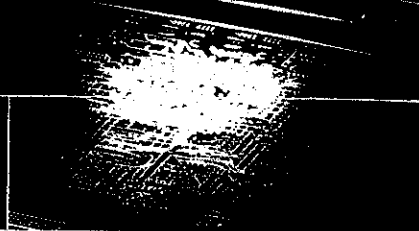


Orion-604-HR



FEATURES

- Dedicated to fine line, high density and high resolution inspection
- Superior detectability
- Triple detection algorithms
- Workflow optimization
- Inspectify™ - online verification
- Flip mode of operation
- 3D image display
- Multi-language user interface
- Ergonomic design

AOI Optimization for High Resolution Inspection

The Camtek Orion-604-HR has been especially designed for fine line, high density and high resolution PCB inspection. The Orion-604-HR incorporates a state-of-the-art illumination system together with an advanced CCD camera providing exceptional image acquisition. Operators enjoy superior detectability unrivalled for the detection of very fine defects. The Orion-604-HR has been optimized to provide unparalleled inspection of 1-4 mil line width panels.

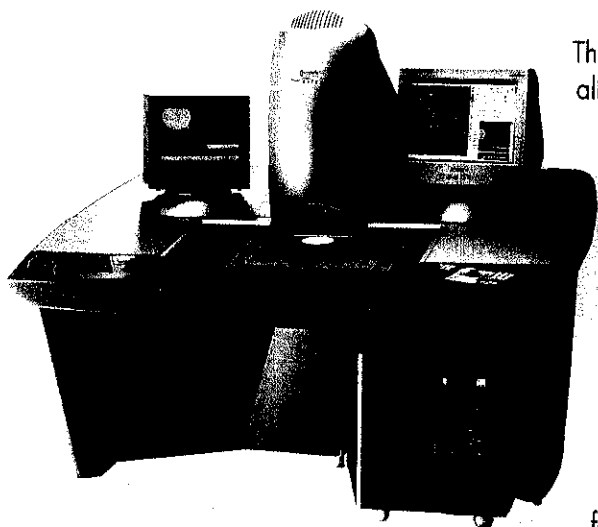
The Orion features triple detection algorithms including DRC (Design Rule Check), template matching and MIC (Morphological Image Comparison).

For workflow optimization, the operator can pre-determine the maximum number of defects warranted for online verification. When the number is below the parameter, verification can be performed immediately on the AOI unit utilizing Camtek's proprietary technology - Inspectify™. Additionally, the Orion offers operators the option to inspect and verify both sides of panels during one cycle using the Flip mode of operation. Utilizing Inspectify™ and Flip modes of operation, the need for unnecessary handling is thereby eliminated and associated defects are dramatically reduced. When the number of defects is above the maximum allowed for online verification, the Orion flags the operator to perform verification offline. The AOI data is then transferred to the CVR (Camtek Verification and Repair System) for offline verification using the same high technology verification tools as those incorporated on the Orion (see CVR data sheet for further details.)

A 3D-image display provides a cross-section graphical depiction of defects for in-depth analysis. This unique tool is especially helpful to engineering research, defect cause and historical analysis, as well as for defect documents files and process control.

The Orion-604-HR has been especially designed to offer unparalleled comfort allowing operators to sit during operation. Furthermore, Camtek AOI systems have been designed to accommodate worldwide users through the incorporation of a multi-language user interface. The operating language can be applied simply by inputting the operator's name upon login. Varying permission levels are also available on the Orion, allowing the AOI supervisor to control and authorize levels of operation appropriate to the operator's knowledge and experience.

A combination of high performance optics, state-of-the-art image processing unit under a Windows NT operating system, triple detection algorithms and MTS (multi-thresholds system) make the Orion-604-HR ideal for the unique requirements of PCB shops requiring cutting edge AOI solutions optimized for fine line, high density and high resolution PCB inspection.



Camtek
AOI SYSTEMS

Moving AOI beyond detection to prevention

Orion-604-HR

Application	High Resolution panel inspection
Throughput	Up to 310 sq. ft. per hour for 18" x 24" (458 x 610 mm) panels (not including loading/unloading)
Resolution	0.10 to 0.40 mil (2.54 - 10.16 µm) (6 preset resolutions)
Panel Size (maximum)	22" x 28" (560 x 710 mm)
Inspection Area (maximum)	Inspectify mode - 21" x 27" (535 x 690 mm) CVR mode - 22" x 28" (560 x 710 mm)
Panel thickness (maximum)	0.2" (5080 µm)
Panel types	Inner layers: signal, P&G and mixed, cross shielding, buried vias (optional) Outer layers: signal, P&G and mixed, external and drilled layers (optional), SMT and cross shielding Phototools: (using white background)
Materials Inspected	Copper (rigid, flex, rigid/flex) PhotoResist (optional) Phototools (using white background)
Detection Methods	Triple Detection Algorithms <ul style="list-style-type: none"> • DRC • Template matching • MIC (Morphological Image Comparison)
Detectable Defects	Open and short circuits, nicks, mouse bites, protrusions, pinholes, islands, dish-downs, line width/space/annular ring violations, missing features, wrong feature size
Reference Source Data	Golden board, artwork, CAM data (optional)
Tooling	tooling pins for 4 universal T-slots Pinless Registration (optional)
Illumination	Visible light: specular and diffused
Laser pointer	included for indication of defect location
Operating System	Windows NT
GUI	multi-language user interface (Windows NT based)
AOI Options	Drilled layer inspection (CAI prerequisite) Local measurement Photo resist inspection (PRI) High resolution microscope Ink marker
Advanced AOI Application Add-ons <i>(see individual data sheets for more details)</i>	Sprinter (Fast Article Inspection) CPC (Camtek Process Control) CAI (CAMtek AOI Interface)
Verification & Repair Methods	Inspectify - immediate online verification CVR - offline verification <i>(see data sheet for more details)</i>
Dimensions	Height: 66" (166 cm) Width: 73" (184 cm) Depth: 65" (164 cm)
Weight	750 Kg.
Power	120/230 VAC; 50/60 Hz, 2Kw
Compressed air	8 ATM, 700 l/min
Temperature and Humidity	standard office environment

Camtek
AOI SYSTEMS

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