

EDW-15 and EDW-25 Nd:YAG Lasers

The new standard in compact, high precision industrial lasers

The EDW-15 Desktop Nd:YAG laser is the cornerstone of Equilasers' laser welding products. Designed specifically to address the needs of laser micro-welding applications, the EDW-15 is a 15 Watt, self-contained laser system that can be treated like any office equipment. The unit quietly delivers a precise amount of laser energy, on command, through a fiber optic cable attached to the SMA connector in the front of the laser system. The EDW-15 distinguishes itself in being able to deliver relatively low peak power (100-2500 Watts), long pulsewidth laser energy in a highly precise manner (+/- 5% at 100 mJ), making it possible to weld, with associated optics, at extremely small spot sizes (as small as 25 microns). Drawing less than 10 Amps at 110 VAC, the unit can be operated almost anywhere in the laboratory or in an office. Fiber-optic delivery allows the unit to be located on a desk or on the floor, and its small footprint conserves valuable lab space.

The design of the EDW-15 reflects many years of military laser design experience by Equilasers' engineers. The laser head consists of a laser resonator combined with an optics box, precisely aligned in factory. The unique construction maintains perfect alignment even with shock and vibration customarily encountered during transit and move. No field alignment is necessary. The reliability of the design is such that when a system was shipped from San Jose to Singapore, it was fully operational within 20 minutes of uncrating. Such reliability, coupled with its small package, makes the EDW-15 ideal also as a laser for medical applications

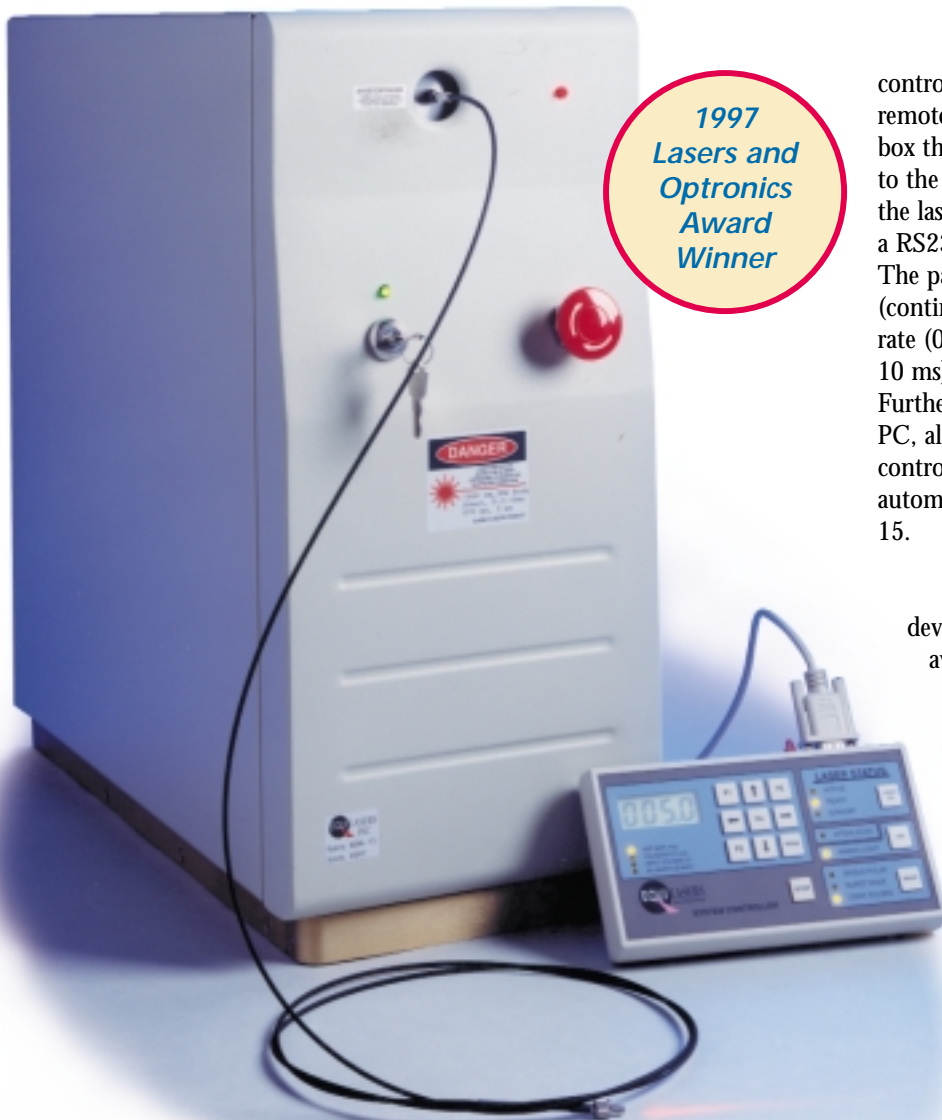
The laser is controlled from a remote controller box that is connected to the rear panel of the laser through a RS232 interface.

