

ESI EzLaze3
Laser Cutting System



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EzLaze3

LASER CUTTING SYSTEM

FOR SEMICONDUCTOR FAILURE ANALYSIS AND LCD REPAIR



EzLaze 3 shown with power supply and remote control. Microscope, stage and stand are options.

Applications

- Cutting Metal Traces
- Removing passivation, oxide and metal layers
- Removing ITO shorts

Features

- Air-cooled architecture
 - No cooling water
 - Compact, Lightweight
 - No maintenance required
- Selectable wavelengths allow cutting and machining of a wide range of materials:
 - 1064 nm, 532 nm, 355 nm or 266 nm
- 3-axis control of cut size and orientation. From 2 μ m x 2 μ m (with 100X objective) to 50 μ m x 50 μ m (with 50X objective). Rotation through 180°.
- Simple operation via remote control box with a 6.5cm x 7.5cm LCD screen displaying menu-based commands or via RS232 interface.
- Precise energy control over a wide range.
- Internal LED spot marker.
- Compatible with most major brands of FA microscopes (Mitutoyo, Motic, Seiwa).
- 3 Operating modes:
 - Single shot
 - Continuous (1 Hz)
 - Burst (max. of 10 sec. at 5 Hz).

Wavelengths Recommended for Cutting Common Materials

IR (1064nm)	Green (532nm)	UV3 (355nm)	UV4 (266nm)
Aluminum	Copper	Polyimide	Polyimide
—	Gold	Kapton	Kapton
—	Poly Silicon	Silicon	Silicon
—	Aluminum	Nitride	Nitride
—	Silicon Dioxide	SOG	SOG
—	—	Silicon Dioxide	Silicon Dioxide

U.S. Patent #. 5,611,946, 5,811,751, 5,963,364, 5,703,713
 Japan Patent #. 3026362

Standard Configuration includes

- Laser Head
- Standard Energy
- XY Shutter (Std. Resolution)
- Power Supply
- Remote Control
- 2.4m umbilical
- Video spot marker
- Foot switch

Options

- High Pulse Energy
- Rotating Shutter1
- High Resolution Shutter
- Motorized Polarizer
- Horizontal Mount Laser
- Head with Robot-length
- Umbilical
- Internal Spot Marker2
- Microscope & Accessories

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SPECIFICATIONS
Standard Energy (Minimum Pulse Energy at Laser Aperture)

Model	1064 nm	532 nm	355 nm	266 nm
IR Only	0.5mJ	—	—	—
Green Only	—	0.5mJ	—	—
IR/Green	0.5mJ	0.5mJ	—	—
Green/UV3	—	0.5mJ	0.5mJ	—
Green/UV4 ³	—	0.5mJ	—	0.25mJ
TriLite UV3	0.5mJ	0.5mJ	0.4mJ	—

High Energy Option⁴ (Minimum Pulse Energy at Laser Aperture)

IR Only	2.2mJ	—	—	—
Green Only	—	2.2mJ	—	—
IR/Green	2.2mJ	2.2mJ	—	—

Cut Size (with single pulse)

Minimum with 100 X objective	2 μ m x 2 μ m	1 μ m x 1 μ m	1 μ m x 1 μ m	2 μ m x 2 μ m ⁵
Maximum with 50 X objective	50 μ m x 50 μ m	40 μ m x 40 μ m	30 μ m x 30 μ m	30 μ m x 30 μ m

PHYSICAL CHARACTERISTICS

Dimensions	Laser Head	Power Supply	Control Panel
Width	6.3" / 160 mm	11.4" / 290 mm	5.0" / 127 mm
Depth	3.3" / 84 mm	5.0" / 127 mm	7.0" / 178 mm
Height	12.0" / 305 mm	8.12" / 206 mm	3.25" / 83 mm
Weight	8.5 lbs. / 3.9 kg	9 lbs. / 4.1 kg	2 lbs / 0.9 kg

Operating Requirements

Temperature	70° ±10°F (21° ±5°C)
Relative Humidity	20—80% non-condensing
Voltage	100—240 VAC, 50/60 Hz
Power	100 watts for laser, 215 watts for illuminator

Notes:

- Optional rotating shutter not available for A-zoom microscope. It is also not available with the motorize polarizer.
- Internal (LED) spot marker is only compatible with the A-zoom option.
- Green/UV4 is a Class 4 laser.
- These lasers are considered to be Class 4 lasers.
- With 80X NUV objective lens.

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VISIBLE AND INVISIBLE LASER RADIATION. AVOID DIRECT EXPOSURE TO BEAM.
Wavelength / Aperture
Pulse Width 2.5mm 4.0mm
1064 nm / 4 ns 6mJ 15mJ
532 nm / 4 ns 1.2mJ 3.0mJ
355 nm / 4 ns 14.8mJ 14.8mJ
CLASS 3B LASER PRODUCT

VISIBLE AND INVISIBLE LASER RADIATION. AVOID EYE AND SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION.
Wavelength 1064 nm / 150 mJ / 7 ns
Wavelength 532 nm / 100 mJ / 6 ns
Wavelength 355 nm / 50 mJ / 5 ns
Wavelength 266 nm / 30 mJ / 5 ns
CLASS 4 LASER PRODUCT

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