

# OYAT 50-343

## 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 operations in extended production cycle environments.

<b>Wavelength</b>	<b>343 nm</b>
<b>Power</b>	50 W
<b>Pulse Duration</b>	50 ps
<b>Pulse Repetition Rate</b>	50 MHz
<b>Beam quality</b>	$M^2 < 1.2$



### Advantages

- ✓ High power : 50 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

Center Wavelength	343.3 nm ± 0.5 nm
Power	50 W
Pulse Width	50 ps
Pulse Repetition Rate	50 MHz
Power Stability	< 2%, 2σ over 8 hours
Pulse to Pulse Energy Stability	< 3% RMS

## Beam Characteristics

Spatial Mode	TEM <sub>00</sub>
M <sup>2</sup>	≤ 1.2
Polarization Ratio	≥ 100:1 linear
Polarization Direction	Vertical, ± 2°
Beam Divergence (full-angle)	< 0.3 mrad
4σ Beam Diameter @ exit (nominal)	3.5 mm ± 0.35 mm
Waist Location (from exit face of output window)	0 m ± 12 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	≤ 2 minutes
Electrical Requirements	100 – 240V AC
Line Frequency	50 to 60 Hz
Power Consumption	< 1200 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)

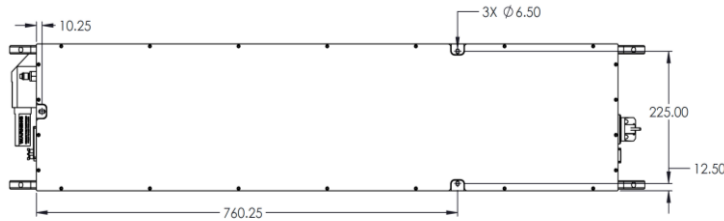
## Features

Internal Power Monitoring	Power monitored at each stage of the laser
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

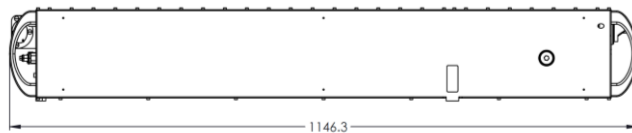
### Laser Head (in mm)



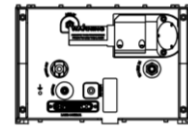
Bottom View



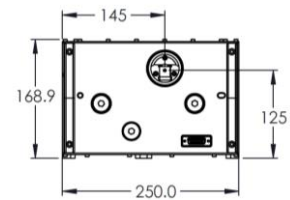
Top View



Side View

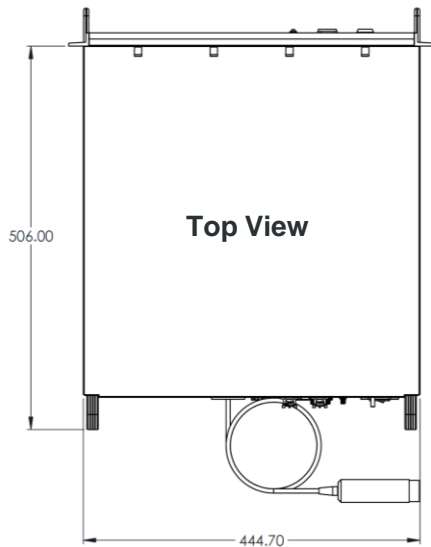


Rear View

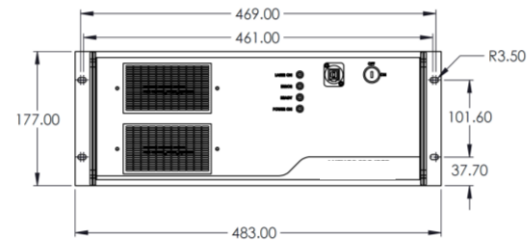


Front View

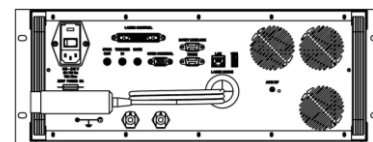
### Power Supply (in mm)



Top View



Front View



Rear View

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

