

# ATHENA

3D Automated Optical Inspection system



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## TECHNOLOGY AND FEATURES

### World's Best High Speed Measurement and Inspection Capability

As applying 12-way and 16-way projectors including the existing 8-way projectors with the basis of advanced technology, ATHENA minimizes errors caused by shadow effects for 3D measurement of all models and simultaneously performs 100% 2D & 3D inspection in all FOV areas. This makes it possible to achieve a near-perfect detection while significantly reducing false calls.

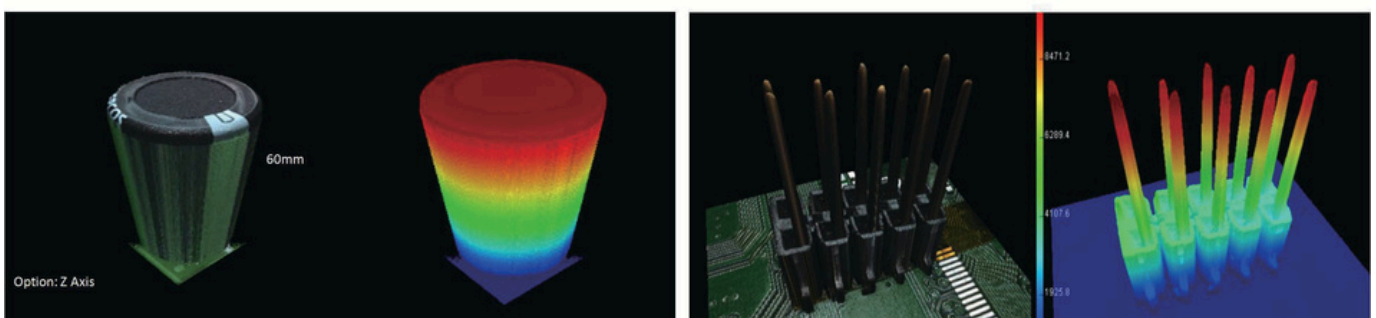
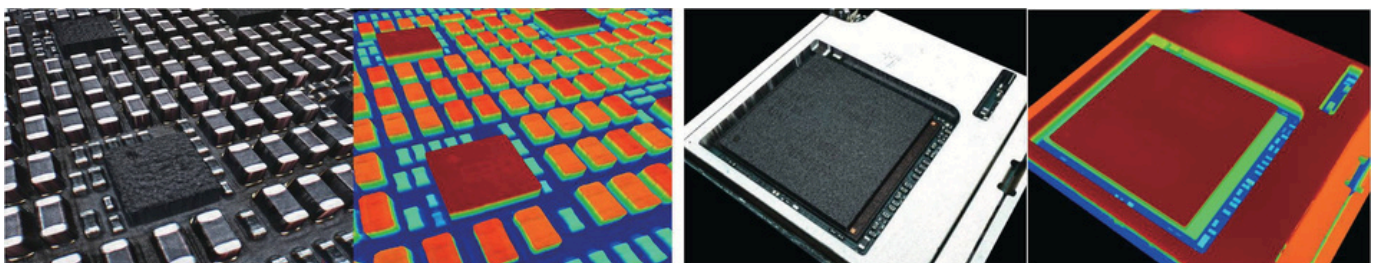
PEMTRON's existing head type has been upgraded to New head for 3D formation that is identical to the real image and more stable based on the accumulated technology for decades.

