

48-1 CO₂ Laser

Most reliable laser with 10 Watts of average power for marking and coding applications



High performance CO₂ laser proven to deliver consistent results year after year

- Proven, economical industry standard for reliable performance and long lifetime
- Most popular Synrad laser series, 25+ years of operational history around the globe
- Reliable 24/7 operation, built with Synrad's unique rigid core box structure for the most demanding industrial environments
- Compact size and light weight for easy integration onto a variety of marking, engraving, and small cutting systems
- Flexible materials processing capability with 10.6 μm and 9.3 μm wavelengths available
- Available in air or water-cooled models



Specifications

Output Specifications		
Wavelength	9.3 μm	10.6 μm
Output Power ¹	>8 W	>10 W
Power Stability (cold start) ²	±15%	±10%
Beam Quality (M ²)	<1.2	
Beam Diameter ³	3.5 mm	
Divergence (full angle)	4.0 mrad	
Ellipticity	<1.2	
Polarization	Linear (Vertical)	
Rise Time	<150 μs	
Operating Frequency	0 - 25 kHz	
Power Supply		
DC Input Voltage	30 VDC	
Maximum Current	7.0 A	
Cooling		
Maximum Heat Load	300 W	
Coolant Temperature	< 40° C (air), 18-22° C (water)	
Minimum Flow Rate	250 CFM, 2 required (air) 0.5 GPM, <60 PSI (water)	
Environmental		
Operating Ambient Temperature	15 - 40° C	
Maximum Humidity	95%, non-condensing	
Physical		
OEM Air Cooled Dimensions (LxWxH) mm (inches)	429 x 71 x 107 (16.9 x 2.8 x 4.2)	
Water Cooled Dimensions (LxWxH) mm (inches)	460 x 71 x 107 (18.1 x 2.8 x 4.2)	
Weight	4.1 kg (9.0 lbs.)	

The Classic Synrad Laser

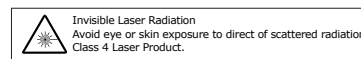
For more than 25 years Synrad has been delivering the 48 Series to OEMs, integrators, and end-users around the globe. The 48-1 is the most widely used 10 Watt laser for industrial applications. Reliability and near maintenance free marking, coding, and engraving are hallmark characteristics of this classic Synrad laser.



1 - Power level guaranteed for 3 years from date of shipment, regardless of operation hours, within recommended coolant flow rate and temperature range.

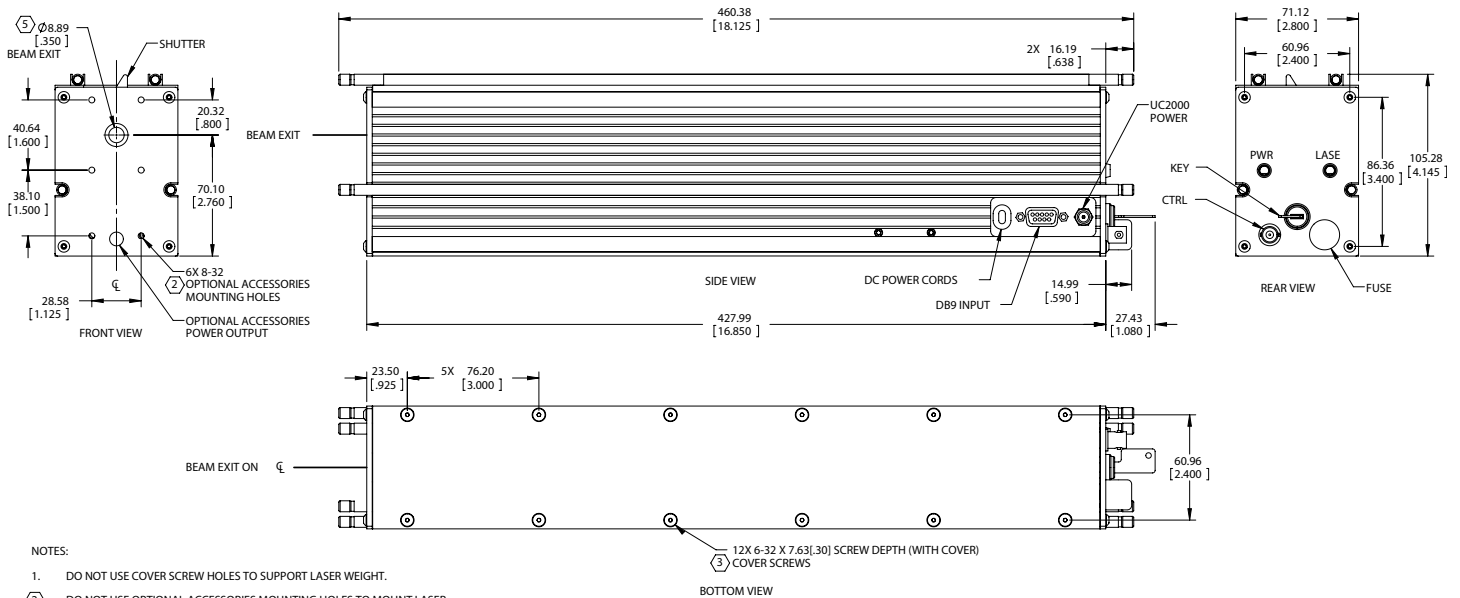
2 - Measured from cold start as $\pm(P_{max} - P_{min}) / (P_{max} + P_{min})$

3 - Measured 1/e² diameter at laser output.



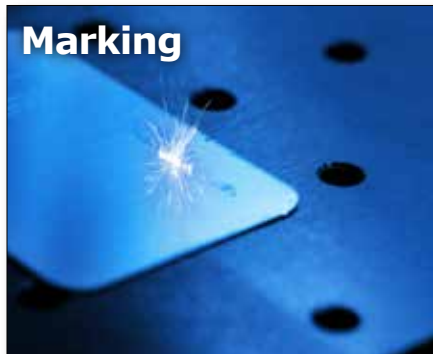
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Technical Illustrations dimension are in mm (inches)



- NOTES:
- DO NOT USE COVER SCREW HOLES TO SUPPORT LASER WEIGHT.
 - DO NOT USE OPTIONAL ACCESSORIES MOUNTING HOLES TO MOUNT LASER.
 - LASER IS MOUNTED BY REMOVING COVER SCREWS AND REPLACING WITH APPROPRIATE LENGTH SCREWS FOR YOUR MOUNTING APPLICATION. USE A MINIMUM OF FOUR SCREWS IN A SYMMETRICAL PATTERN TO PROPERLY DISTRIBUTE MOUNTING FORCES. DO NOT REMOVE COVER.
 - WEIGHT: 9 LBS.
 - BEAM PATH MAY NOT BE CENTERED OR PERPENDICULAR TO FACEPLATE APERTURE.

Recommended Applications



Marking

Enable fast, easy tracking and identification by applying permanent marks, text, and codes to a wide variety of materials.



Coding

Easily applies permanent alpha numeric codes, barcodes, text, and expiration dates to a variety of packaging materials that will not smear or rub off.



Engraving

Enhance tactile experience or enable quick identification of organic materials by adding distinctive texture, contours, marks, or text.

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