

# A SERIES:

## Pulsed Nd:YAG ULTIMATE CONTROL LASER WELDER LW150A



*Pacemaker Cases*



*Automotive Valve Component*



*Disk Drive Flexure*



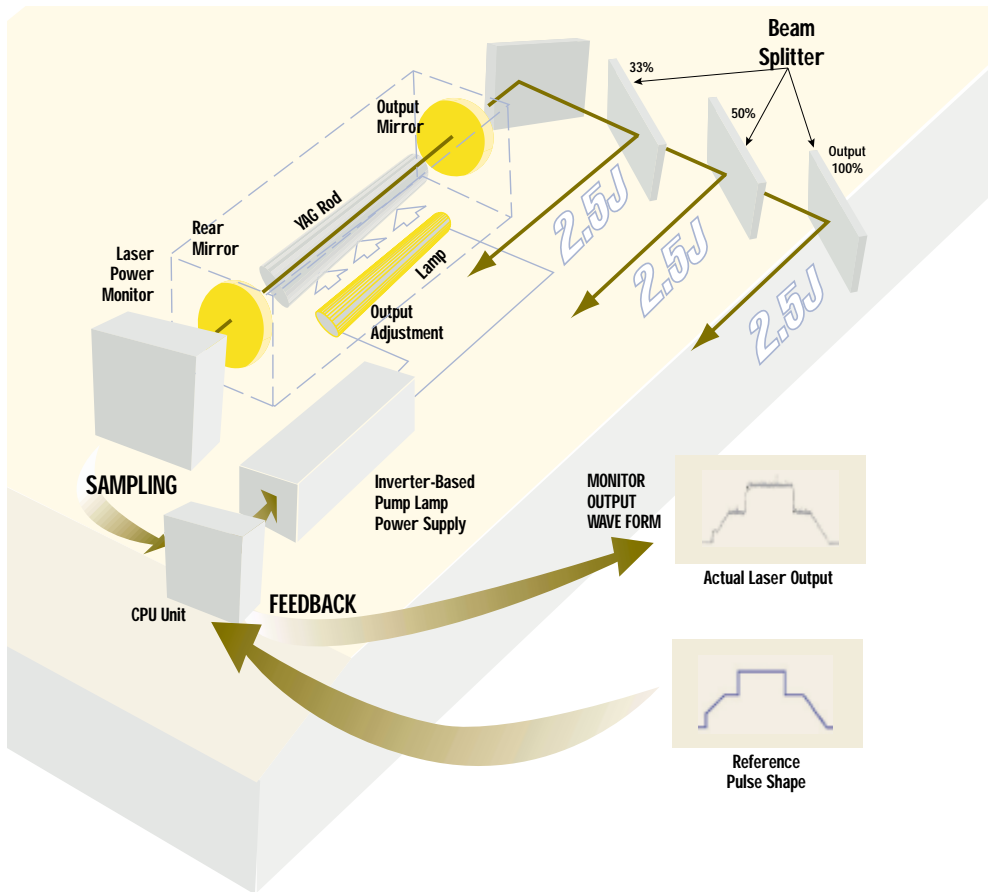
# WELDING LASERS

## ULTIMATE CONTROL – THE NEXT GENERATION

### FEATURES:

- Real time power feedback
- Exceptional branch balance stability
- 20 segment pulse shaping
- Power ramp-up/ramp-down
- CDRH and CE approved
- Up to 4-way energy-share and up to 6-way time-share outputs
- Air cooling option

Unitek Miyachi's new, LW150A pulsed Nd:YAG laser is designed specifically to meet the stringent demands of precision welding applications. These state-of-the-art lasers provide exceptional pulse energy and branch balance stability, and feature real-time power feedback, 20-segment pulse shaping, power ramp-up/ramp-down and up to six time-shared or four energy-shared fiber outputs.



## REAL-TIME POWER FEEDBACK

The real-time power feedback feature ensures extremely stable pulse-to-pulse energy stability which is essential for successful spot and seam welding of medical components and a broad range of materials. Laser pulses are programmed in instantaneous power which automatically compensates for flashlamp degradation, temperature variations and power changes due to thermal lensing, as well as other factors.



