)	34.9(W) x 43.7(D) x 10(H)
Weight (kg)	~ 6

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. Wavelength needs to be specified at the time of purchase.
3. A $sech^2$ pulse shape (deconvolution factor of 0.65) is used to determine the pulse width from the second harmonic autocorrelation trace. If a free-space compressed short pulse output is required, please contact sales@calmarlaser.com.
4. From output port A, a monitor signal (~ 0.1 mW) is available from output port B.
5. Repetition rate needs to be specified at the time of purchase. For other repetition rates, please contact sales@calmarlaser.com.
6. Requires an ambient temperature control of ± 1.0ºC.



Typical Autocorrelation Trace



Typical Optical Spectrum

CALMAR LASER

MENDOCINO

1030 or 1064 nm Femtosecond Fiber Laser

Applications

- Biomedical instrumentation
- Seed source for high power lasers
- Optical high speed sampling
- Terahertz radiation
- Materials characterization
- Optical metrology

Features

- Average power up to 3 mW
- Central Wavelength of 1030 or 1064 nm
- Pulse width compressible to 200 - 400 fs
- Convenient fiber pigtail output
- Turnkey benchtop platform
- Integral optical monitor port

The benchtop (FPL-0) series is the perfect, economical, short pulse optical source for a variety of test and measurement applications. Along with a portable design, the series offers user-friendly front panel control knobs for adjustment of the output power. Different synchronization signals are available through a front panel RF output and an optical monitor port.

The 1 µm low power femtosecond fiber laser is a passively mode-locked fiber laser that provides a stable pulse output at either 1030 or 1064 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.

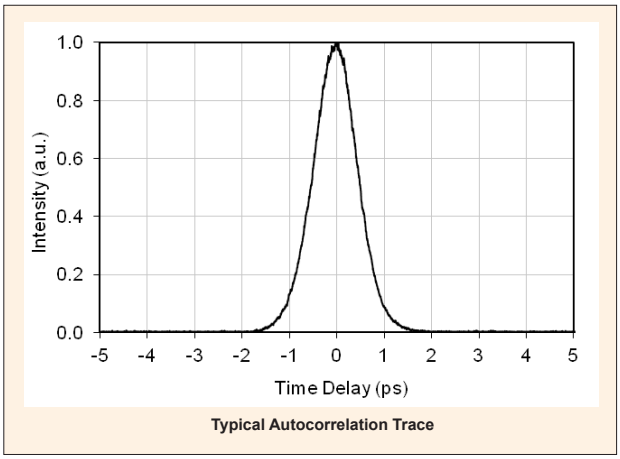
The laser features a convenient fiber pigtail output with power levels up to 3 mW and optical pulses that are compressible to 200 – 400 fs for the standard version, or in the range of 5 – 20 ps for the longer pulse width version. The repetition rate can be specified as 27, 55, or 100 MHz.

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

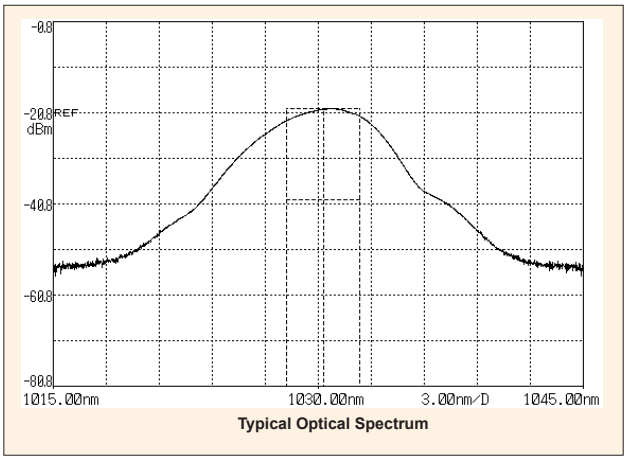
Technical Specifications[1]

Model Number	FPL-02UFF
OPTICAL	
Central Wavelength[2] (nm)	1030 or 1064
Pulse Width[3] (ps)	~ 1 - 2 (compressible to 0.2 - 0.4)
Average Power[4] (mW)	1 - 3
Spectral Width (FWHM, nm)	2 - 5
Repitition Rate[5] (MHz)	27, 55, 100
Power Stability over 8 hours[6] (%, RMS)	< 1.0
Beam Quality, M^2	< 1.1
Polarization Extinction Ratio (dB)	> 20
Output/Termination	PM-980 or HI-1060 fiber pigtail with FC/APC connector, key to slow axis
ELECTRICAL	
Electrical Synchronization (V)	~ 0.5, SMA connector
Supply Voltage (VAC)	85 - 264 autoranging
Supply Frequency (Hz)	47 - 63 autoranging
MECHANICAL	
Operating Temperature (°C)	15 - 30
Dimensions (cm)	34.9(W) x 43.7(D) x 10(H)
Weight (kg)	~ 6

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. Wavelength needs to be specified at the time of purchase.
3. A $sech^2$ pulse shape (deconvolution factor of 0.65) is used to determine the pulse width from the second harmonic autocorrelation trace.
4. From output port A, a monitor signal (~ 0.1 mW) is available from output port B.
5. Repetition rate needs to be specified at the time of purchase. For other repetition rates, please contact sales@calmarlaser.com.
6. Requires an ambient temperature control of ± 1.0ºC.



