

p250 CO₂ Laser

Industrial laser with more than 800 Watts of peak power for high speed drilling, perforating, and cutting applications



High performance pulsed CO₂ laser engineered to maximize production throughput and yield for a wide range of material processes

- 250 W of average power for faster throughput and higher yields across a variety of target materials
- 800 W peak power delivers energy 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



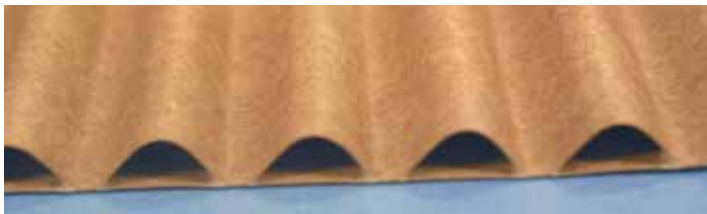
Paper & Paperboard Finishing



Drilling Plastics

Clean Cuts, Faster Throughput

The p250 has excellent stability and high peak power, combined they limit the heat affected zone (HAZ), delivering 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 is eliminated.



Specifications

Output Specifications		
Wavelength	10.2 μm	10.6 μm
Average Output Power ¹	>250 W	
Peak Pulse Power (typical) ²	>750 W	>800 W
Peak Pulse Energy (maximum) ³	600 mJ	
Power Stability (cold start) ⁴	±5%	
Power Stability (typical, after 3 min.)	±3%	
Beam Quality (M ²)	<1.2	
Beam Diameter ⁵	8.0 mm ± 1.0 mm	9.0 mm ± 1.0 mm
Divergence (full angle)	1.9 mrad ± 0.4 mrad	
Ellipticity	<1.2	
Polarization	Linear (Horizontal)	
Rise/Fall Time ⁶	<60 μs/<110 μs	
Operating Frequency	0 - 100 kHz	
Duty Cycle Range	≤45%	
Maximum Pulse Length	1.0 ms	
Power Supply		
DC Input Voltage	48 VDC	
Maximum Current	90 A	
Pulsed Current	250 A for <1 ms	
Cooling		
Maximum Heat Load	4.3 kW	
Coolant Temperature	18 - 22° C (water)	
Minimum Flow Rate	3.0 GPM, <60 PSI	
Environmental		
Operating Ambient Temperature	15 - 40° C	
Maximum Humidity	95%, non-condensing	
Physical		
Dimensions (LxWxH) mm (inches)	1252 x 315 x 198 (49.3 x 12.4 x 7.8)	
Weight	48.5 kg (107 lbs.)	

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

2 - Measured at 1 kHz, 10% duty cycle

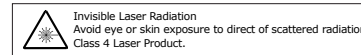
3 - Measured from average power at 625 Hz, 37.5% duty cycle.

4 - Measured as $\pm(P_{max}-P_{min})/(P_{max}+P_{min})$ from cold start at 5 kHz, 45% duty cycle.

5 - Measured 1/e² diameter at laser output

6 - Measured at 1 kHz, 10% duty cycle.

Specifications are subject to change without notice.

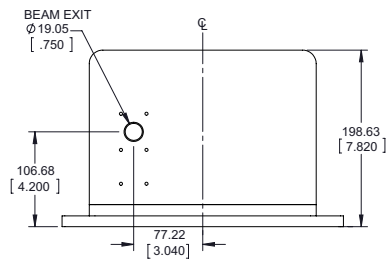


SYNRAD

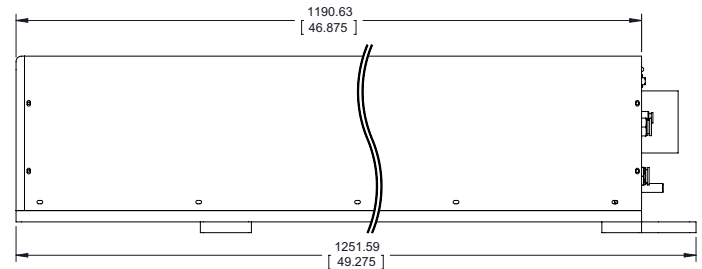
A Novanta Company

p250 CO₂ Laser

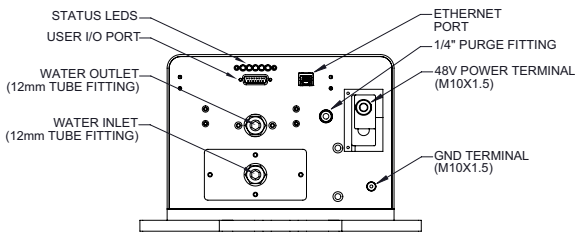
Outline and Mounting Illustrations dimensions are in mm (inches)



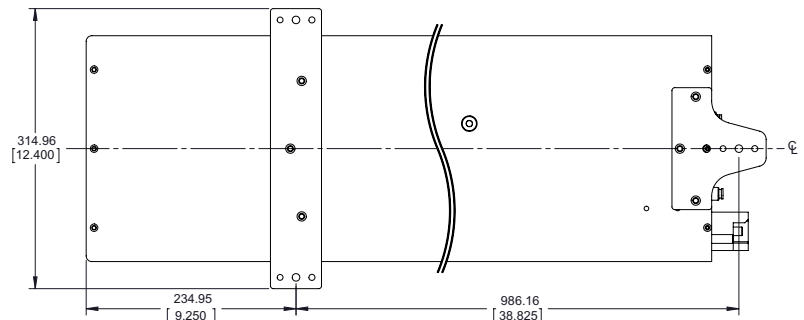
FRONT



SIDE



REAR



BOTTOM

Recommended Applications

Cutting



250 W of continuous output power drives faster throughput for higher production yields. Excellent stability and high peak power minimize 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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