

i401 CO₂ LASER - DATA SHEET

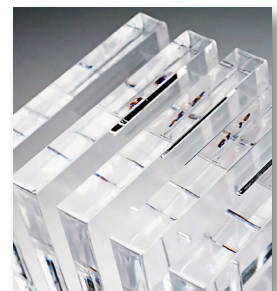
Robust, reliable laser with more than 400 Watts of average power for high speed cutting and drilling applications

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

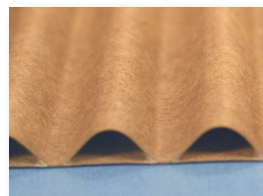
- 400 Watts of average power for faster throughput and higher yields across a variety of target materials, 30 Watts continuous power ensures high throughput
- Internal beam conditioning delivers near perfect circular output in both near and far fields, ensuring a focused spot size with high power density 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

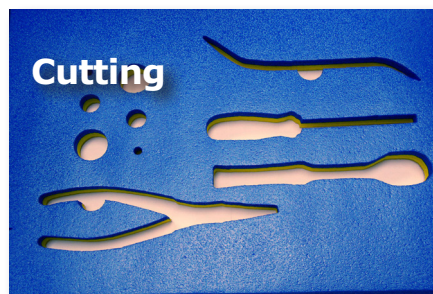
The i401 has excellent power and stability that provide consistently high quality results at even the most demanding speeds. With zero contact to the target material, the i401 is the perfect solution for high-speed cutting applications. Surface deformation commonly associated with mechanical cutting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

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.

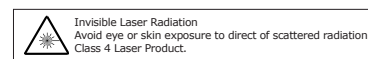
i401 CO₂ LASER - SPECIFICATIONS

Output Specifications	
Wavelength	10.2 μ m 10.6 μ m
Output Power ¹	>400 W
Power Stability (typical, after 3 min.)	$\pm 5\%$
Power Stability (cold start) ²	$\pm 7\%$
Beam Quality (M ²)	<1.2
Beam Diameter ³	6.7 mm \pm 0.7 mm
Divergence (full angle)	2.5 mrad \pm 0.3 mrad
Ellipticity	<1.2
Polarization	Linear (45°)
Rise Time	<100 Qs
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 Temperatures	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 kg (lbs.)	59.0 kg (130 lbs.)

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

2 - Measured from cold start as $3(P_{max}-P_{min})/(P_{max}+P_{min})$

3 - Measured 1/e² diameter at laser output.



i401 CO2 LASER - Outline and Mounting Illustrations

dimensions are in mm (inches)

