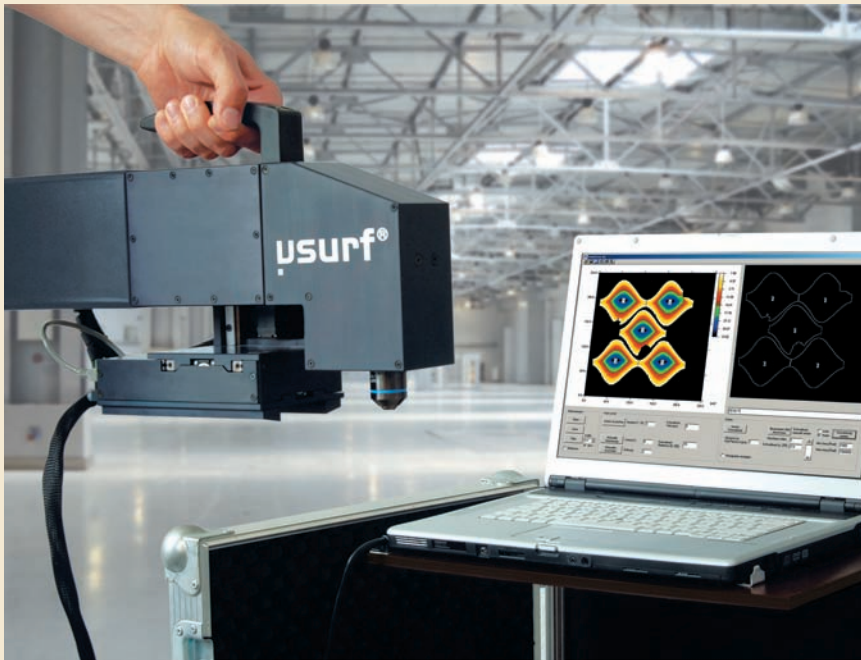


## Laboratory Resolution, Shop Floor Convenience.



The high resolution portable surface metrology solution.

- On-site Deployment
- Light weight
- Reliable Resilience
- Fast Results
- Flexible Performance
- High Resolution 3D Imaging

Sometimes parts that require surface topography or micro-geometry measurements are just too large to bring into the laboratory. Other times high resolution measurements need to be made expeditiously in the field or on the shop floor.

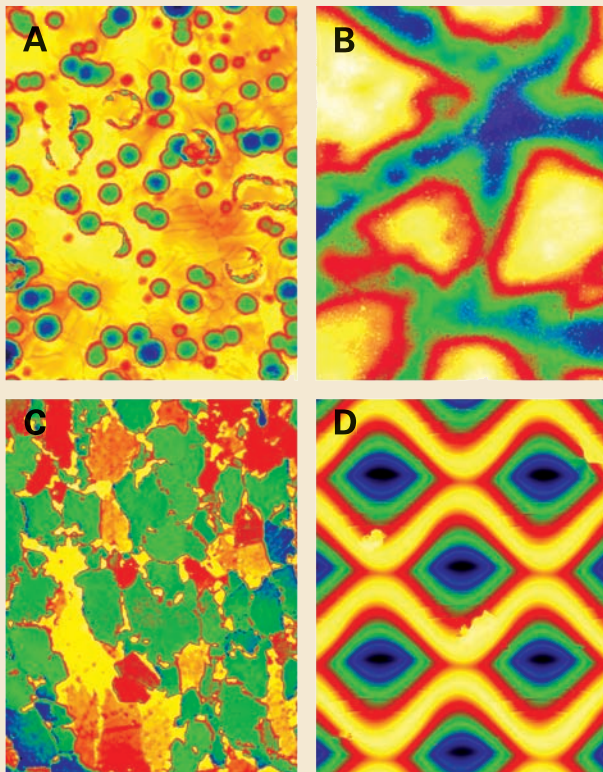
The NanoFocus µsurf mobile brings laboratory surface metrology performance to the location of your choice. The battery operated electronics and tough roll around container allow operation in remote locations without the need for external power sources. Lightweight and easy to operate, the µsurf mobile is ready to measure in about a minute. Measurement times are even faster—generally 5 to 10 seconds.

The µsurf mobile system is based on tried and true µsurf confocal technology. Acquisition and analysis of data is easily handled by the powerful µsoft line of software products.

Some parts can't fit in the lab or get there, but they are still critical enough to require laboratory resolution surface measurements. The  $\mu$ surf mobile surface metrology system brings the lab to the specimens.



The  $\mu$ surf mobile is a self contained metrology system that is easily transportable.



