



LW5AME

Pulsed Nd:YAG Laser Micro Welder

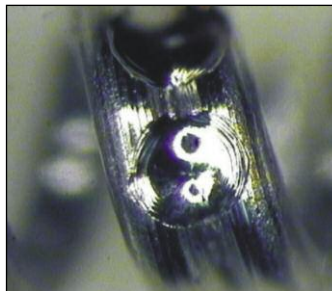
The LW5AME **micro welder** laser is specifically designed to meet the stringent demands of FDA process certification and reliable long term performance for laser welding small, delicate components such as implantable medical devices, surgical tools, sensors, automotive electronics, aerospace components.

LW5AME features three built-in fiber outputs which can be configured in time share or energy share modes making it possible to address the most critical applications utilizing one or more workstations up to 30 meters from the laser.

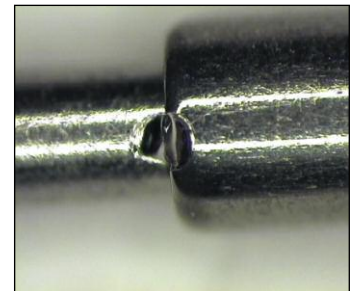
KEY FEATURES

- 30 micron spot diameter for precision welding applications
- 20-segment pulse shaping provides deep penetration welds
- Up to three time share or energy share outputs
- Real time power feedback ensures exceptional pulse-to-pulse power stability

TYPICAL APPLICATIONS



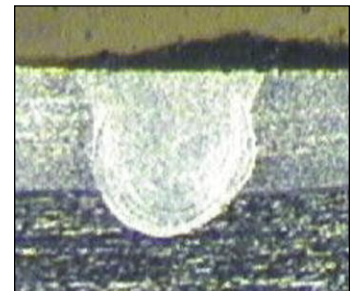
Fine spring



Hypo-tubing

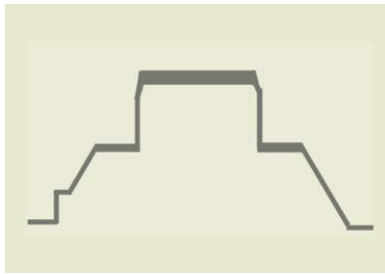


Guide wire welding

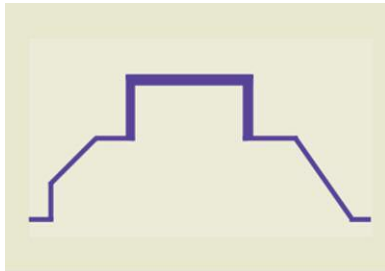


Lap weld cross section

FEATURES



Programmed Pulse Shape



Actual Laser Output

PROCESS CONTROL

The LW5AME micro welder sets the industry standard for process control, weld quality and repeatability. High brightness output and low aberration beam delivery optics produce weld spot diameters as small as 30 microns and minimal heat affected zone (HAZ). Pulse width increments of 20 μs down to 60 μs, and peak powers to 1 kW, the LW5AME offers precise control of weld dimensions.

REAL TIME POWER FEEDBACK

Real time power feedback ensures extremely accurate pulse-to-pulse stability and repeatability. Laser weld pulses are programmed in peak power which is monitored at a 20 kHz sampling

rate in real time. Lamp voltage is automatically adjusted to compensate for flashlamp degradation, temperature variations, and power changes due to thermal lensing.

20-SEGMENT PULSE SHAPING

Pulse shaping permits quick and easy optimization of robust laser weld schedules for a wide variety of materials. Pulse shaping is used to produce deep penetration welds without weld splatter and minimal HAZ. With up to 20 programmable segments, including ramp up/down, LW5AME provides the ultimate control, flexibility, and reliability in tailoring the laser weld pulse.

TECHNICAL SPECIFICATIONS

Parameter	LW5AME Laser Micro Welder
Input power	200/220/240 VAC +10% / -15%, 50/60 Hz, single-phase
Maximum peak power	1 kW / 0.5 ms
Maximum peak energy	100 μm SI fiber: 0.12 J / 200 μm SI fiber: 0.25 J
Average output power	100 μm SI fiber: 0.24 W / 200 μm SI fiber: 0.25 W
Pulse width	60 - 500 μs (20 μs increment)
Pulse repetition speed	1 – 30 pps
Input voltage	200/220/240 VAC +10% / -15%, 50/60 Hz, 1Ø
Wavelength	1.064 μm
No. of schedules available	32 schedules
Time/energy sharing	Single, energy share 2 – 3, time share 2 – 3
Applicable optical fibers	φ0.1 mm SI optical fiber, φ0.2 mm SI optical fiber
Cooling method	Forced air cooling
External communication	RS-485, Digital I/O

WEIGHT & DIMENSIONS

Dimensions (L x W x H)	26.2 in x 12.2 in x 27.2 in (665 mm x 310 mm x 700 mm)
Weight	154 lb (70 kg)



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