p250 CO2 Laser

Industrial laser with more than 800 Watts of peak power for high speed drilling, perforating, and cutting applications

High performance pulsed CO2 laser engineered to maximize production throughput and yield for a wide range of material processes

- 250 W of average power for faster throughput and higher yields across a variety of target materials
- 800 W peak power delivers energy efficiently, minimizing heat affected zone (HAZ) and increasing perforating or drilling speeds
- Excellent power and divergence stability for consistent, high quality application results
- Real-time performance monitoring reduces unplanned downtime with onboard advanced diagnostics that are Industry 4.0 ready

Specifications

<table>
<thead>
<tr>
<th>Output Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength</td>
</tr>
<tr>
<td>Average Output Power¹</td>
</tr>
<tr>
<td>Peak Pulse Power (typical)²</td>
</tr>
<tr>
<td>Peak Pulse Energy (maximum)³</td>
</tr>
<tr>
<td>Power Stability (cold start)⁴</td>
</tr>
<tr>
<td>Power Stability (typical, after 3 min.)</td>
</tr>
<tr>
<td>Beam Quality (M²)</td>
</tr>
<tr>
<td>Beam Diameter⁵</td>
</tr>
<tr>
<td>Divergence (full angle)</td>
</tr>
<tr>
<td>Ellipticity</td>
</tr>
<tr>
<td>Polarization</td>
</tr>
<tr>
<td>Rise/Fall Time⁶</td>
</tr>
<tr>
<td>Operating Frequency</td>
</tr>
<tr>
<td>Duty Cycle Range</td>
</tr>
<tr>
<td>Maximum Pulse Length</td>
</tr>
</tbody>
</table>

Power Supply

- DC Input Voltage: 48 VDC
- Maximum Current: 90 A
- Pulsed Current: 250 A for <1 ms

Cooling

- Maximum Heat Load: 4.3 kW
- Coolant Temperature: 18 - 22° C (water)
- Minimum Flow Rate: 3.0 GPM, < 60 PSI

Environmental

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

Physical

- Dimensions (LxWxH) mm (inches): 1252 x 315 x 198 (49.3 x 12.4 x 7.8)
- Weight: 48.5 kg (107 lbs.)

Clean Cuts, Faster Throughput

The p250 has excellent stability and high peak power, combined they limit the heat affected zone (HAZ), delivering cuts and perforations with minimal discoloration and melt. With zero contact to the target material, the p250 is the perfect solution for sensitive high-speed cutting applications. Surface deformation commonly associated with mechanical cutting systems is eliminated.

 specifications are subject to change without notice.

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 (Pₘₐₓ-Pₙこんに)/Pₘₐₓ+Pₙこんに) from cold start at 5 kHz, 45% duty cycle.
5 - Measured 1/e² diameter at laser output
6 - Measured at 1 kHz, 10% duty cycle.

Avoid eye or skin exposure to direct or scattered radiation. Class 4 Laser Product.
p250 CO₂ Laser

Recommended Applications

**Cutting**

250 W of continuous output power drives faster throughput for higher production yields. Excellent stability and high peak power minimize HAZ for clean cuts.

**Perforating**

800 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.

**Drilling**

High peak and average power deliver the perfect laser for quality, high speed drilling applications on a wide variety of materials.

Contact Us

**synrad.com**

**Americas & Asia Pacific**

Synrad
4600 Campus Place
Mukilteo, WA 98275
P (425) 349.3500
F (425) 349.3667
synrad@synrad.com

**Europe, Middle East, Africa**

Novanta Europe GmbH
Division Synrad Europe
Parkring 57-59
D-85748, Garching, Germany
P +49 (0)89 31707 0
F +49 (0)89 31707 222
sales-europe@synrad.com

**China**

Synrad China Sales and Service Center
Unit C, 5/F, Ting Wei Industrial Park
Liafang Road, Baoan District, Shenzhen
Guangdong, PRC 518133
P +86 (755) 8280 5395
sales-china@synrad.com

**Japan**

Novanta Japan Co., Ltd.
4666 Ikebe-cho Tsuzuki-ku
Yokohama Kanagawa 224-0053 Japan
P +81 3 5753 2462
F +81 3 5753 2467
sales-japan@synrad.com

SYNRA® is a registered trademark of Novanta Corporation. Copyright ©2018 Novanta Corporation. All rights reserved.