

# Performance



The Benchmark Manual Welding Laser



# The Performance Family

## Manual Laser Welding

### Precision for Challenging Jobs

- The SweetSpot Resonator® assures constant weld quality from the very first pulse and there with a reliable welding process
- The MicroWeld feature provides for extremely thin welds especially on delicate workpieces.

### 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.

**Performance**



**Performance Unlimited**



**Performance Open**





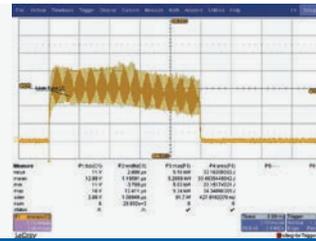
**SweetSpot Resonator®**

- 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



**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



**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



**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 proofed 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

## The Performance Family Manual Laser Welding

| LASER SOURCE                           | Classic   | SweetSpot Resonator® |
|--|---|----------------------|
| Type                                   | pulsed Nd:YAG; 1064 nm                                    |                      |
| Nominal Power (W)                      | 70  | 55                   |
| Max. Power with SPEEDmode (W)          | 150   | 150                  |
| Pulse Peak Power (kW)                  | 8   | 8                    |
| Pulse Energy (J)                       | 90  | 70                   |
| Pulse Duration (ms)                    | 0.3 bis 50  |                      |
| Pulse Frequency (Hz)<br>with SPEEDmode | single pulse up to 50<br>100                              |                      |
| Focal Diameter (mm)                    | 0.3 to 2.0  | 0.2 to 2.0           |
| With MicroWeld™ (mm)                   |   | 0.1 to 0.5           |
| Pulse Shaping                          | 15, graphic editor  |                      |
| USER INTERFACE                         |   |                      |
| Display and Operation                  | 5.7" color TFT touch display, joystick in working chamber |                      |
| Interfaces                             | USB Device optional                                       |                      |
| UTILITIES                              |   |                      |
| Electrical                             | 230 V (50/60 Hz), 16/13 A, 1 Ph                           |                      |
| Power Consumption (kW)                 |   |                      |
| Nominal Power                          | 2.2   |                      |
| ECMode                                 | 0.01  |                      |
| Cooling                                | integrated water-air heat exchanger                       |                      |
| MEASUREMENTS                           |   |                      |
| Weight                                 | 125 kg (275.5 lbs)  |                      |
| Dimensions (W x H x D)                 | 530 x 1240 x 994 mm (20.87 x 48.82 x 39.13 in.)           |                      |
| Ambient Temperature (Max.)             | 35°C (95°F)   |                      |
| CONFIGURATION                          |   |                      |
| Dynamic Foot Switch                    | optional  |                      |
| MicroWeld                              | optional  |                      |
| ECMode                                 | included  |                      |
| SPEEDmode                              | included  |                      |
| 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 10x, optional 16x                                   |                      |



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Coherent offers a limited warranty for all Performance Lasers. For full details of this warranty coverage, please refer to the Service section at [www.coherent.com](http://www.coherent.com) or contact your local Sales or Service Representative.  
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