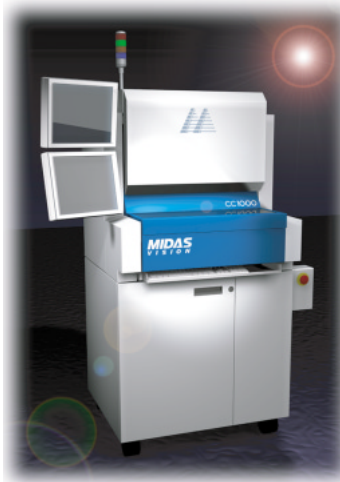


"In MLC, success all comes down to how well you manage your yields...AOI was our first step towards effective yield management."

HTCC/LTCC Process Module

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.

opens; pinholes; pattern misregistration and excess screen stretch.

Robust Operation
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.

Robust Operation

Turnkey-Ready
The CC-1000 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.

Turnkey-Ready

Product Highlights

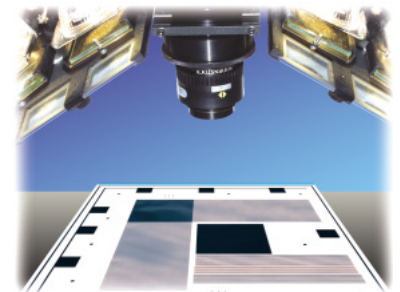
- **Defect detection ...** automatically detects over 12 different types of yield-limiting defects in MLCC

- **High throughput ...** less than 20 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 12.5 microns, line and space widths down to 50 micron

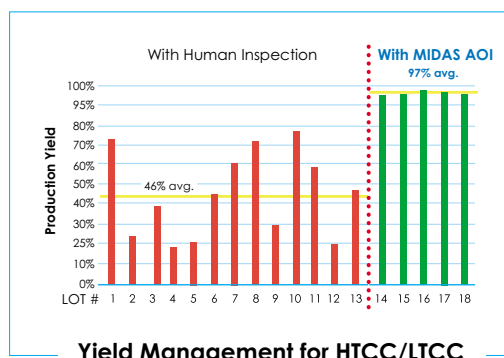


Inspection Calibration Standard

MIDAS' CC-1000

MIDAS Vision's CC-1000 process modules are designed to inspect conductor print and vias on every layer with resolution down to 6.25 micron. This provides MLCC manufacturers with the immediate feedback necessary to refine their fabrication process and eliminate defect-causing phenomenon. With inspection speeds of up to 1300 sq. mm per second, the CC-1000 enables manufacturers to dramatically improve quality while maintaining extremely high production rates.

The CC-1000 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 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"

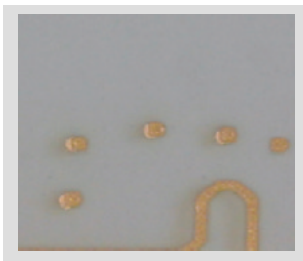


- **Robust ...** automatic part fixturing and part stretch detection for low false reject rates

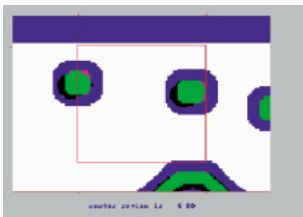
(see product specifications on back)

CC-1000

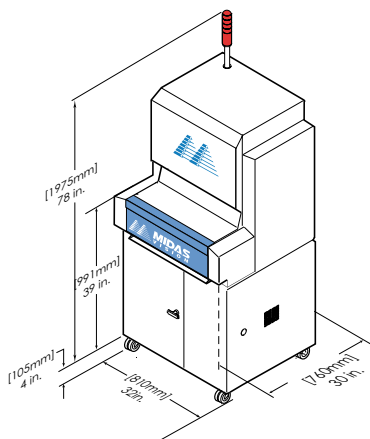
System Specifications



Defect viewed by Stop and Stare camera



Misprinted via shown in the red box



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	280mm x 381mm (contact factory for other sizes)
Active Inspection Area	203mm x 254mm (contact factory for other sizes)
Resolution Options	25, 12.5, 6.25 microns (1 mil, 0.5 mil., 0.25 mil.) (contact factory for other sizes)
Minimum Defect Size	50, 25, 12.5 microns (2 mil, 1 mil., 0.5 mil.) (contact factory for other sizes)
Inspection Rate	Up to 1300 sq. mm/sec (contact factory for part-specific inspection rates)
Typical Defects Detected	Empty or overfilled vias, Pattern shorts or spacing violations, Contamination/debris, Opens, neck-downs, and pinholes, Pattern misregistration, Excess screen stretch

Operation

Measurement	Feature size and location, and print density
Defect Data Storage	ASCII delimited files for off-line use (SPC, Reporting, etc.)
Template Storage	Networked server (NET2HOST™), hard disk and/or vision processor RAM
Part Setup Time	3 minutes for 232 cm ² (36 in. ²), norm (depends on size and source of inspection template)
Operator Interface	Windows 2000 Professional™ - based on NT Two dedicated displays: 1. Graphical process feedback, operator input and machine status feedback 2. Live video microscope for defect review/repair
Training Time	Operator: 3 hours, norm Setup technician: 3 days, norm

Options

Software	CAD2MIDAS™ - 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.
Sheet Fixturing	Universal tooling plate included. Available options include custom tooling designs, vacuum tooling fixture, cassette-to-cassette handling automation, automatic theta alignment, part marking.
Power Fault Protection	External UPS available.

Electro-Mechanical

Dimensions	81cm W x 76cm D x 173 cm H (32"W x 30" D x 68" H)
Weight	160 kg (350 lbs)
Electrical	110/220 VAC 7 amp (10 amp max)
Safety	Semi-S2 compliant
Certifications	CE, UL Approval



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