

i401 CO₂ Laser

Robust, reliable laser with more than 400 Watts of average power for high speed cutting and drilling applications



High performance CO₂ laser engineered with excellent power and divergence stability for demanding industrial applications

- 400 Watts of average power for faster throughput and higher yields across a variety of target materials
- Internal beam conditioning delivers near perfect circular output in both near and far fields, ensuring a focused spot size with high power density for greater detail and faster processing speeds
- Highly reliable RF modules ensure maximum uptime and are field-replaceable for improved serviceability
- Real-time performance monitoring reduces unplanned downtime with onboard advanced diagnostics that are Industry 4.0 ready



Paper & Paperboard Finishing



Acrylic Cutting

Clean Cuts, Faster Throughput

The i401 has excellent power and stability that provide consistently high quality results at even the most demanding speeds. With zero contact to the target material, the i401 is the perfect solution for high-speed cutting applications. Surface deformation commonly associated with mechanical cutting systems are eliminated.



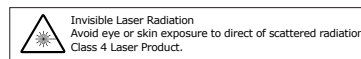
Specifications

Output Specifications		
Wavelength	10.2 μm	10.6 μm
Output Power ¹	>400 W	
Power Stability (cold start) ²	±7%	
Power Stability (typical, after 3 min.)	±5%	
Beam Quality (M ²)	<1.2	
Beam Diameter ³	6.7 mm ± 0.7 mm	
Divergence (full angle)	2.5 mrad ± 0.3 mrad	
Ellipticity	<1.2	
Polarization	Linear (45°)	
Rise Time	<100 μs	
Operating Frequency	0 - 100 kHz	
Power Supply		
DC Input Voltage	48 VDC	
Maximum Current	125 A	
Cooling		
Maximum Heat Load	6000 W	
Coolant Temperature	18 - 22° C (water)	
Minimum Flow Rate	4.0 GPM, <60 PSI	
Environmental		
Operating Ambient Temperature	15 - 40° C	
Maximum Humidity	95%, non-condensing	
Physical		
Dimensions (LxWxH) mm (inches)	1227 x 208 x 300 (48.3 x 8.2 x 11.8)	
Weight	59.0 kg (130 lbs.)	

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

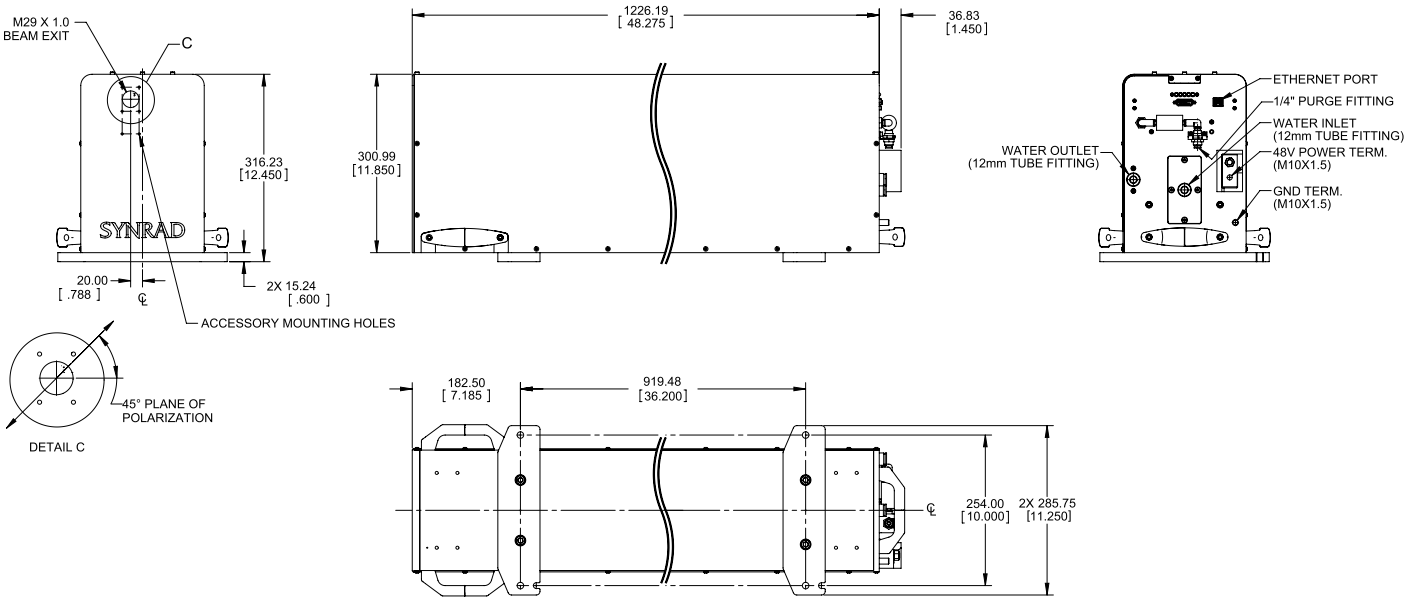
2 - Measured from cold start as $\pm(P_{max} - P_{min}) / (P_{max} + P_{min})$

3 - Measured 1/e² diameter at laser output.

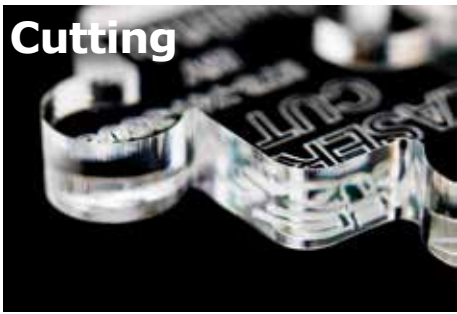


i401 CO2 Laser

Outline and Mounting Illustrations dimensions are in mm (inches)



Recommended Applications



Cutting

400 Watts of continuous output power drives faster throughput for higher production yields. Excellent divergence stability minimizes HAZ for clean, polished edges cuts.



Cutting

Avoid deformation caused by mechanical processes: the i401 provides a non-contact, fully digital solution that allows customized results on even the most challenging materials.



Kiss Cutting

Excellent power stability and 400 Watts of average laser power delivers the precision and throughput speed required for high speed label kiss cutting.

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