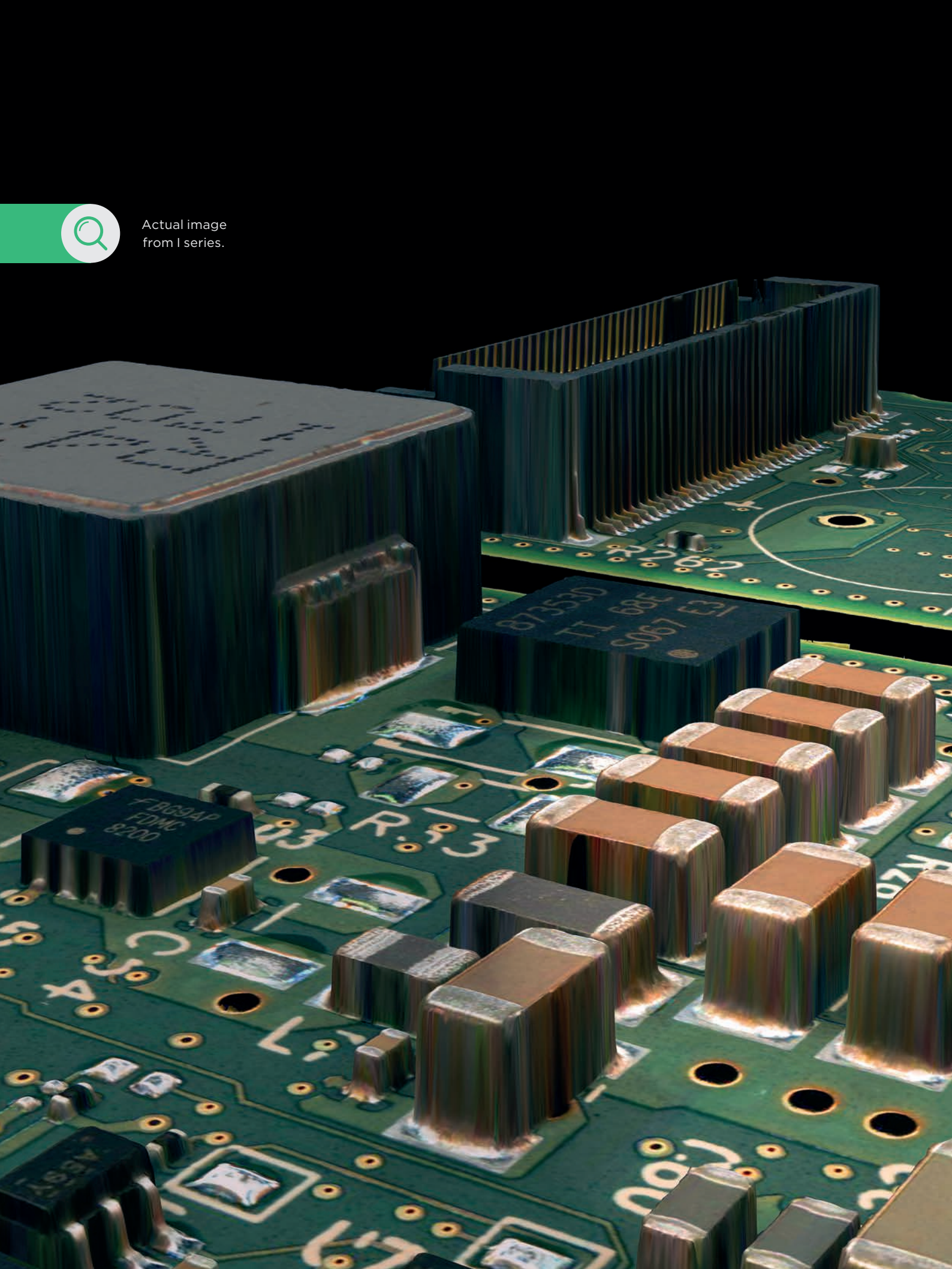


High-mix AOI inspection made simple

Mycronic inspection solutions MYPro I™ series 3D AOI





Actual image
from I series.

