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

<table>
<thead>
<tr>
<th>Output Specifications</th>
<th>9.3 µm</th>
<th>10.6 µm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength</td>
<td>9.3 µm</td>
<td>10.6 µm</td>
</tr>
<tr>
<td>Output Power¹</td>
<td>&gt;8 W</td>
<td>&gt;10 W</td>
</tr>
<tr>
<td>Power Stability (cold start)²</td>
<td>±15%</td>
<td>±10%</td>
</tr>
<tr>
<td>Beam Quality (M²)</td>
<td>&lt;1.2</td>
<td></td>
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<tr>
<td>Beam Diameter³</td>
<td>3.5 mm</td>
<td></td>
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<tr>
<td>Divergence (full angle)</td>
<td>4.0 mrad</td>
<td></td>
</tr>
<tr>
<td>Ellipticity</td>
<td>&lt;1.2</td>
<td></td>
</tr>
<tr>
<td>Polarization</td>
<td>Linear (Vertical)</td>
<td></td>
</tr>
<tr>
<td>Rise Time</td>
<td>&lt;150 µs</td>
<td></td>
</tr>
<tr>
<td>Operating Frequency</td>
<td>0 - 25 kHz</td>
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</tbody>
</table>

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 ±(Pmax−Pmin)/(Pmax+Pmin)
3 - Measured 1/e² diameter at laser output.

A Novanta Company
48-1 CO₂ Laser

Technical Illustrations dimension are in mm (inches)

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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NOTES:

1. DO NOT USE COVER SCREW HOLES TO SUPPORT LASER WEIGHT.
2. DO NOT USE OPTIONAL ACCESSORIES MOUNTING HOLES TO MOUNT LASER.
3. 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.
4. WEIGHT: 9 LBS.
5. BEAM PATH MAY NOT BE CENTERED OR PERPENDICULAR TO FACEPLATE APERTURE.