The parameters controlled include laser firing modes (continuous, single shot, or burst mode); pulse repetition rate (0.5 through 25 Hz); pulsewidth (0.2 ms through 10 ms); and number of pulses in burst mode operation. Furthermore, the laser can be controlled directly from a PC, allowing laser firing to be fully integrated with motion control software. This capability allows one to design fully automated laser workstation solutions around the EDW-15.

A higher power version, EDW-25, was recently developed that is capable of delivering up to 25 watts average output power. Like the EDW-15, it has a slim profile and has 2 rear wheels and 2 casters in front for easy maneuvering.



EDW-25 Nd:YAG Laser Welder



1997
Lasers and
Optronics
Award
Winner

EDW-15 Nd:YAG Laser Welder

Specifications

	EDW-15	EDW-25
Wavelength	1.064 μm	1.064 μm
Output Power Through Fiber	15 watts	25 watts
Maximum Energy	12 Joules @ 10 ms 10 Joules @ 5 ms	20 Joules @ 10 ms 14 Joules @ 5 ms
Pulsewidth	0.2 ms – 10 ms	0.2 ms – 10 ms
Pulse Modes	Single shot, burst, continuous pulse	Single shot, burst, continuous pulse
Pulse Rep. Rate	0.5 – 25 Hz	0.5 – 25 Hz
Beam Delivery	365 μm core optical fiber standard 200 μm core optical fiber optional	550 μm core optical fiber standard. 365 μm core optical fiber optional
Aiming Light	Visible laser diode	Visible laser diode
Control	RS 232 from remote controller or PC	RS232 from remote controller or PC
Input Power Requirement	100 – 120VAC, 10 amps	100 – 120VAC, 15 amps
Cooling	Internal water with heat exchanger; no external cooling required	Internal water with heat exchanger; no external cooling required
Ambient Temp.	40° – 90°F (5°–35°C)	40° – 90°F (5°–35°C)
Humidity	25 – 90% @ 77°F (25°C)	25 – 90% @ 77°F (25°C)
Dimensions	20"H x 19"D x 9"W (51cm x 48cm x 23cm)	28"H x 26"D x 9"W (71cm x 66cm x 23cm)
Weight	65 lbs. (29.5 Kg)	110 lbs. (50 Kg)

Features and Benefits

- Compact, self-contained laser system
- Precision delivery of low laser energy at varying pulsewidth
- Quiet, low EMI and RFI
- Optical fiber delivered power
- High reliability, maintenance free (except flashlamp)

Applications

- Laser welding and micro-welding
- Solder reflow
- Dental applications*
- Other medical and cosmetic applications*

* EDW-15 and EDW-25 are available for these applications only on an OEM basis.

Accessories

- Fiber-optics cable jumpers at 200, 365 and 550 microns core diameter
- Energy share box to provide 2 beams
- Focusing hand pieces with various working distances



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