MYPro I series 3D AOI

Put your inspection on autopilot

At Mycronic, we're on a mission to enable tomorrow's zero-defect SMT line. The new MYPro I series 3D AOI brings your factory one step closer to this vision by continually improving product quality and first-pass yield with minimal operator intervention.

THE EVOLUTION CONTINUES

From automotive to aerospace electronics assembly, the K Series 3D AOI has long been recognized for its high accuracy and repeatability. Thanks to its advanced algorithmic technology, it excels at processing all types of PCBs, making it one of the preferred 3D AOI systems among tier-one mid-volume EMSs in high reliability industries worldwide.

POWERFUL AOI FOR ANY ENVIRONMENT

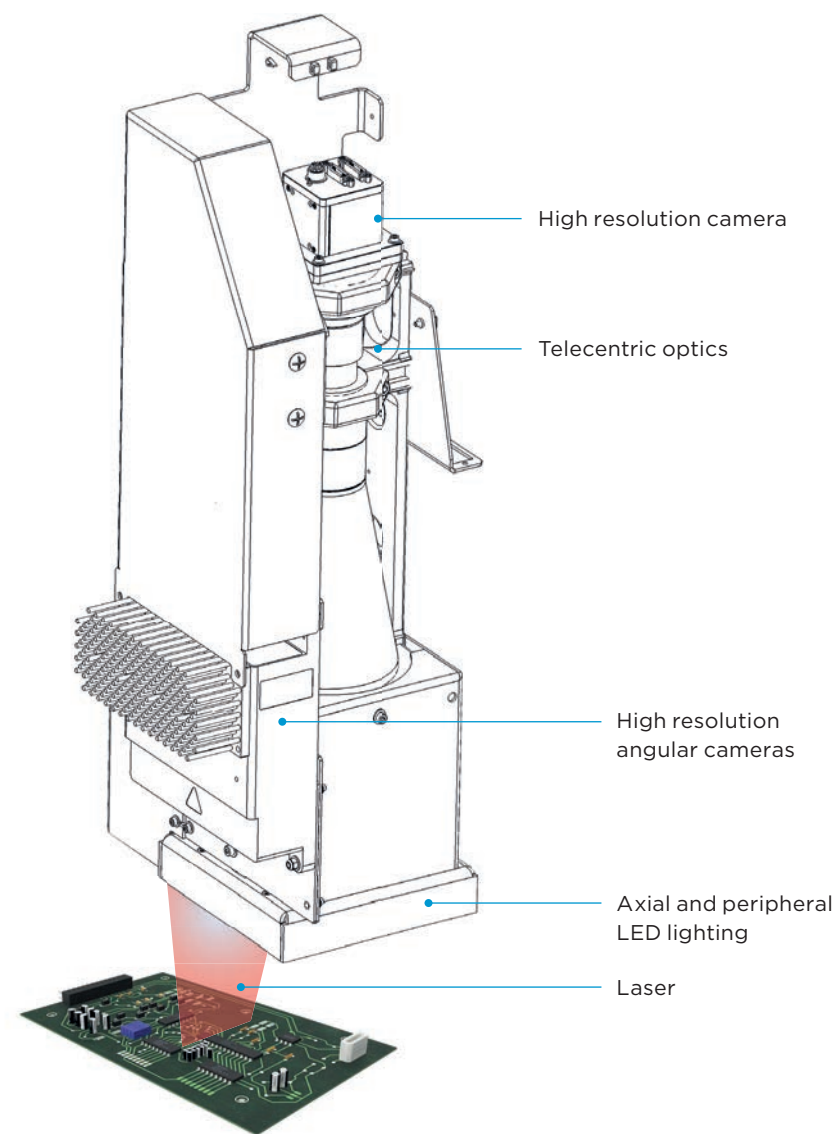
The new MYPro I Series 3D AOI brings these powerful capabilities to an even wider range of manufacturers, pushing the boundaries of ergonomics and automation to the forefront of the industry. Designed for enhanced user experience, it offers intuitive programming guidance and self-optimizing process controls, ensuring easy implementation of high-performance AOI for any operator in any production mix or class.

By combining industry-leading performance with a highly intuitive, user-centric architecture, the MYPro I series is a game changer.