#### Simple Head Composition

More space, convenient maintenance, concise assembly and setting

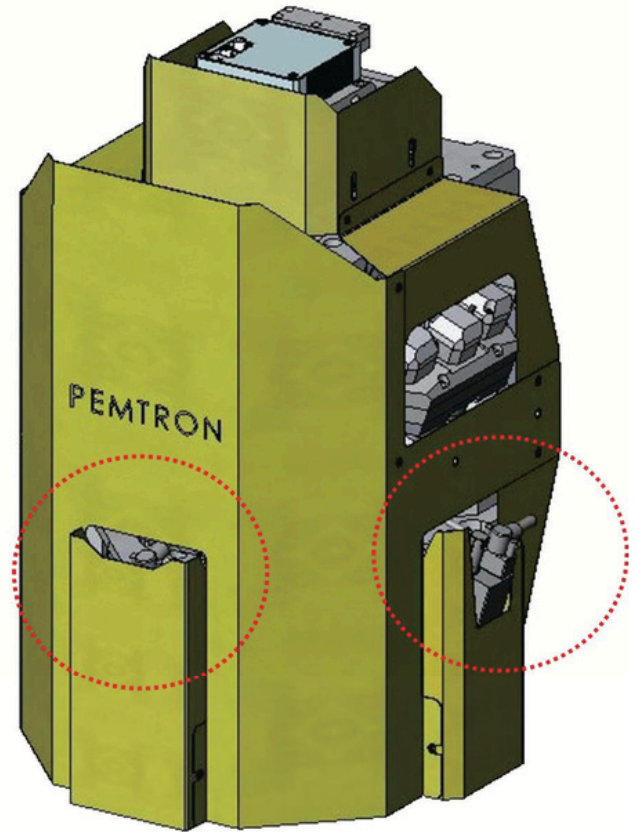
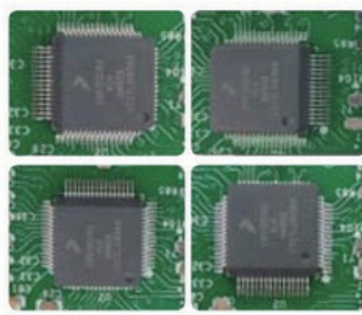
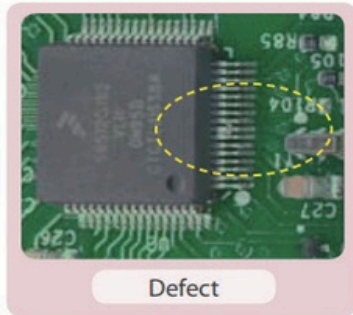
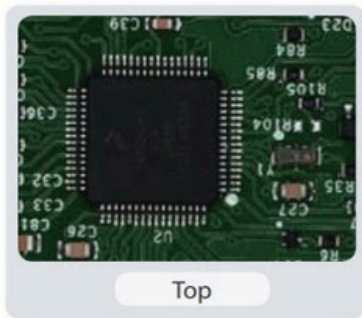
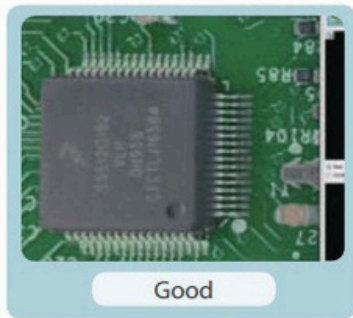
#### More Advanced 3D Technology

- ▶ More stable and accurate 3D realization by installing additional projectors
- ▶ 8-way(option 12-way) / 12-way(option 16-way)
- ▶ Formation of chip 3D among dense components and narrow parts
- ▶ Improved repeatability
- ▶ 3D formation same as real image





## An Accurate and Convenient Inspection by Using Side Camera

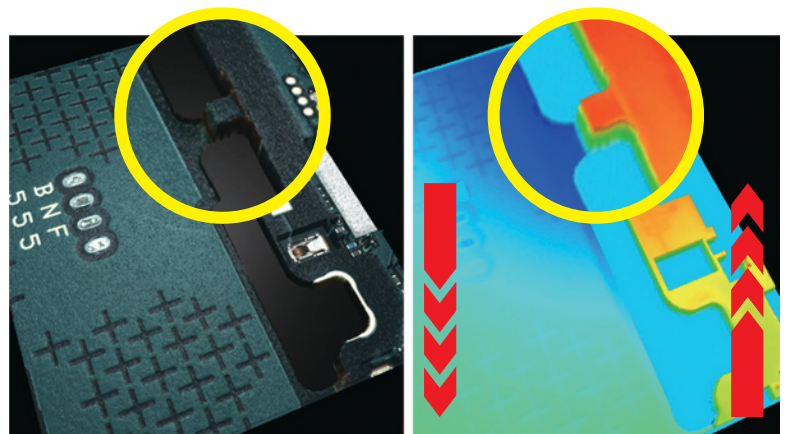


- 4-way side camera (Optional)
- Possible to detect inside bridge which can't be detected with top camera
- Possible to detect inside of the connector
- Convenient teaching by using the existing algorithm
- Real time inspection algorithm for side camera