A. Textured sheet steel surface B. Textured vinyl surface  
C. Etched grain structure surface D. Gravure roll surface

### On-site Deployment

Cables, keyboards, mice and power cords create clutter in the press shop, the rolling mill or just about anywhere. However,  $\mu$ surf mobile eliminates such clutter. All components are contained in a compact roll around case that will fit in the trunk of any car. A tablet PC means no more hunting for a flat surface to operate your mouse or an open spot for your keyboard. Battery powered electronics eliminate the need to run an extension cord in busy or remote areas. Open the case, remove the sensor head, power up and measure. It's that convenient.

### Light weight

A portable system isn't very useful if no one wants to use it because it is too heavy and cumbersome. That is why the  $\mu$ surf mobile was designed with weight savings in mind. Without comprising the robustness and structural integrity of components weight was reduced to a very comfortable 5.5 kgs. Designing and manufacturing our x,y,z stages in house was necessary, but with this and other innovations no one has to go to the gym just to be able to perform surface topography measurements.

### Reliable Resilience

Across a broad range of industries and the challenging environments each presents (medical, engineering, automotive, microelectronic, research, print and paper),  $\mu$ surf technology repeatedly demonstrates outstanding durability and consistent performance. Thanks to its robust design, adaptability to harsh conditions is easily achieved – permitting on-site measurement and eliminating the need to move specimens from production to the lab. Also eliminated are downtime and repairs – thanks to low-maintenance design and our experience with real-world applications. Users report significant time saved and increased productivity.

## Fast Results

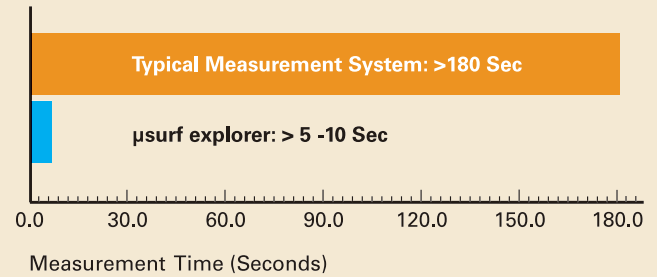
In addition to “on-site” readiness, you’ll save time at each step of the “measurement process.” To start,  $\mu$ surf mobile enables the shortest possible specimen preparation period – no coating or polishing required. Setting up measurement parameters takes only seconds. Your actual measurement time? Even faster. And at the risk of sounding repetitive, your analysis of measured data will be extremely fast, as well. We recognize that the time you spend measuring one specimen is time you could spend on another. So we’ve created the most time-efficient 3D surface measuring system. As you probably know, other systems take considerably longer.

## Flexible Performance

Comfortable with a multitude of materials and analyses,  $\mu$ surf mobile produces the most precise measurements and analyses for: steel, aluminum, organic materials (including bone and wood), ceramics, glass, paper, cloth, plastics, coatings, painted surfaces and more—providing roughness and micro-geometry analyses, regardless of color, shape, size or reflectivity. When measuring a larger field of view is required,  $\mu$ surf mobile offers stitching (or composite measurements).

## High Resolution 3D Imaging

Real-world surfaces are three-dimensional—and so, 2D parameters are not sufficient to appropriately describe and quantify important surface properties. As you can see, the  $\mu$ surf technology clearly and colorfully sets new standards for measuring and visually presenting results down to the nm level. In fact for the first time, your microscope image (with infinite depth of focus) can be displayed alongside vivid 3D quantitative surface data. NanoFocus  $\mu$ surf mobile provides qualitative and quantitative analysis for all of your surface metrology needs where ever you need them. NanoFocus. See more.



## Textured Finishing Roll

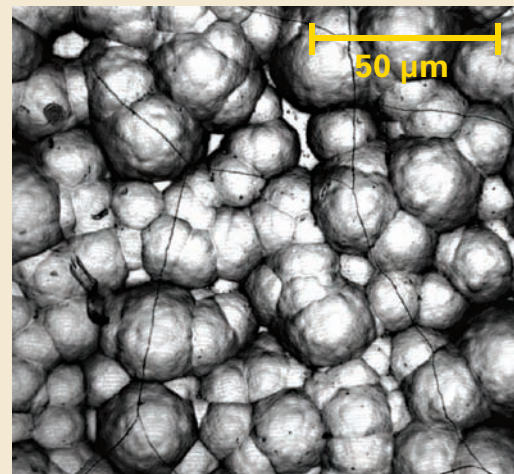
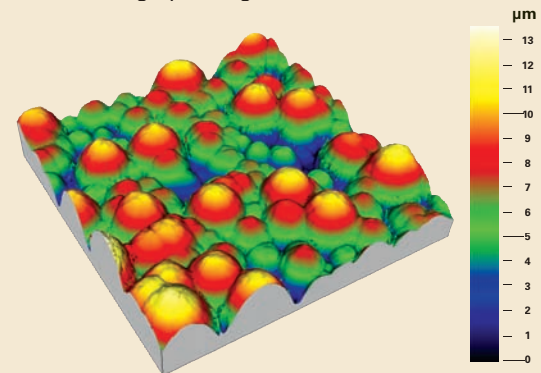
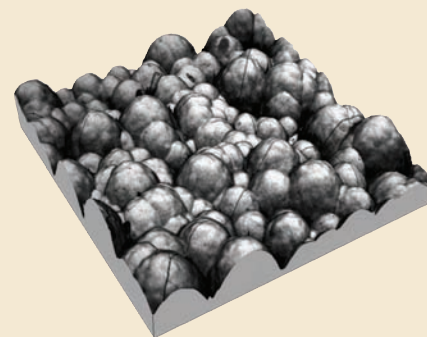


