



PRODUCTS AND SPECIFICATIONS

# ***VisionPro Series***

3D SOLDER PASTE INSPECTION

## **MODELS**

**SP3D**

**M300**

**M500**



**VisionPro** is the latest in ASC International's line of class leading **3D** solder paste inspection systems. VisionPro Systems are designed with feature rich software including user friendly one click measurements, auto-scripting, onboard real-time SPC run charts, defect error review, customized data reports and online work instructions. Engineered for performance, VisionPro incorporates the most advanced, rapid 3D inspection technology into a new vibration free, space saving work center. Building on more than 20 years of SPI expertise - and more offline installations worldwide than all other current manufacturers combined - you can count on ASC International as your long term SPI solution provider.

**System Features:** Multiple Sensor Options: SP3D and PSI Series • Best in Class Gage R&R • Onboard Real-Time SPC Charts • Defect Error Review • Customized Data Reports • Auto-Scripting for Ease of Use • Online Work Instructions • One Click Measurements of Height, Width, Area and Volume • X-Y Dimensional Measurement for Registration and Offset • Wide Range of Measurement Applications such as Solder Paste, Adhesives, Thick Films, Grease and More...

# VisionPro SP3D

The **VisionPro SP3D** combines laser measurement accuracy with Automatic Data Collection (ADC) for real-time control of SMT stencil printing process. With its Windows® OS and service free USB interface, the **SP3D** is easy to learn and operate, making it the most cost effective SPI solution for the SMT manufacturer concerned with improving printing quality and production yields.

#### System Features:

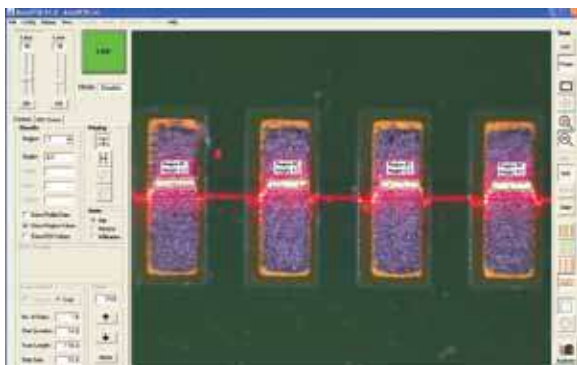
- Intuitive – Easy to Learn User Interface
- Accurate and Repeatable Measurements of Height, Width, Area and Volume
- Excellent 3D Graphics for Qualitative Analysis
- Fully Integrated Real Time SPC Run Charts and Histograms
- Customized Data Reports with Data Tag Traceability
- 4 Unique and Flexible Operating Modes
- Simple USB Interface for Service Free Maintenance

#### System Includes:

- Windows® OS
- Dell 2.5+ GHz CPU with 20"+ LCD Monitor
- High Resolution Color CMOS Camera and Class II Laser
- Large Anti-Static Work Surface
- Hardware / Software Reference Manuals
- 12 Month Warranty with Free Online Technical / Training Sessions

#### Options:

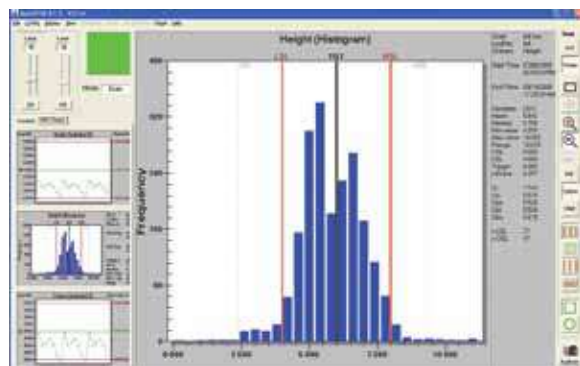
- Manual X-Y Stage with Board Fixture
- NIST Calibration Tool
- Laser Scanning Module – 3D Profiles
- Large FOV Sensor
- Extended Warranty



#### Automated Measurements

To obtain automated measurements on the **SP3D**, position the circuit board under the system's laser-based vision sensor to the desired location. Simply click the large green run button to automatically calculate the solder paste height, width, area and volume. Automated measurements reduce the errors associated with operator to operator variations.

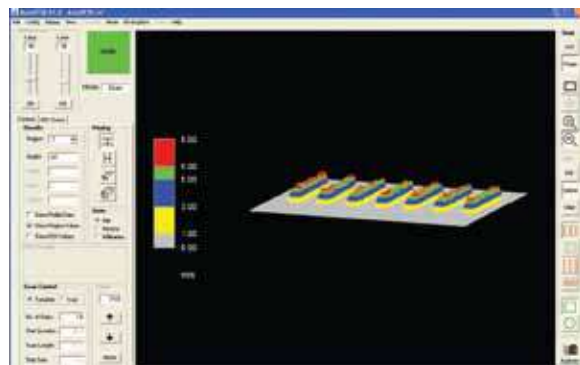
## Onboard SPC Features



#### Customized Data Reports

The onboard SPC interface is a powerful tool that helps printing process. Data collected is instantly charted by the printing performance are managed by the following info

