

Pulsed Nd:YAG Laser Welders

ML-2351A/ML-2350A/ML-2450A



AMADA WELD TECH's pulsed Nd:YAG lasers are designed to meet the stringent demands of precision welding applications found in diverse components such as medical devices, photonic devices, and other precision parts.

ML-2351A laser welder features small spot sizes, excellent beam quality and exceptional pulse-to-pulse stability. It is ideal for use in precise scan held weld systems. ML-2351A lasers are available in air or water cooled versions.

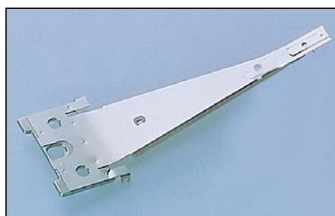
ML-2350A is a power and pulse energy upgrade over the model ML-2351A. It is an economical medium power laser which produces a wide range of spot sizes. ML-2350A lasers are available in air or water cooled versions.

ML-2450A is an economical high speed seam welder, ideal for ferrous materials. Higher average power allows for higher repetition rate and faster processing.

KEY FEATURES

- Real time closed-loop optical power feedback ensures exceptional pulse stability
- Power ramping results in smooth end-of-seam transitions
- Pulse shaping provides a wide process window
- Configurable with up to six time and energy sharing outputs
- Air-cooled option for simplified installation

TYPICAL APPLICATIONS



Disk drive gimbal



Medical probe



Automotive valve



Pacemaker cases

TECHNICAL SPECIFICATIONS

Parameter	ML-2351A	ML-2351AF	ML-2350A	ML-2350AF	ML-2450A
Maximum average power	50 Watts		70 Watts		150 Watts
Maximum pulse energy	50 J ¹		70 J ¹		70 J ¹
Maximum peak power	5 kW ¹		7 kW ¹		7 kW ¹
Time share outputs	Up to 6				
Energy outputs	Up to 4				
Pulse width range	0.25 → 30 ms				0.25 → 100 mS
Pulse width resolution	0.05 ms < 5 ms and 0.1 ms ≥ 5 ms				
Oscillation wavelength	1.064 μm				
Positioning guide beam	Built-in visible laser (red)				
Output stability	±3% ²				
Repetition speed	1 – 200 pps				
Input voltage options	220 VAC +10%/-15%, 50/60 Hz ±3%, 3-phase 400 VAC +10%/-15%, 50/60 Hz ±3%, 3-phase				
Recommended service	20 A (220 VAC) and 10 A (400 VAC)				30 A (220 VAC) and 20 A (400 VAC)
Max. power consumption	3.3 kW				5.7 kW
Schedule set	32 schedules				
Schedule change time	Start Delay Time 0.1 ms, 1 ms, 4 ms, 8 ms, 16 ms selectable				
Ambient temperature	41 - 86°F (5 - 35°C)				
Alarm for lamp life	Preset number of shots or input power value to lamp				
RS-485: type baud rate parity stop bits	Full duplex or half duplex 9,600 bps, 19,200 bps or 38,400 bps Even, odd, or no parity bit 1 or 2				
Cooling	5-25°C inlet water temp. 294 kPa max. pressure drop 1.0 ton cooling capacity	Air cooled – no external water required	5-25°C inlet water temp. 294 kPa max. pressure drop 1.0 ton cooling capacity	Air cooled – no external water required	5-32°C inlet water temp. 294 kPa max. pressure drop 1.5 ton cooling capacity
Branch/main shutter speed	≤150 ms				
Time share shutter speed	≤50 ms				
Dust proof optics path	Yes				

Notes: ¹ Pulse Width = 10mS ² Laser output energy at least 5 J per pulse and 1 kW peak power minimum

WEIGHT & DIMENSIONS

	ML-2351A / ML-2350A	ML-2450A	ML-2351AF / ML-2350AF	ML-2351A / ML-2350A	ML-2450A
Dimensions W x D x H	19.5 in x 39.2 in x 39.0 in (495 mm x 995 mm x 990 mm)	19.5 in x 39.2 in x 39.0 in (495 mm x 995 mm x 990 mm)	20.9 in x 39.2 in x 39.0 in (530 mm x 995 mm x 990 mm)	19.5 in x 39.2 in x 39.0 in (495 mm x 995 mm x 990 mm)	19.5 in x 39.2 in x 39.0 in (495 mm x 995 mm x 990 mm)
Weight	463 lb (210 kg)	507 lb (230 kg)	485 lb (220 kg)	529 lb (240 kg)	551 lb (250 kg)



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