

# SE3000™ 3D SPI

A Leap Forward in Solder Paste Inspection  
Best combination of speed, accuracy and resolution.



SE3000™ 3D SPI



Powered by  
Multi-Award Winning  
MRS Sensor Technology

# SE3000™ 3D SPI

The new SE3000™ 3D SPI system incorporates 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.



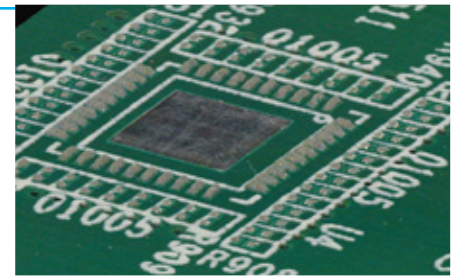
Dual-Mode MRS Sensor for SPI

## 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.

Effective suppression of multiple reflections is critical for highly accurate measurement. MRS is an ideal technology solution for a wide range of applications including those with very high quality requirements.

The Dual-Mode MRS Sensor for SPI provides the flexibility to use one mode for high speed inspection and another mode for high resolution inspection - all with one sensor.



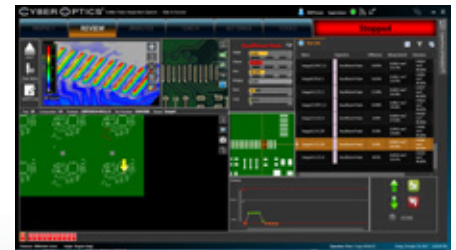
## Award-Winning Intuitive Software



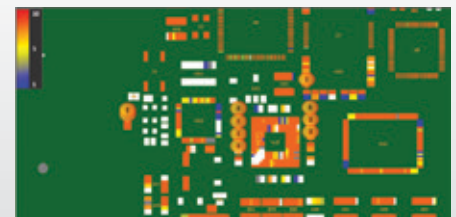
SPI SOFTWARE

CyberOptics' SPI software delivers a world-class user experience with its intuitive interface that is extremely stable and simple to use, enabling the shortest learning curve. With a full multi-touch experience, SPI software offers a range of 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

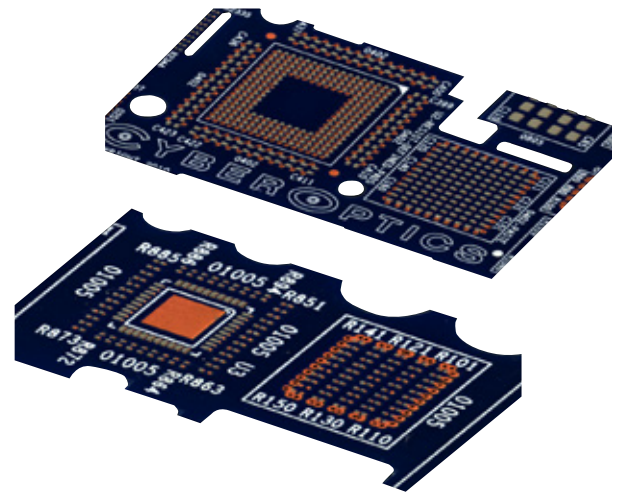
## Feedback, Feed Forward Ready

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.



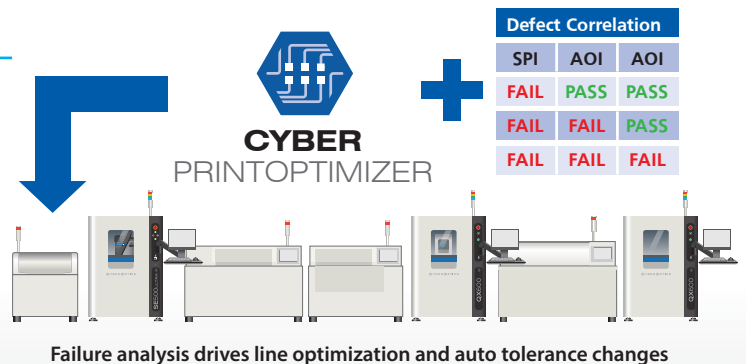
## Superior Inspection Capabilities

Ideal for measuring height, area, volume, registration and bridging. Effectively detects insufficient paste, insufficient height, insufficient area, excessive paste, excessive height, smear, offset, shape height, deposit and customer defect types.



