

# SE ULTRA SERIES

World-class Accuracy at Fastest Speed



EM Asia Innovation Award for SPI V5 Software

High Speed,  
'All-in-one' scan,  
On-the-fly measurement  
@ 210cm<sup>2</sup>/sec



## System Specifications

Panel Size Capacity (Max)	510 x 510 mm (20.0 x 20.0 in.)
Panel Size Capacity (Min)	50 x 50 mm (2.0 x 2.0 in.)
Dimensions (W x D x H)	110 x 127 x 139 cm
Weight	~ 855 kg (1885 lbs.)
Maximum Panel Weight	3.0 kg (6.6 lbs)
Board Thickness	0.3 mm to 5.0 mm (0.01 in. to 0.2 in.)
Board Edge Clearance	Top: 2.5 mm (0.10 in.); Bottom: 3.0 mm (0.12 in.)
Component Clearance	Top (above belt): 20.1 mm (0.78 in.); Bottom: 25.4 mm (1.0 in.)
Conveyor Speed Range	150 - 450 mm/sec (5.9 - 17.7 in./sec)
Conveyor Adjustment	Automatic

## Functional Specifications

Maximum Inspection Area	508 x 503 mm (20.0 x 19.8 in.)
Field-of-View (FOV)	32 x 32 mm (1.26 x 1.26 in.)
X and Y Pixel Size	High Resolution: 15 μm (0.6 mils); High Speed: 30 μm (1.2 mils)
Paste Height Range	50 - 500 μm (2 - 20 mils)
Height Resolution	0.2 μm (0.008 mils)
Maximum Board Warp	< 2% of PCB diagonals or max. of 6.35mm (0.25 in) total
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
Machine Interface	SMEMA, RS232 & Ethernet
Power Requirements	100 - 130 / 220 - 240V (10%), 50/60 Hz, 10 - 15 amps
Compressed Air Requirements	5.6 to 7.0 Kg/cm <sup>2</sup> (80 to 100 psi @ 4 cfm)

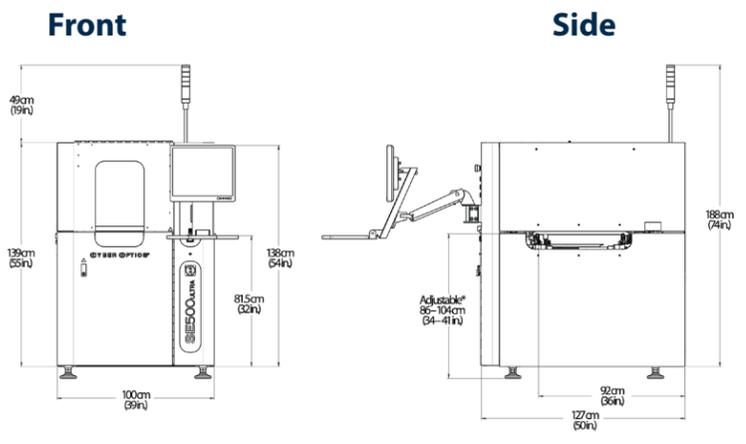
## Performance Specifications

Inspection Speed @ 30um	Up to 210 cm <sup>2</sup> /sec (32.5 in <sup>2</sup> /sec)
Inspection Speed @ 15um	80 cm <sup>2</sup> /sec (12.3 in <sup>2</sup> /sec)
Fiducial, Barcode and Skip Mark	All-in-one scan
Height Accuracy †	2 μm on a Certification Target
Gage R&R †	<<10%, 6 σ

† Under controlled conditions

## Options

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



Contact CyberOptics today for more information  
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## World-class Accuracy at Fastest Speed

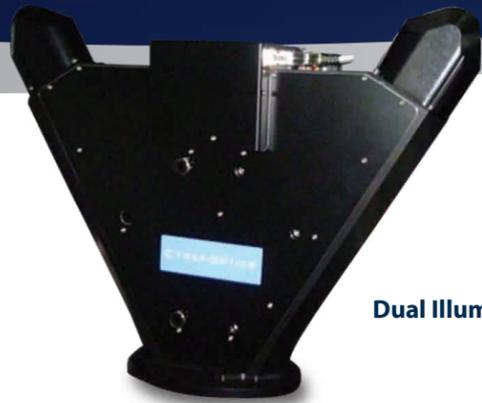
An all-new, ultra-fast sensor combined with a unique 'all-in-one' scan sequence makes the SE500ULTRA 30% faster than its predecessor SPI systems.