Typical Autocorrelation Trace



Typical Optical Spectrum

CALMAR LASER

CE

RoHS COMPLIANT

1310 nm Femtosecond Fiber Laser

Low Jitter GHz Trigger Option

Applications

- High speed receiver conformance testing
- Photodetector characterization
- Optical metrology
- Materials characterization
- Silicon integrated circuit testing
- Seed source for higher energy laser systems

Features

- Average power > 0.5 mW
- Central Wavelength 1310 nm
- Pulse width < 0.3 ps
- GHz synchronization for low-jitter triggering
- Turnkey benchtop platform
- Convenient fiber pigtail output
- Exceptional long term stability

The benchtop (FPL-0) series is the perfect short pulse optical source for test and measurement applications. Along with a portable design, the series offers user-friendly front panel control knobs for adjustment of the output power and pulse width. Different synchronization outputs are available with GHz (high harmonic) options that can provide a time domain persistent timing jitter of less than 0.25 ps.

The 1310 nm low power femtosecond fiber laser is a passively mode-locked fiber laser that employs nonlinear wavelength conversion to provide a stable short pulse output at 1310 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 fiber pigtail output with power levels greater than 0.5 mW and an optical pulse of less than 0.3 ps.

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

Technical Specifications[1]

Model Number	FPL-01OFF		
OPTICAL			
Central Wavelength (nm)	1310 ± 2		
Pulse Width[2] (ps)	< 0.3		
Average Power (mW)	> 0.5		
Repitition Rate[3] (MHz)	20		
Power Stability over 8 hours[4] (%, RMS)	< 0.5		
Beam Quality, M^2	< 1.1		
Polarization Extinction Ratio (dB)	> 20		
Output	Single mode fiber (SMF-28) pigtail		
Termination	FC/APC connector		
ELECTRICAL			
Electrical Synchronization (V)	~ 0.5, SMA connector		
Electrical Synchronization Frequency[5]	Standard, 20 MHz	High Harmonic, 1 GHz	High Harmonic, 10 GHz
Persistent Timing Jitter[6] (RMS, ps)	< 2.0	< 0.5	< 0.25
Supply Voltage (VAC)	85 - 264 autoranging		
Supply Frequency (Hz)	47 - 63 autoranging		
MECHANICAL			
Operating Temperature (°C)	15 - 30		
Dimensions (cm)	34.9(W) x 43.7(D) x 10(H)		
Weight (kg)	~ 6		

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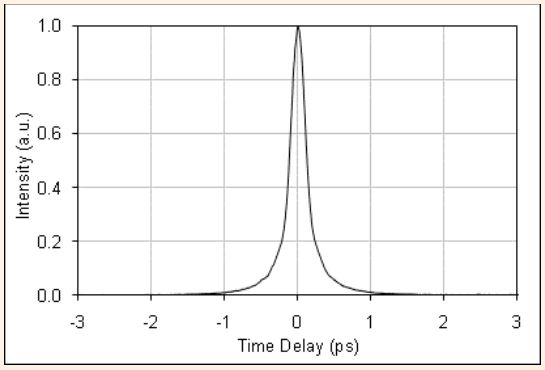
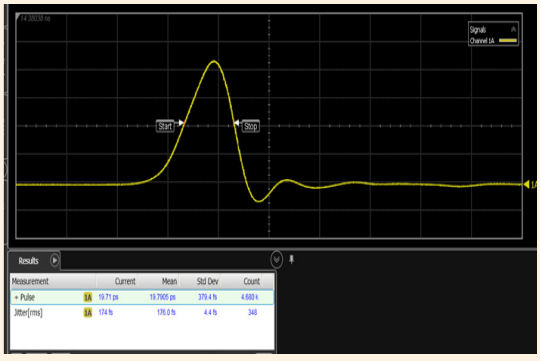
2. A $sech^2$ pulse shape (deconvolution factor of 0.65) is used to determine the pulse width from the second harmonic autocorrelation trace.
3. For other repetition rates, please contact sales@calmarlaser.com.
4. Requires an ambient temperature control of ± 1.0ºC.
5. The desired synchronization output needs to be specified at the time of purchase. For more details, please contact sales@calmarlaser.com.
6. Measured when used as a trigger signal with a high speed sampling oscilloscope.



