

Performance Series

High Quality Manual Welders

Performance Series Manual Welders enable you to make micron level precision spot and seam welds on metal quickly and easily. Three different free standing models offer various sized working chambers, numerous laser options, and even the capability for motorized part rotation. This ensures that there's a Performance Series product that matches your specific welding requirements and fits your budget. All Performance Series Welders share a common user interface which makes job setup and operation simple, even for inexperienced personnel.



MODELS

- Performance features a working chamber with a hinged cover. This provides easy access and can be opened with one hand, while the other is holding the workpiece.
- Performance Unlimited has an enclosed workspace with a laser-proof safety curtain on one side. This makes it easy to weld long or bulky workpieces without any compromise in operator safety.
- Performance Open has no working chamber, enabling welding of virtually any sized part.

BENEFITS

- Easy to use with minimal operator training
- Superior quality welds
- High throughput
- Excellent part-to-part consistency

Performance Manual Welders

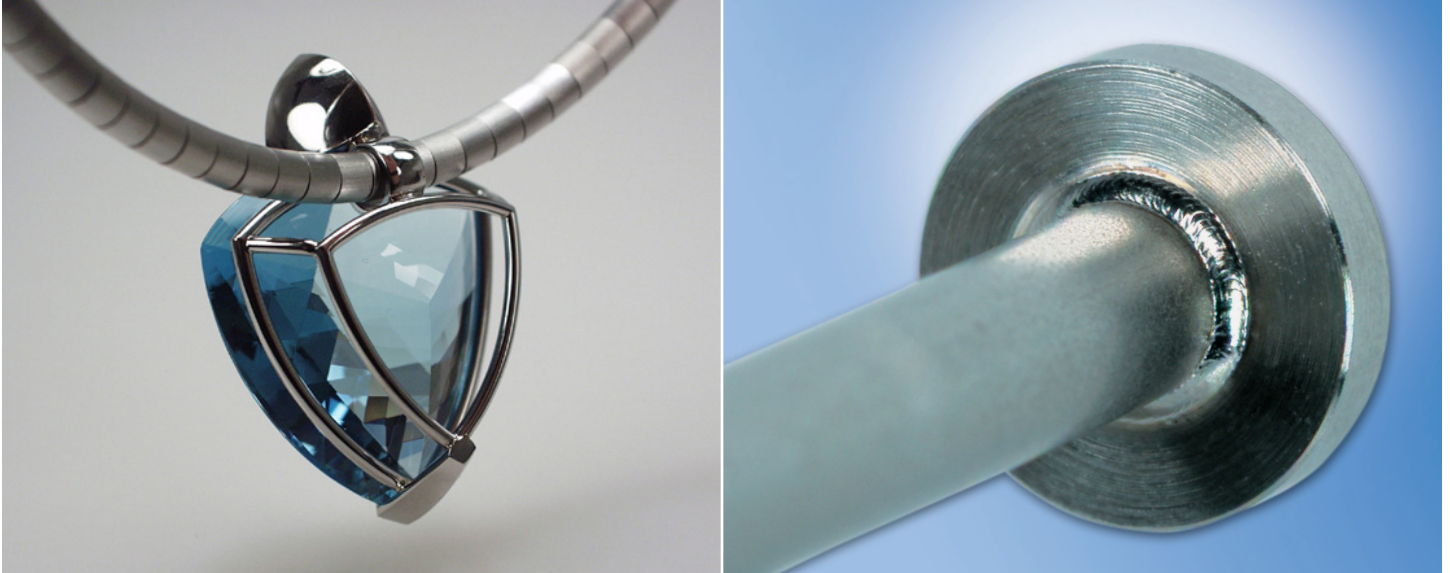
Laser Source	LPSS Classic	LPSS SweetSpot	Fiber 150	Fiber 300
Nominal Power (W)	70 (150 with SPEEDmode)	55 (150 with SPEEDmode)	150	300
Pulse Peak Power (kW) at Workpiece	0.1 to 8	0.1 to 8	0.025 to 1.3	0.025 to 2.7
Pulse Duration (msec)	0.3 to 50		0.05 to 50	
Pulse Energy (J)	90 (100 with SPEEDmode)	70 (100 with SPEEDmode)	0.001 to 13	0.001 to 28
Pulse Frequency (Hz)	single pulse up to 50 100 with SPEEDmode		single pulse up to 100	
Focal Diameter (mm)	f 120 mm: 0.3 to 2.6	f 120 mm: 0.3 to 2.6 w/MicroWeld 0.1 to 0.5	f 120: 0.09 to 1.2 f 90: 0.068 to 0.9	f 120: 0.15 to 1.2 f 90: 0.115 to 0.9
Focus Tolerance Range (mm)			>±0.4	
User Interface				
Display	5.7" color TFT touch display, 3x joystick in working chamber			
Interfaces	USB 5V power, optional USB (device), optional Ethernet			
Pulse Shaping	15 predefined shapes, graphic editor for custom shapes			
Utilities				
Electrical	230 V (50/60 Hz), 16A, 1phase			
Power Consumption (kW)				
Nominal	2.2		1.32	
ECO Mode	0.01		1.32	
Cooling	integrated water-air heat exchanger		forced air	
Measurements				
Weight				
Standard Housing	125 (275.5 lbs)		129 (284.4 lbs)	
Dimensions (mm) (W x H x D)				
Standard Housing	547 x 1235 x 1045 (21.5 x 48.6 x 41.1 in.)			
Ambient Temperature (°C)	10 to 35		15 to 35	15 to 30
Measurements				
Microscope	Leica 10x (optional 16x)		Leica 16x	
Camera	optional integrated work chamber camera, HDMI output			
Process Gas Supply	fixed and flexible gas nozzle			
Process Gas Control	optional gas pressure sensor			
Cooling Air	optional flexible cooling air nozzle			
Fume Exhaust	optional integrated exhaust, HEPA 99,997% acc. DIN24184 optional interface for external exhaust unit (available as accessory)			
Power Monitor	optional integrated pulse power sensor with USB connection for measurement and logging			
Radiation Axis	optional rotation axis with 3-chaw chuck			

