BLOOM
LASERS FOR INDUSTRY

SCAN ME

OYAT 100-343

High Power Picosecond Quasi-CW laser for industrial applications

OYAT, the quasi-continuous fiber laser, delivers high power and high frequency picosecond pulses.

Its innovative patented fiber design enables high power, high pulse repetition rate, picosecond pulses all in a single mode-beam in the UV at 343 nm.

The fiber technology combined with the simply efficient laser head architecture makes OYAT a robust, and cost-performance visible QCW laser for most demanding industrial applications. Manufactured with a field proven technology, qualified components and good practices, BLOOM lasers are the right answer to 24/7 operation in extended production cycle environments.

Wavelength	343 nm
Power	100 W
Pulse Duration	50 ps
Beam quality	$M^2 < 1.2$

Advantages

- High power : 100 W
- Excellent beam quality $M^2 < 1.2$
- Excellent power stability ± 2 %
- Picosecond pulses : 50 ps
- Field proven technology
- Low consumption
- HALT designed / HASS Certified

Applications

- TGV - Through Glass Via drilling
- Welding
- Cutting
- Semiconductor Wafer processing
- Solar cell Manufacturing
- High-brightness laser applications

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Specifications

Output Characteristics	
Central Wavelength	343.3 nm ± 0.3 nm
	100 W
Pulse Width	50 ps
Pulse Repetition Rates	30 - 50 MHz
Power Stability	< 2%, 2σ over 8 hours
Pulse to Pulse Energy Stability	< 3% RMS
Beam Characteristics	
Spatial Mode	TEM_{00}
M^2	≤ 1.2
Polarization Ratio	≥ 100:1 linear
Polarization Direction	Vertical, ± 2°
Beam Divergence (full-angle)	< 0.2 mrad
4σ Beam Diameter @ exit (nominal)	3.5 mm ± 0.35 mm
Astigmatism	≤ 30%
Beam Circularity	≥ 90%
Long Term Beam Pointing Stability, over 8 hours	≤ 25 µrad, full-angle
Laser safety class (IEC 60825-1 : 2014)	Class IV
Operating Conditions	
External Communications	Ethernet / RS-232 / USB
Warm-up Time Cold Start Warm Start	 ≤ 30 minutes ≤ 2 minutes
Electrical Requirements	100 – 240 V AC
Line Frequency	50 to 60 Hz
Power Consumption	< 1500 W
Temperature Range	15°C to 35°C (59°F to 95°F)
Humidity	10% to 95% RH, non-condensing
Storage Conditions Temperature Humidity	 0°C to 50°C (32°F to 122°F) 5% to 95% RH
Altitude (non-operational)	Sea level to 11 000 meters
Chiller Requirements	
Cooling Water Temperature	25°C ± 0.1°C
Minimum Cooling Power	1200 W
Cooling Water Flow	5 L/min, 3.5 L/min minimum
Physical Characteristics	
Dimensions (L x W x H)	Laser Head : 1146 x 250 x 169 mm (45.11 x 9.84 x 6.65 in) Control Unit : 506 x 483 x 177 mm (19.92 x 19.01 x 6.97 in)
Weight	Laser Head : 50 kg (110 lbs) without water Control Unit : 25 kg (55 lbs)
Features	
Extended Internal Power Monitoring	Power monitored at each stage of the laser
Ultra Wide Operation Range	Constant pulse width and beam parameters over the whole pulse repetition rate range
Industry Ready Data Logging	Long-term and short-term laser operation log, diagnosis, maintenance
Alignment Beam	Low power mode for laser installation and alignment
Sacrificial Window	Field Replaceable Unit
Advanced Support	Industry 4.0 ready, remote control, remote support, >30 sensors in laser head
Best Practices	Sealed laser head, multi-stage components cleaning and assembled in ISO 6 cleanroom (class 1000)

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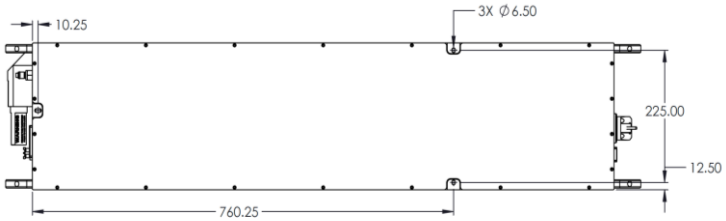
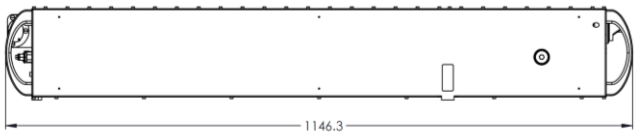
Drawings

Laser Head (in mm)

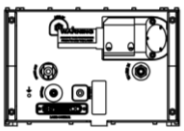


Bottom View

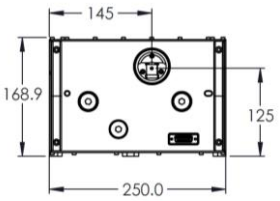
Top View



Side View

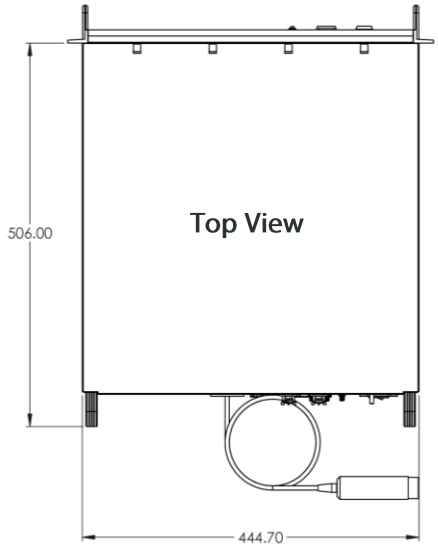


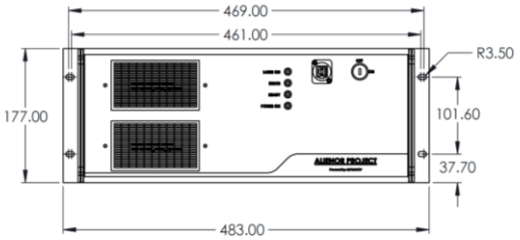
Rear View



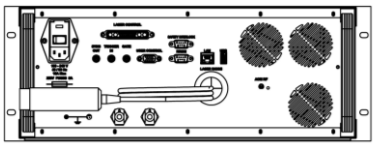
Front View

Power Supply (in mm)





Front View



Rear View

According to BLOOM continuous product improvements, specifications and drawings are subject to change without notice.

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