Designed and built by CyberOptics, the ULTRA sensor is manufactured as an integrated unit with no moving parts - which means no machine-to-machine variation. Plus, there is no drift, no parts to wear and absolutely no recalibration needed.



ULTRA Sensor

You can choose the Dual Illumination sensor option for best repeatability and reproducibility results - even on the smallest paste deposits.



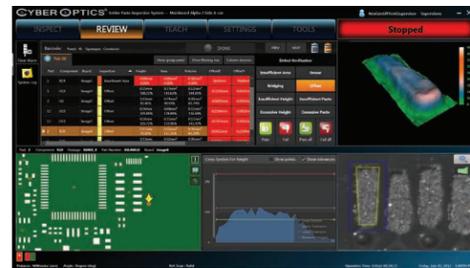
Dual Illumination Sensor

## New Award-Winning Intuitive Software

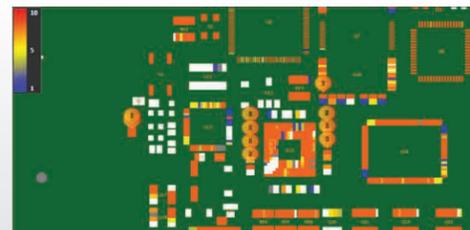
The brand-new V5 series software delivers world-class user experience with its intuitive interface, completely changing the way users interact with our system. Yet, at the same time, the software is extremely stable and simple to use enabling shortest learning curve.

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

SE500ULTRA fully supports feedback and feed forward capability with leading Solder Paste Printer and SMT Moulder vendors respectively. With simple configuration settings, SE500ULTRA 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.

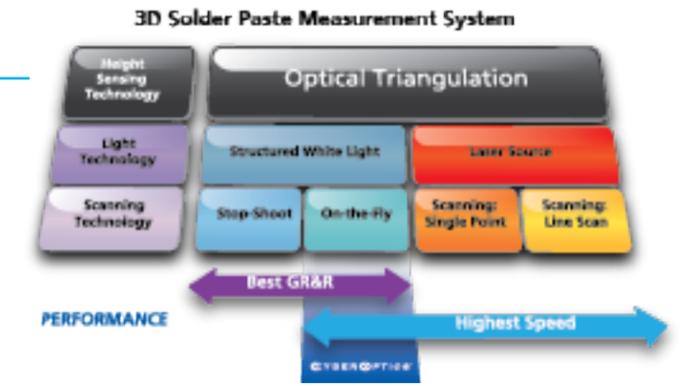


All Major Screen Printers

CyberOptics

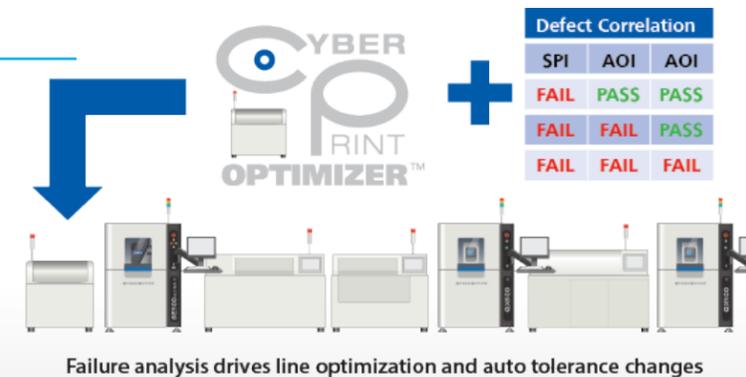
## High Speed, On-The-Fly Inspection

SE500ULTRA incorporates CyberOptics' patented 3D sensing technology that uses white strobe light acquiring full FOVs with each strobe and minimizing vibration effects - delivering good accuracy and consistent repeatability. You can measure ANY PCB surface - including flexible circuits - as white light causes minimum diffusion. With its continuous image acquisition, you can be assured of fast, focused and reliable inspection.



## 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, Scalable SPC Solution

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

