

p250 CO₂ Laser

Get better production yields and precise results with the highest peak power available from a 250 W laser



High performance pulsed CO₂ laser delivers precise perforating, drilling, and cutting results for high speed processing systems

- 250 W of average power for faster throughput and higher yields across a variety of target materials
- 800 W peak power delivers energy more efficiently, minimizing heat affected zone (HAZ) and increasing perforating or drilling speeds
- Excellent power and divergence stability for consistent, high quality application results
- Real-time performance monitoring reduces unplanned downtime with onboard advanced diagnostics that are Industry 4.0 ready



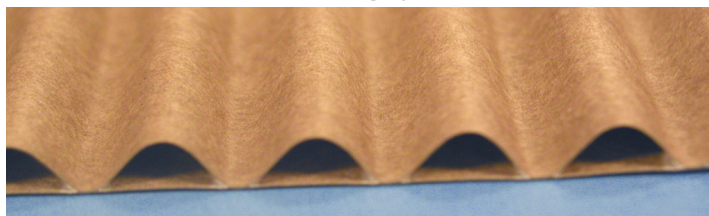
Paper & Paperboard Finishing



Drilling Plastics

Clean Cuts, Faster Throughput

The p250 has excellent power and divergence stability that limits the heat affected zone (HAZ) to deliver cuts and perforations with minimal discoloration and melt. With zero contact to the target material, the p250 is the perfect solution for sensitive high-speed cutting applications. Surface deformation commonly associated with mechanical cutting systems are eliminated.



Specifications

Output Specifications	
Wavelength, μm	10.6 \pm 0.1
Peak Pulse Power (typical) ¹	> 800 W
Power Output, continuous ²	>250 W
Peak Pulse Energy (maximum) ³	600mJ
Pulse Length (max)	1.0 millisecond
Pulse Frequency	Up to 100 kHz
Rise Time/Fall Time 10% 1kHz (typical)	60 μs /110 μs typ
Duty Cycle Limit	45%
Power Stability	From cold: \leq 5.5%
Mode Quality (M ²)	<1.2
Beam Waist Diameter, mm (at 1/e ²) ⁴	8.0 \pm 1.0 mm
Beam Diameter at Faceplate (at 1/e ²) ⁴	9.0 \pm 1.0 mm
Beam Divergence (full angle in mrad 1/e ²) ⁴	1.9 \pm 0.4 mrad
Ellipticity near field 45% 1 kHz and 5 kHz	<1.2
Ellipticity far field	<1.2
Polarization	Horizontal
Input Specifications	
Power Supply Voltage/Current	48 VDC \pm 0.5 VDC/90 A
Pulsed Current	250 A for 1 millisecond
Cooling Specifications	
Heat Load (max)	4.3 kW
Maximum Chassis Operating Temperature	45° C
Cooling	Water (18 - 22° C)
Flow-rate	3 GPM, < 60 psi
Environmental Specifications	
Operating Ambient Temperature Range	15° C - 45° C
Humidity	0 - 95%, non-condensing
Physical Specifications	
Dimensions (LxWxH) Inches (mm)	49.3 x 12.4 x 7.8 (1252.2 x 314.9 x 198.1)
Weight lbs. (kg)	107 lbs. (48.5 kg)

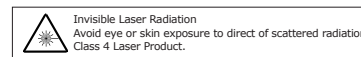
1 - Measured at 1 kHz, 10% duty cycle

2 - Power level guaranteed for 24 months from date of shipment, regardless of operation hours within recommended coolant flow rate and temperature range

