

Upgrade a microscope into a 3-D-Surface device

# smartWLI microscope

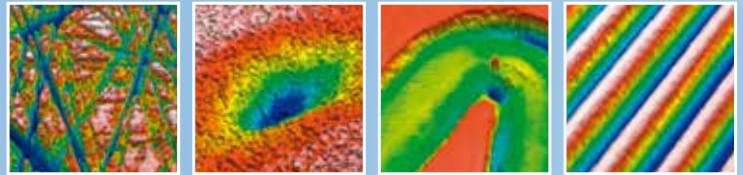
Highly accurate  
Speedytec  
Dependable  
Economical

Classical optical microscopes can be expanded into a fullfledged 3-D surface instrument, significantly increasing their usefulness. Using this measurement principle high-precision 3-D data can be collected throughout the viewable range of the microscope. Various types of 3-D analyses can then be done with the microscope and smartWLI as a basis.

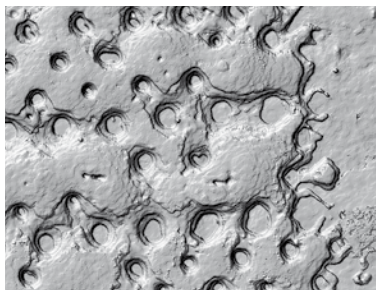
Suitable for all modern microscopes from different manufacturers: Zeiss, Nikon, Mitutoyo, Olympus, Leica...



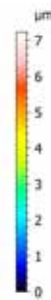
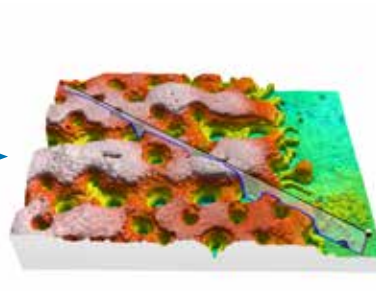
# smartWLI microscope



Material Science • Automotive • Micro Systems • Electronics • Solar



2-D image generated by standard microscope



3-D image – new feature after smartWLI upgrade

Measurement System	
Measurement principle	White-light interferometry
Z-Positioning system	piezo objective adjustment system / stepper motor
Height measuring range [µm]	Up to 400 / > 1000 (microscope specific)
Measurement Array [Pixel]	1936 x 1216
Light source	microscope lighting system
Vertical resolution [nm]	PSI 0.1, VSI: 1.0 / VSI: < 100nm (stepper motor)
Max. scan speed [µm/s]	48
Computer, OS	PC or Laptop with Windows 7
Measurement time by z-range 20 µm [s]	< 3
Operating temperature [°C]	10 – 35
Recommended working temperature [°C]	18 – 22
Software	
smartWLI	Windows 7, 64bit Software for measuring the topography and for exporting the 3-D data using a direct interface to the MountainsMap® analysis software
smartWLI-SDK	SDK for measuring the topography for using in customer own software, Matlab or LabVIEW
Export format	ASCII, SUR, BCR-STM, BMP, JPEG, TIFF
MountainsMap®	Extensive analysis software as well as profile and 3-D visualisation, measurement data pre- and post-processing, DIN EN ISO roughness and height determination, serial processing, measurement logging
Objectives	
Magnification (MAG)	2,5x      5x      10x      20x      50x      100x
Numerical Aperture (NA)	0.075      0.13      0.30      0.40      0.55      0.70
Working distance (WD) [mm]	10.3      9.3      7.4      4.7      3.4      2.0
Field of view (FOV)* [µm]	7203x4524      3601x2262      1800x1131      900x565      360x226      180x113
Pixel size* [µm]	3.72      1.86      0.93      0.47      0.19      0.09
Optical resolution by Dawes* [µm]	3.61      2.08      0.90      0.68      0.49      0.39
Accessories	
Motorized XY-stage	Movement dependent on the microscope
Stitching	Automated stitching by using motorized stage
* Approximate values (dependent on the microscope)	

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