

BLAZER series

Medium-power industrial ps-laser



BLAZER series provide industrial grade DPSS picoseconds lasers with adjustable repetition rate and high peak power. Rugged and compact design of these lasers has been a versatile tool for a variety of industrial material processing applications.

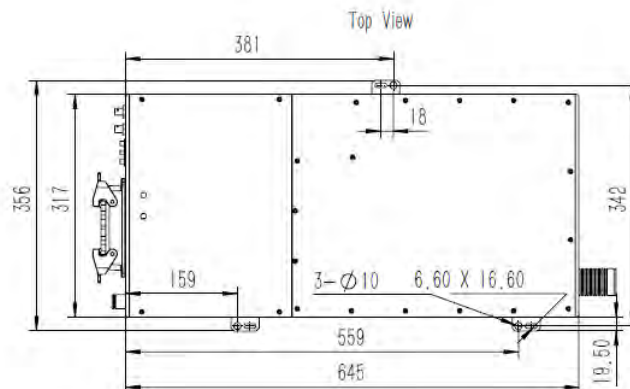
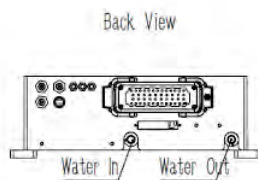
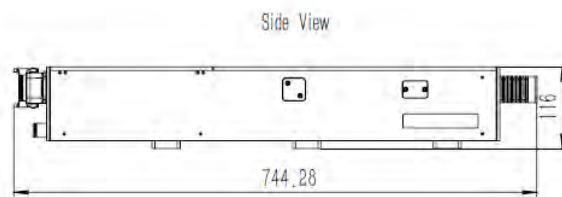
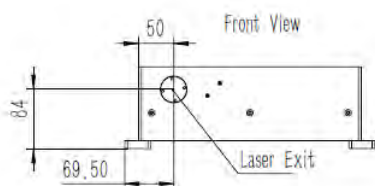
FEATURES

- 10-40W at 1064nm / Harmonics from 532nm to 355nm
- 100-2000 kHz repetition rate / 10 ps pulse duration
- High beam quality $M^2 < 1.3$
- Compact, sealed and rugged industrial grade design
- Fully detachable umbilical
- Burst mode
- Integrated process shutter
- PSO

APPLICATIONS

- Cutting and drilling for Materials such as glass, sapphire
- Thin film ablation
- Micromachining
- Patterning

BLAZER-20F/40F Laser Head Mechanical Specifications



BLAZER series Specifications



Medium-power industrial ps-laser

Beam characteristics

Version	BLAZER-20F			BLAZER-40F		
Wavelength (nm)	1064nm (532/355 option)					
Repetition Rate ¹ (kHz)	100 – 2000 kHz					
Average Power (W)	Average Power (W) at Different Rep. Rates ²					
Wavelength (nm)	100kHz	500kHz	800kHz	400kHz	600kHz	800kHz
1064nm	13	24	26	35	40	40
532nm ³	8	15	18	20	25	25
355nm	5	10	10	12	15	15
Pulse Energy (μJ)	Pulse Energy (μJ) at Different Rep. Rates					
Wavelength (nm)	100kHz	500kHz	800kHz	400kHz	600kHz	800kHz
1064nm	130	48	32.5	87.5	66.6	50
532nm	80	30	22.5	50	41.6	31
355nm	50	20	12.5	30	25	18.8
Beam Spatial Profile	TEM ₀₀ (M ² <1.3)					
Pulsewidth FWHM (ps)	<10ps@1064nm					
Energy Stability (RMS)	<2%					
Power Stability ⁴ (RMS)	<2%					
Polarization Ratio	>100:1					
Beam Circularity (%)	>85%					
Pointing Stability ⁵ (μrad/°C)	<50μrad/°C					
Beam Divergence ⁶ (mrad)	<1mrad					
Beam Diameter ⁷ (mm)	~2mm					

General characteristics

AC Input	220 VAC ±5% 50-60Hz
Power Consumption	<2.5kW (typical 50W at 500kHz)
Cooling Type	Closed-loop water cooling
Operating Conditions	Temperature 15-35°C Humidity <65%
Warm-Up Time (mins)	<40mins

NOTES

- 1.All specifications at 1064nm and 500kHz repetition rate unless otherwise noted.
- 2.Please provide operating Rep. rate for optimum output power.
- 3.A lower 532nm output power version to be offered if need both 532nm &355nm.
- 4.Average in 8 hours with room temperature variation $\delta T < 3^{\circ}\text{C}$.
- 5.Maximum deviation from beam mean centroid.
6. Full angle for 86.5% of energy.
- 7.Output of laser head at 1064nm.


