**p150 CO2 Laser**

Industrial pulsed laser with more than 600 Watts of peak power for precision marking, drilling, and cutting applications

High performance pulsed CO2 laser engineered for optimal power stability, excellent beam quality, and fastest pulse rise time, delivers exceptional quality on the most challenging materials

- 150 W of average power for faster throughput and higher yields across a variety of target materials
- 600 W peak power delivers energy more efficiently, minimizing heat affected zone (HAZ) to process sensitive materials
- Excellent power and divergence stability deliver consistent, high quality application results
- Integrated beam conditioning guarantees a high quality, circular output beam for precise cutting, drilling, and intricate feature details

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### Specifications

**Output Specifications**

<table>
<thead>
<tr>
<th>Wavelength</th>
<th>9.3 µm</th>
<th>10.2 µm</th>
<th>10.6 µm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Output Power(^1)</td>
<td>&gt;150 W</td>
<td></td>
<td></td>
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<tr>
<td>Peak Pulse Power (typical)(^2)</td>
<td>600 W</td>
<td>550 W</td>
<td>600 W</td>
</tr>
<tr>
<td>Peak Pulse Energy (maximum)(^3)</td>
<td>335 mJ</td>
<td></td>
<td></td>
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<tr>
<td>Power Stability (cold start)(^4)</td>
<td>±5%</td>
<td>±6%</td>
<td></td>
</tr>
<tr>
<td>Power Stability (typical, after 3 min.)</td>
<td>±3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beam Quality ((M^2))</td>
<td>&lt;1.2</td>
<td></td>
<td></td>
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<tr>
<td>Beam Diameter(^5)</td>
<td>8.5 mm ± 1.0 mm</td>
<td></td>
<td></td>
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<tr>
<td>Divergence (full angle)</td>
<td>1.9 mrad ± 0.4 mrad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ellipticity</td>
<td>&lt;1.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polarization</td>
<td>Linear (Vertical)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rise/Fall Time(^6)</td>
<td>&lt;50 μs/100 μs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Frequency</td>
<td>0 - 200 kHz</td>
<td></td>
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</tr>
<tr>
<td>Duty Cycle Range</td>
<td>≤37.5%</td>
<td></td>
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<tr>
<td>Maximum Pulse Length</td>
<td>600 μs</td>
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</tr>
</tbody>
</table>

**Power Supply**

- DC Input Voltage: 48 VDC
- Maximum Current: 65 A
- Pulsed Current: 100 A for < 700 μs

**Cooling**

- Maximum Heat Load: 3500 W
- Coolant Temperature: 18 - 22° C (water)
- Minimum Flow Rate: 2.0 GPM, <60 PSI

**Environmental**

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

**Physical**

- Dimensions (LxWxH) (mm) (inches): 798 x 132 x 155 (31.4 x 5.2 x 6.1)
- Weight: 18.1 kg (40.0 lbs.)

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1 - Power level guaranteed for 2 years from date of shipment, regardless of operation hours, within recommended coolant flow rate and temperature range.
2 - Measured at 1 kHz, 10% duty cycle.
3 - Measured from average power at 625 Hz, 37.5% duty cycle.
4 - Measured as \((P_{max}-P_{min})/(P_{max}+P_{min})\) from cold start at 5 kHz, 37.5% duty cycle.
5 - Measured 1/e diameter at laser output.
6 - Measured at 1 kHz, 10% duty cycle.

Specifications are subject to change without notice.

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**When Results Matter**

The p150 was designed in response to industry needs for very high quality results on difficult to process materials. The combination of fast pulse rise time, best-in-class 600 watts peak power, and excellent beam quality opens up new capabilities to process sensitive materials such as thin films, where melt lips can be greatly reduced and even eliminated.

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**Cutting Electronic Films**

- Cutting & Perforating Packaging Films & Foils

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**Invisible Laser Radiation**

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

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SYNDRAD
A Novanta Company
p150 CO₂ Laser

Outline and Mounting Illustrations  dimensions are in mm (inches)

Recommended Applications

**Cutting**
150 W of continuous output power drives faster throughput for higher production yields. Excellent rise/fall time and divergence stability minimizes HAZ for clean cuts.

**Perforating**
600 W peak power delivers energy more efficiently, increasing perforating or drilling speeds and reducing HAZ; a solid solution for laser finishing processes on automated packaging lines.

**Thin Film Processing**
High peak and average power deliver the perfect laser for quality, precision drilling and cutting applications on a wide variety of thin, sensitive materials.

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