



Viking

Optical 3D Profilometer

Contactless **3D measurements** on almost every material

- Fast and intuitive setup and usage
- Automated measurements and data processing
- Automated result provision, accordingly to international standards
- High measurement speed and large height measurement ranges
- Non-contact and non-destructive measurements on all surface types

Compact, fast, accurate to the nanometre. **Viking**

Desktop Solution Optical 3D-Profilometer

The Solarius Viking is an optical 3D profilometer providing a small body size and low weight and is perfectly suited to be placed on normal tables.

Easy to set up and operate

The Viking tool is based on up to date and most innovative sensor technologies to create 3-dimensional surface topographies very quickly. Also, the intuitive and easy to operate system software is a key feature of the Viking metrology system: New operators spend less time understanding the system and can perform more measurements in shorter time. Once set up, measurement and data analysis procedures

can be stored and executed repeatedly at any time without additional efforts.

Viking Measurement Range

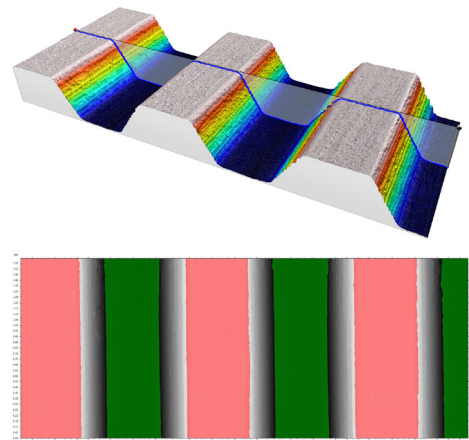
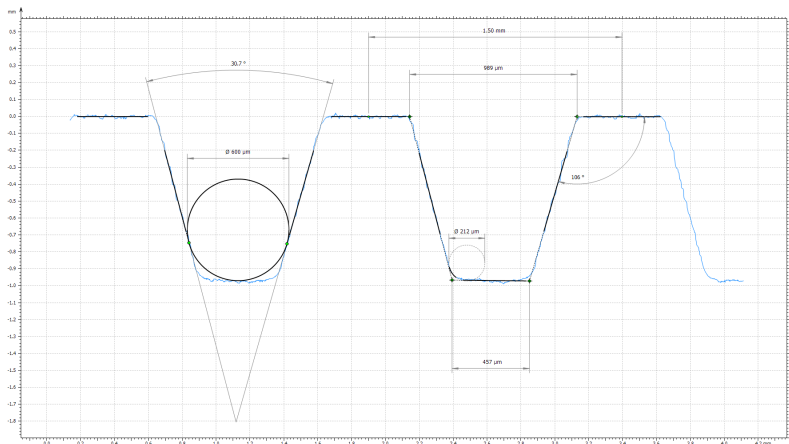
The Viking system provides a lateral measurement range of 150 mm x 150 mm. Depending on the application it can be equipped with confocal point or triangulation line sensors. Based on each individual configuration the Viking disposes of height resolutions down to below 10 nanometres. Additionally, different options for acquiring and processing data can be selected, including the easy to operate recipe generator for repeat measurements.

Typical Applications

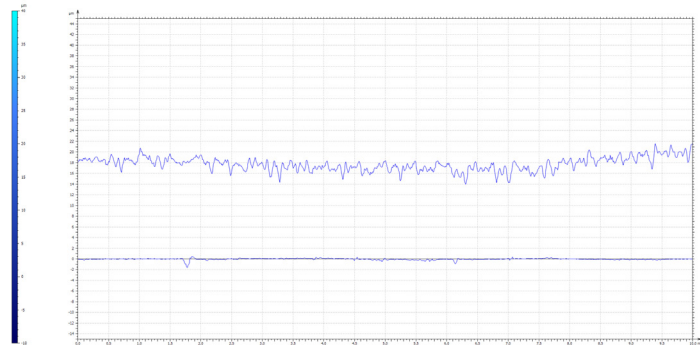
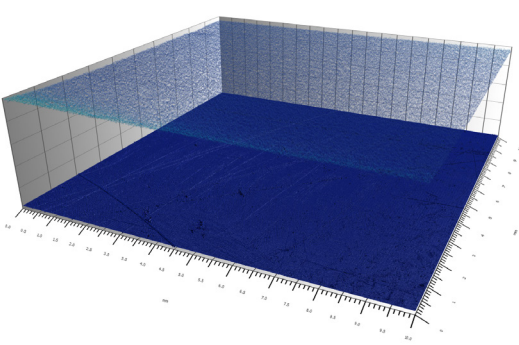
- Contour
- Geometry
- Wear & Tear
- Surface Roughness 3D
- Straightness
- Flatness
- Layer Thickness
- Cross-Section Area
- Area
- Volume
- Profile Roughness 2D