Manual Laser Welding

Performance Family Manual Welders combine a laser source, stereomicroscope viewer and control interface into a single, freestanding system. Highly reliable and mounted on casters, they are cost-effective and convenient to use in 24/7 manufacturing environments ranging from medical products to jewelry.

System software allows both quick setup using default parameters, as well as the ability to optimize performance through several powerful options. For example, pulse shape control enables laser output to be precisely optimized for various metals.

Each model of the Performance Series can be supplied with either a pulsed solid-state laser or a pulsed fiber laser.



Solid-State Lasers

Solid-state lasers offer an economical option that's still strong on features and capabilities. In particular, they deliver the highest peak power, which is great for welding highly reflective materials and producing rigid, strong welds. Plus, the patented SweetSpot Resonator employed by Coherent eliminates a traditional shortcoming of flashlamp-pumped solid-state lasers, namely, the "first pulse effect." Here, the first pulse has higher energy than subsequent pulses, which can damage delicate parts.

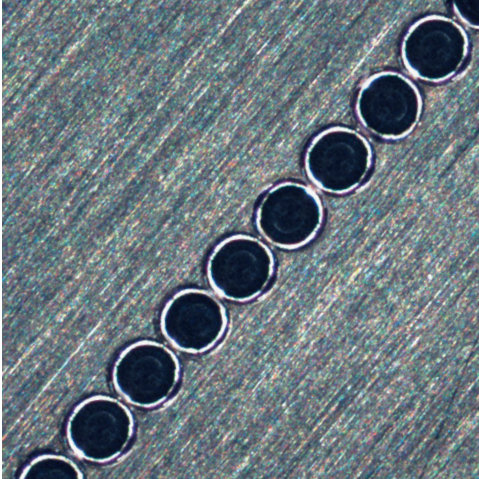
Solid-state lasers deliver a great combination of weld quality and value for most users. That's why they've become so popular in jewelry manufacturing and repair, and in job shops.

Fiber Lasers

Fiber lasers offer improved performance, and are intended for applications where precision, weld quality and consistency are most critical, such as in medical product manufacturing or aerospace.

One key advantage of the Coherent fiber laser system is improved beam quality; this increases depth of focus giving the operator more tolerance for where they hold the part. Also, our dedicated beam guiding optics with true zoom focusing enable adjustment of the focused laser spot size.

Fiber lasers also offer improved pulse-to-pulse consistency and long term stability. This keeps weld seams consistent and completely eliminates any possibility of weld voids.



Improved Weld Consistency

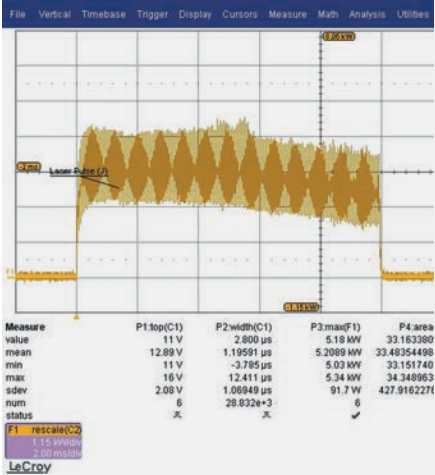
- Constant weld quality from the very first pulse with SweetSpot Resonator®
- Improved process consistency
- Small weld spots for extremely delicate workpieces using MicroWeld™
- Widest range of welding capabilities

