

CC-1220M

HTCC/LTCC Process Module



MIDAS CC-1220M (Shown with Handler)

Multilayer co-fired ceramic (MLCC) substrates are critical components used in Bluetooth communications, wireless LAN, high-end servers, and mobile RF communications. The cost of low yields, defects, and “premature field failures” in these substrates can be very high – not only in terms

of financial impact but also in a manufacturer’s reputation. To prevent the possibility of shipping defective substrates, manufacturers are now relying upon automated optical inspection (AOI) systems to greatly improve their yields, productivity and outgoing quality.

MIDAS Visions’ CC-1220M process modules are designed to inspect conductor print and vias on every layer with resolution down to 3.75 micron. This ability provides MLCC manufacturers with the immediate feedback necessary to refine their fabrication process and eliminate defect-causing phenomenon. By providing real-time process feedback, the CC-1220M enables manufacturers to dramatically improve quality while maintaining extremely high production rates.

The CC-1220M performs fast, accurate and repeatable conductor print and via inspection. The system provides highly effective Pass/Fail decisions while logging valuable information for process and quality control. Yield-limiting **Robust Operation**

defects are readily exposed, logged, and optionally presented to an operator for review. These defects include: clogged, empty/overfilled vias; shorts/spacing violations; contamination; circuit opens; neck-downs; “dirty” opens; pinholes; pattern misregistration and excess screen stretch.

Sophisticated defect detection algorithms in the software system automatically detect and adapt to non-critical circuit irregularities caused by normal process variation, thereby greatly reducing false rejects.

Turnkey-Ready

The CC-1220M is ready for integration into any manufacturing facility as a stand-alone process inspection module or an island-of-automation with a loader and unloader.

Product Highlights

Defect detection ... automatically detects over 12 different types of yield-limiting defects in MLCC

High throughput ... less than 12 seconds for a 153mm x 153mm LTCC sheet at 12.5 micron

Flexible ... inspection of sheets up to 204mm x 254mm

Versatile ... handles framed, unframed, manual feed or automated feed; good/bad sorting capability is an option

High precision ... defect detection down to 10 microns, line and space widths down to 40 micron

Robust . automatic part fixturing and part stretch detection for low false reject rates



Inspection Calibration Standard

(see product specifications on back)

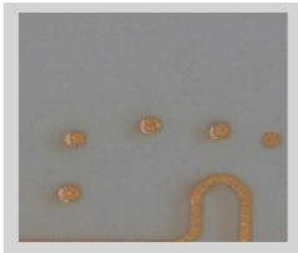


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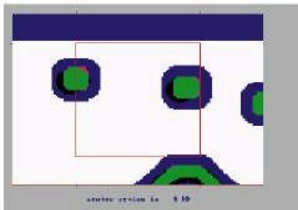
Specifications

Inspection

Application	Conductor Pattern Printing, Via Punch, Via Fill	
Substrate Types	Unfired ceramic green tape (blue, brown, white, or green LTCC or HTCC) Bare sheet or framed, wet or dry	
Substrate Size (maximum)	254 x 254mm (10 x 10 in.) Contact MIDAS for other sizes	
Inspection Area (active)	203 x 203 mm (8 x 8 in.) Contact MIDAS for other sizes	
Resolutions Options	2.5, 3.8, 6.25, and 12.5 micron (0.125, 0.15, 0.25, and 0.5 mil) Contact MIDAS for other sizes	
Throughput Part Size: 150 x 150 mm	Resolution (μ)	Cycle Times (s)
	2.5	55
	3.8	32
	6.25	21
Defects Detected	Empty or overfilled vias Pattern shorts or spacing violations Opens, neck-downs, and pinholes Contamination/debris Pattern registration Excess screen stretch	



Defect viewed by Stop and Stare camera



Misprinted vias shown in the red box

Operation

Measurement	Feature size and location, and print density
Defect Data Storage	ASCII delimited files for off-line use (SPC, Reporting, etc.)
Defect Review	Video microscope for on-line verification or repair
Operator Interface	Windows XP Pro Two dedicated displays: <ol style="list-style-type: none">1. Graphical process feedback, operator input and system status2. Live video microscope for defect review/repair
Training Time	Operator: 3 hours, norm Setup technician: 3 days, norm

Options

Software	CAD Converter™ - for creating inspection templates based on Gerber 274X with optional SmartTemplates™ ATG - automatic template generation package for creating highly robust inspection templates with variable sensitivity for ultra-low false calls.
Fixtures/Handling	Options include custom tooling designs, custom tooling fixture, cassette-to-cassette handling automation, automatic theta alignment, part marking.

Electro-Mechanical

Dimensions	Width: 81 cm (66 in.), Height: 173 cm (90 in.), Depth: 76 cm (70 in.)
Weight	160 kg (350 lbs)
Electrical	110/220 VAC 7 amp (10 amp max)
Safety	Semi-S2 compliant
Certifications	CE



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