LAMTech

Interferometric measuring systems for the flatness measurement of precision parts

TOPOS Flatness Measurement Instrument

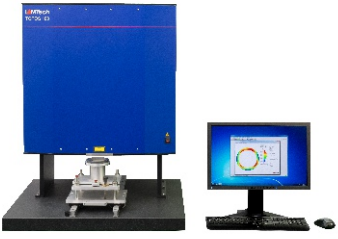
for the fast, non-contact flatness measurement

SPI visual inspection interferometer

for the visual flatness check

TOPOS

Flatness measurement of precision parts



TOPOS 100

TOPOS 50

TOPOS flatness measurement instruments allow the non-contact flatness check of lapped, ground as well as polished precision parts.

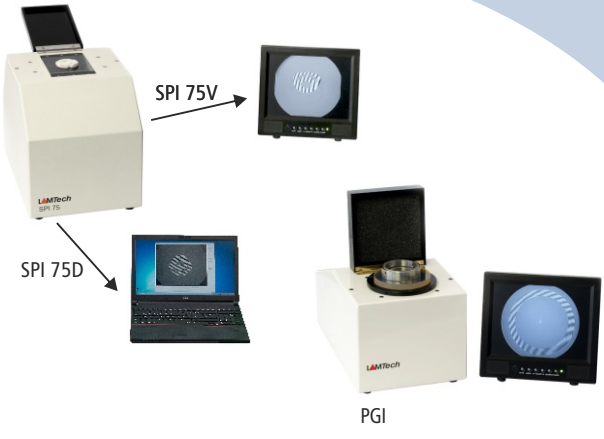
Advantages of the TOPOS flatness measurement instrument:

- Maximum protection of the reference surface due to the non-contact measurement which leads to a considerable reduction of maintenance costs
- Oil and other processing material cannot reach the reference surface and/or reach into the flatness measurement instrument
- The measurement instrument can be placed in the production line, close to the processing machines
- the TOPOS instruments are suitable for the 100% control, due to the short measurement time
- Intuitive software ISA, which allowas a simple handling of the measurement instrument

Specifications TOPOS

	TOPOS 50	TOPOS 100
Measurement area (diameter)	50 mm	100 mm
Lateral resolution	10 measuring points/mm	5-20 measuring points/ mm (Zoom)
Measurement accuracy	(0,1 ... 0,4) µm +2% of measured value, depending on the sensitivity	
Calibrated sensitivities	0,5, 1, 2 and 4 µm per fringe	
Measurement time	< 2 s	

SPI & PGI Visual flatness check



SPI visual inspection interferometers allow the visual flatness check of lapped, ground as well as polished precision parts.

PGI visual inspection interferometers allow the visual flatness check of polished surfaces.

Advantages of the visual inspection interferometers:

- Broad range of measurable parts: matte as well as polished parts can be measured
- Software Intdok allows the documentation and a simpler evaluation

Measurement with SPI and PGI:

For testing, the parts are simply placed on the glass surface respecively optical flat on the top side of the measurement instrument. A magnified image of part and fringes is displayed on a monitor.

Specifications SPI

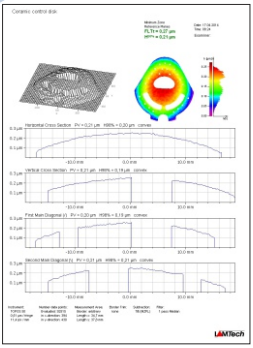
	SPI 75	**SPI 130**
Measurement area (diameter)	75 mm	130 mm
Flatness of reference surface	better 0,15 µm	

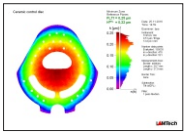
Specifications PGI

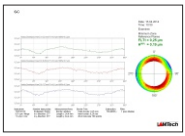
Measurement area (diameter)	75 mm, other sizes on request
Flatness of reference suface	better 0,10 µm
Sensitivity	0,33 µm per fringe

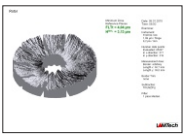
Software

Programs for the evaluation and documentation of fringe patterns





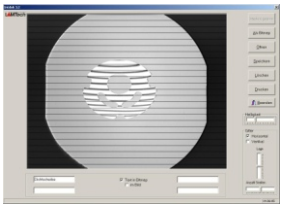




Evaluation software ISA for TOPOS flatness measurement instruments

Advantages of the ISA software:

- Output of concrete flatness values, which make results comparable and quantifiable
- The topography of a part can be displayed in various forms (measuring data sheet, false-color picture, relief image, etc.)
- Connection to statistics and quality control programs: data output of measuring results as series of measurement in CSV or AQDEF data format



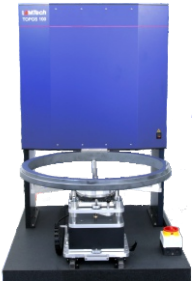
Evaluation software Intdok for the documentation of fringe patterns of SPI and PGI

Advantages of the Intdok software:

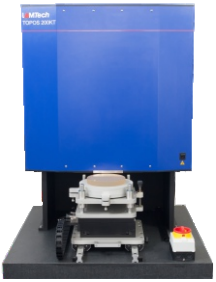
- Display and documentation of interferograms on PC's (export as bitmap possible)
- Horizontal or vertical grid with abitrary distances can be overlaid as to facilitate the evaluation of flatness

TOPOS

Flatness measurement of large rings and surfaces



TOPOS DT

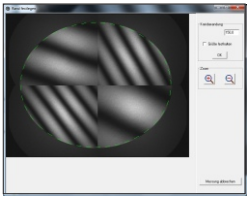


TOPOS KT

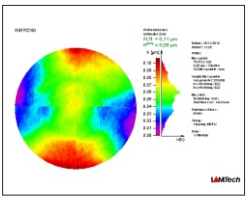
Economic feasibility and technical realisation are a problem for the flatness measurement of large surfaces. Addidtionally, the lateral resolution of enlarging measuring areas decreases, which limits the applicapility of the measurement process especially when it comes to narrow rings.

The solution to this problem is the measurement in individual, consecutive, overlapping segments by the help of a rotary table for large rings and a cross table for large surfaces. The stitching-method combines mathematically single measurements to the total surface.

The method distinguishes itself by high economic feasibility with short measurement times.



stitched interferogram after the measurement with a cross table



flatness as false-color image

Models	Measurement area
TOPOS 200 KT	Measurement of surfaces with a maximum outer diameter of 190 mm , squared up to 170 mm
TOPOS 300 KT	Measurement of surfaces with a maximum outer diameter of 290 mm , squared up to 270 mm
TOPOS DT	measurement of rings with an outer diameter up to 420 mm

Lamtech Lasermesstechnik GmbH

- implementation of customer-specific software requirements
- individual adaption of the devices to production processes
- in-house developement and production in Germany

Lamtech Lasermesstechnik GmbH
Nellinger Straße 20
70619 Stuttgart
Germany
T: +49 (0)711 232810
F: +49 (0)711 2361125
www.lamtech.de
info@lamtech.de

updated April 2017, subject to change without notice