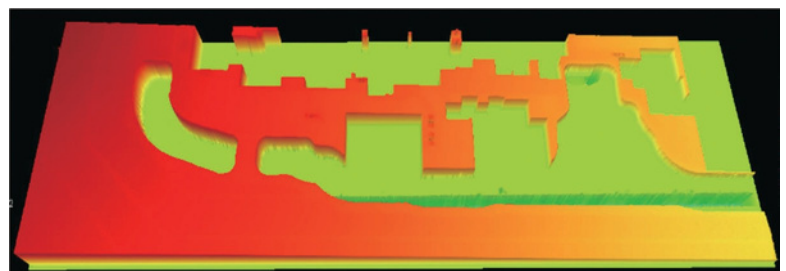
## Moiré Warpage

PEMTRON can use the Moiré technology to inspect the moiré 3D warpage for the entire board not through the existing spot method

- Improved warpage inspection accuracy
- Easy operation
- Full board 3D warpage



Height Difference Due to Damage



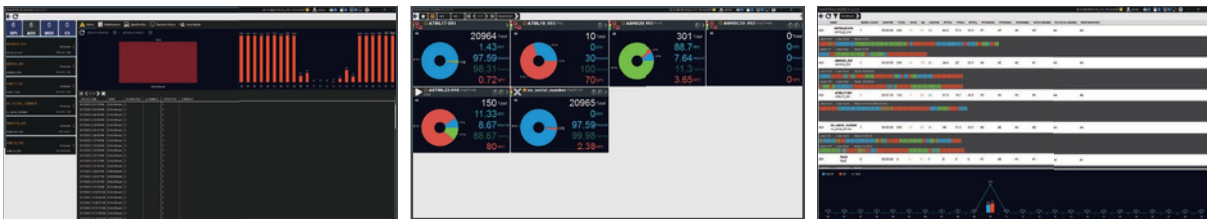
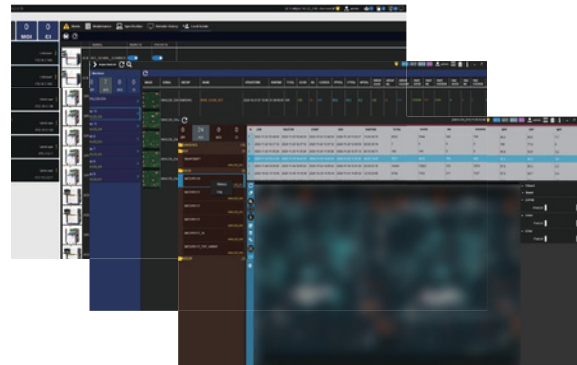
PCB surface is implemented normal as it makes higher to the left

# SMARTRON

Factory Optimization Solution  
System RMS / Alarm / SPC / Job & Library management



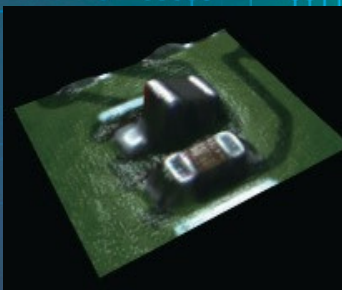
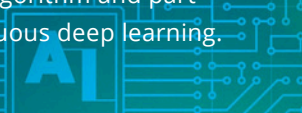
- Real-time Line Monitoring and Control
- RMS(Remote Monitoring System)
  - Registered System status
- Data Analytics and Reporting
- Yield / CpCpk / Job & Part analysis etc.
  - Statistical Chart / Process Chart / Alarm History
- Quality Management Solution
- Multiple line & systems maintenance management
  - Job & Library management
  - Optimizing based on classified result data



