vi40 CO_2 Laser

Industry leading laser with more than 40 Watts of average power for marking, engraving, and ablating applications

Next gen high performance CO_2 laser engineered for seamless integration into high-speed industrial equipment

- Gen2 tube design provides excellent thermal management to deliver stable, high power output and crisp beam quality for precise processing
- Real-time condition monitoring with an industry first temperature broadcast feature to avoid unexpected downtime and costly system repairs
- Fast rise/fall times enable high speed engraving, marking, and coding applications for high-volume manufacturers and processors
- 40W continuous power for faster throughput
- Industry best maximum operating environment temperature ensures reliable operation in a wide range of conditions
- Compact, lightest 40W CO_2 laser available, easily fits into tight spaces and onto weight-sensitive systems

Gen2 Tube Design

Building off the proven vi30 architecture, the new Gen2 tube design in the vi40 lowers thermal resistance to deliver more power from the same sized package. The vi40's stable, accurate beam creates detailed results and ensures proper marking depth without external correction optics. Throughput speed has also been improved with fast rise/fall times, especially useful in high-speed, high-volume coding applications for manufacturers and processors.

Temp Broadcast

Customer-inspired feature that provides real-time temperature measurements of the laser's interior. Direct temperature data is transmitted on user output line intervals of 250 ms for real-time feedback on operating conditions. Temperature data can be integrated into machine control systems to trigger system cooling and/or provide advanced warning of potential fault conditions. During the initial system design phase, direct laser temperature data is useful to ensure proper cooling and ventilation.

Specifications

Output Specifications	
Wavelength	10.6 µm
Output Power[1]	>40 W
Power Stability (cold start)[2]	±5%
Power Stability (typical, after 3 min.)	±3%
Beam Quality (M^2)	<1.2
Beam Diameter[3]	2.5 mm ± 0.5 mm
Divergence (full angle)	<7.0 mrad
Ellipticity	<1.2
Polarization	Linear (Horizontal)
Rise Time	<100 µs
Operating Frequency	0 - 100 kHz
Power Supply	
DC Input Voltage	48 VDC
Maximum Current	15 A
Cooling	
Maximum Heat Load	680 W
Coolant Temperature	45° C (air)
Minimum Flow Rate	190 CFM, 2 required (air)
Environmental	
Operating Ambient Temperature	15 - 45° C
Maximum Humidity	95%, non-condensing
Physical	
OEM Air Cooled Dimensions (LxWxH) mm (inches)	16.8 x 3.5 x 5.5 (427 x 89 x 139)
Weight kg (lbs.)	6.7 (14.8)

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 $\pm(P_{max}-P_{min})/(P_{max}+P_{min})$

3 - Measured $1/e^2$ diameter at laser output.

Invisible Laser Radiation
Avoid eye or skin exposure to direct of scattered radiation
Class 4 Laser Product.

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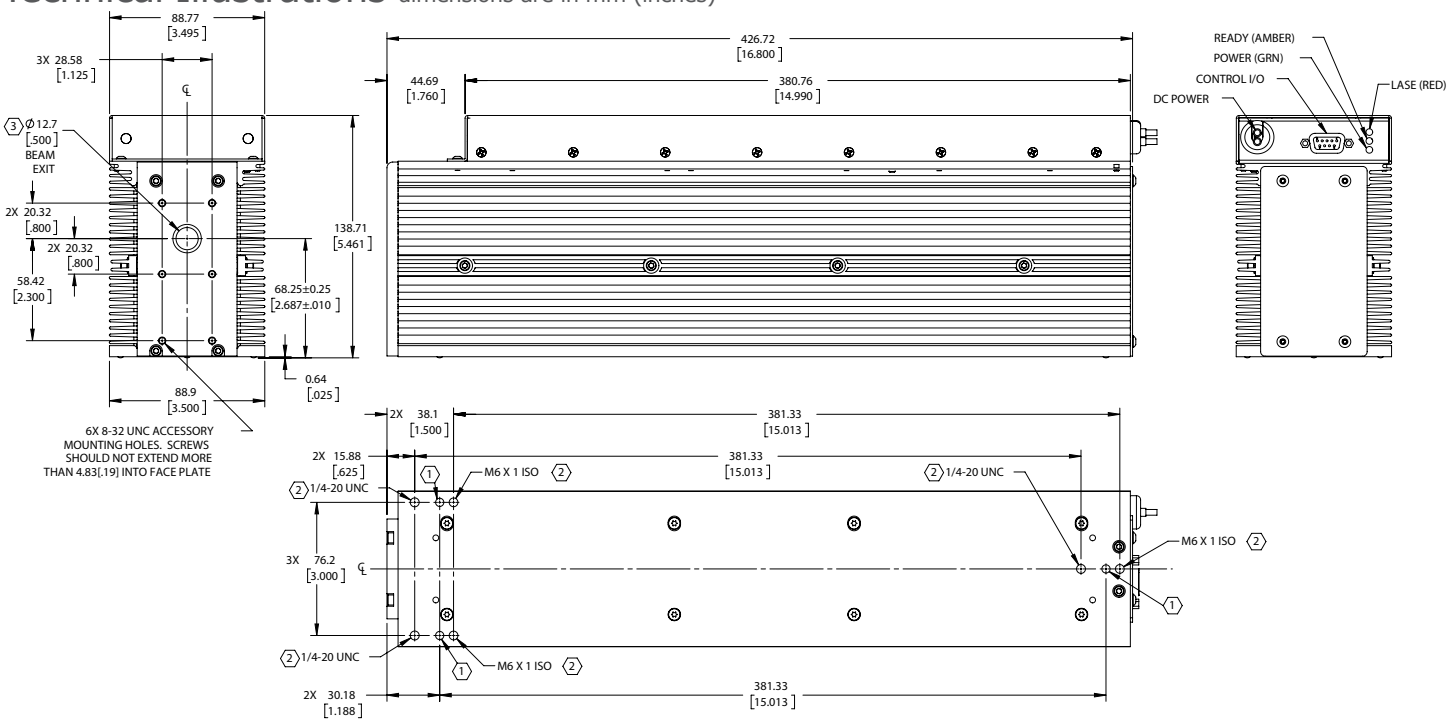
Technical Illustrations dimensions are in mm (inches)



NOTES:

1. HARDENED BALL MOUNTING POINT, 3X (Ø.1875 BALL BEARING).
2. THIS MOUNTING HOLE PATTERN USED FOR BOTTOM ACCESS FASTENING.
3. BEAM PATH MAY NOT BE CENTERED OR PERPENDICULAR TO FACE PLATE APERTURE.

Recommended Applications

Stable operation over a wide range of settings enables precise control of material removal, allowing consistent ablation depth or detailed 3D engraving.

Powerful, accurate laser output that can be used on a wide variety of materials.

Small footprint, light weight, and high resolution imagery engineered to fit a wide variety of automated manufacturing systems.

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