

**ASMPT** enabling the  
digital world



# Process Lens

Measure what matters – with exceptional  
precision, speed and reliability

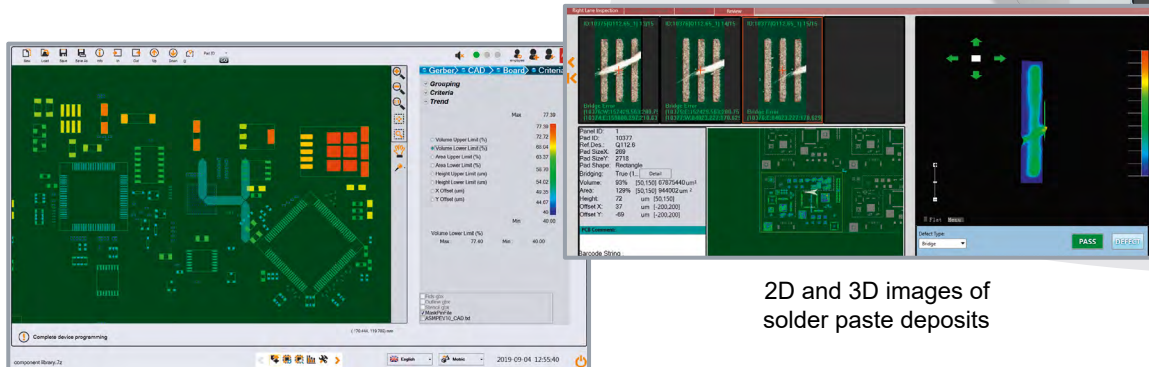
# Process Lens

## MORE PRECISION, SPEED, AND INVESTMENT PROTECTION

Process Lens is a highly precise, flexible, state-of-the-art 5D inline SPI system with on-the-fly 3D compensation of PCB warping. It is fast enough even for inline measurements with dual conveyors. Thanks to its smart algorithms, the Process Lens understands what it measures and knows how to interpret the results accordingly. It measures what matters: solder paste deposits, glue, contaminations, dust, and more – all while suppressing any measurement noise generated by the circuit board.

The choice is yours: the Process Lens has a DLP chip with individually controllable micro-mirrors and a scanning field of 30 x 30 millimeters, while the Process Lens HD features independently controllable micro-mirrors and a scanning field of 50 x 50 millimeters. The Process Lens HD is up to 70 percent faster than traditional systems while maintaining a very high measurement accuracy, but with 80 percent fewer false calls. It also offers full flexibility, where users can switch between high-speed and high-resolution modes through software.

The bottom line: more stable printing processes, higher throughput rates, and significantly better yields. Unmatched and unbeatable by the competition – compare for yourself.



Fast programming:  
Component library recom-  
mends inspection criteria

2D and 3D images of  
solder paste deposits

### The future awaits Smart process optimization that's easy to retrofit

**Absolutely unique:** With the optional expert software WORKS Optimization you can upgrade your 5D SPI to the world's first self-learning inline expert system for optimizing your printing process.

The **WORKS Optimization** printing solution optimizes your printing process proactively with virtual prints, trend analyses and direct DEK printer control – optionally fully autonomously with no operator assists whatsoever. The expert software learns from each print cycle 24/7, 365 days a year, and never forgets a detail.

The WORKS Optimization application also forms closed loops with third-party printers and, in combination with end-of-line AOI systems now also supports operators in optimizing the placement process.