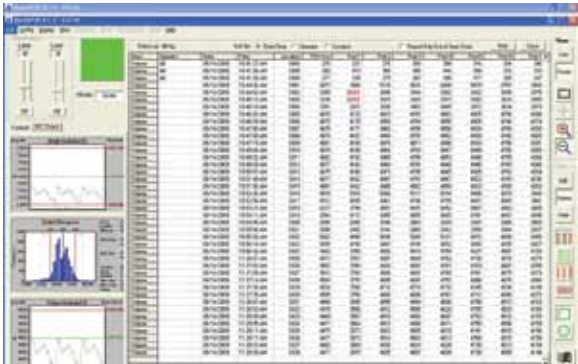
- User Defined LSL, Target and USL
- X-bar / R and Histogram Charting
- Min / Max / Median Values
- Cp / Cpk / Cr and Lower Z Values



#### 3D Scanning Laser

The **SP3D's** optional laser scanning feature provides 3D profiling capabilities along with added accuracy and repeatability due to increased data acquisition. This feature also provides a second layer of analysis to establish proper corrective actions based upon qualitative defect attributes.

# VisionPro M300 | M500



operators control the critical parameters of the stencil  
the integrated SPC software. Calculations crucial to the  
formation:

The **VisionPro M300 and M500** employ sophisticated, 3-dimensional technology combined with an intuitive Windows® OS interface, and packaged in rugged, bench-top hardware designed for the electronics production floor. With only a few minutes of training, an operator can perform accurate 3D measurements of solder paste pads, BGA's and many other PCB features. The completely automatic measurement process eliminates operator errors and offers excellent measurement repeatability. This makes the **M300/M500** powerful yet cost efficient tools for the electronics manufacturer concerned with improving production yields.

#### System Features:

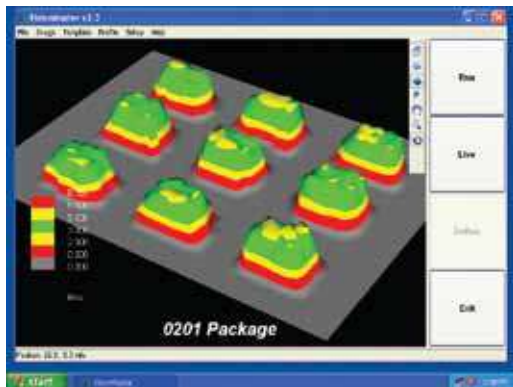
- Intuitive – Easy to Learn User Interface
- The Most Advanced True 3D Sensor Technology
- Best in Class Gage R & R (ANOVA Study)
- Measures 7 Distinct Characteristics Including Height and Volume
- Excellent 3D Graphics for Qualitative Analysis
- Fully Integrated Real Time SPC Run Charts and Histograms
- Customized Data Reports with Data Tag Traceability
- 4 Unique and Flexible Operating Modes
- Simple USB Interface for Service Free Maintenance

#### System Includes:

- Windows® OS
- Dell 2.5+ GHz CPU with 20"+ LCD Monitor
- High Resolution Color CMOS Camera
- Large Anti-Static Work Surface
- Hardware / Software Reference Manuals
- 24 Month Warranty with Free Online Technical / Training Sessions

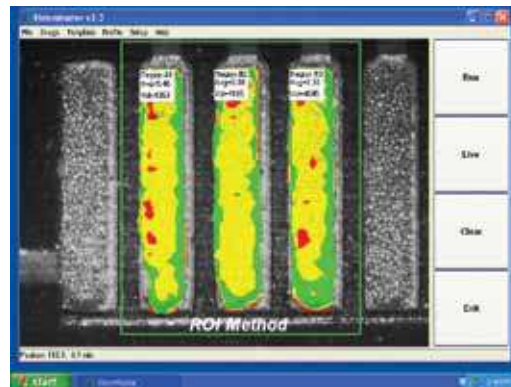
#### Options:

- Manual X-Y Stage with Board Fixture
- NIST Calibration Tool
- Extended Warranty



#### 3D Color Profile Analysis

The **M300 and M500** allow operators to obtain 3D color profiles for fast and accurate paste analysis. Operators may use these profiles to help them determine what corrections are needed in their solder paste printing process, thereby reducing both down time and the high cost of rework.

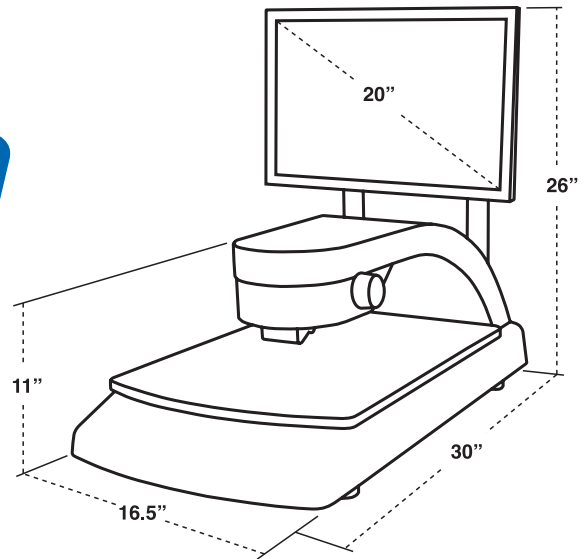


#### Automated Measurements

To obtain measurements on the **M300 and M500**, position the circuit board under the system's sensor to the desired location. Use manual, semi-automatic or full automatic mode to measure any of seven solder paste characteristics.