3 - Tested at 100 Hz, 10% duty cycle

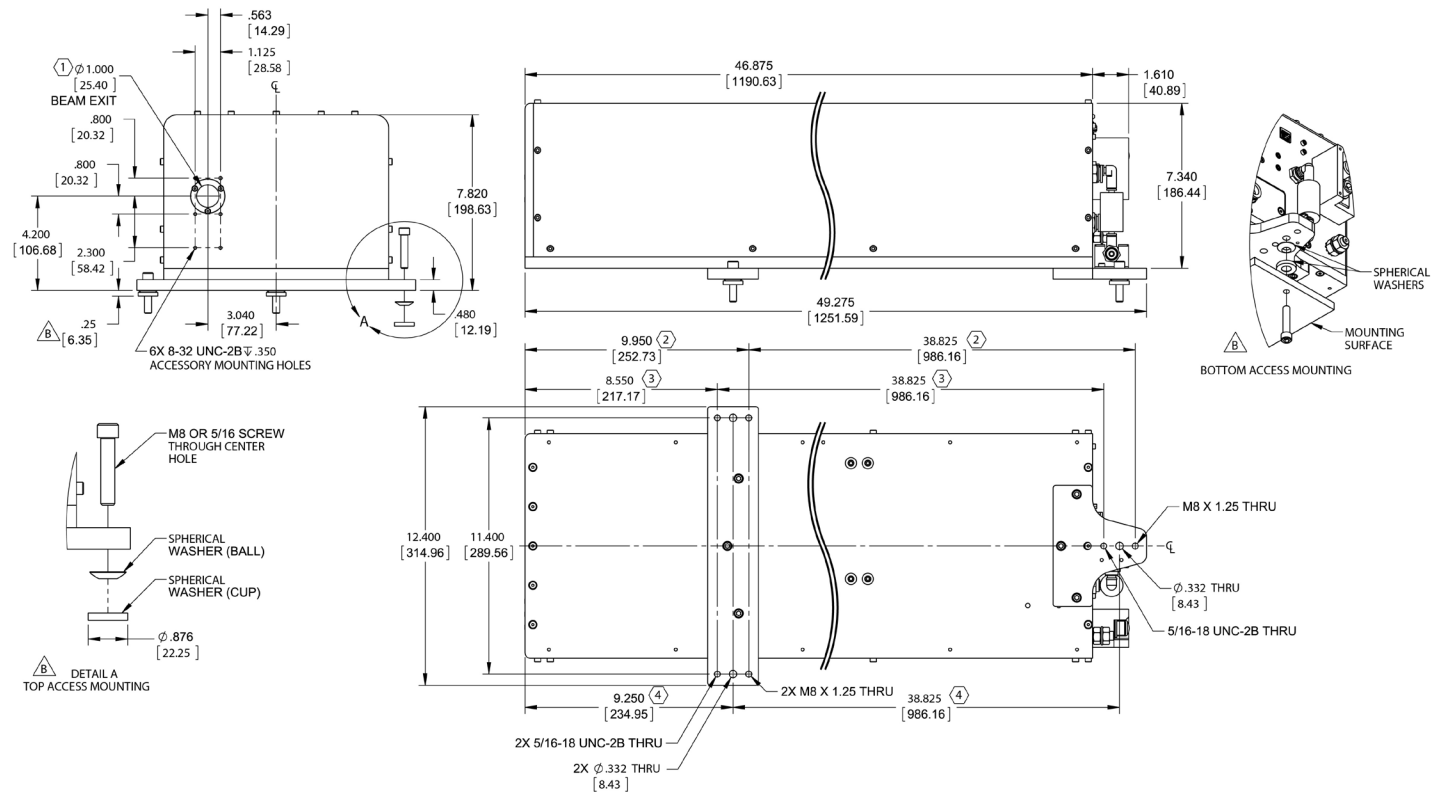
4 - Measured at 5kHz, 45% duty cycle

Note: Published specifications guaranteed at a temperature of 22° C. Some performance degradation may occur in ambient temperatures above 22° C. For air-cooled lasers, laser power typically decreases 0.5 - 1% per degree Celsius increase in ambient temperature. Specifications are subject to change without notice.

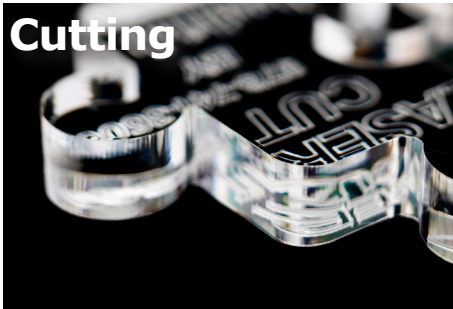


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Outline and Mounting Illustrations dimensions are in inches [mm]



Recommended Applications



Cutting
250 W of continuous output power drives faster throughput for higher production yields. Excellent divergence stability minimizes HAZ for clean cuts.



Perforating
800 W peak power delivers energy more efficiently, increasing perforating or drilling speeds and reducing HAZ; a solid solution for laser finishing processes on automated packaging lines.



Drilling
High peak and average power deliver the perfect laser for quality, high speed drilling applications on a wide variety of materials.

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