

Inspection Tools

Coordinate Measurement Machine



Application: Measure distance, radius, diameter, and Z-height

Features and Specs:

- **Stage dimensions:**
- **Objectives: 0.5X, 2.5X**
- **Variable zoom**
- **Units: US Standard, Metric**

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Dage XD7600 X-Ray System

Application: Non-destructive internal inspection

Features and Specs:

- **70° oblique angle views**
- **Automated inspection routines**
- **Automatic void measurements**
- **Maximum board size: 508mm x 444mm x 50mm**
- **Maximum sample weight: 5kg**

Model Number: XD7600

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Kohyoung Zenith Inspection System



Application: Assembly inspection, missing components, offset, rotation, polarity, upside down, coplanarity, solder fillet, lifted lead, tombstoning, bridging, and billboarding

Features and Specs:

- **3D shadow free moiré technology with 8 way projection**
- **Camera pixel resolution: 15 μ m**
- **Height resolution: 2 μ m**
- **Maximum board size: 510mm x 490mm x 5mm**
- **Maximum board weight: 6kg**

Model Number: Zenith

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Kohyoung Aspire2 Inspection System



Application: 3-D solder paste inspection of volume, area, height, offset, bridging, shape deformity, coplanarity

Features and Specs:

- **High Speed Mode, High Precision Mode**
- **PCB warpage compensation**
- **Maximum board size: 510mm x 510mm**
- **Minimum board size: 50mm x 50mm**

Model Number: Aspire2

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Cyber Optics SE500 3-D Solder Paste Inspection



Application: 3-D solder paste inspection

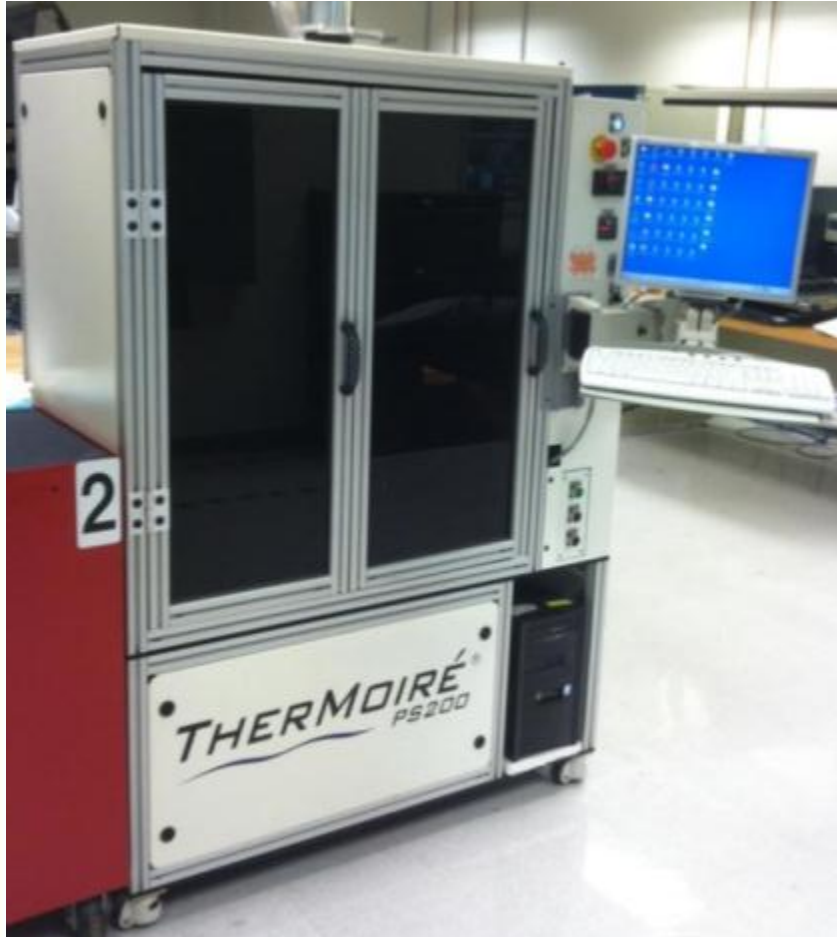
Features and Specs:

- **Inspection Speed: 80cm²/sec**
- **Inspect pads down to 150µm x 150µm**
- **Measure paste height, area, and volume**

Model Number: SE500

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Akrometrics TherMoire PS200



Application: Component warpage, board bow and twist

Features and Specs:

- **Maximum sample size: 200mm x 200mm**
- **100 (2.5 μ m resolution) and 300 (0.8 μ m resolution) line per inch gratings**
- **Infrared oven for insitu warpage measurements up to 260°C**
- **3-D contour images, cord/diagonal measurements.**

