# orange

## Femtosecond Fiber Laser 1040 nm & 520 nm

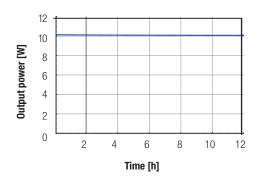


Menlo Systems' femtosecond Yb fiber-baser laser sources now offer more than 10 W in average power with a pulse duration of <150 fs. Based on our unique figure 9® design, the lasers offer reproducible and long-term stable operation. Both oscillator and amplifier use polarization maintaining (PM) fiber 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.

### PERFORMANCE DATA

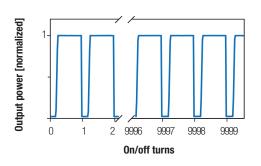
## Amplitude noise

< 1% rms (over 12h)



## Reproducibility

Identical and consistent laser performance



# **MenioSystems**

#### **KEY SPECIFICATIONS**

- Wavelength 1040 nm & 520 nm
- Output Power >10 W
- Pulse Length <150 fs
- Repetition Rate 50-250 MHz

#### **APPLICATIONS**

- OPA/OPO pumping
- Amplifier Seeding
- Ultrafast Spectroscopy
- Cell Surgery
- Multi-Photon Excitation
- 2-Photon Polymerization and 3D Printing

#### **FEATURES**

- High Stability and High Beam Quality
- Low Amplitude and Phase Noise
- All-PM Solution
- figure 9<sup>®</sup> Technology
- Laser Output in less than 60 Seconds after Pressing On-Button

#### **OPTIONS**

#### SHG 520

Frequency doubling to 520 nm

#### CHIRPED PULSES

Picosecond pulses for seeding applications

#### ■ SYNC100

#### **Repetition Rate Synchronization**

Tunable cavity length by high-band-width 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

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# Femtosecond Fiber Laser 1040 nm & 520 nm

ORANGE	ORANGE HIGH POWER	ORANGE HIGH POWER 10				
1040 nm ± 10 nm	1040 nm ± 10 nm	1040 nm ± 10 nm				
>100 mW (@ 100 MHz)	>1 W (@ 100 MHz)	Hz) >10 W (@ 100 MHz)				
>1 nJ	>10 nJ	>100 nJ				
chirped, supporting <150 fs	<150 fs (<75 fs**)	<200 fs (<150 fs**)				
100 MHz (50-250 MHz with Vario)	100 MHz (50-250 MHz with Vario)	100 MHz (50-250 MHz with Vario)				
fiber-coupled	free space	free space				
	TEM00, M <sup>2</sup> <1.2 (typ.<1.1)	TEM00, M <sup>2</sup> <1.2 (typ.<1.1)				
1 (up to 4 with MULTIBRANCH)	1 (up to 4 with MULTIBRANCH)	1 (up to 4 with MULTIBRANCH)				
linear, PM Fiber	linear, p-polarized	linear, p-polarized				
	120 mm	120 mm				
SECOND HARMONIC MODULE SHG 520						
>400 mW @ 520 nm, <150 fs @ 100 MHz						
520 nm & 1040 nm, linear polarized, beam height 95 mm,						
laser head dimensions 500 x 580 x 140 mm						
	1040 nm ± 10 nm >100 mW (@ 100 MHz) >1 nJ chirped, supporting <150 fs 100 MHz (50-250 MHz with Vario) fiber-coupled  1 (up to 4 with MULTIBRANCH) linear, PM Fiber  E SHG 520 >400 mW @ 520 nm, <150 fs 520 nm & 1040 nm, linear polar	1040 nm ± 10 nm       1040 nm ± 10 nm         >100 mW (@ 100 MHz)       >1 W (@ 100 MHz)         >1 nJ       >10 nJ         chirped, supporting <150 fs				

<sup>\*</sup>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 stabiliz	red	
Operating Temperature	22 °C ± 3 °C		
Laser Head Dimensions	413 x 178 x 120 mm <sup>3</sup>	415 x 400 x 140 mm <sup>3</sup>	415 x 400 x 140 mm <sup>3</sup>
Laser Head Weight	10 kg	26 kg	26 kg
Control Unit Dimensions	448 x 132 x 437 mm <sup>3</sup>	448 x 132 x 437 mm <sup>3</sup>	448 x 227 x 495 mm <sup>3</sup>
Control Unit Weight	10 kg	11 kg	24 kg
Warm-Up Time	<60 s		

#### ORDERING INFORMATION

Product Code	orange	orange HP	orange HP 10
		orange HP-520	

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







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

Menlo Systems, Inc. T+1 973 300 4490

Thorlabs, Inc. T+1 973 579 7227 Menlo K.K. T+81 90 7409 2021

**Menlo Systems China** T+86 21 6071 1678 jpsales@menlosystems.com chinasales@menlosystems.com



<sup>\*\*</sup>Please inquire about shorter pulse widths.