QuikLaze 50ST2

LASER CUTTING SOLUTION

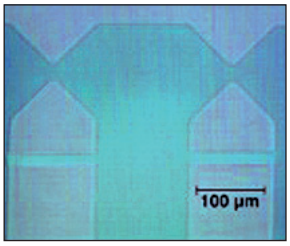
QuikLaze50ST2 shown with motorized micromachining accessory kit.

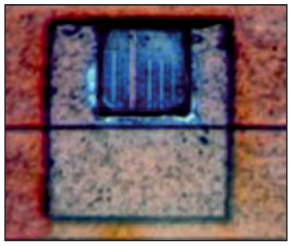
A precise Laser Cutting Solution for the LCD Repair, Failure Analysis, and Micro-machining market.

Applications

QuikLaze 50ST2 is a tool designed specifically for quick, easy removal of a variety of materials. Multiple, user selectable wavelengths provide the capability to selectively remove certain materials while leaving others unaffected. A few examples of procedures that can be efficiently performed include:

- Remove ITO shorts–cut metal traces on LCD panels
- Remove polyimide prior to FIB edits.





IR Energy used to make a 15 x 110 um cut in an Indium Tin Oxide line (left image). UV used for polyimide removal of a 40 um x 40 um area (right image).

Benefits

- Precise cutting on a microscopic level.
- Fast throughput using selectable repetition rates from single shot to 50 Hz continuous.
- Compact laser-head design for mounting on a microscope or on high-volume production equipment.
- Cutting of assorted materials with variable wavelength (1064 nm, 532 nm, 355 nm,and/or 266 nm) configurations.
- Accurate cutting control with the standard motorized X-Y aperture.
- Simple operation via intuitive microprocessor-based, remote-control panel, or through an RS232 interface.
- Versatile software that allows precise control of machining.
- Ease of installation and operation.

QuikLaze is an excellent tool for increased productivity in LCD repair, semiconductor failure analysis, and light micromachining applications. QuikLaze can dramatically improve the productivity of IC design engineers and failure analysts by providing a valuable tool for quickly removing passivation materials and cutting circuit lines. The system can vastly improve yield for LCD production by quickly repairing defects and removing shorts.

The QuikLaze laser system features New Wave's latest Advanced Beam Delivery System (ABDS). The ABDS enables precise cuts on a microscopic level for each of the three wave-length regions (infrared, visible or ultraviolet). The system also provides precise power control of the wavelength selectable beam without sacrificing the beam characteristics.

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

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Micromachining Accessory Kit[1]

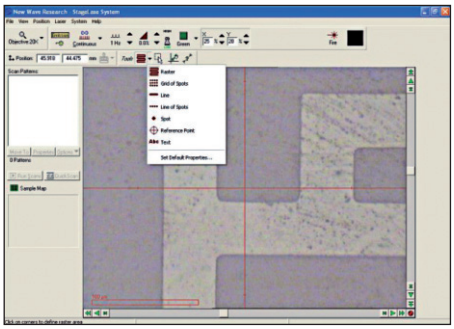
There are two micromachining kits available for the QL50ST2. These kits provide a highly integrated solution to meet the needs of the failure analysis and micro-machining market.

The manual micromachining kit consists of:

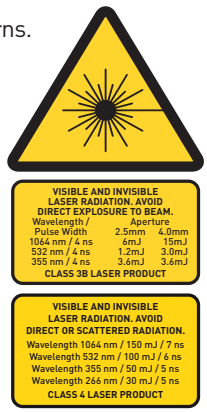
- High-quality microscope and stand.
- Precision 6" manual stage.
- High-resolution video camera.
- Color monitor for viewing sample.

The motorized micromachining kit consists of:

- High-quality microscope and stand.
- Accurate and reliable motorized 6" X-Y stage.
- Computer, monitor, keyboard, LCD monitor, and joystick.
- High-resolution video camera.
- Software supports simple to complex patterns.
- Software support for .dxf imports.



Robust software to support automated cuts.



Standard Configuration includes

- Laser head (vertical mount) with 2.5mm x 2.5mm aperture.
- XY Shutter (Std. Resolution).
- Close-loop energy control 2.
- 2.4m umbilical.
- Power supply.
- Remote Control Panel.
- Foot switch.
- Video spot marker.

Options

- Beam blended mode option (only for IR/GR) 3
- High resolution X-Y shutter
- Rotational X-Y shutter 4 (aperture) +/- 90°
- 4.0 mm x 4.0 mm aperture size
- Rotating Polarizer (0° – 180°) optimized for cell repair
- External & LED (internal) spot marker
- Mounting Options: Vertical or Horizontal

Specifications

Energy (before microscope)

Standard Energy Range (2.5mm x 2.5mm aperture size)

Model	1064 nm	532 nm	355 nm	266 nm
IR Only	0.5mJ	—	—	—
Green Only	—	0.5mJ	—	—
R/Green	0.5mJ	0.5mJ	—	—
Green/UV3	—	0.5mJ	0.5mJ	—
Green/UV4[5]	—	0.5mJ	—	0.25mJ
TriLite UV3	0.5mJ	0.5mJ	0.4mJ	—
IR/Green Beam Blended (IR/GR)[3]	0.5mJ	0.5mJ	—	—
TriLite Beam Blended (IR/GR)[3]	0.5mJ	0.5mJ	0.4mJ	—

Mid-Energy Option[6] (2.5mm x 2.5mm aperture size)

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

High-Energy Option[6] (2.5mm x 2.5mm aperture size)

IR Only	2.7mJ	—	—	—
Green Only	—	2.7mJ	—	—

Cut Size

Minimum (w/ 100X objective)	2µm x 2µm	1µm x 1µm	1µm x 1µm	2µm x 2µm[7]
Maximum (w/ 50 X objective)	50µm x 50µm	50µm x 50µm	50µm x 50µm	50µm x 50µm

Physical Characteristics

	Laser Head	Power Supply	Control Panel
Depth	3.27" (83 mm)	14.76" (375 mm)	5.0" (127 mm)
Width	6.26" (159 mm)	7.65" (194 mm)	7.0" (178 mm)
Height	12.38" (314 mm)	11.21" (285 mm)	3.25" (83 mm)
Weight	10 lbs. (4.5 kg)	30 lbs. (13.6 kg)	2 lbs (0.9 kg)

Operating Requirements

Temperature	70° ±10° F (21° ±5° C)
Relative Humidity	20 to 80% non-condensing
Voltage	100—120/240 VAC (laser), 50/60 Hz 90—254 VAC (optional illuminator), 50/60 Hz
Power Consumption	400 watts for laser, 150 watts for illuminator

Notes:
1. The micromachining kit is only available with the standard energy range (Class 3B). The close-loop energy feature is not available for the micromachining kit.
2. Close-loop energy control is designed to compensate for the degradation of the flash lamp over the life of the device and to provide consistent energy output.
3. Beam blended mode option available as follows: IR(70%) Green(30%) with tolerance of +/-5%. This option is not available with the close-loop energy control.
4. Optional rotation shutter is not available for A-Zoom microscope.
5. Green/UV4 is a Class 4 laser and is not available with the close-loop energy control.
6. These lasers are considered to be Class 4 lasers and available only with the A-zoom option.
7. With 80X UV objective lens.

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