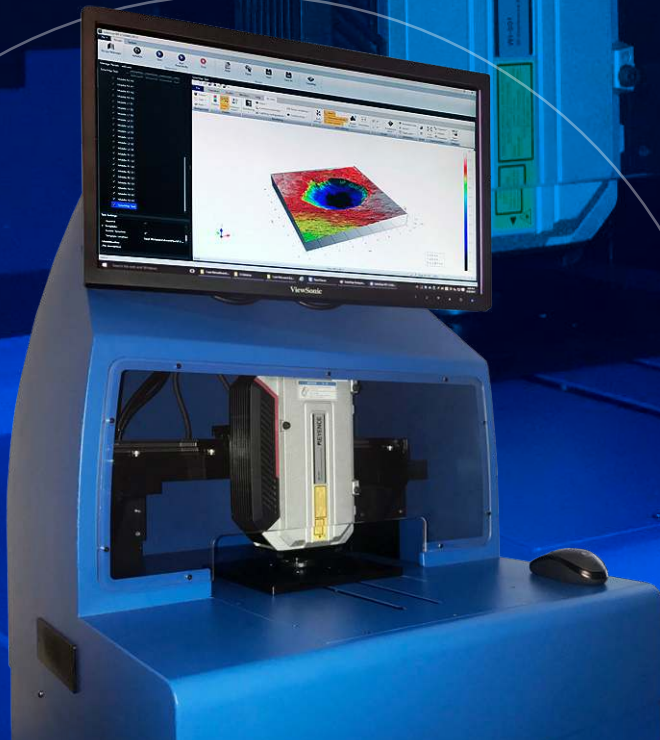


# Atlas

Fast 3D surface measurement



**EASE OF USE**  
and **RELIABILITY**  
make Atlas a remarkable  
tool for **FAST** and  
**ACCURATE** surface  
measurement.

The Atlas profilometer is a modular surface measuring system for quality assurance and process control. Depending on the specific measurement task it can be equipped with different interferometric sensors, making it a unique tool to meet a variety of measuring requirements. Its software features allow for automation and flexibility in a production environment.

Solaris provides comprehensive solutions to challenging metrology problems. Our team of application engineers have over 20 years of experience in complex system design and developing simple, easy to use manufacturing solutions. Our extensive installation base in R&D, offline QC and integrated factory metrology tools is supported by an engineering staff in the US, Asia and Europe. Solaris focusses on complete solutions customized for end user needs.

- Easy to Automate
- Customized Recipes
- Multiple Sensor Options
- Large Platform

**SOLARIUS™**

## CUSTOMER APPLICATIONS:

### Engineering Surfaces:

Measurement of form, flatness and roughness for detailed metal pieces. Form and volume characterization of micro inspection molding, waviness and microtopography of sheet metal surfaces.

### IC-Packaging/SMT:

Fast and automated characterization of warpage, lead coplanarity, laser marking depth and contact roughness. Solder paste volume and pad location can be measured with sub-micron accuracy.

### Thick Film/Hybrid:

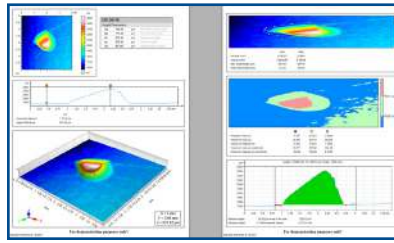
Automated measurement of production parameters such as printed resistor layers, conductor paths, and laser trim structures, including freshly printed paste. This provides fast and precise control of the screen-printing process.

### Inkjet Nozzles:

Identification of tile size, location and structure of nozzles to dispense ink.

## Software

The Atlas solution is a combination of two software tools, a measurement creation tool and a flexible analysis tool. This unique combination is ideal for applications in research and development, failure analysis and low volume semi-automated measurement. Designed for usability, the Atlas software makes powerful 2D and 3D analysis accessible to users of all skill levels.



## Sensors

The interferometric area scan sensor emits light with a wide dynamic range. This allows the sensor to simultaneously measure targets with different reflectivity (such as shiny metal and dull rubbers) from a single captured image. Accurate shapes can be captured even for measurement targets made of resin or other translucent material, because the process is not affected by internal reflections. The interferometric measurement principle eliminates the “dead zone” effect seen with triangulation sensors, as there is no “blocking” of light returning to the sensor.

Optical Probe	001	004	010
Measuring Range Z		1.4 mm	
Measuring Range XY	1x1 mm	4x4 mm	10x10 mm
Minimum Detection Area	4x4 $\mu\text{m}$	15x15 $\mu\text{m}$	40x40 $\mu\text{m}$
Working Distance		18mm	
Repeatability (height difference)		0.1 $\mu\text{m}$	
Linearity (height difference)		+/- 2.8 $\mu\text{m}$	
Wavelength		830 nm	
Laser Class		Class 3R	
Output		3.6 mW	

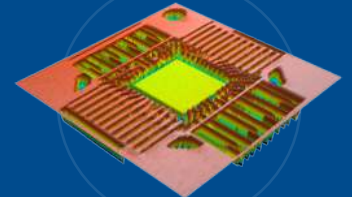
## System Specifications

The Atlas offers fast 3D measurement of 80,000 points in 0.13 seconds with nanometric scale resolution for measurement areas ranging from 1x1mm to 10x10mm. Using white light interferometry allows accurate measurement of an unusually wide variety of materials and surfaces. Variations in color, reflectivity, and tilt do not affect measurement accuracy. The sensor in combination with high precision X/Y stages are mounted on a vibration isolated platform. This complete solution is powered by a Xeon Quad Core E5 controller running the Windows 10 operating system.

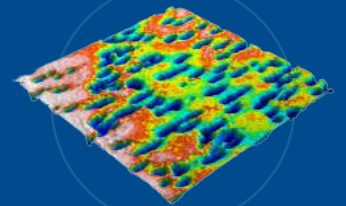
## Stages

The XY Stage employs a center-driven, ironless linear motor as the driving element. Since the linear motor is a frictionless direct drive device, there is no backlash or hysteresis, wind-up or stiction limiting the motion performance. The linear motor drive also offers the advantage of higher speed, acceleration and system responsiveness with no wear to motor brushes or drive screws.

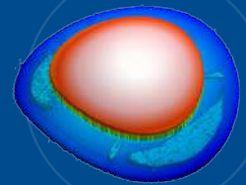
Maximum travel [mm]:	300	400
Straightness / flatness [ $\mu\text{m}$ ]:	+/- 5	+/- 5
Repeatability [ $\mu\text{m}$ ]:	+/- 0.5	+/- 0.5
Resolution [nm]:	5	5
Max. Speed [m/s]:	2.0	2.0
Max. Acceleration [G]:	4.0	4.0
Permissible loads [kg]:	40	40



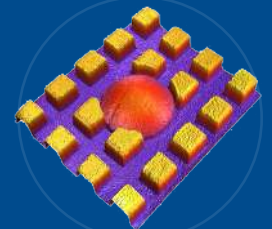
Chip Substrate



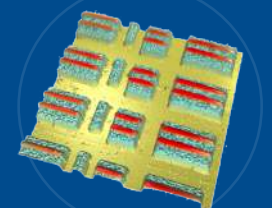
Automotive Door Panels



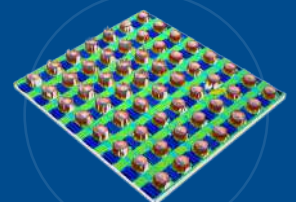
Epoxy Drop



Integrated Circuit board



Particles on Substrate



Solder Pads

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