EOTECH
more for science

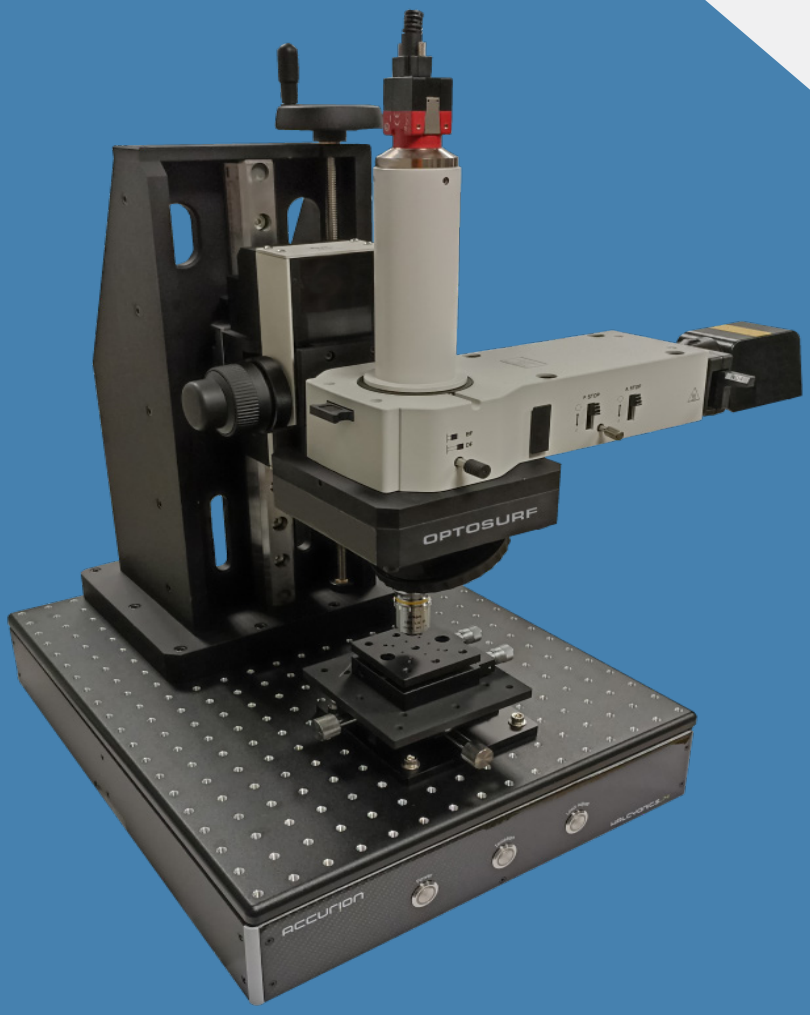
All surfaces

OptoSURF

The most flexible & powerful optical profiler

For micro-surface measurement and analysis

Enter the world of micro-surfaces structure!



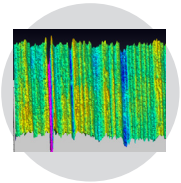
Method

Technology: The OptoSURF system uses a Nikon interferometric base microscope combined with an imaging camera and a piezoelectric motor for phase shifting technologies. Phase shifting interferometry is the base of all the measurement capabilities of this system. The microscope setup is mounted on a very stable column which is fixed on an anti-vibration table to insure stability and vibration free measurement. A specific sample platform with tip/tilt capability, complete the setup to adjust fringes contrast and orientation.

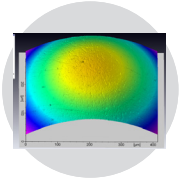
Measuring Modes: Different measurement algorithms can be used to match the sample surface structure. For super smooth surface we have the standard Phase shifting algorithm, while for disrupted surfaces, we can use the White Light Scanning phase algorithm called Wave. For rough surfaces, a confocal algorithm, based on fringe contrast, scans the surface in height up to 100 µm.

Software: The OptoSURF software helps you to acquire the surface structure using the different measurement modes, on single , multiple or combined areas . It can calculate different parameters like profiles and surface roughness, structure porosity, step height and defect detection, as well as shape comparison and volume. The software can visualize more than one measurement at a time to compare different surface structures..

