

orange

Femtosecond Fiber Laser

1040 nm & 515 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 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 second harmonic generation 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.

MenloSystems

KEY SPECIFICATIONS

- Wavelength 1040 nm
- Output Power >1 W
- Pulse Length <150 fs
- 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
- Figure 9 Technology
- Laser Output in Less than 60 Seconds after Pressing On-Button

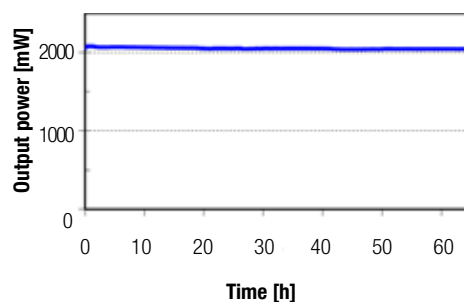
OPTIONS

- **CHIRPED PULSES**
Picosecond pulses for seeding applications
- **SYNC100**
Repetition Rate Synchronization
Tunable cavity length by high-bandwidth piezo-controlled synchronization
- **RRE-SYNCRO**
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

PERFORMANCE DATA

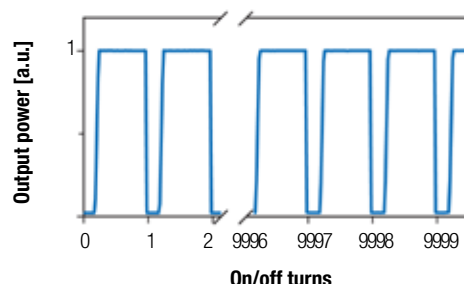
Amplitude noise

< 0.5% rms (over 24h)



Reproducibility

Identical and consistent laser performance



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SPECIFICATIONS

	ORANGE	ORANGE HIGH POWER	ORANGE 515
Center Wavelength	1040 nm ± 10 nm	1040 nm ± 10 nm	515 nm ± 10 nm
Average Power	>40 mW	>1 W	>250 mW
Pulse Energy	>0.4 nJ	>10 nJ	>2.5 nJ
Pulse Width	<150 fs		
Repetition Rate	100 MHz (50-250 MHz with VARIO)*		
Repetition Rate Instability	<1 ppm over 90 hours at constant temperature		
Output Port	fiber-coupled (FC/APC)	free space	free space
Auxiliary Output Port	-	-	free space, 1040 nm, >1 W*
Additional Fiber-Coupled Seed Port	1 (up to 4 with MULTIBRANCH)		
Polarization	linear, PM 980 fiber	linear, p-polarized	linear, s-polarized
Beam Height	-	75 mm	75 mm
WITH OPTION CHIRPED PULSES			
Pulse Width	1-4 ps	30-50 ps	-
Output Port	fiber-coupled (FC/APC)	fiber-coupled (FC/APC)	-
Polarization	linear, PM 980 fiber	linear, PM 980 fiber	-

*Please inquire for your specific combinations of average power, pulse duration and repetition rate.

REQUIREMENTS

Operating Voltage	100/115/230 VAC		
Frequency	50 to 60 Hz		
Cooling Requirements	no water cooling is required		
Laser Head Stabilization	actively temperature stabilized		
Operating Temperature	22 °C ± 5 °C		
Laser Head Dimensions/Weight	413 x 120 x 178 mm ³ / 9 kg	500 x 580 x 140 mm ³ / 35 kg	500 x 759 x 140 mm ³ / 45 kg
Control Unit Dimensions/Weight	449 x 435 x 132 mm ³ / 10 kg	449 x 509 x 266 mm ³ / 24 kg	449 x 509 x 266 mm ³ / 24 kg
Warm-Up Time	<60 s		

* User can switch between 515 nm and 1040 nm port.

ORDERING INFORMATION

Product Code	orange	orange HIGH POWER	orange 515
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Please call for pricing. Specifications are subject to change without notice. Custom modifications are available, please inquire.

MenloSystems



Invisible laser radiation
avoid exposure to beam
Class 4 laser

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