MYPro I series 3D AOI

World-class inspection starts with outstanding image acquisition

The I series 3D AOI is a true metrology device that allows you to inspect all types of assemblies with the same accuracy and no compromises.



POWERFUL 3D AOI

Drill down into powerful image library tools with advanced algorithmic assistance.

PRECISE OPTICAL METROLOGY

High-precision metrology combining high-definition 2D texture with shadow-free 3D inspection that eliminates image cropping and warpage effects.

COMPLETE TEST COVERAGE

Comprehensive defect coverage accurately measures component body and solder joints to identify misplaced components, tombstones, lifted leads and more.

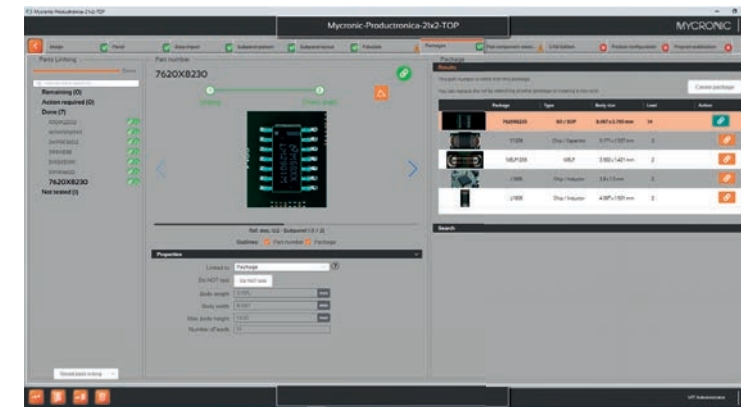
ALL-COMPONENT INSPECTION

Comprehensive toolbox of ready-to-use 2D and 3D tests to inspect any SMT components, but also through-hole or press-fit components, connectors of any type and shape, as well as novel components. The geometry and relative positions of components, pins, or connectors can also be inspected to further expand your test coverage.

Powered by AI

to bring performance and usability to new heights

As production conditions change and grow more complex, 3D AOI inspection is increasingly critical to eliminating defects, waste and rework. Thanks to a new software utilizing AI image classification and pattern recognition, the MYPro I series makes implementation easier than ever. Whatever size your production batches, and however experienced your operators may be, these advanced automation features continually maintain the highest levels of inspection performance.



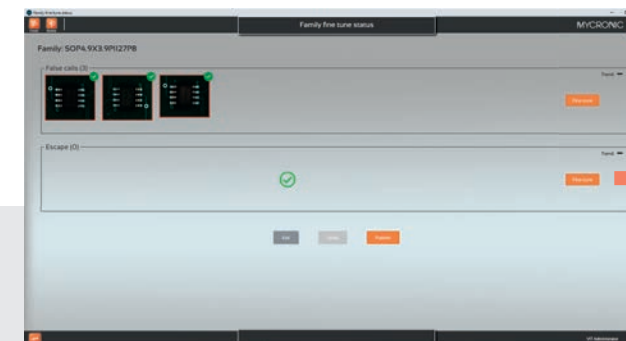
For existing components, Auto Match-Maker auto-matically finds corresponding inspection model from the central library.

MYWIZARD: UP TO 30% FASTER PROGRAMMING

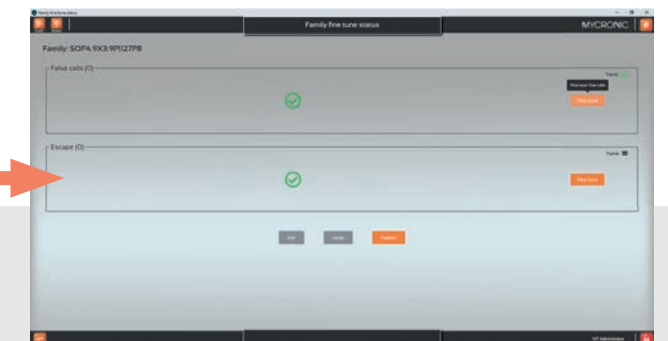
The new MYWizard user interface integrates two artificial intelligence systems—Auto Match-Maker, an advanced component recognition technology, and a new machine learning algorithm that locates fiducials and component's polarity—in order to guide operators through the programming faster. It results in up to 30% reduction in programming time compared with previous generations, with reduced operator experience and training.

