

# C-Fiber 780

## Femtosecond Fiber Laser 780 nm

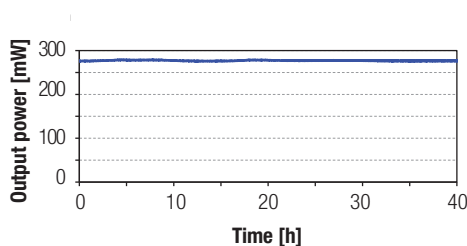


Menlo Systems' fiber-based femtosecond laser sources integrate the latest achievements in fiber technology into easy-to-use products. Menlo Systems' unique figure 9<sup>®</sup> design results in reproducible and long-term stable operation. It is based on the well-established nonlinear optical loop mirror (NOLM) mode locking mechanism. Both oscillator and amplifier use polarization maintaining (PM) fiber components only, ensuring excellent stability and low-noise operation. The subsequent second harmonic generation for the 780 nm is a highly efficient module for maximum performance. The laser is maintenance free, user installed and ready to use at the press of a single button. Customize your laser with the available options to match the requirements of your application.

### PERFORMANCE DATA

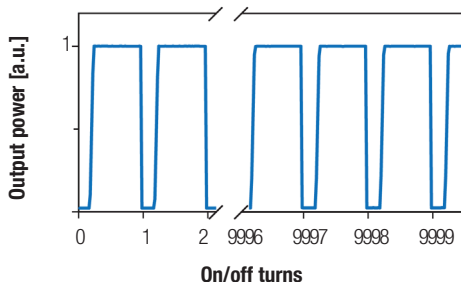
#### Amplitude noise

< 0.5% rms (over 24h)



#### Reproducibility

Identical and consistent laser performance



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### KEY SPECIFICATIONS

- Wavelength 780 nm
- Output Power >250 mW
- Pulse Length <70 fs
- Auxiliary Output at 1560 nm
- Repetition Rate 50-250 MHz

### APPLICATIONS

- Amplifier Seeding
- THz Generation & THz Physics
- Ultrafast Spectroscopy
- Multi-Photon Excitation
- 2-Photon Polymerization and 3D Printing

### FEATURES

- High Stability
- Low Amplitude and Phase Noise
- All-PM Solution
- Single Mode-Lock State
- Menlo figure 9<sup>®</sup> Technology
- Dual color output (780nm/1560nm)

### OPTIONS

- **SYNC100**  
**Repetition Rate Synchronization**  
Tunable cavity length by high-bandwidth piezo-controlled synchronization
- **RRE-SYNCR0**  
**Repetition Rate Stabilization**  
Feedback electronics to phase lock pulses to an external clock (see separate data sheet for more details)
- **VARIO**  
**User-Defined Repetition Rate**  
Factory-set value selectable in the 50-250 MHz range
- **MULTIBRANCH**  
**Additional Seed Ports**  
Seeding of multiple amplifiers with optional subsequent frequency conversion to cover multiple wavelengths
- **FEMTOSCALE**  
**Additional Compression Unit**  
Compression of second harmonic output pulse length to <70 fs

# C-Fiber 780

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## Femtosecond Fiber Laser 780 nm

| SPECIFICATIONS                     | C-FIBER 780                                  | C-FIBER 780 HIGH POWER       |
|------------------------------------|--|------------------------------|
| Center Wavelength                  | 780 nm ± 10 nm                               | 780 nm ± 10 nm               |
| Average Power                      | >100 mW                                      | >250 mW                      |
| Pulse Energy                       | >1.0 nJ                                      | >2.5 nJ                      |
| Pulse Width                        | <100 fs (<70 fs with FEMTOSCALE)*            |                              |
| Repetition Rate                    | 100 MHz (50-250 MHz with VARIO)**            |                              |
| Repetition Rate Instability        | <1 ppm over 20 hours at constant temperature |                              |
| Timing Jitter                      | <2 fs [rms, 10 kHz.. 10 MHz]                 |                              |
| Output Port                        | free space                                   |                              |
| Auxiliary Output Port***           | free space, 1560 nm, >250 mW                 | free space, 1560 nm, >500 mW |
| Additional Fiber-Coupled Seed Port | 1 (up to 4 with MULTIBRANCH)                 |                              |
| Polarization                       | linear, s-polarized                          |                              |
| Beam Height                        | 75 mm  |                              |

\*Compressor unit integrated in laser head module. \*\*Please inquire for your specific combinations of average power, pulse duration and repetition rate. \*\*\* User can switch between 780 nm and 1560 nm port (arbitrary splitting ratios possible).

| REQUIREMENTS                   | C-FIBER 780                             | C-FIBER 780 HIGH POWER                  |
|--------------------------------|---|---|
| Operating Voltage              | 100/115/230 VAC                         |   |
| Frequency                      | 50 to 60 Hz                             |   |
| Power Consumption              | 120 VA                                  |   |
| Cooling Requirements           | no water cooling is required            |   |
| Laser Head Stabilization       | actively temperature stabilized         |   |
| Operating Temperature          | 15 °C - 35 °C                           |   |
| Laser Head Dimensions/Weight   | 415 x 350 x 110 mm <sup>3</sup> / 18 kg | 415 x 350 x 140 mm <sup>3</sup> / 20 kg |
| Control Unit Dimensions/Weight | 448 x 132 x 437 mm <sup>3</sup> / 10 kg | 448 x 132 x 437 mm <sup>3</sup> / 12 kg |
| Warm-Up Time                   | <60 s                                   |   |

### ORDERING INFORMATION

| Product Code | C-Fiber 780 | C-Fiber 780 HIGH POWER |
|--------------|-------------|------------------------|
|--------------|-------------|------------------------|

Please call for pricing. Specifications are subject to change without notice. Custom modifications are available, please inquire.

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Invisible laser radiation  
avoid exposure to beam  
Class 3B laser

**Menlo Systems GmbH**  
T+49 89 189 166 0  
sales@menlosystems.com

**Menlo Systems, Inc.**  
T+1 973 300 4490  
ussales@menlosystems.com

**Thorlabs, Inc.**  
T+1 973 579 7227  
sales@thorlabs.com

