LSM 300™

Off-line Solder Paste Inspection

LSM 300 is an off-line solder paste inspection system that uses non-contact laser technology to measure wet solder paste. The height measurement function, activated by clicking on the AutoMeasure™ icon, is completely automatic.

By eliminating the inconsistencies associated with inspection systems that require the operator to position cursors manually, LSM 300 offers substantially improved repeatability.

System Features

- AutoMeasure for automatic height measurement
- 3D inspection; area and volume as well as height
- Circular cursor for measuring area and volume of BGA pads
- Rectangular cursor rotates to accommodate angled features
- Height cursors lock for comparison purposes
- Magnified image of measurement site

Affordable, 3D Post-Print Inspection

LSM 300 is the latest innovation from the world's leading supplier of post-print inspection systems. LSM 300 combines the economy and ease-of-use of the popular LSM systems with a number of improvements including a redesigned user interface, s-video camera with two magnification levels, high-resolution monitor, and AutoMeasure software feature for automatic height measurement.

Off-line solder paste inspection is an economical first step toward improving yields by implementing process control. Unlike 2D or vision-based systems, LSM 300 reports 3D measurements including paste volume, the most reliable predictor of finished board quality.

System Includes

- System base with non-contact sensor and anti-static work surface
- Built-in video camera with 15x and 85x magnification
- High-resolution color monitor
- Trackball and keyboard
- Pre-loaded Windows® 98 and application software
- *LSM 300 Reference, User Guide* and online HELP

Options

- Applied Stats™ SPC software
- Large work surface
- NIST-traceable calibration standard
- Network adapter

Support and Training

To ensure the proper installation and maintenance of your CyberOptics system, we have a dedicated team of professionals available to help you with your support and training needs. Our factory-trained applications engineers specialize in CyberOptics SMT systems and software.

Contact CyberOptics directly for:

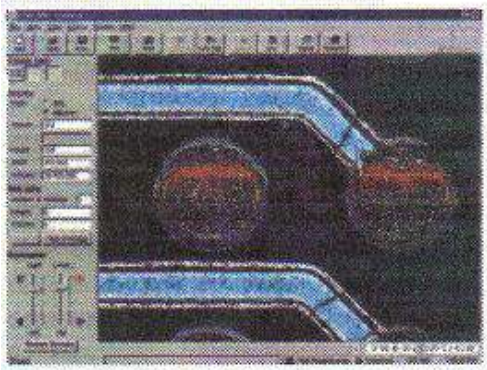
- On-site user training
- Warranty-covered product and support
- Factory-certified parts

Applications

- Troubleshooting fine pitch, BGA and CSP sites
- Monitoring printing process
- Collecting data for SPC analysis
- Quality control documentation
- Measuring stencil apertures
- Evaluating mask and plating thickness
- Determining glue dot diameter
- Verifying component placement
- Examining reflowed solder joints
- Inspecting IC lead coplanarity

CYBEROPTICS®

LSM 300



AutoMeasure uses high-resolution optics and proprietary image analysis algorithms to locate the laser stripe, correct for board warp and position the cursors over the dual laser stripe reflections. With a single click on the AutoMeasure icon, the operator obtains an accurate and repeatable height measurement within seconds.

Maximum Versatility

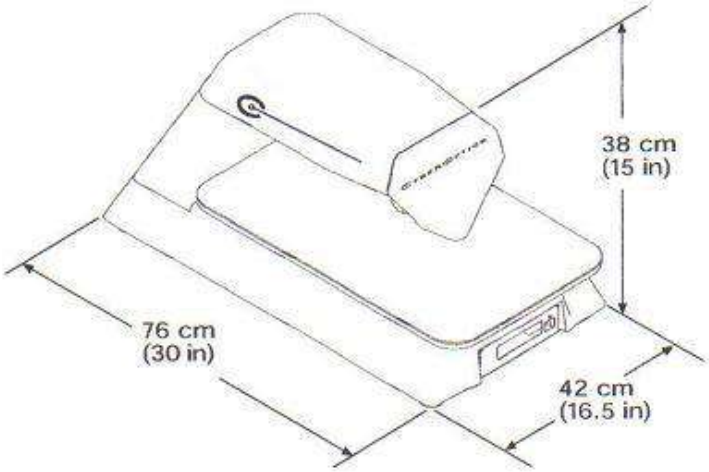
- Choice of high or low magnification
- Circular and rectangular cursors scale to fit feature
- Measure height of single or multiple pads
- Store data in Microsoft® Excel-compatible format
- Multiple data files can be open simultaneously to handle several lines
- Save data to disk or transmit via serial port

System Specifications

Maximum object thickness	5 cm (2 in)
Optimum z-height measurement range	102-305 µm (4-12 mils)
Maximum x differential (high magnification)	2591 µm (102 mils)
Maximum y differential (high magnification)	1905 µm (75 mils)
Standard-size work surface	36 x 61 cm (14 x 24 in)
Large work surface (optional)	91 x 61 cm (36 x 24 in)
Throat depth (laser spot to rear support column)	400 mm (16 in)
System CPU	166 MHz or greater processor; 32MB or more RAM; 2.1GB or greater hard drive; 3.5 in diskette drive
Input/output	2 USB ports, 1 serial port, printer, keyboard, trackball
Color monitor	Color VGA monitor (800 x 600 resolution)
Camera	Solid state CCD
Power requirements	100-240 V AC, 50-60 Hz, 2 amps
Ambient operating temperature	5-40°C (40-100°F)
Ambient operating humidity	< 90% noncondensing
Dimensions (w x l x h)	42 x 76 x 38 cm (16.5 x 30 x 15 in)
Weight (system without monitor)	32 kg (70 lb)
(monitor alone)	13 kg (28 lb)

Sensor Specifications

Laser type		1 mW laser diode
CDRH/IEC-825 ratings		Class II/Class 2
Resolution	**high magnification**	3.8 µm (0.15 mil)
	low magnification	25.4 µm (1.0 mil)
Field of view	**high magnification** (approx 85x)	2.6 x 1.9 mm (102 x 75 mils)
	low magnification (approx 15x)	14.8 x 11.1 mm (583 x 437 mils)



Patents pending.

CyberOptics Corporation is certified under ISO 9001 by Bureau Veritas Quality Int'l.

All specifications are subject to change without notice.

CyberOptics is a registered trademark and LSM 300 and AutoMeasure are trademarks of CyberOptics Corporation.

Safety Considerations

The AutoLSM system complies with all applicable laws for the manufacture of laser devices. This system is classified as a Class II laser device by the Center for Devices and Radiological Health (CDRH). This classification requires two safety precautions: Do not stare directly into the laser source and do not point the laser at anyone else's eye.

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