No Power Feedback



Power Feedback



Consistent Spot Welding with Power Feedback

## PULSE SHAPING

The pulse shaping feature permits quick and easy optimization of robust laser weld schedules for a variety of applications and materials and produces deep penetration welds with low weld splatter. Pulse shaping also helps to eliminate cracking in many otherwise difficult-to-weld materials. With up to 20 programmable segments including steps and ramps, the A-Series lasers provide the ultimate control and flexibility in tailoring the laser welding pulse to meet robust laser weld process requirements and greatly extend the range of materials, platings and joint designs that can be successfully welded.



Advanced pulse program mode.



Pin hole

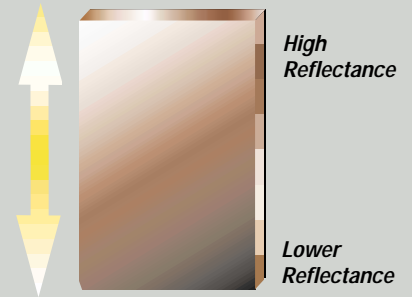


No pin hole

Eliminating pin holes with pulse shaping on 430 stainless steel

## SUPERIOR BRANCH TO BRANCH STABILITY

**VARIABLE MIRROR:**  
The reflectance can be adjusted by moving the mirror up and down.



For critical energy sharing applications, the new adjustable dichroic beam splitters, based on a patented ion-assisted deposition (IAD) fabrication technique, provide superior branch-to-branch energy balance under all conditions. This feature yields tight control over post weld shift in critical photonic device welding applications by providing precisely balanced laser pulse energy and weld nugget formation on every shot.

## POWER RAMP-UP AND RAMP-DOWN TAPERING

Power ramp-up and ramp-down tapering improves seam welding quality by preventing under and overheating at the beginning and end portions of the seam.



Without ramp-up/down power control function.



With ramp-up/down power control function.



Implantable medical device

## FULL SERVICE SUPPORT – A PARTNERSHIP

Unitek Miyachi is the leading U.S. supplier of industrial lasers into the medical, photonics, and electronic component marketplaces. We have an unsurpassed reputation for providing outstanding service and support both before and after the sale. When you purchase a Unitek Miyachi laser, you enjoy the benefits of a long-term commitment to customer satisfaction and a partnership with Unitek Miyachi Corporation. Unitek Miyachi has almost 20 years' experience in laser technology and we transfer that knowledge to our partners with every system that ships from our facility:

- Standard and Custom System Design and Manufacturing Including:
  - ▲ CDRH Class I eye-safe enclosures
  - ▲ Large windows for process viewing
  - ▲ Configurable control panels with PLCs
  - ▲ Interior lighting
  - ▲ Base plates with pre-drilled tooling holes
  - ▲ Internal AC power strips
  - ▲ Multi-axis CNC motion components and tooling
  - ▲ Configurable with all Unitek Miyachi Lasers
- Applications Development
- Process Development Support
- Installation and Training
- Expert, Worldwide 24/7 Field Service Support

**Ask about our Extended Warranty and Preventive Maintenance Plans.**



## SPECIFICATIONS

<i>Parameter</i>	<i>LW150A</i>
<i>Maximum Average Power</i>	150 Watts
<i>Maximum Pulse Energy</i>	70J at 10mS
<i>Maximum Peak Power</i>	7kW
<i>Time Share Outputs</i>	Up to 6
<i>Energy Share Outputs</i>	Up to 4
<i>Pulse Width</i>	0.25mS – > 99.9mS
<i>Pulse Width Resolution</i>	0.05mS < 5mS and 0.1m ≥ 5mS)
<i>Oscillation Wavelength</i>	1.064µm
<i>Positioning Guide Beam</i>	Built-in visible laser (red), standard
<i>Output Stability</i>	±3%
<i>Repetition Speed</i>	1 – 200pps
<i>Input Voltage</i>	220 VAC or 380/400VAC, 50/60Hz, 3 phase, 30A
<i>Internally Stored Weld Schedules</i>	32
<i>Start/Schedule Set</i>	External input DS bounce time
<i>Ambient Temperature</i>	41-86°F (5-30°C)
<i>Alarm for Lamp Life</i>	Preset number of shots or input power value to lamp
<i>Data Communications</i>	RS-485 full/half duplex
<i>Cooling</i>	5-32°C inlet water temp., 3-bar max. pressure drop, 5.5kW cooling capacity
<i>Branch/Main Shutter Speed</i>	≤150mS
<i>Time Share Shutter Speed</i>	≤50mS
<i>Dust Proof Optics</i>	Yes

Your Local Representative



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