Photo micrograph image



3D surface topography image



Hybrid image combining photo micrograph and 3D topography.

### Hardware

<b>Image acquisition module</b>	Fast digital camera with progressive scan technology, up to 55 fps, 512x512 Pixel, 10 bit, Firewire
<b>Light Source</b>	High efficiency LED ( $\lambda = 505 \text{ nm}$ and 50.000 h)
<b>x,y-axis module MN 50</b>	Precision scanning module, x,y-table, 50x50 mm <sup>2</sup>
<b>z-axis module MN 35</b>	Precision scanning module, range: 35 mm
<b>z-axis module V 250</b>	Fast precision scanning module (piezo), range: 250 $\mu\text{m}$ , resolution: < 10 nm
<b>Peripherals &amp; controller</b>	PC/ notebook/ tablet pc, Windows XP professional, 1 GB RAM, firewire, DVD-burner incl. NeroExpress, ethernet, 3D mouse navigator, emergency stop, integrated into space-saving rollable and transportable container
<b>Mounting hardware</b>	Special feet for use on roll surfaces, for roll diameters > 200 mm

### Software

<b>µsoft control</b>	NanoFocus measurement and analysis software, measurement control, setting of measurement parameters, analysis of 2D and 3D parameters in accordance with DIN EN ISO. Illustration: profiles, 2D view, 3D reconstruction, reflection image, confocal curve
<b>AutoStitch</b>	µsoft control plugin for extending the measurement field
<b>Winsam (optional)</b>	µsoft control plugin for calculation and display of functional 3D parameters (tribology)
<b>µsoft analysis (optional)</b>	Software to analyse 3D measurement data, layout function, templates for series measurement and analysis

### Optic modules

	<b>1600 S</b>	<b>800 L, S, XS</b>	<b>320 L, S, XS</b>	<b>260 XS</b>	<b>160 S</b>
<b>Magnification</b>	10x	20x	50x	60x	100x
<b>Measuring field (<math>\mu\text{m}</math>)</b>	1600x1600	800x800	320x320	260x260	160x160
<b>Numerical aperture</b>	0.3	0.4 / 0.45 / 0.6	0.5 / 0.8 / 0.95	0.9	0.9
<b>Working distance (mm)</b>	11.0	12.1 / 3.1 / 0.9	10.6 / 1.0 / 0.3	0.4	1.0
<b>Resolution in z-direction (nm)</b>	20	6 / 5 / 4	4 / 2 / 2	2	1
<b>Resolution in x,y-direction (<math>\mu\text{m}</math>)</b>	3.1	1.6	0.7	0.5	0.31

### General

<b>File formats</b>	NMS, OMS, ACII, SDF, TIF, BMP
<b>File size</b>	Single measurement approx. 0.8 MB
<b>Typical measuring time</b>	5-10 seconds
<b>Sample properties</b>	Reflectivity: 1-100%, coated, non coated, reflective, diffuse
<b>Vibration</b>	Isolation for most applications not necessary
<b>Power supply</b>	90-265 V, Frequency 50-60 Hz, input < 50 W, Optional: battery powered
<b>Cable length</b>	Measurement device: 6 m, Power cable 10m (with internal cable reel)
<b>Weight</b>	Measurement device: 55 kg, Rollable container: 25kg
<b>Dimensions</b>	Measurement device: 460x360x700 mm (lxwxh), Rollable container: 25 kg 380x110x155 mm (lxwxh)
<b>Miscellaneous</b>	Protection class: IP 52

**Are you interested in µsurf mobile or other NanoFocus-Technology?  
Please call us at +1 804 228-4195 or E-mail us at [solutions@nanofocus-us.com](mailto:solutions@nanofocus-us.com).**

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