

# **Laser Cutter**

## **(New Wave EzLaze II)**



### **Capability/Application**

EzLaze II Laser Cutting System for Semiconductor Failure analysis

### **Specifications**

- Sample stage: capable of holding 8" wafer
- Microscope Objectives:
  - 2X and 10X M Plan Apo (Objectives for Bright-field Observation)
  - 50X M Plan Apo NIR (Near-infrared radiation range objectives)
  - 100X M Plan NUV (Near-ultraviolet radiation range objectives)
- Uniform cuts from 50 $\mu$ m x 50 $\mu$ m (with 50X objective) to 1  $\mu$ m x 1 $\mu$ m (with 100X objective)
- User-selectable wavelengths (1064nm, 532nm, 355nm and/or 255nm) for cutting and machining wide range materials
- CCD: capable of video capture

## Applications

- **The Most Common Applications Include:**
  - Cutting traces to repair, isolate, or disable parts of a circuit.
  - Removing topside layers to expose traces that are beneath metal, oxide, nitride or other materials, to enable micro-probing of the circuit
- **Other applications include:**
  - Removal of topside to improve resolution when probing with an e-beam system
  - Trimming resistors in a low volume or engineering mode
  - Marking areas within a device to show where focused ion beam cutting is to be performed.

## Recommended Wavelengths for Cutting Materials

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

LCD	<u>Infrared (1064 nm)</u>	<u>Green (532 nm)</u>	<u>Ultraviolet (355 nm)</u>
<b>Materials:</b>	ITO Chromium Color Filter-red, green	ITO Chromium Color Filter-blue/green	Color Filter-blue/green
<b>Semiconductor Materials:</b>	Aluminum Gold Ti-Tungsten	Silicon Dioxide Nitride Polyimide (big cuts) SOG , Poly-silicon Gold	Nitride Polyimide Gold Aluminum Ti-Tungsten

*Equipment manufacturer web page*

[http://www.ece.ucy.ac.cy/labs/holistic\\_elab/facilities/brochures/EZlazeII.pdf](http://www.ece.ucy.ac.cy/labs/holistic_elab/facilities/brochures/EZlazeII.pdf)