Typical Autocorrelation Trace



< 0.2 ps Jitter for 10 GHz Harmonic Trigger Signal

CALMAR LASER

CE

RoHS COMPLIANT

MENDOCINO

1550 nm High Power Femtosecond Fiber Laser

Applications

- Telecommunication components characterization
- Optical high speed sampling
- Terahertz radiation
- Optical switching
- Materials characterization
- Optical metrology

Features

- Average power up to 350 mW
- Central Wavelength 1550 nm
- Pulse width < 100 fs
- Near transform-limited output
- Convenient fiber pigtail output
- Turnkey benchtop platform

The benchtop (FPL-0) series is the perfect short pulse optical source for a variety of test and measurement applications. Along with a portable design, the series offers user-friendly front panel control knobs for adjustment of the output power and pulse width. Different synchronization signals are available through a front panel RF output and an optical monitor signal.

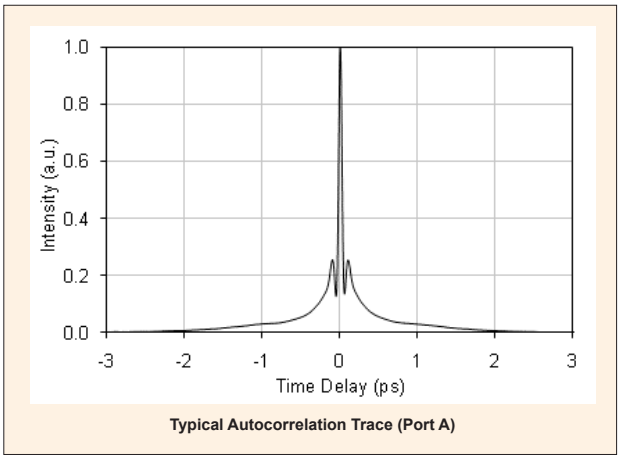
The 1550 C-band high power femtosecond fiber laser is a passively mode-locked fiber laser that provides a stable short pulse output at 1550 nm. The laser utilizes the proprietary Mendocino saturable absorber technology, which has been developed and perfected over a twenty-year period, to deliver reproducible mode-locking at turn-on with excellent stability and reliability. It features a convenient fiber pigtail output with power levels up to greater than 350 mW and an optical pulse of less than 100 fs.

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

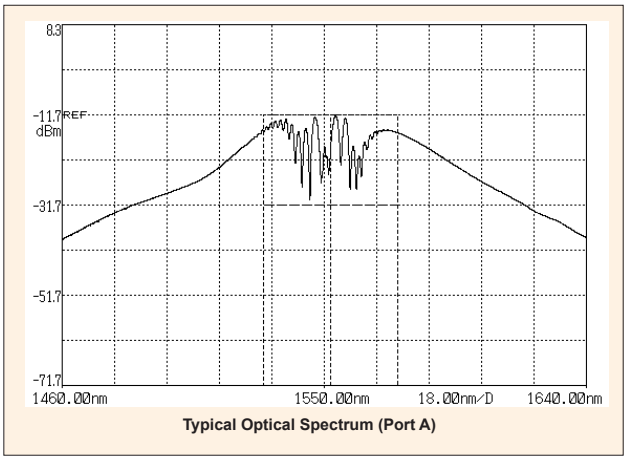
Technical Specifications[1]

Model Number	FPL-04CFF	
OPTICAL	**Port A (Main)**	**Port B (Monitor)**
Central Wavelength (nm)	1550	
Pulse Width[2] (ps)	< 0.1	< 0.5
Average Power (mW)	up to 350	~ 0.1
Repitition Rate[3] (MHz)	100	
Power Stability over 8 hours[4] (%, RMS)	< 1.0	
Beam Quality, M^2	< 1.1	
Polarization Extinction Ratio (dB)	> 20	N/A
Output	PM 1550	Single mode SMF-28
Termination	Fiber pigtail with FC/APC connector	N/A
ELECTRICAL		
Electrical Synchronization (V)	~ 0.5, SMA connector	
Supply Voltage (VAC)	85 - 264 autoranging	
Supply Frequency (Hz)	47 - 63 autoranging	
MECHANICAL		
Operating Temperature (°C)	15 - 30	
Dimensions (cm)	34.9(W) x 43.7(D) x 10(H)	
Weight (kg)	~ 6	

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 $sech^2$ 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 ± 1.0ºC.