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BLAZER series

High-power industrial ps-laser



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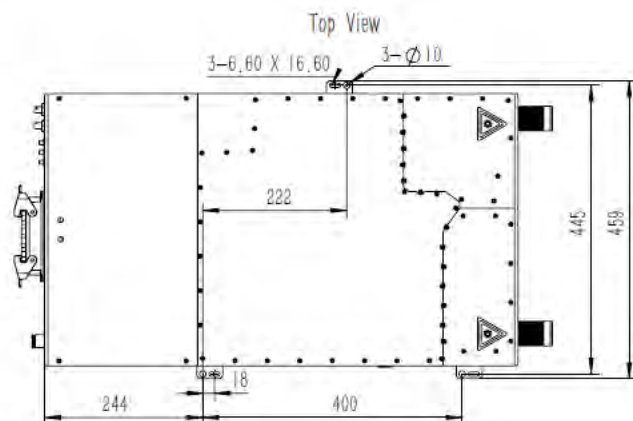
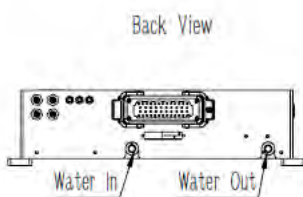
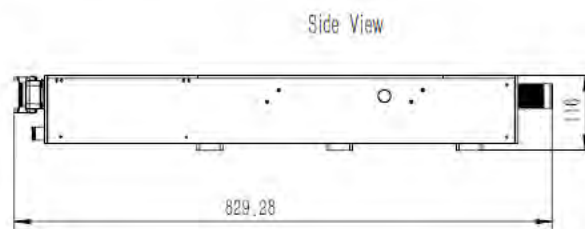
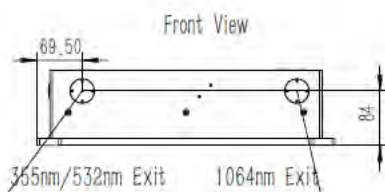
FEATURES

- 30-100W at 1064nm / Harmonics from 532nm to 355nm
- 100-2000 kHz repetition rate / 10 ps pulse duration
- High beam quality $M^2 < 1.3$
- Compact, sealed and rugged industrial grade design
- Fully detachable umbilical
- Burst mode
- Integrated process shutter
- PSO

APPLICATIONS

- Cutting and drilling for Materials such as PI, FPC, LCP
- Thin film ablation
- Micromachining
- Patterning

BLAZER-50F/100F Laser Head Mechanical Specifications



BLAZER series Specifications



High-power industrial ps-laser

Beam characteristics

Version	BLAZER-50F			BLAZER-100F		
Wavelength (nm)	1064nm (532/355 option)					
Repetition Rate ¹ (kHz)	100 – 2000 kHz					
Average Power (W)	Average Power (W) at Different Rep. Rates ²					
Wavelength (nm)	100kHz	500kHz	800kHz	400kHz	600kHz	800kHz
1064nm	30	50	50	70	80	80
532nm ³	18	30	25	50	50	50
355nm	12	20	20	30	30	30
Pulse Energy (μJ)	Pulse Energy (μJ) at Different Rep. Rates					
Wavelength (nm)	100kHz	500kHz	800kHz	400kHz	600kHz	800kHz
1064nm	300	100	62.5	175	133	100
532nm	180	60	31	125	83	62.5
355nm	120	40	25	75	50	37.5
Beam Spatial Profile	TEM ₀₀ (M ² <1.3)					
Pulsewidth FWHM (ps)	<10ps@1064nm					
Energy Stability (RMS)	<2%					
Power Stability ⁴ (RMS)	<2%					
Polarization Ratio	>100:1					
Beam Circularity (%)	>85%					
Pointing Stability ⁵ (μrad/°C)	<50μrad/°C					
Beam Divergence ⁶ (mrad)	<1mrad					
Beam Diameter ⁷ (mm)	~2mm					

General characteristics

AC Input	220 VAC ±5% 50-60Hz
Power Consumption	<2.5kW (typical 50W at 500kHz)
Cooling Type	Closed-loop water cooling
Operating Conditions	Temperature 15-35°C Humidity <65%
Warm-Up Time (mins)	<40mins

NOTES

- 1.All specifications at 1064nm and 500kHz repetition rate unless otherwise noted.
- 2.Please provide operating Rep. rate for optimum output power.
- 3.A lower 532nm output power version to be offered if need both 532nm &355nm.
- 4.Average in 8 hours with room temperature variation $\delta T < 3^{\circ}\text{C}$.
- 5.Maximum deviation from beam mean centroid.
6. Full angle for 86.5% of energy.
- 7.Output of laser head at 1064nm.

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BLAZER-P series

High energy picosecond mode-locked laser



BLAZER-P laser series inherit the robust and hermetically sealed DPSS master oscillator design of BLAZER series. Diode pumped regenerative amplifier and flash lamp pumped energy amplifier produce up to 200mJ picosecond pulses. 24/7 rugged industrial design improves laser reliability and reduces running costs.