ESCAPE TRACKER FOR AUTOMATED PERFORMANCE OPTIMIZATION

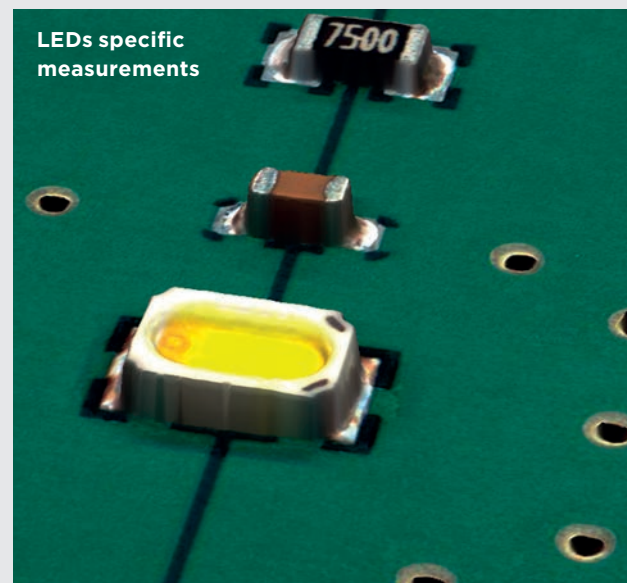
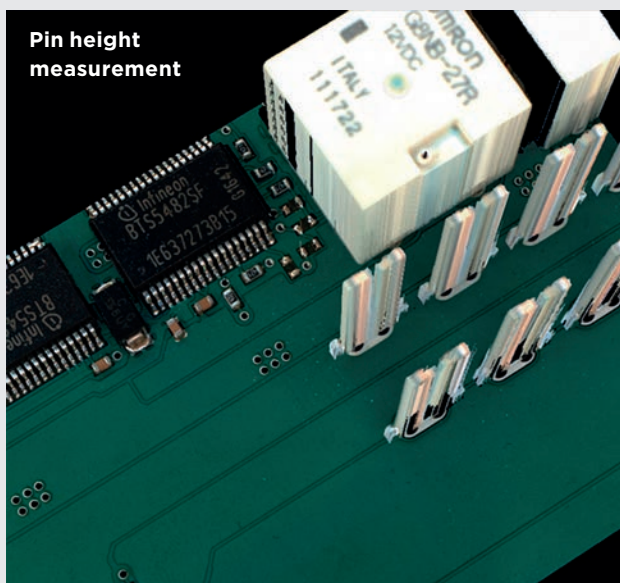
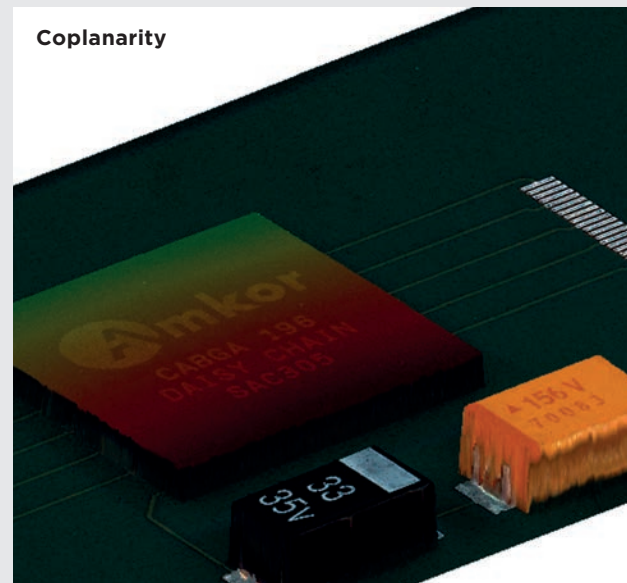
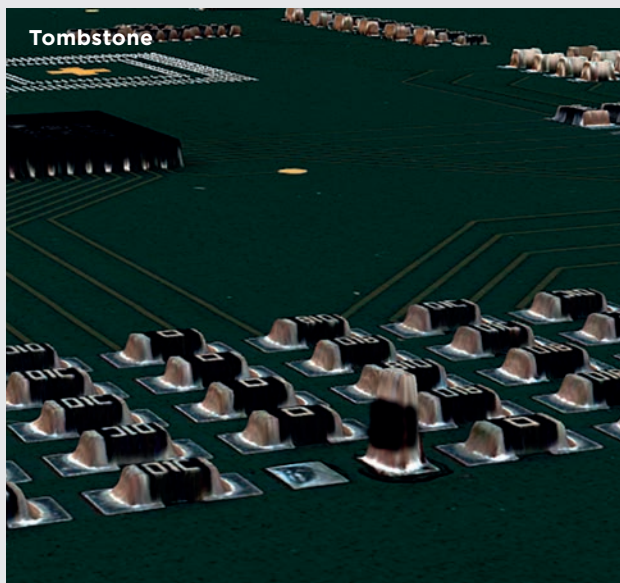
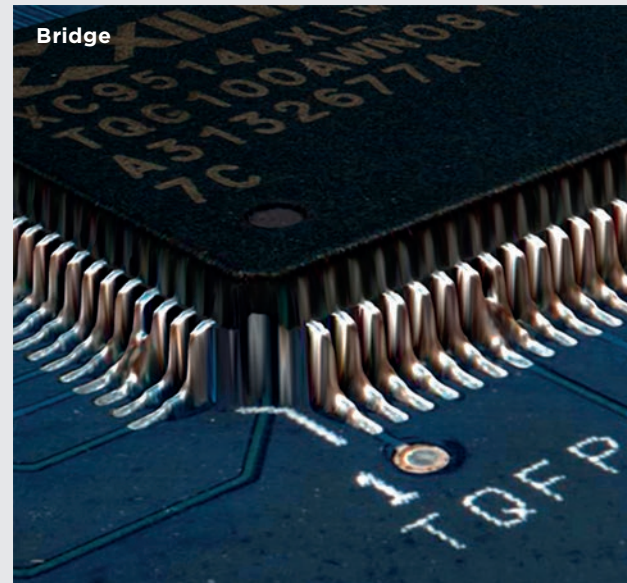
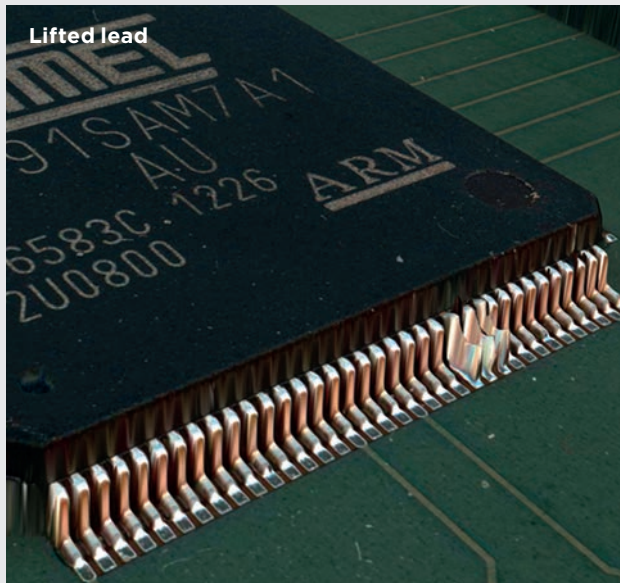
MYPro I series features a next-generation self-checking inspection performance system. With Escape Tracker, the operator is immediately informed of any errors or programming weaknesses that could potentially generate false calls or escapes. Central library items that need to be corrected are clearly displayed allowing for easier, faster and safer fine-tuning.