Every application, besides parametric result data, also provides optical impressions of the surface measured and different analytics as diagrams and renderings.

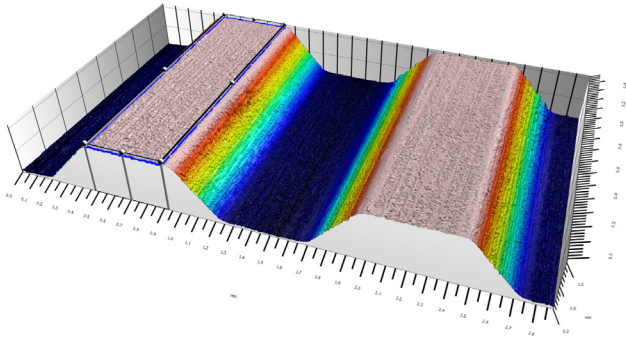
Contour & Area



Layer Thickness



Flatness

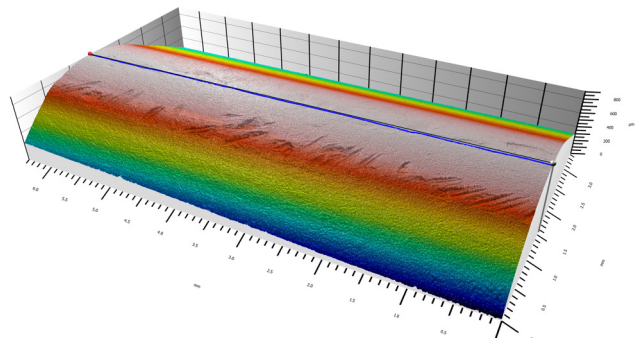


ISO 12781

Flatness Parameters

FLTt	28.2 μm	Peak-to-valley flatness deviation of the surface
FLTp	13.3 μm	Peak-to-reference flatness deviation
FLTv	14.9 μm	Reference-to-valley flatness deviation
FLTq	5.98 μm	Root-mean-square flatness deviation

Straightness

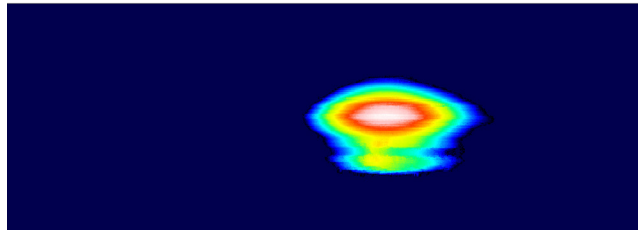
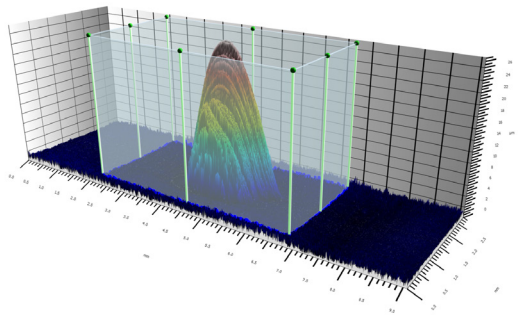