# MECHANICAL SPECIFICATIONS

## SP3D | M300 | M500



### System Specifications

Maximum Object Thickness  
Standard Work Surface (WxL)  
Throat Depth (Sensor to Rear support)  
System Computer  
Electrical Requirements  
Ambient Operating Temperature  
Ambient Operating Humidity  
System Weight  
System Weight (CRATED)  
Measurement Capability  
SPC Charting/ Data Reports  
Work Instruction

### SP3D

5.1 cm (2.0 inches)  
41 x 53 cm (16 x 21 in.) (Custom Size Avbl.)  
38 cm (15 inches)  
Minimum: 2.5 GHz, 1.0 GB RAM, Windows OS  
100 - 240 VAC, 50 - 60 Hz, 2 Amps  
5 to 38 C (40 to 100F)  
<90% Non Condensing  
36 Kg (80 lbs)  
59 Kg (130 lbs) (Not including PC & Monitor)  
Height, Volume, Area, Width, Length, 3D Defect Analysis  
Integrated  
Built In

### VisionPro M300

5.1 cm (2.0 inches)  
41 x 53 cm (16 x 21 in.) (Custom Size Avbl.)  
38 cm (15 inches)  
Minimum: 2.5 GHz, 1.0 GB RAM, Windows OS  
100 - 240 VAC, 50 - 60 Hz, 2 Amps  
5 to 38 C (40 to 100F)  
<90% Non Condensing  
36 Kg (80 lbs)  
59 Kg (130 lbs) (Not including PC & Monitor)  
Height, Volume, Area, Width, Length, 3D Defect Analysis  
Integrated  
Built In

### VisionPro M500

5.1 cm (2.0 inches)  
41 x 53 cm (16 x 21 in.) (Custom Size Avbl.)  
38 cm (15 inches)  
Minimum: 2.5 GHz, 1.0 GB RAM, Windows OS  
100 - 240 VAC, 50 - 60 Hz, 2 Amps  
5 to 38 C (40 to 100F)  
<90% Non Condensing  
36 Kg (80 lbs)  
59 Kg (130 lbs) (Not including PC & Monitor)  
Height, Volume, Area, Width, Length, 3D Defect Analysis  
Integrated  
Built In

### Sensor Specifications

Measurement Principal  
Camera (Pixel)  
Lateral Resolution  
FOV Size  
Z Resolution  
Measurement Range  
Illumination

Laser Technology  
1280 x 1024  
3.5 µm (.14mils)  
4.8 mm x 3.6 mm (186 mils x 142 mils)  
2.54 µm (.10 mils)  
2.5 mm (100 mils)  
LED White Light with Laser

Phase Shift Interferometry (PSI)  
640 x 480  
4.3 µm (.17 mils)  
2.8 mm x 2.1 mm (110 mils x 83 mils)  
1.78 µm (.07 mils)  
365 µm (14.4 mils)  
LED Based White Light

Phase Shift Interferometry (PSI)  
1280 x 1024  
6.8 µm (.27 mils)  
5.8 mm x 4.7 mm (230 mils x 184 mils)  
.48 µm (.019 mils)  
488 µm (19.2 mils)  
LED Based White Light

### Inspection Performance

Inspection Speed  
Static Repeatability  
Gage R & R (+/- 50% tolerance on PCB)  
Height Accuracy on Cal Target  
Minimum Paste Deposit Size (X.Y)

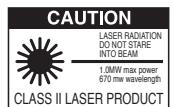
60 frames/sec.  
2.5 µm (.1 mils)  
<10%  
2 µm (.8 mils)  
127 µm (5mils)

1 Second FOV 3D  
1 µm (.04 mils)  
<10%  
1 µm (.04 mils)  
51 µm (2 mils)

1 Second FOV 3D  
1 µm (.04 mils)  
<10%  
1 µm (.04 mils)  
51 µm (2 mils)

### Optional Large FOV: SP3D XL

FOV 25 mm x 17.9 mm  
(1.0 x .7 inches)  
Resolution 4 µm (.17 mils)  
Camera CMOS Color  
Camera 10Mp



**Safety Considerations**  
The SP3D systems comply with all applicable laws from the manufacture of laser devices. This system is classified as a Class II laser device by the Center for Devices and Radiological Health (CDRH). This classification requires two safety precautions: Do not stare directly into the laser source and do not point the laser at anyone else's eye.

**VisionPro - Light Years Ahead**



### For More Information:

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