

μikro TOP-zoom 3D-MEASUREMENT OF MICROSTRUCTURES

High resolution analysis of surface structure of objects, components, tools and models:

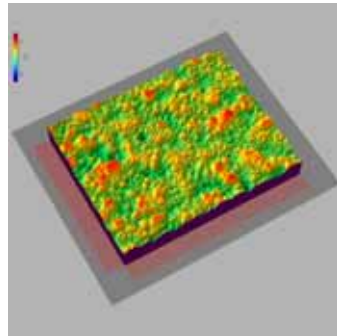
The topometric 3D-digitisation system μikro TOP was specially developed for the detailed analysis and three-dimensional measurement of microstructures with high resolution.

Here are the key features of the μikro TOP system in brief:

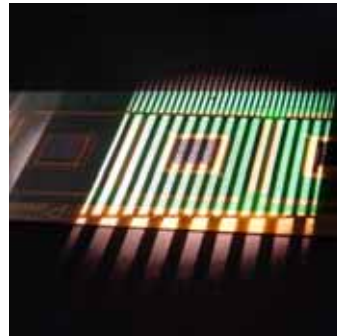
- ❑ μikro TOP is based upon our proven opto TOP sensor
- ❑ The sensor of the μikro TOP system is equipped with a high resolution digital camera (1.380 x 1.036 pixel)
- ❑ The 3 x zoom allows a continuously variable setting of the measurement field between 11 x 8 and 33 x 24 mm
- ❑ Scans with variable numbers of measurement points and acquisition time are permitted by digital zoom function
- ❑ The scanning is performed non contacting and non destructive
- ❑ Neither pre-treatments nor preparations are necessary
- ❑ The entire system can be controlled by a laptop and is thus flexible and quickly transportable
- ❑ The new control unit of the sensor may be driven independently from the main supply; thus ,in combination with a laptop, the complete system is suited for mobile application



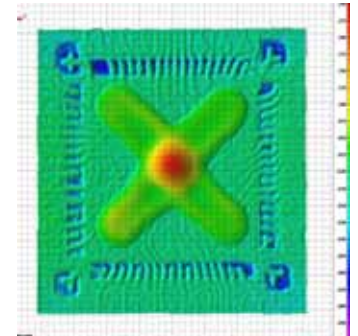
μikro TOP on a car test track



Microstructure of road profile



Measurement of a Chip Carrier



Highness profile, 250μm

The μikro TOP system has the following characteristics:

- ❑ As standard the roughness parameters R_a and R_z are available
- ❑ In addition to these, other characteristics concerning surface roughness can be quantitatively measured (e.g. waviness, profile)
- ❑ Furthermore an evaluation of surface and volume as well as a deformation analysis can be carried out
- ❑ The data output is possible in standard data formats for point clouds and triangular meshes

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Technical Data

Image processing

Host computer	Core™2 Duo, ≥ 2 GHz, ≥2 GB RAM, ≥ 60 GB Open-GL Graphic adapter, DVD-writer
Image data interface.....	IEEE 1394 Interface (FireWire®)
Operating system.....	Windows XP
Measurement software	OPTOCAT for Windows
Data interface.....	SDF, ASCII, BRE, STL*, PLY*, VRML*

* detailed specification on inquiry

Sensors

Projection unit	Miniaturised projection technique
Light source	100 W halogen
Imaging	Digital camera, IEEE 1394 interface
Digitisation	1.380 x 1.036 pixel
Operating distance.....	approx. 20 cm
Acquisition time	approx. 300 - 400 msec

Options

Host computer	DELL Precision 1190
Software option.....	TOPOSURF
Positioning equipment	Tripod, swivel arm, rotation table

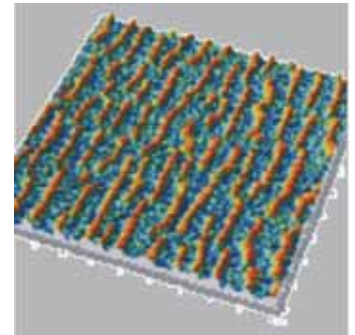
The specifications of the measurement fields

Measurement field [mm]	continuously setting between 18 x 8 and 36 x 24 mm
Lateral resolution [μm]	12 - 24
Depth resolution [μm]	< 2
Repeatability [μm]	< 5

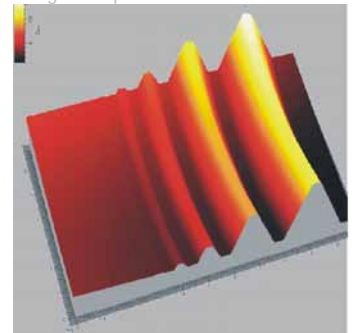
The system with the 3x zoom option is suitable in particular for applications where the highest resolution is required and where frequent switching between different magnifications is needed.

Our HighEnd 3D-digitisation system μikro TOP takes advantage of an advanced high resolution digital camera, which is directly connected with the host computer via IEEE-1394-interface. This allows the use of any arbitrary PC - especially a laptop - which offers this interface without integrating additional frame grabbers or I/O-cards.

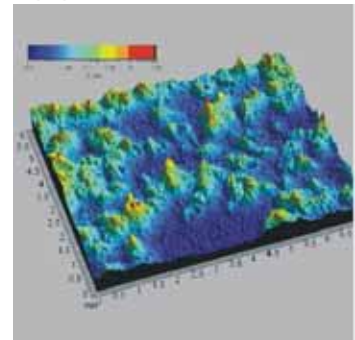
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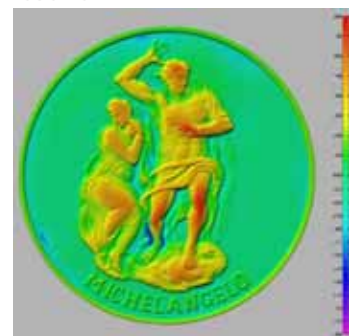
Roughness profile of leather



Profile



Facial hair



Ancient coin

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