

# BlueCut

## High Energy Industrial Femtosecond Laser 1030 nm, 515 nm



The BlueCut is an industrial-grade micro-Joule femtosecond fiber laser system. Based on all-fiber integrated technology, this is an inherently robust and stable system, which comes in a sealed package designed for OEM integration. The system is maintenance free and easily field serviceable, ensuring maximum up-time demanded by both industrial and scientific applications. The high repetition rates available from the BlueCut combined with its high average power and superior beam quality allow for high throughput and increased efficiency for a fast return-on-invest.

**MenloSystems**

### KEY SPECIFICATIONS

- Wavelength 1030 nm / 515 nm
- Pulse Energy: >10  $\mu$ J
- Average Power >10 W
- Pulse Duration: < 400 fs
- Burst Mode

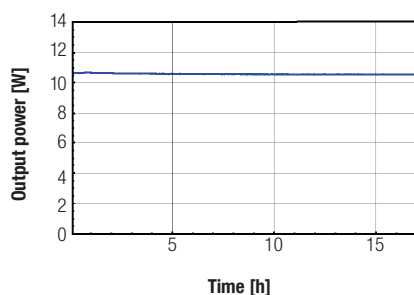
### APPLICATIONS

- Micro Material Processing
  - Waveguide Writing
  - Micro-Cutting
  - Micro-Structuring
  - Marking of Transparent Materials
- Biomedical
  - Life Science, Lab-on-a-Chip
  - Ophthalmology
  - Multi-Photon Microscopy
  - 2 Photon Polymerization
- Industries
  - Semiconductors
  - Organic Materials
  - Solar Cells
- Scientific
  - Seeding of Solid State Amplifiers
  - Nonlinear Frequency Conversion

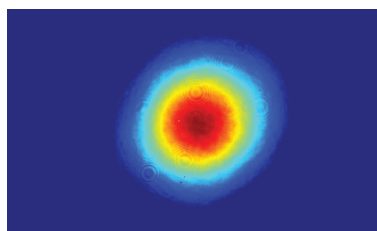
### PERFORMANCE DATA

#### Amplitude noise

< 1 % rms (over 12 h)

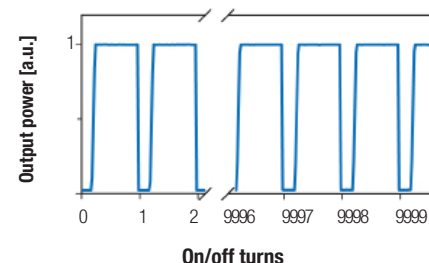


#### Spatial Mode

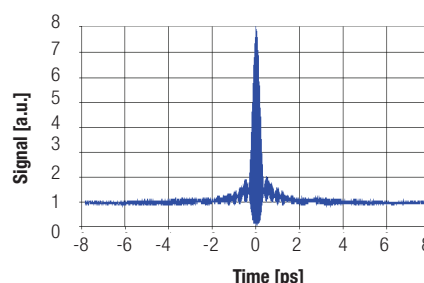


#### Reproducibility

Identical and consistent laser performance



#### Temporal Profile



### FEATURES

- Single Shot to 10 MHz
- Air Cooled
- All-Fiber Technology
- Compact Design for OEM Integration
- Robust and Stable
- Maintenance Free
- Remote Control

### OPTIONS

- **SHG**  
Frequency doubling to 515 nm
- Inquire about options for OEM integration

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## High Energy Industrial Femtosecond Laser 1030 nm, 515 nm

SPECIFICATIONS	BlueCut	BlueCut 515
Center Wavelength	1030 nm	515 nm**
Maximum Pulse Energy	>10 $\mu\text{J}^*$	>3.5 $\mu\text{J}^*$
Maximum Average Power	>10 W*	>3.5 W*
Pulse Duration	<400 fs	<400 fs
Spectral Bandwidth	>5 nm	>5 nm
Repetition Rate	single pulse to 10 MHz	
Long-term Power Stability	<1 % rms (over 12 h, for constant ambient temperature)	
Beam Quality	TEM00, $M^2 < 1.25$ , (typ. <1.20)	
Polarization	linear	
Output Control	integrated pulse picker for selection of repetition rate integrated fast shutter with analog-in and digital-in modulation for external gating integrated optical isolator	
Trigger Output Signal	pulse picker signal provided as RF trigger out	

\*Whatever applies first for a given repetition rate.

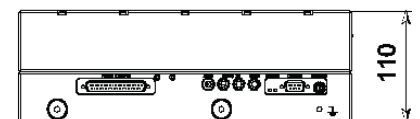
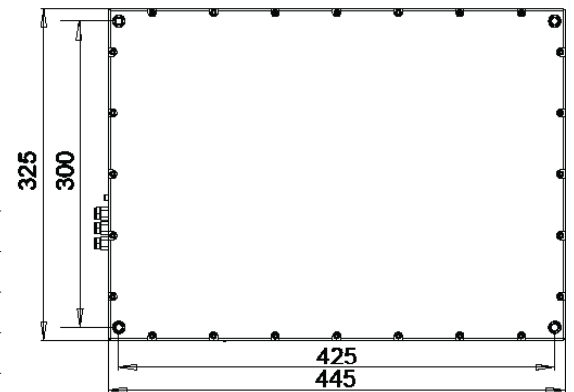
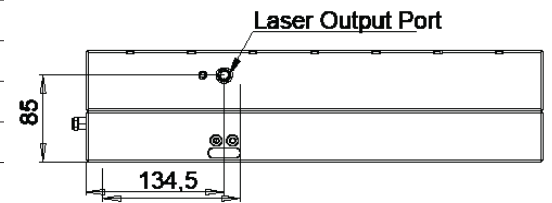
\*\*Secondary output @ 1030 nm, power ratio adjustable.

### UTILITY AND ENVIRONMENTAL REQUIREMENTS

Operating Voltage	100-240 VAC/50-60 Hz (optional 24 VDC, 20A)
Power Consumption	<500 W
Cooling Requirements	air cooling (no water cooling is required)
Warm-up Time	<30 min (<1 h for highest stability)
Communication interface	RS232 or USB, Laptop included with GUI
Range of Operating Temperature	15 to 35°C (60 to 95°F), non-condensing
Dimensions Head	BlueCut: 325 x 445 x 110 mm <sup>3</sup> BlueCut 515: 295 x 180 x 116 mm <sup>3</sup>
Dimensions Controller	19" x 4U x 495 mm
	Laser head and controller have a non-removable interconnection.

### BlueCut

Example	Average Power	Pulse Energy
250 kHz	2.5 W	10 $\mu\text{J}$
1 MHz	10 W	10 $\mu\text{J}$
10 MHz	10 W	1 $\mu\text{J}$



Please contact us for technical drawings for BlueCut 515.

### ORDERING INFORMATION

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



Invisible laser radiation  
avoid exposure to beam  
Class 4 laser



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