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.

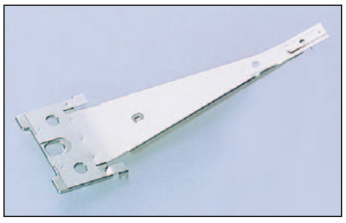
ML-2350A is a power and pulse energy upgrade over the model ML-2351A. It is an economical medium power laser which produces a wide range of spot sizes. ML-2350A lasers are available in air or water cooled versions.

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)





USA Headquarters and Western Technical Center
AMADA WELD TECH
1820 S. Myrtle Ave. • Monrovia, CA 91016 US • T: (626) 303-5676
info@amadaweldtech.com • www.amadaweldtech.com
ISO 9001:2015 Certified Company • 24/7 Repair Service: 1-866-751-7378

AMADA WELD TECH
(Eastern Technical Center)
High Point, North Carolina
T: (941) 544-5762
southsales@amadaweldtech.com

AMADA WELD TECH
(Midwest Technical Center)
Detroit, Michigan
T: (248) 313-3078
midwestsales@amadaweldtech.com

AMADA WELD TECH GmbH
Puchheim, Germany
T: +49-89-839403-0
infode@amadaweldtech.eu

AMADA WELD TECH SHANGHAI CO., LTD.
Shanghai, China
T: +86-21-6448-6000
jwu@amadaweldtech.com.cn

AMADA WELD TECH KOREA CO., LTD.
Seoul, Korea
T: +82-31-8015-6810
sales@amadaweldtech.co.kr

AMADA TAIWAN CO., LTD.
Taipei, Taiwan
T: +886-3-328-3511

AMADA (THAILAND) CO., LTD.
Bangkok, Thailand
T: +66-2170-5900
info@amada.co.th

AMADA VIETNAM CO., LTD.
Ha Noi, Vietnam
T: +84-24-6261-4583
thuyet@amada.co.jp

AMADA WELD TECH INDIA PVT., LTD.
Bangalore, India
T: +91-80-4092-1749
info@amadaweldtech.in

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