vi30 CO2 Laser
Industry leading laser with more than 30 Watts of average power for marking, engraving, and ablating applications

Next gen high performance CO2 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
- Fast rise/fall times enable high speed engraving, marking, and coding applications for high-volume manufacturers and processors
- 30W continuous power for faster throughput
- Industry best maximum operating environment temperature ensures reliable operation in a wide range of conditions
- Compact, lightest 30W CO2 laser available, easily fits into tight spaces and onto weight sensitive systems

Gen2 Tube Design
The vi30 architecture features the new Gen2 tube design for lower thermal resistance to deliver more power from a compact package. The vi30’s stable, accurate beam creates detailed application 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.

Specifications

<table>
<thead>
<tr>
<th>Output Specifications</th>
<th>9.3 µm</th>
<th>10.2 µm</th>
<th>10.6 µm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength</td>
<td>9.3 µm</td>
<td>10.2 µm</td>
<td>10.6 µm</td>
</tr>
<tr>
<td>Output Power&lt;sup&gt;1&lt;/sup&gt;</td>
<td>&gt;20 W</td>
<td>&gt;25 W</td>
<td>&gt;30 W</td>
</tr>
<tr>
<td>Power Stability (cold start)&lt;sup&gt;2&lt;/sup&gt;</td>
<td>±7%</td>
<td>±5%</td>
<td></td>
</tr>
<tr>
<td>Power Stability (typical, after 3 min.)</td>
<td>±5%</td>
<td>±3%</td>
<td></td>
</tr>
<tr>
<td>Beam Quality (M&lt;sup&gt;2&lt;/sup&gt;)</td>
<td>≤1.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beam Diameter&lt;sup&gt;3&lt;/sup&gt;</td>
<td>2.5 mm ± 0.5 mm</td>
<td></td>
<td></td>
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<tr>
<td>Divergence (full angle)</td>
<td>&lt;7.0 mrad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ellipticity</td>
<td>&lt;1.2</td>
<td></td>
<td></td>
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<tr>
<td>Polarization</td>
<td>Linear (Horizontal)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rise Time</td>
<td>&lt;100 µs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Frequency</td>
<td>0 - 100 kHz</td>
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<td></td>
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</tbody>
</table>

Power Supply

- DC Input Voltage: 48 VDC
- Maximum Current: 10 A

Cooling

- Maximum Heat Load: 500 W
- Coolant Temperature: 45° C
- Minimum Flow Rate: 140 CFM, 2 required (air)

Environmental

- Operating Ambient Temperature: 15 - 40° C
- Maximum Humidity: 95%, non-condensing

Physical

- OEM Air Cooled Dimensions (LxWxH) mm (inches): 427 x 89 x 139 (16.8 x 3.5 x 5.5)
- Weight kg (lbs): 6.5 (14.3)

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

<sup>2</sup> Measured from cold start as ±(P<sub>max</sub>-P<sub>min</sub>)/(P<sub>max</sub>+P<sub>min</sub>)

<sup>3</sup> Measured 1/e<sup>2</sup> diameter at laser output.
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Technical Illustrations dimensions are in mm (inches)

Outline and mounting drawings for tall, wide, and water-cooled models are available on the Synrad website at: https://www.synrad.com/products/lasers/vi-series.

Recommended Applications

**Engraving**

100 kHz pulse frequency for accurate raster image scanning at high speeds.

**Marking**

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

**Coding**

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

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