

# YLMO

## Femtosecond Fiber Laser for Life Sciences and Microscopy



Menlo Systems' femtosecond fiber laser integrates the latest developments in fiber technology and incorporates these enhancements into an easy-to-use product.

Our patented figure 9<sup>®</sup> technology delivers reliable and consistent mode-locking, which is ideally suited to ensure long-term stable operation in demanding environments. The YLMO with its PM-fiber design guarantees excellent stability and consistent long-term performance.

The YLMO is engineered with life science and multi-photon applications in mind. The pulses can be pre-chirped to attain their shortest width within their intended target sample.

The installation of the laser system is as easy as it gets, taking only a few minutes. For ease of operation, the laser is switched on by the push of a single button. The maintenance free operation guarantees a worry-free device that enables our customers to focus their time and resources on their actual application.

**MenloSystems**

### KEY SPECIFICATIONS

- Wavelength 1045 nm
- Output Power >4 W (@ 100 MHz)
- Repetition Rate 30-100 MHz
- Pulse Width <80 fs
- Pulse Energy >40 nJ

### APPLICATIONS

- Multi-Photon Excitation
- Optogenetic Photoactivation
- Single Cell Engineering
- Two-Photon Polymerization

### FEATURES

- figure 9<sup>®</sup> Technology
- Reliable Mode-Locking
- Long-Term Stable Operation
- Robust Design for Harsh Environments
- User-Settable Pre-chirped Pulse Compressor
- Fast and Easy Installation
- Maintenance Free Operation
- Compact Design and Silent Operation
- Easy Front Panel and Software Interface
- Fast Startup within 60 Seconds

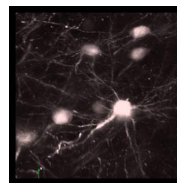
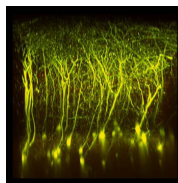
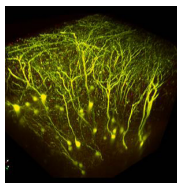
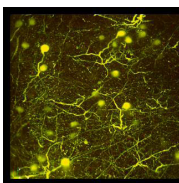
### OPTIONS

- **Pulse Picking and Fast Amplitude Modulation**

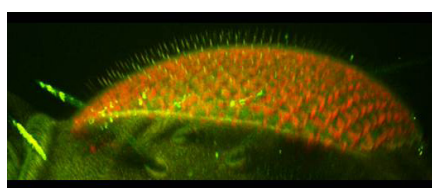
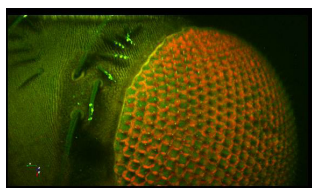
### ASK US ABOUT

- Fiber coupling

### APPLICATION EXAMPLES



2-photon excitation of mouse brain: Imaging of YFP labeled mouse brain with Thorlabs Cerna microscope equipped with YLMO



3D surface measurement: 3D surface measurement of a tdTomato labeled eye of a fruit fly using a Thorlabs Cerna microscope equipped with YLMO

## Femtosecond Fiber Laser for Life Sciences and Microscopy

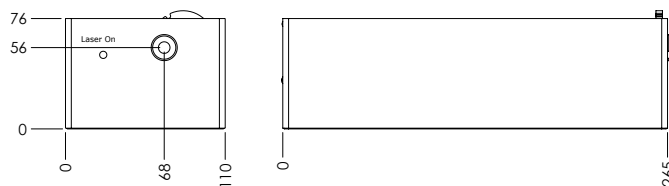
SPECIFICATIONS	YLMO
Center Wavelength	1045 nm $\pm$ 5 nm
Pulse Width (FWHM)	<80 fs
Average Power	>4 W (@ 100 MHz)
Pulse Energy	>40 nJ
Repetition Rate	factory set between 30 MHz and 100 MHz, $\pm$ 1 MHz
Bandwidth	>30 nm
Output Port	free space
Polarization	p-pol. in free space (PER: typ. 23 dB)
Beam Diameter	2.0 mm $\pm$ 0.5 mm
Beam Divergence	<2 mrad
Beam Quality	$M^2 < 1.2$ (typ. <1.1)
Dispersion Control	0 fs <sup>2</sup> ... - 30.000 fs <sup>2</sup>
Pulse Picking Option (only for 50 MHz or lower)	Realized by integrated fast AOM: Mode 1: Divides repetition rate by factor 3 or higher, pulse energy stays constant. Mode 2: Can be used as fast amplitude modulator.

### REQUIREMENTS AND DIMENSIONS

Operating Voltage	110 / 115 / 230 VAC, 50 to 60 Hz
Max. Power Consumption	200 W
Operating Temperature	15 °C - 30 °C
Laser Head	265 x 110 x 76 mm <sup>3</sup> / <5 kg
Control Unit	19", 2 HU (449 x 496 x 96 mm <sup>3</sup> ), <20 kg
Umbilical Cord Length	2 m*
Interfaces	USB, Interlock, Trigger-Out

\*Please inquire your specific umbilical cord lengths.

### TECHNICAL DRAWING



Technical drawing of the YLMO laser head. The laser head comes equipped with detachable 25 mm posts and post clamps. Please contact us for more details and technical drawings of the control unit.

### ORDERING INFORMATION

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