Applications



Surface roughness: to measure any type of surface quality



Surface structure: to visualize, quantify and understand surface shape and structure

Advantages/benefits:

- Flexible and compact
- Adapted to most surface structure and size
- High performances from nanometers to 0,1 mm
- Good value price performances

Industry:

Optics and semiconductors:
Super smooth surface with low or high reflectivity down to the nanometer level

Metallic surfaces:
Surface quality or defect detection in manufacturing processes

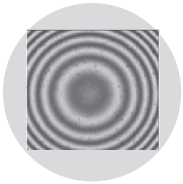
Plastic, polymers:
Surface quality and structure analysis

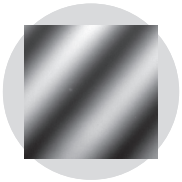
Paper, textiles, others:
Surface structure analysis

Technical Data

Configurations:

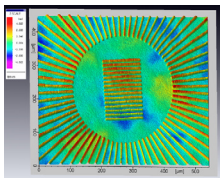
Setup	Standard	Optional
Stand in aluminum	450x 400 x 400 mm3 (H x W x D)	Large sample on demand
Microscope	Nikon based	
Tip/Tilt, XY platform	200 x 200 mm²	Can be motorized in XY
Phase shifting module	100 µm Piezo motor	
Illumination	LED White	
Magnification	2.5 up to 100 x	
Camera	1.5 MPixels	5 Mpixels





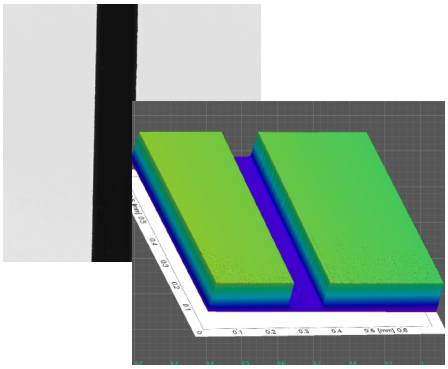
Features:

Full camera settings with autofocus
Multiple measuring modes
Filtering, shape compensation
Single, multiple and stitching measurement
3D visualisation with multiple views
Surface in SDF format
Calculation of parameters saved in CSV format and report
Step height measurement

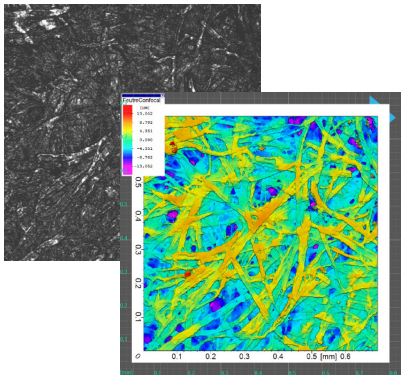


Examples:

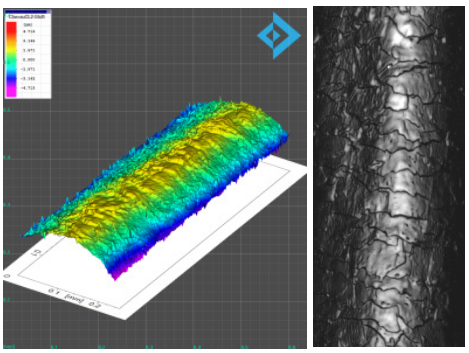
Step



Paper



Hair



Technical specifications:

Magnification	5X	10X	20X	50X
Measurement surface (mm²) 5Mp/1.6Mp	1.68 x 1.0 / 1.0 x 0.74	0.84 x 0.69 / 0.5 x 0.37	0.42 x 0.34 / 0.25 x 0.14	0.17 x 0.14 / 0.1 x 0.07
Depth of focus (µm)	27	3.06	1.71	0.9
Working distance (mm)	9	7.4	4.7	3.4
Optical resolution (µm)	2.1	0.9	0.69	0.5
Lateral sampling (µm)	0.7	0.34	0.17	0.06
Repeatability Phase mode (nm)	1	0.5	0.5	0.5
Repeatability Wave mode (nm)	2	1	1	1

Other specifications:

Camera model	Mako G-507	Mako G-158
Format	2/3"	1/3"
Camera resolution	2464 x 2056 pixels (5 Mp)	1456 x 1088 pixels (1.6 Mp)
Binning	Yes (1, 2, 4)	Yes (1, 2, 4)
Communication	GigaE	GigaE
Frequency (FPS)	14	25
Dark noise (e-)	2.7	2.2
Dynamic range (Db)	72	71.5
AutoFocus	Yes	Yes
AutoBrightness	Yes	Yes
Minimum Computer configuration	Windows 10 64 bit Pro, I9 11700K,16 Go RAM, SSD 512 Go	
Graphic	NVidia Quadro 4 Go	

Contact

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