Performance

Setting benchmarks

COHERENT®
Superior Reliability & Performance
The Performance family

Manual laser welding

**Discover the benchmark of manual laser welding.**

Back in 1992 we pioneered manual laser welding, setting the standards till today. The Performance is available in three different variations – two closed laser-safe versions and an open one – to meet the needs of our customers in an ideal way.

**Stronger – enough power at any time**

■ Up to 100 W output power and 50 Hz pulse frequency significantly increase welding speed.

■ Manual laser welding systems are frequently used as workhorses in rough workshop environments. The cooling unit of the Performance is designed for a 100% duty cycle even at high ambient temperature.

■ The embedded control unit and state-of-the-art power supply enhance long-term stability and reliability – guaranteeing reliable 24/7 operation.

**Smarter – weld-assist systems for a new level of control and user friendliness**

■ The Performance is clever it takes advantage of welding intermissions for workpiece handling. The new SPEEDmode™ increases the maximum pulse frequency significantly and uses work-piece handling time for reloading.

■ The ECOmode™ saves energy during longer intermissions.

■ BURSTmode™ and Pulse Ramping: simplify welding tasks or jobs asking for high concentration, like welding of delicate medical devices. They offer a new level of control and sensitiveness.

■ The dynamic foot switch provides an intuitive control of welding speed or strength on the fly.
**Dynamic Foot Switch**
- Offers sensitive control of an arbitrary laser parameter.
- Acts like a foot throttle and is easy to configure.
- Triggers start and end-ramp when using Pulse Ramping mode.
- Adjusts welding speed or power during welding.

**IPMmode™/Pulse Shaping**
- IMPmode™ guarantees high pulse to pulse stability.
- Especially suited for micro welds.
- Pulse shaping to preset pulse shapes for many materials.
- Perfect welds even of highly reflective metals and alloys.

**SweetSpot™**
- Patented resonator design.
- No first-pulse effect.
- Constant weld quality from the very first pulse.
- Assures a reliable welding process.

**MicroWeld™**
- Weld spots with less than 0.1 mm diameter.
- For extremely fine welds and delicate workpieces.

**SPEEDmode™**
- Significant power increase within a certain timespan.
- Shorter process time through higher pulse frequencies.
- System reloading during welding intermissions for workpiece handling.

**BURSTmode™**
- Fires laser pulses with a predefined number.
- Stops automatically when number of pulses is reached.
- Risk-free working with fast pulse sequences.
- Increased processing speed.

**Pulse Ramping**
- Successively increases/decreases the power of first/last laser pulses.
- Ideally suited for closed seam welds and gas-tight housings.
- A good choice for starting a weld on highly reflective material.
- Reduced risk of piercing thin material.

**TrueView™**
- Ensures a 100 % hit-rate even when working out of focus.
- The laser beam is always aligned to the crosshair.
- No parallax misalignment.

**ECOmode™**
- Switches off system components during idle times.
- Only 10 W power consumption vs. 200 W in standby mode.
- Fast restart within less than 1 sec at any time.
- Reduced costs due to less lamp wear.

**Housing/Working Chamber**
- Easy, barrier-free access through wide opening door.
- Slender foot area offers comfortable seating position.
- Single-handed opening, other hand may stay in working position.

**Performance Unlimited**
- Mechanical rocker as hand rest.
- Laser proved safety curtain.
- High flexibility combined with high laser safety.

**Performance Open**
- Open class 4 concept.
- It allows a high degree of freedom while working on long and bulky parts.
<table>
<thead>
<tr>
<th>Laser Source</th>
<th>Classic</th>
<th>SweetSpot®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>pulsed Nd:YAG; 1064 nm</td>
<td></td>
</tr>
<tr>
<td>Nominal power</td>
<td>W 70</td>
<td>55</td>
</tr>
<tr>
<td>Max. power with SPEEDmode™</td>
<td>W 100</td>
<td>85</td>
</tr>
<tr>
<td>Pulse peak power</td>
<td>kW 8</td>
<td>6</td>
</tr>
<tr>
<td>Pulse energy</td>
<td>J 90</td>
<td>70</td>
</tr>
<tr>
<td>Pulse duration</td>
<td>ms</td>
<td>0.3 bis 50</td>
</tr>
<tr>
<td>Pulse frequency</td>
<td>Hz</td>
<td>single pulse up to 50</td>
</tr>
<tr>
<td>Focal diameter</td>
<td>mm</td>
<td>0.3 - 2</td>
</tr>
<tr>
<td>With MicroWeldT™</td>
<td>mm</td>
<td>0.1 - 0.5</td>
</tr>
<tr>
<td>Pulse shaping</td>
<td>15, graphic editor</td>
<td></td>
</tr>
<tr>
<td>Memory</td>
<td>kB</td>
<td>32</td>
</tr>
</tbody>
</table>

**User Interface**
- Display and operation: 5.7" color TFT touch display, joystick in working chamber
- Interfaces: USB Device optional

**Utilities**
- Electrical:
  - V 110/230
  - Hz 50/60
  - A 16/13
  - Ph 1
- Power consumption:
  - Nominal power kW 2,2
  - Stand-by kW 0,2
  - ECOmode™ kW 0,01
- Cooling: integrated water-air heat exchanger

**Measures**
- Weight kg 125
- Dimensions (WxHxD) mm 530x1240x994
- Ambient temperature max. C° 35

**Configuration**
- Dynamic foot switch: optional
- MicroWeld™: optional
- ECOmode™: X
- SPEEDmode™: X
- Processing gas supply: fixed and flexible gas nozzle
- Cooling air: optional, flexible cooling air nozzle
- LED ring light: optional
- Exhaust: integrated, filtration efficiency 99.997% acc. DIN24184
- Microscope: LEICA 10-x, optional 16-x