# LASER SECTION MICROSCOPE

## Measure Solder Paste Height and Registration

CyberOptics' Laser Section Microscope (LSM™) provides fast, accurate non-contact measurement of solder paste height, registration and other critical printing parameters. By viewing the color video image and observing solder paste height measurements, the operator can quickly identify defects including bridging, dog-ears and slumping.

### System Features

- Measures in mils and microns
- Easy to use with minimal training
- Affordable and cost effective
- More than 500 systems in use worldwide
- Useful for ISO verification

### System Includes

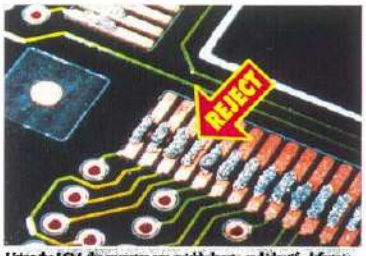
- Large benchtop base (optional small base available)
- Solid-state CCD video camera
- High resolution 9 inch color monitor
- NIST-traceable calibration tool
- RS-232 output kit
- Options: Video printer
  Data printer
- SPC software available from third-party vendors

CyberOptics


*LSM measures fine pitch solder paste.*

### Easy-to-Use Benchtop System

The LSM™ projects a laser stripe across the solder paste. Using the laser stripe as a guide, the operator positions guidelines on the video image to measure the height of the solder paste in relation to the surface of the printed circuit board. The operator can also use vertical guidelines to evaluate solder paste registration.



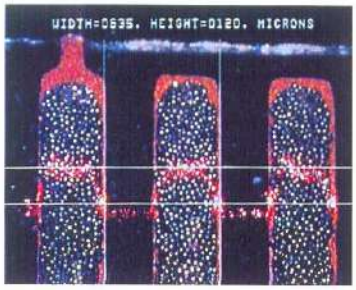

*Using the LSM, the operator can quickly locate and identify defects in solder paste printing.*

*The LSM makes it possible to verify the quality of solder paste printing on critical fine-pitch sites.*

Unlike conventional light section microscopes requiring a number of adjustments to obtain a measurement, the LSM requires only a few simple steps. The ease of operation makes the system ideal for both the laboratory and the production floor.

The LSM provides consistent results from operator to operator, with minimal training.

# LSM™




## Measurement Made Easy

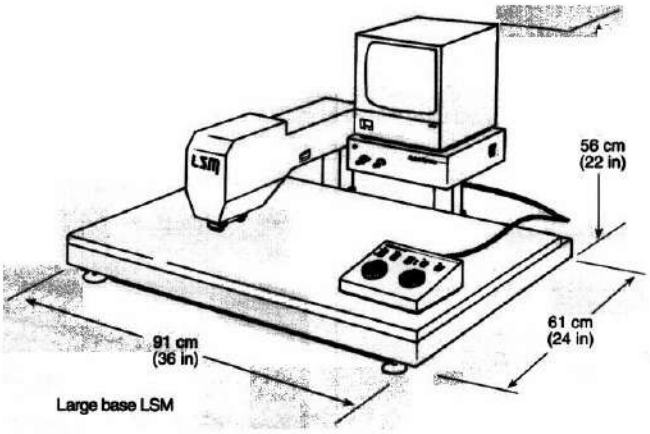
The LSM™ color monitor displays a magnified, illuminated image of the solder paste inspection site. The operator manually positions the on-screen guidelines and reads the measurements displayed on the monitor display.

**To measure solder paste height**
The operator aligns one guideline with the laser stripe on the circuit board and the other with the stripe on the solder paste. The LSM measures the distance between the two lines and, based on that measurement, calculates the solder paste height.

**To measure solder paste registration**
The operator aligns vertical guidelines along the parallel edges of the copper pad and the solder paste. The LSM displays the measurement of the distance between the two guidelines.

## System Specifications

| | |
|---|---|
| Dimensions (w x d x h) | |
| Large base | 91 x 61 x 56 cm (36 x 24 x 22 in) |
| Small base (optional) | 57 x 39 x 52 cm (22.5 x 15.5 x 20.5 in) |
| Measurement platform size | |
| Large base (w x d) | 91 x 61 cm (36 x 24 in) |
| Small base (optional) | 57 x 39 cm (22.5 x 15.5 in) |
| Throat depth | |
| Large base | 41 cm (16 in) |
| Small base (optional) | 21 cm (8.25 in) |
| Maximum object thickness | |
| Large base | 5 cm (2 in) |
| Small base (optional) | 5 cm (2 in) |
| Maximum height differential | 0.5 mm (0.02 in) |
| Maximum width differential | 1.5 mm (0.06 in) |
| Power requirements | 100/120 volts, 50/60 Hz, 1 amp |
| | 220/240 volts, 50/60 Hz, 0.5 amps |
| Weight | |
| Large base | 60 kg (132 lbs) |
| Small base (optional) | 28 kg (62 lbs) |



Large base LSM

All specifications are subject to change without notice.

LSM is a trademark of CyberOptics Corp.


**Safety Considerations**
The color LSM system complies with all applicable laws for the manufacture of laser devices. This system is classified as a Class I 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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