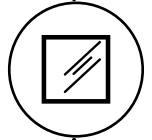


# TOTALLY UNIQUE Process Lens



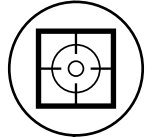
## The most innovative measurement system

Moiré phase shifting with individually controllable micro-mirrors



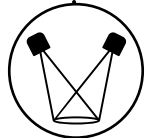
## Maximum accuracy

Precise X/Y positioning, combined 2D/3D measurements and on-the-fly compensation of board warpage



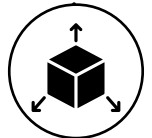
## Shadow-free illumination

Multiple light sources



## Comprehensive

Visualization of position, area, height, volume and shape of all solder deposits; checks for coplanarity and bridging



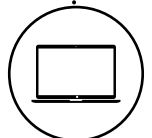
## Maximum throughput

Inline measurement in dual conveyor mode



## Easy operation

Quick programming with component library and recommendations of inspection criteria



## Investment protection

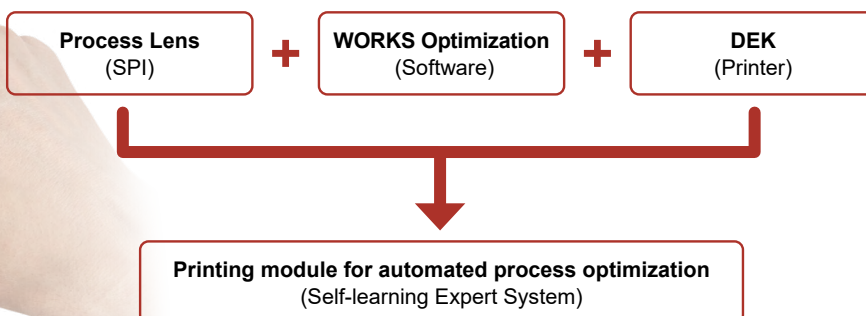
Software-upgradeable with WORKS Optimization to inline expert system for autonomous process optimization



Process Lens utilizes the full potential of a highly connected and highly automated intelligent factory. Data is viewed holistically and processes are analyzed, integrated and optimized at all levels. With open industry standards, machine learning and artificial intelligence, manufacturing becomes even more productive and resilient.

## WORKS SOFTWARE SUITE

All systems go: The WORKS Optimization application of the WORKS Software Suite ensures a consistently stable printing process.



More about  
Process Lens



# Process Lens / Process Lens HD

Machine type	Process Lens	Process Lens HD
<b>System</b>	<b>Description</b>	
DLP chip	individually controllable micro-mirrors	individually controllable micro-mirrors
Camera system	4 MP / Field of view 30 × 30 mm	25 MP / Field of view 50 × 50 mm
Pixel size	15 µm × 15 µm	10 µm × 10 µm (high-resolution mode) 20 µm × 20 µm (high-speed mode)
Vertical resolution	0.37 µm	
Height accuracy with calibration target	≤ 1 µm	
Paste height (max.)	1,000 µm	
Paste deposit size	90 µm × 130 µm	70 µm × 125 µm (high-resolution mode) 130 µm × 200 µm (high-speed mode)
X/Y gantry accuracy	± 12.5 µm (at ± 3σ)	
Inspection speed	Up to 30 cm <sup>2</sup> /s	90 cm <sup>2</sup> /s (high-speed mode)
Measurement	Shadow-free	
Solder paste measurements	Volume, area, height, X- and Y-offset, shape, bridging, coplanarity	
<b>PCBs</b>		
Dimensions – single lane	50 × 50 mm to 610 × 560 mm (L × W)	50 × 50 mm to 540 × 560 mm (L × W)
Dimensions – dual lane (standard)	50 × 45 mm to 375 × 260 mm (L × W)	
Dimensions – dual lane (in single-lane mode)	50 × 45 mm to 375 × 460 mm (L × W)	
Thickness	0.5 mm to 4.5 mm	
Minimum edge clearance	3 mm	
Maximum weight	3 kg	
Maximum PCB warpage compensation range	-6.5 mm to +6.5 mm	
<b>Conveyors</b>		
Loading/unloading time – single lane	< 2.5 s	
Loading/unloading time – dual lane	0 s	
Machine-to-Machine communication	IPC-SMEMA-9851, IPC-HERMES-9852	
<b>Machine dimensions</b>		
Length × Width	1,130 × 1,300 mm	
Height (conveyor height: 950 mm)	1,600 mm	
Weight	780 kg	

## ASMPT

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