Work Faster

- Higher pulse rate reduces process time
- SpeedMode increases power briefly for welding certain materials
- Addresses special applications (e.g. building spheres and tip rounding)

Easier Closed Seam Welds

- Use fast pulse sequences confidently by presetting the pulse count
- Avoids piercing thin materials with BURSTmode™
- Properly dosed energy deposition even at seam overlap



Weld Any Metal

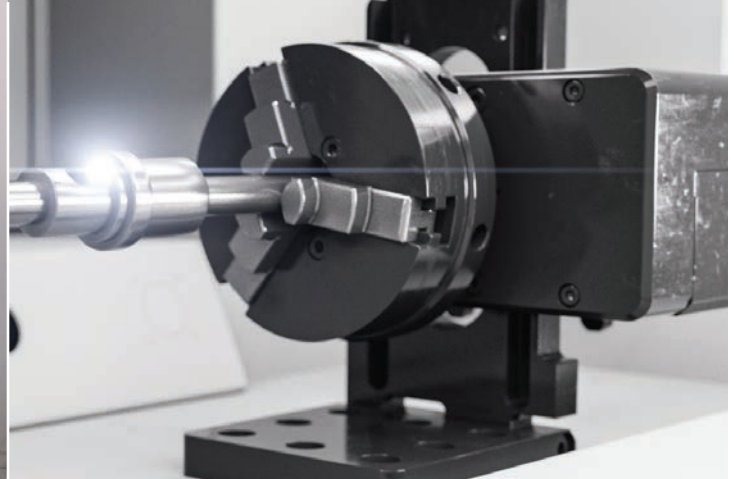
- Optimize pulse shape for each material
- Welding highly reflective metals, dissimilar materials and special alloys
- Avoids micro cracking

Perfect Vision and Aiming

- TrueView™ parallax free microscope and laser alignment guarantee the weld is placed properly
- Ensures a 100% success rate even when working out of focus

Ergonomically Designed

- Easy access to work chamber through wide opening door
- Comfortable seating position with controls placed within easy reach

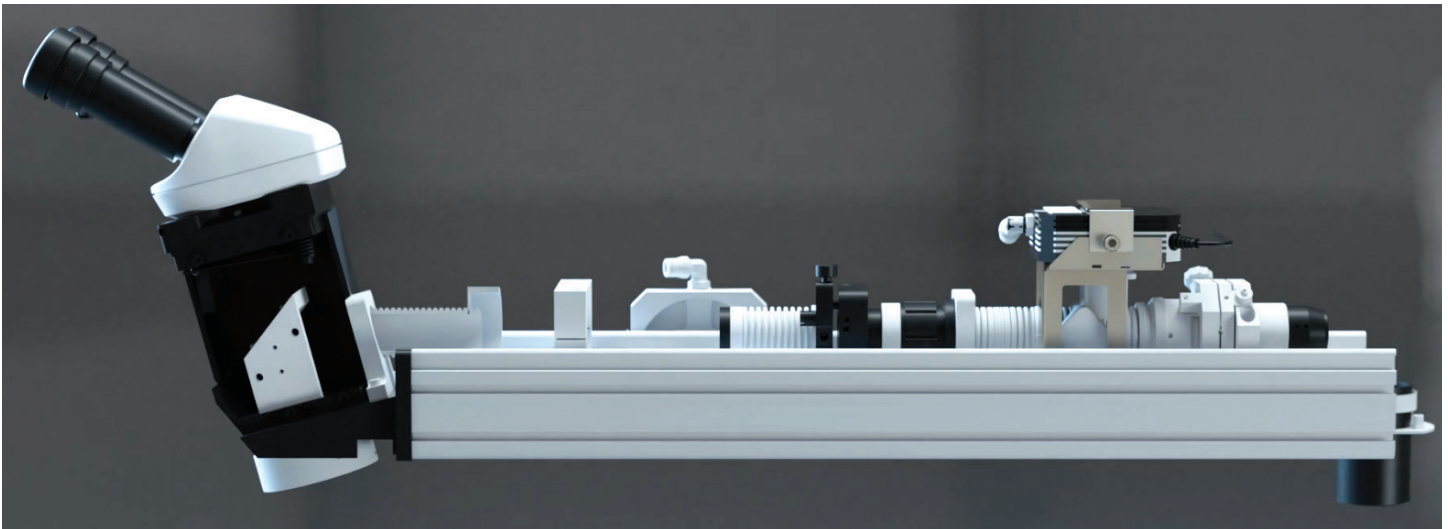


Complete Traceability

- Measure and record every single laser pulse
- USB connects to a separate PC for data logging

Simply Welding Round Parts

- Integrated rotary part motion
- Easily controlled via touch screen
- Controlled simultaneously with laser



Advanced Beam Delivery Optics

- Easier to use and more flexible
- Less operator dependence
- Increased yields
- Improved reproducibility