Model Number: PS200

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Leica Optical Microscope



Application: Inspection, process control, microstructure analysis, defect/failure analysis

Features and Specs:

- **Magnification up to 1000X**
- **Bright field, dark field, cross-polarized light**
- **Q-capture software for measurements and analysis**

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FCI Scanning Electron Microscope w/EDS

Application: Inspection, process control, microstructure analysis, defect/failure analysis, elemental analysis

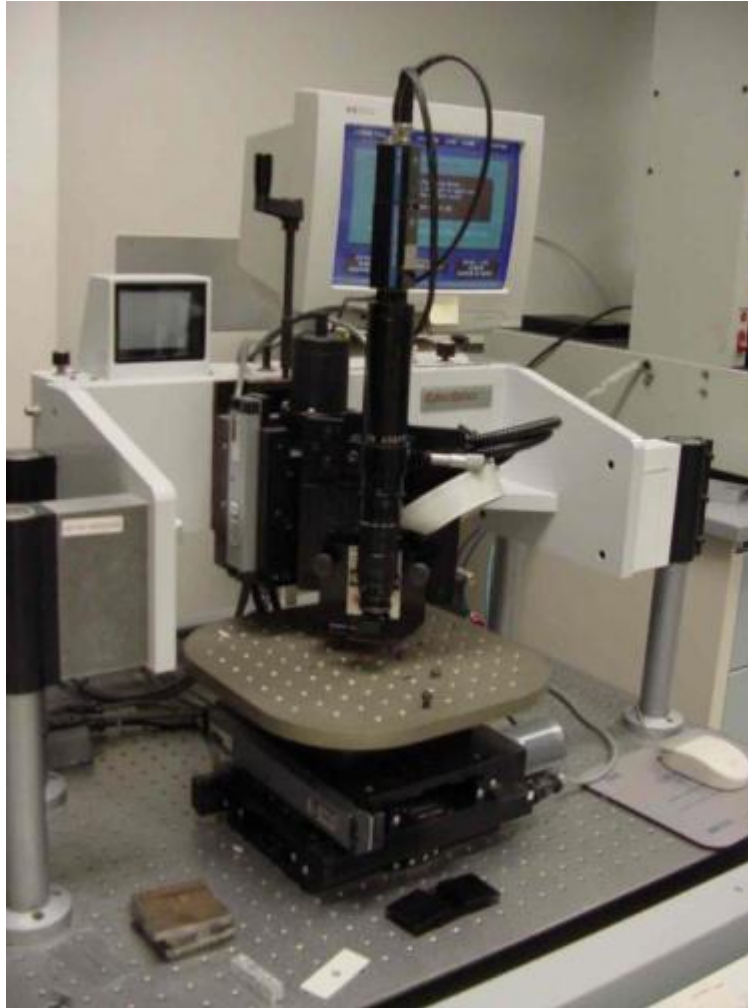
Features and Specs:

- **High Vacuum and Environmental SEM modes**
- **Secondary Electron, Backscatter Electron detectors**
- **Energy Dispersive Spectrometry (EDS)**

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CyberOptics Laser Profilometer



Application: Map surface topography, roughness, and line-scanned profiles.

Features and Specs:

- **3 Point Range Sensors, PRS15, PRS40, PRS150**
- **Resolution down to 0.03mils (PRS15)**
- **X-Y stepper resolution 0.1mil**
- **Air table**

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Wetting Balance Tester



Application: Solderability Tests for Component Leads, Terminations, Lugs, Terminals and Wires.

Features and Specs:

- **Solder bath, dab pad, flux pool**
- **10N Load Cell**
- **Various sample holders and pins**



Model Number: KWB-1000

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Metcal Optical Inspection System



Application: Endoscopic optical inspection of wire bonds, BGAs, through-holes, J-legs, gullwings, leaded heel fillets, solder paste and adhesive deposits and height measurements.

Features and Specs:

- **Inspect standoffs as low as 0.05mm**
- **Maximum magnification: 245X**
- **MT2 tips fit between 0.7mm pitch**

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Machine Shop



Equipment:

- **Lathe**
- **Vertical Milling Machine**
- **Drill press**
- **Shear press**
- **Grinders**
- **Various other tools**

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Wet Lab



Equipment:

- **Belt grinder**
- **Automatic / manual polishing equipment**
- **Wet Saw**
- **Diamond Saw**
- **Fume hood**
- **Ultrasonic cleaner**
- **Optical microscopes**
- **Various cross sectioning tools**

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