EzLaze II
Laser Cutting System for Semiconductor Failure Analysis

**Applications**
- Semiconductor Failure Analysis
- Cutting metal lines
- Removing passivation, oxide and metal layers

**Features**
- Compact, air-cooled laser system that requires no costly maintenance
- Laser-head design with stepper motor for high repeatability and precise cutting
- Uniform cuts from 50µm x 50µm (with 50X objective) to 1µm x 1µm (with 100X objective)
- User-selectable wavelengths (1064nm, 532nm, 355nm, and/or 266nm) for cutting and machining a wide range of materials
- Simplified operation via intuitive, microprocessor-based remote-control panel, or an RS232 interface
- Three trigger modes: single-shot, 1Hz, or burst of 5Hz (for a maximum of 50 shots followed by 20 seconds lockout cooling time) to facilitate faster material removal
- Wide energy range with precise energy control
- Easy to install and operate

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**Recommended Wavelengths for Cutting Materials**

<table>
<thead>
<tr>
<th>IR (1064nm)</th>
<th>Green (532nm)</th>
<th>UV3 (355nm)</th>
<th>UV4 (266nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>Copper</td>
<td>Polyimide</td>
<td>Polyimide</td>
</tr>
<tr>
<td></td>
<td>Gold</td>
<td>Kapton</td>
<td>Kapton</td>
</tr>
<tr>
<td></td>
<td>Poly Silicon</td>
<td>Silicon</td>
<td>Silicon</td>
</tr>
<tr>
<td></td>
<td>Aluminum</td>
<td>Nitride</td>
<td>Nitride</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SOG</td>
<td>SOG</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Silicon Oxide</td>
<td>Silicon Oxide</td>
</tr>
</tbody>
</table>
EzLaze II Products

<table>
<thead>
<tr>
<th>Model</th>
<th>1064 nm</th>
<th>532 nm</th>
<th>355 nm</th>
<th>266 nm</th>
</tr>
</thead>
<tbody>
<tr>
<td>IR Only</td>
<td>.6mJ / .2 mJ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Only</td>
<td>.6mJ / .2 mJ</td>
<td>.6mJ / .2 mJ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IR/Green</td>
<td>.6mJ / .2 mJ</td>
<td>.6mJ / .2 mJ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green/UV3</td>
<td>.6mJ / .2 mJ</td>
<td>.6mJ / .2 mJ</td>
<td>.25mJ / .075 mJ</td>
<td></td>
</tr>
<tr>
<td>Green/UV4</td>
<td>.6mJ / .2 mJ</td>
<td>.6mJ / .2 mJ</td>
<td>.25mJ / .075 mJ</td>
<td></td>
</tr>
<tr>
<td>TriLite UV3</td>
<td>.5mJ / .15 mJ</td>
<td>.5mJ / .15 mJ</td>
<td>.4mJ / .15 mJ</td>
<td></td>
</tr>
</tbody>
</table>

Cut Size (with single pulse)

<table>
<thead>
<tr>
<th></th>
<th>1064 nm</th>
<th>532 nm</th>
<th>355 nm</th>
<th>266 nm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum with 100X objective</td>
<td>2 µm x 2 µm</td>
<td>1 µm x 1 µm</td>
<td>1 µm x 1 µm</td>
<td>2 µm x 2 µm</td>
</tr>
<tr>
<td>Maximum with 50 X objective</td>
<td>50 µm x 50 µm</td>
<td>40 µm x 40 µm</td>
<td>30 µm x 30 µm</td>
<td>30 µm x 30 µm</td>
</tr>
</tbody>
</table>

1) Minimum energy at High/Low settings.
2) With 50X NUV objective lens.

Physical Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Laser Head</th>
<th>Power Supply</th>
<th>Control Panel</th>
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</thead>
<tbody>
<tr>
<td>Length</td>
<td>6.25” / 159 mm</td>
<td>5” / 126 mm</td>
<td>7” / 178 mm</td>
</tr>
<tr>
<td>Width</td>
<td>6.38” / 162 mm</td>
<td>11.4” / 289 mm</td>
<td>5” / 126 mm</td>
</tr>
<tr>
<td>Height</td>
<td>11.75” / 298 mm</td>
<td>8.12” / 206 mm</td>
<td>3.25” / 83 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>10 lbs. / 4.4 kg</td>
<td>9 lbs. / 4.1 kg</td>
<td>2 lbs / 0.9 kg</td>
</tr>
<tr>
<td>Length Umbilical</td>
<td>8 ft / 2.4 m</td>
<td></td>
<td>10 ft / 3 m</td>
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</tbody>
</table>

Operating Requirements

<p>| | | | |</p>
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<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>70° ±10° F (21° ±5° C)</td>
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<td></td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>20—80% non-condensing</td>
<td></td>
<td></td>
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<tr>
<td>Voltage</td>
<td>100—120/240 VAC (laser), 100—120/240 VAC (illuminator), 50/60 Hz</td>
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<td></td>
</tr>
<tr>
<td>Power</td>
<td>100 watts for laser, 150 watts for illuminator</td>
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</tr>
</tbody>
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