ISO 12780

Straightness parameters

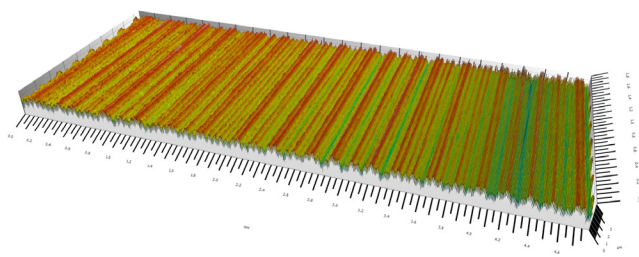
STRt	8.19 μm	Peak-to-valley straightness deviation
STRp	3.32 μm	Peak-to-reference straightness deviation
STRv	4.87 μm	Reference-to-valley straightness deviation
STRq	2.33 μm	Root-mean-square straightness deviation

Volume



Parameters	Value	Unit
Area	1.95	mm^2
Volume	21526324	μm^3
Max height	26.6	μm

Profile Roughness 2D

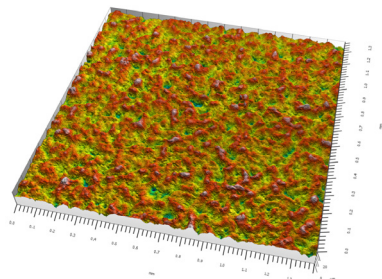


ISO 4287

Amplitude parameters - Roughness profile

		Context	Mean	Std dev	Min	Max
Ra	μm	Gaussian filter 0.8 mm	0.329	0.00839	0.318	0.356
Rq	μm	Gaussian filter 0.8 mm	0.407	0.0108	0.395	0.442
Rp	μm	Gaussian filter 0.8 mm	1.09	0.0289	1.04	1.16
Rv	μm	Gaussian filter 0.8 mm	1.13	0.0555	1.04	1.23
Rz	μm	Gaussian filter 0.8 mm	2.21	0.07	2.11	2.39
Rt	μm	Gaussian filter 0.8 mm	2.54	0.112	2.34	2.78

Surface Roughness 3D



ISO 25178

Parameters table - S-L-Surface

Height Parameters			
Sa	1.53	μm	Arithmetic mean height
Sq	1.99	μm	Root-mean-square height
Feature Parameters			
S5p	5.63	μm	pruning = 5 % Five point peak height
S5v	10.1	μm	pruning = 5 % Five point pit height
S10z	15.7	μm	pruning = 5 % Ten point height

Technical data **Viking**

Chromatic Confocal Point Sensor

Optical probe ¹⁾	CL-1	CL-2	CL-3	CL-4
Measurement range	150 µm	400 µm	1.4 mm	4.0 mm
Working distance	3.3 mm	10.8 mm	12.2 mm	16.5 mm
Spot diameter	2.7 µm	5.2 µm	11.9 µm	12.3 µm
Lateral resolution	1.1 µm	1.7 µm	4.5 µm	4.6 µm
Axial resolution	.042 µm	.12 µm	.36 µm	.66 µm
Linearity	± 0.025 µm	± 0.05 µm	± 0.13 µm	± 0.3 µm
Maximum measurement angle	± 42°	± 28°	± 25°	± 21°
Minimum measurable thickness	7.5 µm	14 µm	40 µm	110 µm

Line Sensor

Sensor	8020	8060	8080	8200
Measurement range Z	4.4 mm	14.6 mm	41 mm	68 mm
Standoff Z-range begin	17.8 mm	56.7 mm	52.5 mm	211 mm
Lateral resolution	2.5 µm	5 µm	12.5 µm	25 µm
Measurement range middle (X)	7.5 mm	16 mm	35 mm	72 mm
Begin range (X)	7 mm	15 mm	30 mm	64 mm
End range (X)	8 mm	16 mm	39 mm	80 mm
Frequency	1 kHz	1 kHz	1 kHz	1 kHz
Linearity	± .05%	± .04%	± .03%	± .04%
Light source	405 nm	405 nm	405 nm	405 nm

System Configuration

Setup	Desktop system
Lateral measurement range / travel range	150 mm x 150 mm
Flatness stages	± 5 µm
Load capacity	max. 10 kg
Vertical travel range	25 mm
Foor print [W x D x H]	475 mm x 450 mm x 434 mm
Weight	29 kg
Supply voltage	100-240 V, 50-60 Hz
File formats	SUR, TXT, CSV
Computer	Desktop PC incl. monitor
Software	SolarScanNT, SolarMap

¹⁾ further models on request

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