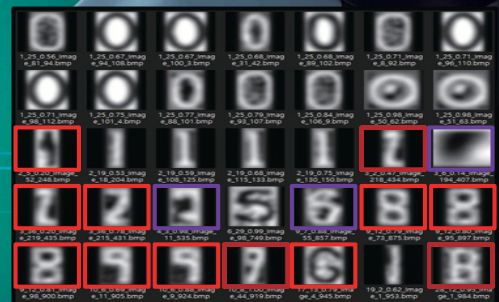
# AI SMART FACTORY

Operation management of more accuracy and convenience based on the accumulated data and technology for the last 20 years

- Auto confirmation feature decreased false call by clearly distinguishing OK and NG.
- Auto judgment especially for OCR algorithm and part
- Auto debugging feature with continuous deep learning.



Lift  
 Chip  
 missing



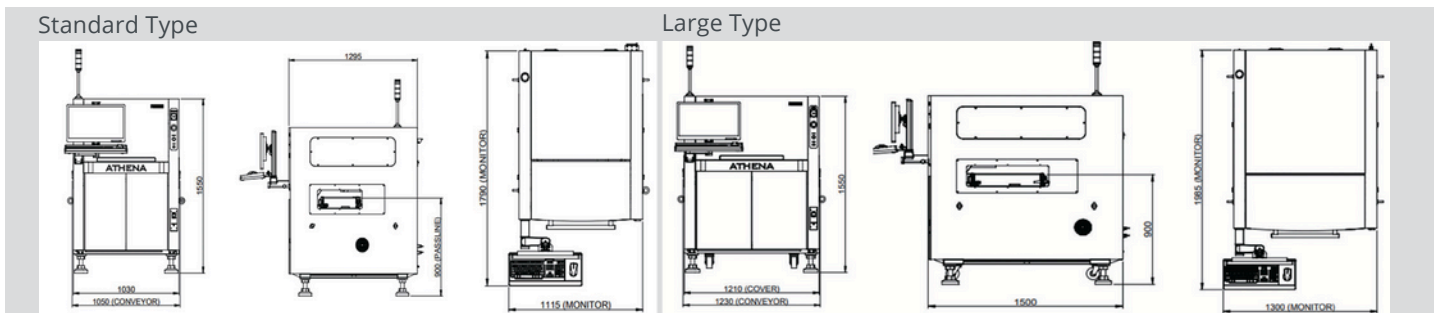


# SPECIFICATIONS

Model	ATHENA				
Camera	10MP			12MP	
Resolution	10um	15um	18 um	10um	15um
Inspect Speed	20 cm <sup>2</sup> / sec	45 cm <sup>2</sup> / sec	64 cm <sup>2</sup> / sec	28.34 cm <sup>2</sup> / sec	57.31 cm <sup>2</sup> / sec
FOV (Field Of View)	33x30mm	49x45mm	59x54mm	41x30mm	61x46mm
Height Range	0 – 5.5mm (option 27mm)				
Height Accuracy	± 3%				

Model	ATHENA	ATHENA L	ATHENA D	ATHENA DL
Inspection Size	Max. PCB Size 330 x 330mm (13 x 13 inch)	510 x 510mm (20 x 20 inch)	Dual : 330 x 280mm(13 x 11 inch)	Dual : 510 x 300 mm(20 x 12 inch)
			Single : 330 x 500mm(13 x 20 inch)	Single : 510 x 600mm(20 x 24 inch)
PCB Specification	Min. PCB Size 50 x 50mm (2 x 2 inch)			
Thickness	0.4 ~ 7mm			
Top Clearance	50mm			
Bottom Clearance	50mm			
Electrical requirements	200 ~ 240Vac, 1Phase, 50/60Hz			
Power Consumption	3.7kW (16A Max @ 220V AC)			
Dimension (W x D x H)	1050 x 1345 x 1550mm (41 x 53 x 61 inch)	1230 x 1535 x 1550mm (48 x 60 x 61 inch)	1050 x 1780 x 1565mm (41 x 70 x 62 inch)	1230 x 1825 x 1565mm (48 x 72 x 62 inch)
Weight	1050kg (2315lb)	1200kg (2646lb)	1200kg (2646lb)	1330kg (2932lb)

\* Specifications subject to change without notice.



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