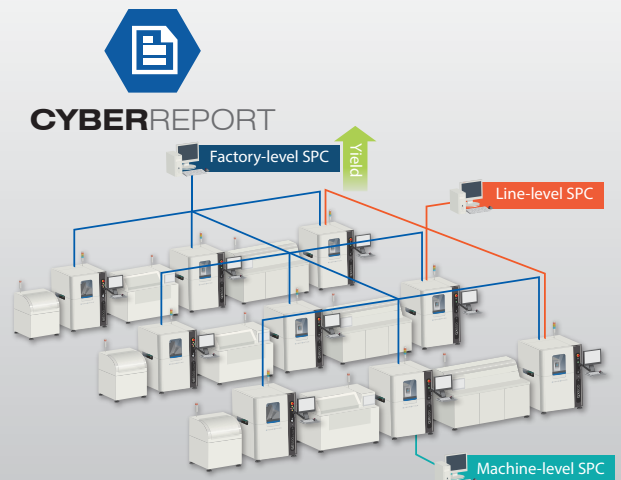
## CyberPrint OPTIMIZER™ Ready

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.



## Fast, Scaleable SPC Solution

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



## Inspection Capabilities

<b>Inspection Sensor</b>	Dual Mode MRS189	
<b>Dual Mode Inspection</b>	High Resolution	High Speed
<b>Inspection Resolution Mode</b>	9µm	18µm
<b>Inspection Speed</b>	16 cm <sup>2</sup> /sec (2.48 in <sup>2</sup> /sec)	46 cm <sup>2</sup> /sec (7.13 in <sup>2</sup> /sec)
<b>Field-of-View (FOV)</b>	22 x 18 mm (0.86 x 0.70 in.)	36 x 36 mm (1.42 x 1.42 in.)
<b>Minimum Paste Size</b>	100 x100 µm (3.9 x 3.9 mil)	200 x200 µm (7.8 x 7.8 mil)
<b>Maximum Paste Size</b>	15 x 15 mm (0.59 x 0.59 in.)	30 x 30 mm (1.18 x 1.18 in.)
<b>Height Measurement Range</b>	2 mm (0.07 in.)	3 mm (0.12 in.)
<b>PCB Wrapping Compensation</b>	< 2% of PCB diagonal or a maximum of 6.35 mm (0.25 in.) total	
<b>Z Height Accuracy</b>	2 µm on a Certification Target	
<b>Measurement Gage R&amp;R</b>	<< 10%	
<b>Measurement Types</b>	Height, Area, Volume, Registration, Bridge Detection	
<b>Defect Category</b>	Bridging, Insufficient Paste, Insufficient Height, Insufficient Area, Excessive Paste, Excessive Height, Smear, Offset, Shape Δ Height, Deposit, Customer defect type	
<b>Function Capability</b>	Closed-loop to printer, CyberPrint, inline SPC tool	

## System Capability

<b>Panel Maximum Size</b>	510 x 510 mm (20.0 x 20.0 in.)
<b>Panel Minimum Size</b>	50 x 50 mm (2 x 2 in.)
<b>Panel Maximum Inspection Area</b>	510 x 503 mm (20.0 x 19.8 in.)
<b>Panel Edge Clearance</b>	Top 2.5 mm (0.1 in.); Bottom 3.0 (0.12 in.)
<b>Panel Thickness</b>	0.3 mm to 5.0 mm (0.01 in. to 0.2 in.) (10mm Option)
<b>Panel Maximum Weight</b>	3.0 kg (6.6 lbs)
<b>Height Clearance</b>	Top: 40mm (1.96 in.); Bottom: 30mm (1.18 in.)
<b>Conveyor Adjustment</b>	Automatic
<b>Conveyor Direction</b>	Left to Right or Right to Left

## System Specification

<b>System Dimensions</b>	110 x 127 x 139 cm (W x D x H) Height excludes signal-light pole and levelling feet
<b>Weight</b>	≈ 965 kg (2127 lbs.)
<b>Machine Interface</b>	SMEMA, RS232 and Ethernet
<b>Power Requirements</b>	100-120 VAC or 220-240 VAC, 50/60 hz, 10-15 amps
<b>Compressed Air Requirements</b>	5.6 to 7.0 Kg/cm <sup>2</sup> (80 to 100 psi @ 4 cfm)
<b>OS</b>	Windows 10

## Options

SPC software, Barcode Readers (1D/2D), Programming Software: ePM-SPI/AOI, Offline Defect Review, Certification Target



Contact CyberOptics today for more information

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