During programming process, Escape Tracker alerts on three potential false calls.



After fine-tuning, Escape Tracker confirms false calls are eradicated, and no escapes are introduced.



Actual images from MYPro I series 3D AOI

Superior accuracy for any product geometry

The MYPro I series paves the way to Automatic Optical Metrology (AOM). It offers best-in-class accuracy and repeatability in X, Y, Z and Theta for efficient process control. The unique combination of sub-pixel geometric pattern matching technology, proprietary 3D algorithms and unique warpage and distortion compensation leads to superior critical measurement capabilities.

Vectorial imaging pattern matching.
 $\pm 5\text{mm}$ warpage compensation with full Z accuracy.
 Sub-pixel technology with $4.75\mu\text{m}$ X, Y resolution.

Ensure comprehensive defect coverage

To enable reliable data capture and high-resolution 3D visualization, the MYPro I series expands defect coverage using a combination of 2D texture and shadow-free 3D inspection. This is made possible by a range of state-of-the-art camera, 3D sensor and motion system technologies.

High-resolution camera with fully telecentric lens captures high-quality RGB images for inspection and review.

High-performance 3D sensor combines vertical lasers to avoid projection shadows, optimized angles to minimize intrinsic shadow effects and adaptive height filtering that adapts the sensor's sensitivity to component geometry.

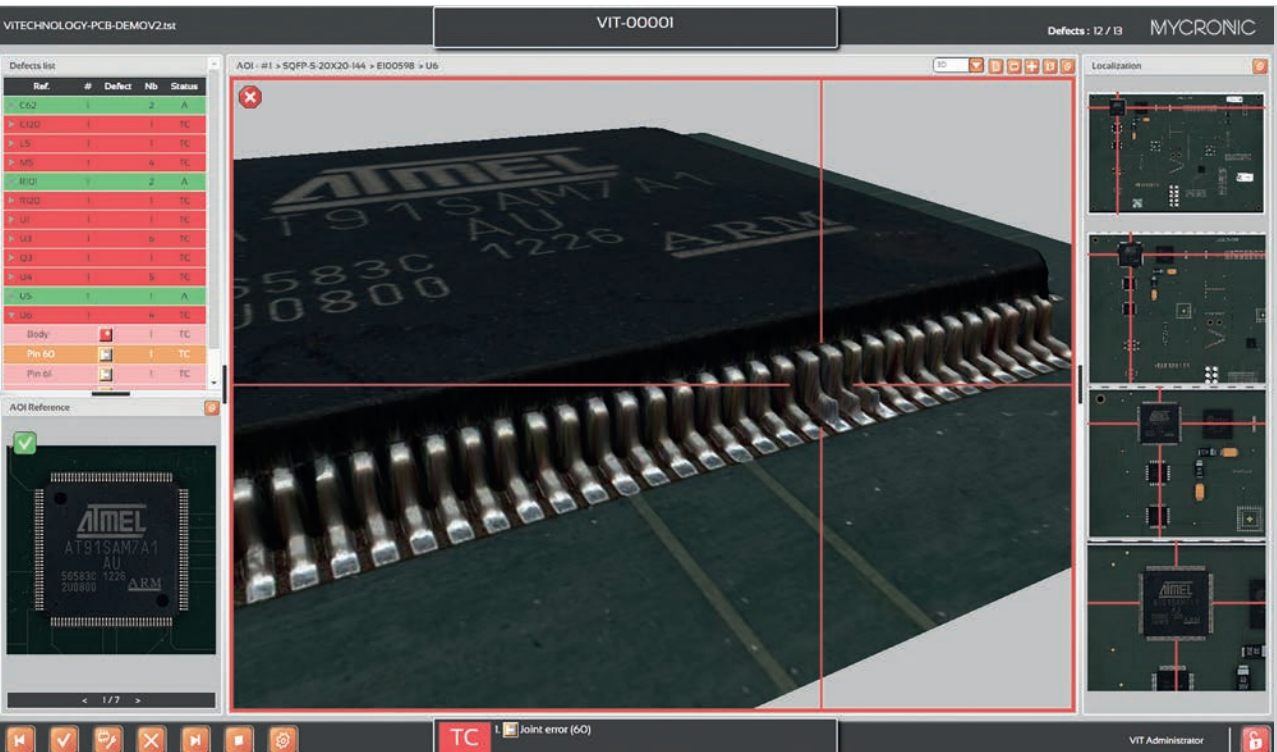
High-precision motion system utilizing three linear motors for accurate high-speed motion and $0.5\mu\text{m}$ resolution optical encoders for accurate positioning.

Results at a glance with MYPro Review

MYPro Review gives operators an easy way to make pass/fail diagnoses at a glance. By automatically correlating SPI and AOI results into a single on-screen overview, it not only provides a highly accurate and simplified defect classification system, but also helps fine-tuning SPI tolerances for optimal first-pass yield.



- Review high-quality 3D defect images to localize defects at a glance
- Easy classification using reference images
- Use IPC or user-defined defect categories
- Speed up reaction times with pre-defined corrective action messages
- Optimize review environment with customized screen layouts



High viewing comfort, for greater efficiency of review operations.

Industry-leading performance and production stability

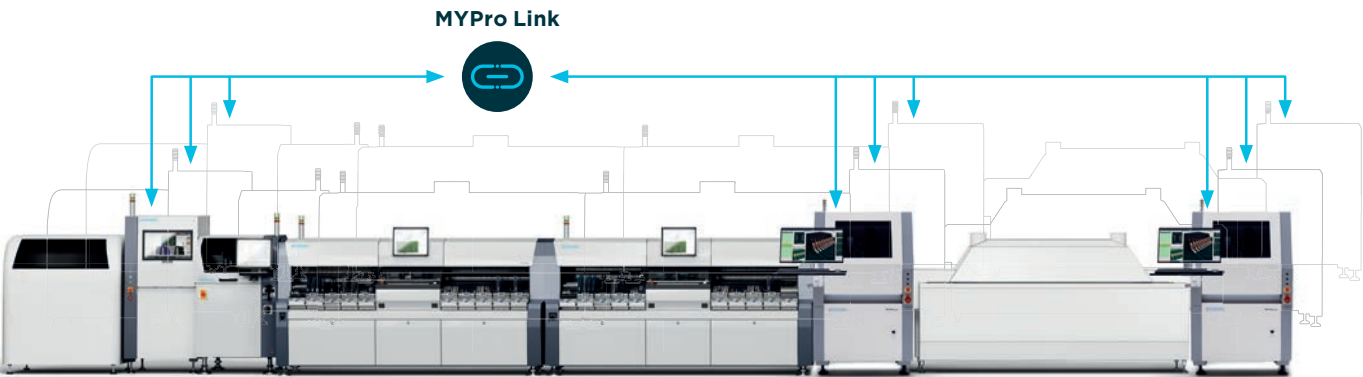
Today’s lean and agile manufacturing calls for superior first pass yield efficiency and 100% performance portability from one line to another. MYPro I series satisfies the most demanding customers in the electronics assembly industry where quality and productivity are both mission- and business-critical. The system has been designed to optimize test coverage at line speed for the smart factory while offering 100% offline capabilities.

- Superior uptime above 99.5%.
- Unified software suite for pre-reflow, post-reflow and post-wave AOI applications.
- 100% offline programming and tuning capabilities.
- Rapid inspection time up to 100 cm²/s.

Fully integrated process control

MYPro Link, Mycronic’s award-winning web-based process control software suite, puts the benefits of inspection data correlation into real-time production. All so you can monitor your line performance over time or at a glance, and get to the root cause of every defect in just a few clicks.

- Unified source of SPI and AOI data with MYPro Link, allowing you to view your process in real time, quickly drill down to the defect image and take immediate corrective action.
- Full machine-to-machine portability for all programs.