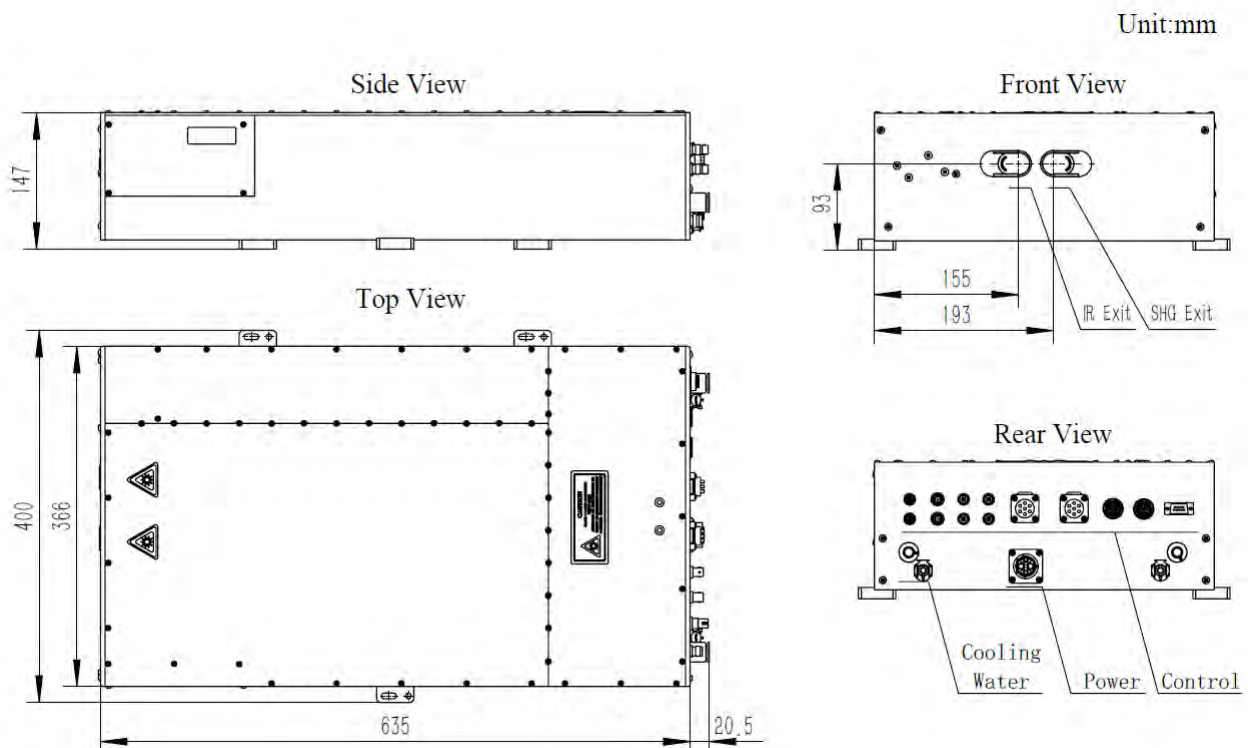
FEATURES

- **1-200mJ** at 1064nm / Harmonics from 532nm to 355nm
- **1Hz-10kHz** repetition rate / **<30 ps** pulse duration
- High beam quality $M^2 < 1.5$
- Compact, sealed and rugged industrial grade design for **24/7** use and ensures long-term thermal and mechanical stability
- RS232 interface for remote operation

APPLICATIONS

- Non-linear optics
- Micromachining
- Pump source
- Satellite laser ranging

BLAZER-50P Laser Head Mechanical Specifications



BLAZER-P series Specifications



High energy picosecond mode-locked laser

Beam characteristics

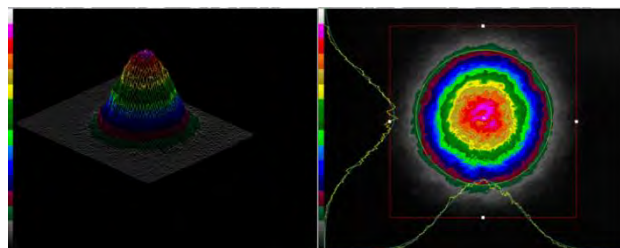
Version	BLAZER-01P	BLAZER-50P	BLAZER-100P	BLAZER-200P
Wavelength (nm)	1064nm (532/355 option)			
Repetition Rate ¹ (Hz)	1Hz-10kHz	1Hz-10Hz		
Pulse Energy (mJ)	Pulse Energy (mJ)			
Wavelength (nm)				
1064nm	1	50	100	200
532nm	0.5	25	50	100
355nm	0.25	15	30	60
Beam Spatial Profile	TEM ₀₀ (M ² <1.5)			
Pulsewidth (ps)	<30ps@1064nm			
Energy Stability (RMS)	<1%			
Polarization Ratio	>100:1			
Beam Circularity (%)	>85%			
Pointing Stability ² (μrad/°C)	<50μrad/°C			
Beam Divergence ³ (mrad)	<2mrad	<0.3mrad	<0.2mrad	<0.2mrad
Beam Diameter ⁴ (mm)	~1mm	~8mm	~12mm	~16mm

General characteristics

AC Input	220 VAC ±5% 50-60Hz
Power Consumption	<2kW
Cooling Type	Closed-loop water cooling
Operating Conditions	Temperature 5-35°C Humidity <80%
Warm-Up Time (mins)	<30mins

NOTES

1. Other repetition rate can be customized.
2. Maximum deviation from beam mean centroid.
3. Full angle for 86.5% of energy.
4. Output of laser head at 1064nm.



Beam profile


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