Viking-C

The non-contact profilometer Viking-C for affordable laser measuring

Viking-C is designed with a small footprint making it ideal as a desktop metrology tool.

The tool is designed to meet mid-range accuracy needs using state-of-the-art sensor technology to generate three- dimensional surface maps. Solarius maintains the precision and workmanship of its high accuracy LaserScan system, incorporating the same design methodologies in the Viking-C.

The productivity benefits of Viking-C lie in its easy to learn measurement procedures. New operators spend less time learning to use the system and more time measuring components. Once a measuring sequence is performed and saved, the same measuring sequence and analysis can be recalled at any point in the future.

- Short learning curve
- Fast non-destructive testing
- Automated measurements
- Measurement report generator
- Fast replacement for tactile systems

SOLARIUS™ DEVELOPMENT

CUSTOMER APPLICATIONS:

Thick Film:

Measurement of conductive ink either wet or dry on ceramic surfaces. Measurements can be performed before or after the component has been fired.

Plastic Surfaces:

Plastic surfaces give rise to geometric changes due to both stress and wear. Measurements can be performed at high angles of incidence, this allows for 3D forms to be profiled.

Metal Surfaces:

Wear and other form features can be measured rapidly with the Viking system. The system lends itself to post production analysis of small metal parts and identifying microscopic defects.

Software

Viking-C data acquisition software utilizes a unique flow chart technique for entry of measurement specifications. This is a powerful tool for step and repeat applications, more than one measurement can be programmed forming a sequence of measuring steps. The Viking-C software allows for 3D measurement and 2D analysis (3D analysis optional), results are presented in graphical form. Numerical data can be displayed and then exported in a database format. The measurement routine can be easily edited or saved for future use.

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 WLC sensor to be used both in the laboratory and in the factory. The Confocal measurement principle eliminates fading at the edges.

		WLC 1	WLC 2	WLC 3	WLC4	WLC 5	WLC 6
Measuring Range	µm	130	400	1400	4000	12000	24000
Working Distance	mm	3.3	11	12.7	16	29	22
Resolution (z axis)	nm	2.7	8	20	50	180	300
Slope	deg	± 42.5	± 28	± 25	± 21	± 14	± 8.5
Horizontal Resolution	µm	0.9	1.2	2	4	7	8
Measuring Frequency (Hz)		2000	2000	2000	2000	2000	2000
Spot Size	µm	1.9	2.3	4	8	14	16

System and Measurements

Viking-C is a stand-alone desktop surface measurement tool. The x-y stages are mounted to a granite base; the sensor is mounted above the tables and supported by a granite column. Surface measurements are made by rasterizing the surface with the tables moving in either the x or y direction as specified.

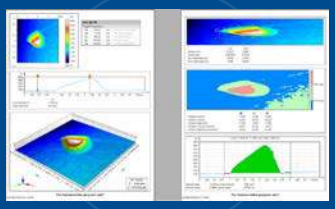
Stages

Open frame stages are most often used in applications requiring low overall height and flat motion. To achieve these requirements, we eliminate all empty space between the top and bottom of the positioner, minimizing the overall height and tolerance stack without sacrificing stiffness & load capacity. It utilizes precision linear guide bearings ideal for fast, repetitive motion. By using a monolithic design we are able to improve overall flatness, orthogonality, and decrease moment loading experienced with a standard stack of stages.

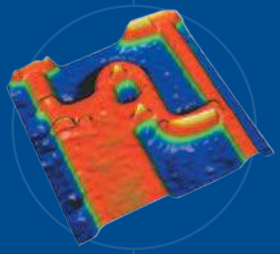
Travel	150 mm x 150 mm
Payload	2.5 kg – maintain flatness spec., 10 kg max
Flatness of travel	± 5 µm
Repeatability	± 5 µm
Speed	60 mm/sec at 1200 rpm
Hall effect reference switches	One, each axis
Motors	IMS Nema 17
Encoders	None
Leadscrew	ø10x3
Linear Bearings	Size 9 recirculating ball
Weight	Approximately 6.3 kg (14lbs)

Options

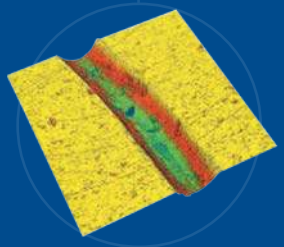
- Camera: Allows for viewing of the surface that is to be measured. This is a useful option for locating specific features to be measured.
- 3D Analysis Software: This option allows you to extend the analysis capability with full 3D functionality.



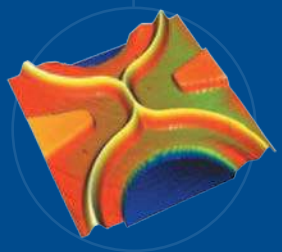
Intuitive user interface



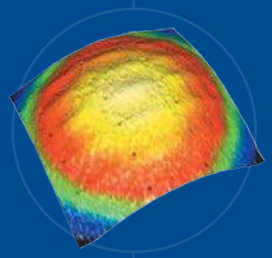
Thick film



Wear analysis



Rubber gasket



Spherical measurement

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