

# 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.

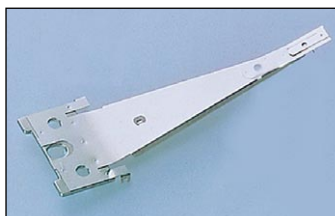
ML-2350A is a power and pulse energy upgrade over the model ML-2351A. It is an economical medium power laser which produces a wide range of spot sizes. ML-2350A lasers are available in air or water cooled versions.

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 <sup>1</sup>                                                                                          |                                            | 70 J <sup>1</sup>                                                                  |                                            | 70 J <sup>1</sup>                                                                  |
| Maximum peak power                               | 5 kW <sup>1</sup>                                                                                          |                                            | 7 kW <sup>1</sup>                                                                  |                                            | 7 kW <sup>1</sup>                                                                  |
| 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% <sup>2</sup>                                                                                           |                                            |                                                                                    |                                            |                                                                                    |
| Repetition speed                                 | 1 – 200 pps                                                                                                |                                            |                                                                                    |                                            |                                                                                    |
| Input voltage options                            | 220 VAC +10%/-15%, 50/60 Hz ±3%, 3-phase<br>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<br>20 A (400 VAC)                                               |
| Max. power consumption                           | 3.3 kW                                                                                                     |                                            |                                                                                    |                                            | 5.7 kW                                                                             |
| Schedule set                                     | 32 schedules                                                                                               |                                            |                                                                                    |                                            |                                                                                    |
| Schedule change time                             | Start Delay Time<br>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<br>baud rate<br>parity<br>stop bits | Full duplex or half duplex<br>9,600 bps, 19,200 bps or 38,400 bps<br>Even, odd, or no parity bit<br>1 or 2 |                                            |                                                                                    |                                            |                                                                                    |
| Cooling                                          | 5-25°C inlet water temp.<br>294 kPa max. pressure drop<br>1.0 ton cooling capacity                         | Air cooled – no external<br>water required | 5-25°C inlet water temp.<br>294 kPa max. pressure drop<br>1.0 ton cooling capacity | Air cooled – no external<br>water required | 5-32°C inlet water temp.<br>294 kPa max. pressure drop<br>1.5 ton cooling capacity |
| Branch/main shutter speed                        | ≤150 ms                                                                                                    |                                            |                                                                                    |                                            |                                                                                    |
| Time share shutter speed                         | ≤50 ms                                                                                                     |                                            |                                                                                    |                                            |                                                                                    |
| Dust proof optics path                           | Yes                                                                                                        |                                            |                                                                                    |                                            |                                                                                    |

Notes: <sup>1</sup> Pulse Width = 10mS <sup>2</sup> 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<br>W x D x H | 19.5 in x 39.2 in x 39.0 in<br>(495 mm x 995 mm x 990 mm) | 19.5 in x 39.2 in x 39.0 in<br>(495 mm x 995 mm x 990 mm) | 20.9 in x 39.2 in x 39.0 in<br>(530 mm x 995 mm x 990 mm) | 19.5 in x 39.2 in x 39.0 in<br>(495 mm x 995 mm x 990 mm) | 19.5 in x 39.2 in x 39.0 in<br>(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](mailto:info@amadaweldtech.com) • [www.amadaweldtech.com](http://www.amadaweldtech.com)  
 ISO 9001:2015 Certified Company • 24/7 Repair Service: 1-866-751-7378

### AMERICAS

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

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

**AMADA WELD TECH**  
**(Mexico Office)**  
 El Paso, Texas  
 T: (915) 881-8765  
[mexsales@amadaweldtech.com](mailto:mexsales@amadaweldtech.com)

**EUROPE**  
**AMADA WELD TECH**  
**GmbH**  
 Munich, Germany  
 T: +49-89-839403-0  
[infoe@amadaweldtech.eu](mailto:infoe@amadaweldtech.eu)

### ASIA

**AMADA CO., LTD.**  
 Isehara, Japan  
 T: +81-463-96-1111  
[amd\\_microweld\\_sales@amada.co.jp](mailto:amd_microweld_sales@amada.co.jp)

**AMADA WELD TECH**  
**SHANGHAI CO., LTD.**  
 Shanghai, China  
 T: +86-21-6448-6000  
[jvu@amadaweldtech.com.cn](mailto:jvu@amadaweldtech.com.cn)

**AMADA WELD TECH KOREA CO., LTD.**  
 Seoul, Korea  
 T: +82-31-8015-6810  
[amadasales@amadaweldtech.co.kr](mailto:amadasales@amadaweldtech.co.kr)  
[sales2@amadaweldtech.co.kr](mailto:sales2@amadaweldtech.co.kr)

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

Specifications subject to change without notice. Copyright© 2025 AMADA WELD TECH INC.  
 The material contained herein cannot be reproduced or used in any other way without the express written permission of AMADA WELD TECH INC. All rights reserved.

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

**AMADA VIETNAM CO., LTD.**  
 Ha Noi, Vietnam  
 T: +84-4-6261-4583  
[thuyet@amada.co.jp](mailto:thuyet@amada.co.jp)

**AMADA WELD TECH**  
**INDIA PVT., LTD.**  
 Bangalore, India  
 T: +91-80-4092-1749  
[info@amadaweldtech.in](mailto:info@amadaweldtech.in)

follow us on:

