SE3000™ 3D SPI

Ultimate Precision Accuracy with World-class Usability

Powered by MRS Technology

Inspection Capabilities	MRS Sensor	Ultra High Resolution MRS Sensor
Inspection Speed	Peak: 35 cm²/sec (2D+3D) Average: 30 cm²/sec (2D+3D)	Peak: 15 cm²/sec (2D+3D) Average: 12 cm²/sec (2D+3D)
Minimum Component Aperture Size	0402 mm (01005 in.)	0201 mm (008004 in.)
Panel Size Capacity	SE3000: Minimum: 50 x 50 mm (2 x 2 in.) ; Maximum: 510 x 510 mm (20.0 x 20.0 in.) SE3000-X: Minimum: 50 x 120 mm (2 x 4.7 in.) ; Maximum: 710 x 610 mm (27.9 x 24.0 in.) SE3000-XL: Minimum: 50 x 120 mm (2 x 4.7 in.) ; Maximum: 1200 x 610 mm (47.2 x 24.0 in.) with 2 index inspection capability	
Maximum Panel Weight	SE3000: 3.0 kg (6.6 lbs) ; SE3000-X and SE3000-XL: 10.0 kg (22.04 lbs)	
Board Thickness	SE3000: 0.3 mm to 5.0 mm (0.01 in. to 0.2 in.) SE3000-X and SE3000-XL: 0.5 mm to 6.0 mm (0.02 in. to 0.24 in.)	
Board Edge Clearance	SE3000: Top: 2.5 mm (0.10 in.) ; Bottom: 3.0 mm (0.12 in.) SE3000-X and SE3000-XL: Top: 3.0 mm (0.12 in.) ; Bottom: 3.0 mm (0.12 in.)	
Clearance	Top (above belt): 30 mm (1.18 in.) ; Bottom: 35 mm (1.38 in.)	
Conveyor Speed Range	150 - 450 mm/sec (5.9 - 17.7 in./sec)	
Conveyor Adjustment	Automatic	
Functional Specifications		
Maximum Inspection Area	SE3000: 510 x 503 mm (20.0 x 19.8 in.) SE3000-X: 710 x 602 mm (27.9 x 23.7 in.) SE3000-XL: 1200 x 602 mm (47.2 x 23.7 in.)	
Field-of-View (FOV)	36 x 36 mm (1.42 x 1.42 in.)	21 x 21 mm (0.82 x 0.82 in)
3D Resolution	18 µm	9 µm
Maximum Pad Size in FOV	15 x 15 mm (0.6 x 0.6 in.)	
Measurement Types	Height, Area, Volume, Registration, Bridge Detection, Defect Review	
Measurement Gage R&R	<10%, 6 σ on Printed Circuit Board; <5% 6 σ on Certification Target	<5%, 6 σ on Printed Circuit Board; <3% 6 σ on Certification Target
Height Accuracy	3 µm on a Certification Target	
Height Measurement Range	1 mm	
Vision System & Technology		
Imagers	Multi-3D sensors	
System Specifications		
Machine Interface	SMEMA, RS232 and Ethernet	
Power Requirements	100-120 VAC or 220-240 VAC, 50/60 hz, 10-15 amps	
Compressed Air Requirements	5.6 to 7.0 Kgf/cm² (80 to 100 psi @ 4 cfm)	
System Dimensions	SE3000: 110 x 127 x 139 cm (W x D x H) SE3000-X: 133 x 140 x 139 cm (W x D x H) SE3000-XL: 199 x 140 x 139 cm (W x D x H)	
Weight	SE3000: ≈965 kg (2127 lbs.) SE3000-X: ≈1242 kg (2738 lbs.) SE3000-XL: ≈1279 kg (2819 lbs.)	
Options		
SPC software, Barcode Readers (1D/2D), Programming Software: ePM-SPI/AOI & GC-PowerPlace, Offline Defect Review, Certification Target		
SE3000-D (Dual Lane) and SE3000-DD (Dual Lane - Dual Sensor) models available		

NEW

2018 NPI Award
Test & Inspection - SPI

CYBEROPTICS®

Contact CyberOptics today for more information
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CYBEROPTICS®

SE3000™

True Measurement, Supreme Quality

Performance at its Best (Accuracy and GR&R)

The new SE3000™ SPI system is the very first SPI system to incorporate the industry leading MRS sensor technology with a finer resolution for the best accuracy, repeatability and reproducibility - even on the smallest paste deposits. Combined with the award winning, easy-to-use SPI software, solder paste inspection has a new level of precision for the most stringent requirements. Large Board capability with SE3000-X is also available.

MRS Technology for 3D SPI

CyberOptics' unique sensor architecture with 4 multi-view 3D sensors and a parallel projector, simultaneously captures and transmits multiple images in parallel while proprietary 3D fusing algorithms merge the images together, delivering metrology grade accuracy at production speed.

Award-Winning Intuitive Software

SPISOFTWARE

The SPI V5 series software delivers world-class user experience with its intuitive interface, completely changing the way users interact with our system. Yet, at the same time, the software is extremely stable and simple to use enabling shortest learning curve.

With full multi-touch experience, SPI V5 series software offers a range of revolutionary features that enable smarter and faster inspection:

- Seamless integration of all applications - Teach, Inspection, Defect Review and Real-time SPC
- Unlimited undo-redo and global search options in Teach
- Loads of smart, informative and relevant charts that provide yield summary, FPY information, hotspot display, top 10 pad failures, historical panel and more
- Easy, hassle-free operation using multi touch, multi-selection, pinch-zoom, and pan-move options

Defect Review Interface

Hot Spot Display

Real-time SPC

Feedback, Feed Forward Ready

SE3000™ fully supports feedback and feed forward capability with leading Solder Paste Printer and SMT Mounter vendors respectively. With simple configuration settings, SE3000™ gives you the power to do more with SPI results - optimize printing process, establish stencil cleaning cycles and fine-tune printer setup. All this means reduced rework costs, increased production throughput and improved yields.
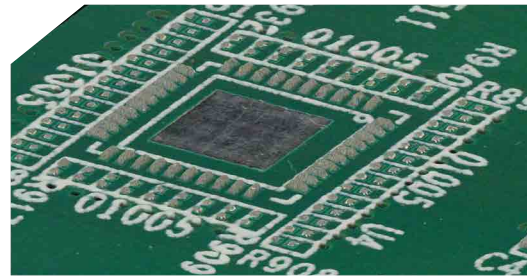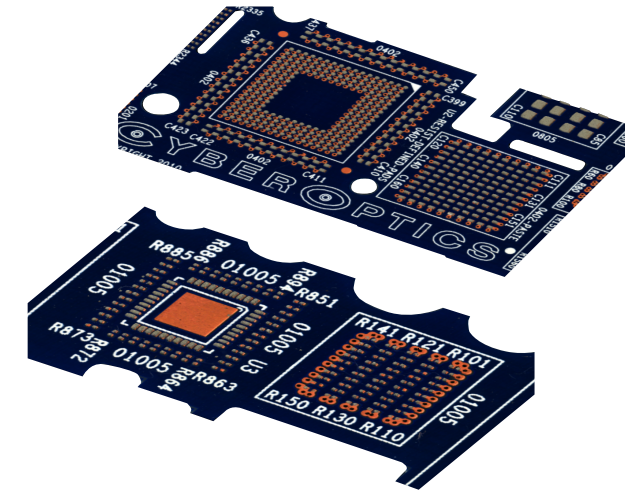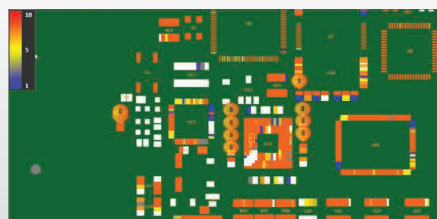
All Major Screen Printers   CyberOptics

High Speed, On-The-Fly Inspection

The SE3000 SPI System brings the revolutionary MRS technology to solder paste inspection delivering higher performance in accuracy and precision. Effective suppression of multiple reflections is critical, making MRS an ideal technology solution for a wide range of applications including those with very high quality requirements.

CyberPrint OPTIMIZER™ Ready

CyberPrint OPTIMIZER™ automatically optimizes the print process by proactively analyzing accurate trend data - first-ever in the industry! Pre-defined templates help you get started quickly while customizable rules support perfect customization for specific product needs. CyberPrint OPTIMIZER™'s predictive process improvement gets you better yields and reduces downtime.

CYBERPRINTOPTIMIZER

Defect Correlation		
SPI	AOI	AOI
FAIL	PASS	PASS
FAIL	FAIL	PASS
FAIL	FAIL	FAIL
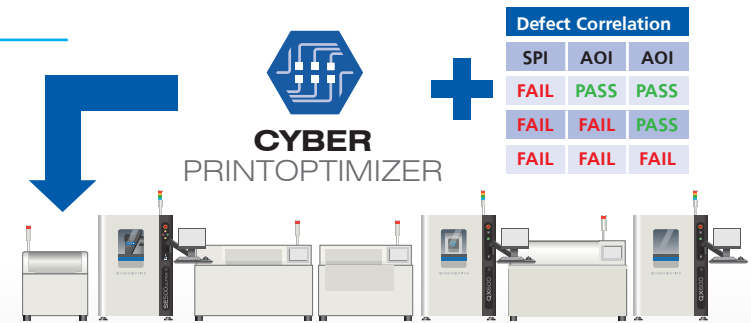
Failure analysis drives line optimization and auto tolerance changes

Fast, Scaleable SPC Solution

CyberReport™ offers full-fledged machine-level to factory-level SPC capability with powerful historical analysis and reporting tools.

CYBERREPORT

Factory-level SPC

Line-level SPC

Machine-level SPC