



OYAT 80-515

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 visible at 515 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 operations in extended production cycle environments.

Wavelength	515 nm
Power	80 W
Pulse Duration	30 ps
Pulse Repetition Rate	30 MHz
Beam quality	$M^2 < 1.2$



Advantages

- ✓ High power : 80 W
- ✓ Excellent beam quality $M^2 < 1.2$
- ✓ Excellent power stability +/-2 %
- ✓ Picosecond pulses : 30 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

Center Wavelength	515 nm ± 0.1 nm
Power	80 W
Pulse Width	30 ps
Pulse Repetition Rate	30 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)	< 0.45 mrad
4σ Beam Diameter @ exit (nominal)	3.5 mm ± 0.35 mm
Waist Location (from exit face of output window)	0 m ± 4 m
Astigmatism	≤ 30%
Beam Circularity	≥ 90%
Long Term Beam Pointing Stability, over 8 hours	≤ 25 μrad, full-angle

Operating Conditions

External Communications	Ethernet / RS-232 / USB
Warm-up Time	
Cold Start	≤ 30 minutes
Warm Start	≤ 10 minutes
Electrical Requirements	100 – 240V AC
Line Frequency	50 to 60 Hz
Power Consumption	< 900 W
Temperature Range	15°C to 35°C (59°F to 95°F)
Humidity	10% to 95% RH, non-condensing
Storage Conditions	
Temperature	0°C to 50°C (32°F to 122°F)
Humidity	5% to 95% RH
Altitude (non-operational)	Sea level to 11 000 meter

Chiller Requirements

Cooling Water Temperature	25°C +/- 0,1°C
Minimum Cooling Power	700 W
Cooling Water Flow	5 liter/min, 3 liter/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

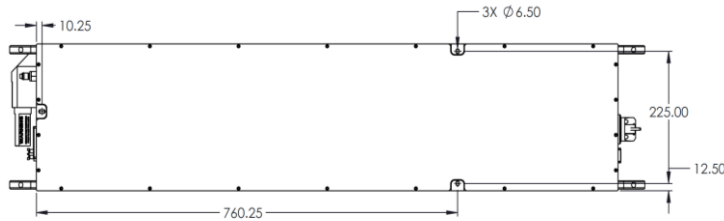
Internal Power Monitoring	Power monitored at each stage of the laser
Pulse Behavior with Power	Constant pulse width, pulse energy and beam parameters
Data Extraction	Long-term and short-term laser operation log, diagnosis, maintenance
Alignment Beam	Low power mode for laser installation and alignment
Sacrificial Window	Field Replaceable Unit
Best practices	Sealed laser head, multi-stage components cleaning and assembled in ISO 6 cleanroom



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Drawings

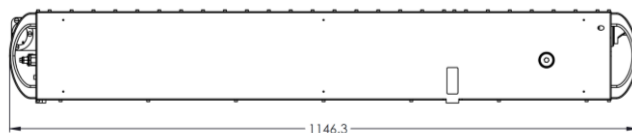
Laser Head (in mm)



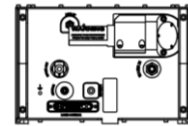
Bottom View



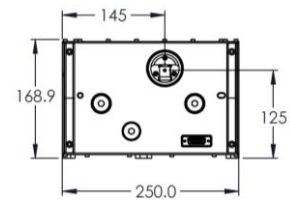
Top View



Side View

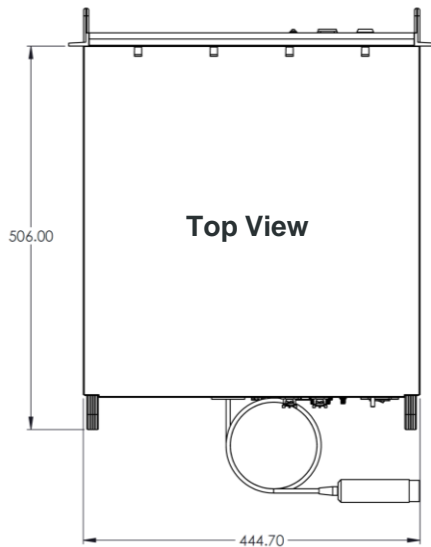


Rear View

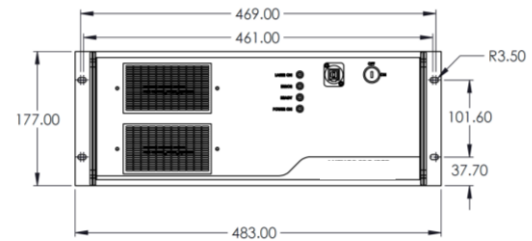


Front View

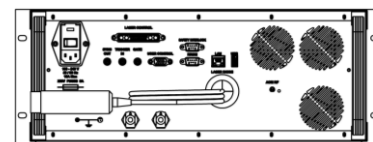
Power Supply (in mm)



Top View



Front View



Rear View

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