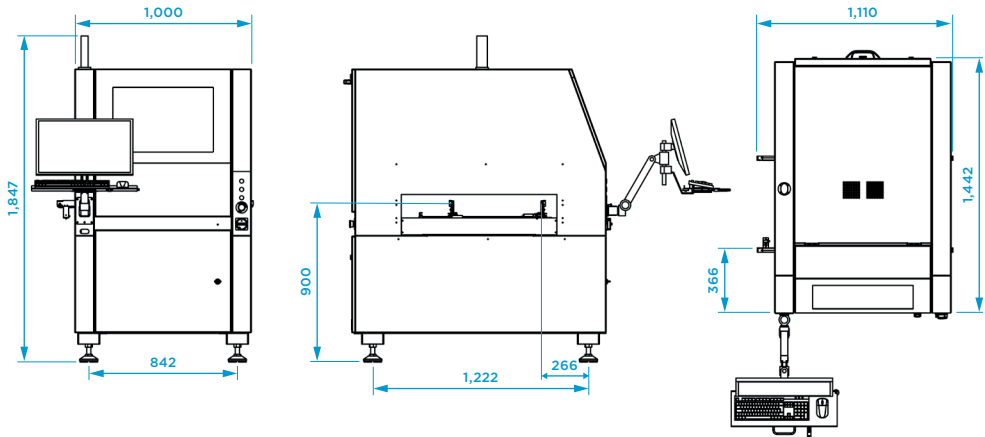


A complete range of I series 3D AOI to fulfill all your needs

MYPro I50/I80/I90	
INSPECTION TECHNOLOGY	
3D sensor	Shadow-proof 3D sensor, based on laser and angular cameras
Optics	High-precision telecentric lens
Field of View (XxY)	61.1x44.9mm (2.40x1.76")
Lighting types	Axial and peripheral LED with holographic diffuser
Lighting colors	White, red, blue
Warp compensation	±5mm warpage compensation with full Z accuracy
INSPECTION PERFORMANCE	
Defect types	Component body, Missing component, Misplacement (X, Y, Z, θ), Tombstone, Polarity, Coplanarity, Upside-down component, OCR/OCV, Solder joint, Missing joint, Solder excess, Bridging, Lifted lead, Head-in-pillow
Metrology	Critical distance measurement capability with 10µm precision
Foreign material detection	Embedded in standard software version
Height inspection range	From -5mm to +20mm
X, Y resolution	4.75µm—subpixel technology
Z resolution	1µm constant resolution over 20mm Z range
Gage R&R	X, Y GRR<4% on 01005
Inspection speed	<100cm²/s
SOFTWARE SUITE	
Vision integrated software suite	Vision3D
Vision offline programming	Included
Vision library	Standard, based on JEDEC packages
Auto programming assistance	Auto MatchMaker and Auto Teach
Library quality control	Library Pro
Metrology software	Macro Tool
SYSTEM	
Operating system	Windows 10, 64-bit
PCB positioning	Board and panel fiducials
Axis motion	Linear motors with optical encoders—1µm repeatability
OPTIONS	
External barcode readers (1D/2D)	Cognex DM 150—also compatible with major barcode reader brands
Internal barcode readers (1D/2D)	Software option enabling reading from scanning head
Uninterruptible power supply	For PC 230V
115V power supply	Single phase 115V/60Hz/16A
Offline program preparation software	MYPro Data Import, for CAD data offline preparation
Offline review software	MYPro Review
Online SPC	MYPro Analyze
Other options available	Please contact us

The MYPro I series 3D AOI system is available in several versions to cover all SMT inspection needs: single lane, dual lane, and heavy duty. Field upgrades are also available.

MYPro I50/I80/I90			
FACILITIES			
Interface	IPC-SMEMA-9851, HERMES		
Power requirements	Single phase 230V/50Hz/10A		
Dimensions in mm (WxDxH)	1,110x1,351x(1,975-2,075)		
Weight	900kg		
Operating temperature	15°C-30°C		
Relative humidity	20-75% (without condensing)		
Network	TCP/IP, RJ45 plug		
Laser	Class-1 laser product according to the IEC 60825-1 standard		
	MYPro I50	MYPro I80	MYPro I90
PCB HANDLING			
Minimum PCB dimensions	51x51mm / 2x2"		
Maximum PCB dimensions (XxY)	533x609mm 21x24"	Scan X mode Single lane: 533x600mm 21x23.6" Dual lane: 2 x (533x280mm) 2 x (21x11") Scan Y mode Single lane: 391x600mm 19.4x23.6" Dual lane: 2 x (391x325mm) 2 x (19.4x12.8")	Standard: 533x609mm 21x24" Optional: 939x609mm 37x24"
PCB thickness	0.5-4mm	0.5-4mm	0.5-15mm
Maximum PCB weight	3kg	3kg	15kg
Minimum edge clearance	3mm	3mm	4mm
Top clearance	34mm		
Bottom clearance	60mm		
Conveyor width adjustment	Automatic		
Conveying height	860-960mm		
DIMENSIONS MYPRO I SERIES			
[mm]			



Bringing tomorrow's electronics to life

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