Polaris

State of the art chromatic confocal line scan sensor and NanoPrecision XY stages.

INCREDIBLY FAST
3D inspection make
Polaris unrivaled in
PRICE, ACCURACY,
and **SPEED.**

Polaris is comprised of a state of the art chromatic confocal line scan sensor and NanoPrecision XY stages. Polaris offers an incredibly fast 3D measurement of 384,000 points per second with nanometric scale resolution. The robust and highly integrated design of Polaris allow for fast and accurate measurements on the production line and in harsh industrial environments. Polaris is well suited for all materials including polished and tilted surfaces. For ultra fast 3D inspection the Polaris is unrivaled in price, accuracy, and speed.

- Ultra fast non-contact measurement
- Works on any kind of material
- Insensitive to ambient lighting
- Perfect for online inspection
- Instantaneous profile measurement
- Maintenance free and robust
- Nondestructive measurement

SOLARIUS™

CUSTOMER APPLICATIONS:

Warpage measurement of Printed Circuit Board

Dental measurements

Mechanical measurements

Glass flatness/roughness

Height/Gap measurements

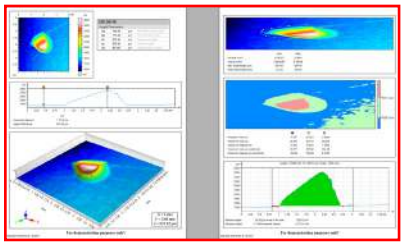
Film/Glass thickness

Solder Bump

Semiconductors

Software

The Polaris 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 Polaris software makes powerful 2D and 3D analysis accessible to users of all skill levels.



Sensors

The high measurement precision and sturdy construction of the measuring head and the independence of the measurement from the condition of the object surface allow the Chromatic Confocal Line sensor to be used both in the laboratory and in the factory. The Confocal measurement principle eliminates fading at the edges.

Optical Probe	0.2	1	4
Measuring Range	200 µm	0.95 mm	3.9 mm
Line Length	0.96 mm +/-0.01mm	1.91 mm +/-0.01mm	4.78 mm +/-0.02 mm
Pitch	5 µm	10 µm	25 µm
Working Distance	5.3mm +/- 0.2mm	18.5 mm +/- 0.2mm	41 mm +/- 0.02 mm
Spot Diameter	2 µm	4 µm	10 µm
Lateral Resolution	1 µm	2µm	5 µm
Axial Resolution	20 nm	80 nm	320 nm
Accuracy	+/- 80nm	+/- 300 nm	+/- 1.2 µm
Numerical Aperture	0.7	0.55	0.33
Angle to Surface	90 +/- 44	90 +/- 33	90 +/- 20
Thickness range	20-280 µm	75 µm- 1.35 mm	300 µm- 5.5mm
Length/Diameter	70.4mm/37mm	93.3mm/54mm	120 mm/58 mm
Weight	280 g	350 g	430 g

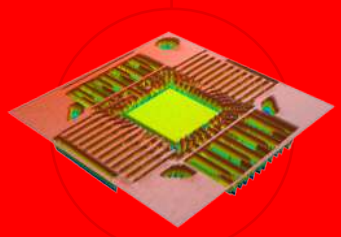
System Specifications

The Polaris offers an incredible measurement speed of up to 2000 lines per second, each line being made of 192 discrete points, providing up to 384 000 measured points per second. This outstanding performance is the result of a high level of technological integration and the advanced manufacturing processes at Solarius.

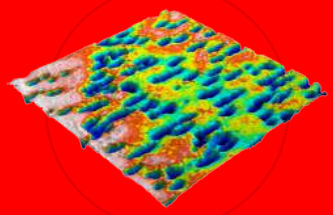
Stages

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.

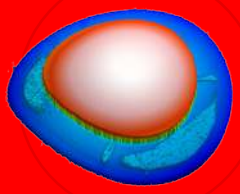
Maximum travel per axis [mm]:	150	200	250	300	400
Repeatability [µm]:	±0.5	±0.5	±0.5	±0.5	±0.5
Straightness / flatness [µm]:	< ± 2 µm over for 1 axis	< ± 2 µm over for 1 axis	< ± 3 µm over for 1 axis	< ± 3 µm over for 1 axis	< ± 3 µm over for 1 axis
Resolution [nm]:	5	5	5	5	5
Max. Speed [m/s]	2	2	2	2	2
Max. Acceleration [G]	4	4	4	4	4
Permissible loads [kg]	40	40	40	40	40



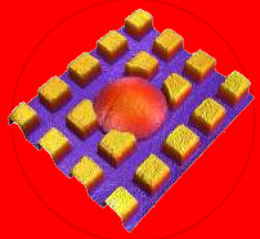
Chip Substrate



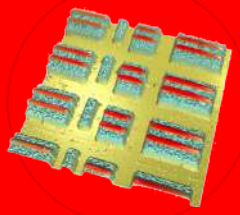
Automotive Door Panels



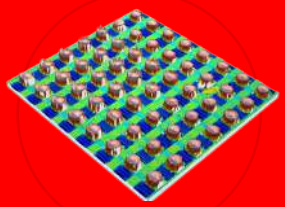
Epoxy Drop



Integrated Circuit board



Particles on Substrate



Solder Pads

SOLARIUS™

Solarius Development Inc. • 2390 Bering Drive • San Jose, CA 95131 • Tel: (408) 435-2777
Fax: (408) 435-2999 • Sales@Solarius-Inc.com