Typical Autocorrelation Trace (Port A)



Typical Optical Spectrum (Port A)

CALMAR LASER

1550 nm Femtosecond Fiber Laser

Low Jitter GHz Trigger Option

Applications

- High speed receiver conformance testing
- Photodetector characterization
- Optical metrology
- Materials characterization
- Silicon integrated circuit testing
- Seed source for higher energy laser systems

Features

- Average power > 0.5 mW
- Central Wavelength 1550 nm
- Pulse width < 0.5 ps
- GHz synchronization for low-jitter triggering
- Turnkey benchtop platform
- Convenient fiber pigtail output
- Exceptional long term stability

The benchtop (FPL-0) series is the perfect short pulse optical source for test and measurement applications. Along with a portable design, the series offers user-friendly front panel control knobs for adjustment of the output power and pulse width. Different synchronization outputs are available with GHz (high harmonic) options that can provide a time domain persistent timing jitter of less than 0.25 ps.

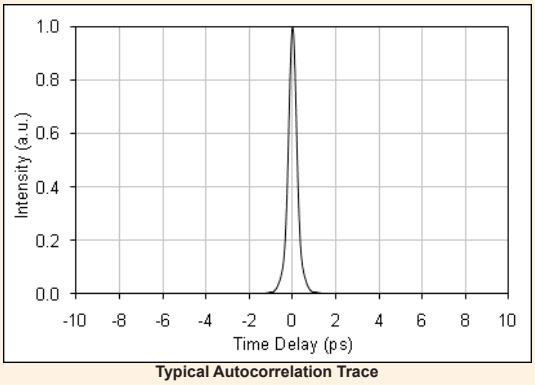
The 1550 C-band low power femtosecond fiber laser is a passively mode-locked fiber laser that provides a stable short pulse output at 1550 nm. The laser utilizes the proprietary Mendocino saturable absorber technology, which has been developed and perfected over a twenty-year period, to deliver reproducible mode-locking at turn-on with excellent stability and reliability. It features a convenient fiber pigtail output with power levels greater than 0.5 mW and an optical pulse of less than 0.5 ps.

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

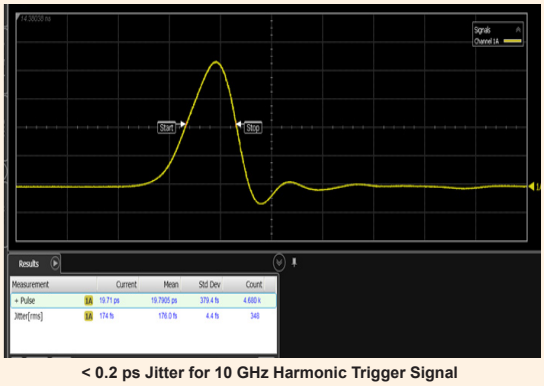
Technical Specifications[1]

Model Number	FPL-01CFF		
OPTICAL			
Central Wavelength (nm)	1550 ± 2		
Pulse Width[2] (ps)	< 0.5		
Average Power (mW)	> 0.5		
Repitition Rate[3] (MHz)	20		
Power Stability over 8 hours[4] (%, RMS)	< 0.5		
Beam Quality, M^2	< 1.1		
Polarization Extinction Ratio (dB)	> 20		
Output	Single mode fiber (SMF-28) pigtail		
Termination	FC/APC connector		
ELECTRICAL			
Electrical Synchronization (V)	~ 0.5, SMA connector		
Electrical Synchronization Frequency[5]	Standard, 20 MHz	High Harmonic, 1 GHz	High Harmonic, 10 GHz
Persistent Timing Jitter[6] (RMS, ps)	< 2.0	< 0.5	< 0.25
Supply Voltage (VAC)	85 - 264 autoranging		
Supply Frequency (Hz)	47 - 63 autoranging		
MECHANICAL			
Operating Temperature (°C)	15 - 30		
Dimensions (cm)	34.9(W) x 43.7(D) x 10(H)		
Weight (kg)	~ 6		

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 $sech^2$ 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 ± 1.0ºC.
5. The desired synchronization output needs to be specified at the time of purchase. For more details, please contact sales@calmarlaser.com.
6. Measured when used as a trigger signal with a high speed sampling oscilloscope.



Typical Autocorrelation Trace



< 0.2 ps Jitter for 10 GHz Harmonic Trigger Signal

CALMAR LASER

DANGER
INVISIBLE LASER RADIATION
AVOID EYE OR SKIN EXPOSURE
TO DIRECT OR SCATTERED RADIATION
Wavelength 1535~1565nm
Pulse Duration <15ps
Maximum Power <100mW
CLASS IIIb Laser Product