Product description

1 smartWLI extended

smartWLI extended / 2.3 MP camera		**SE 1001**
technology measurement		
principle:	white-light interferometer	
scanning device:	Piezo positioning system	
system parameters		
objectives:	up to 4 objectives manual exchangeable / automated detection	
max. range Z axis:	400 µm	
topography reproducibility*:	< 0.15 nm	
digitalization:	up to 0.01 pm	
scanning speed:	approx. 11.4 – 218 µm/s - full camera resolution up to 400 µm/s – ROI	
0.4 µm step height:	< 1 nm (1-σ reproducibility)	
12 µm step height:	< 3 nm (1-σ reproducibility)	
100 µm step height:	< 20 nm (1-σ reproducibility)	
smooth surfaces:	up to 53° (max. slope)	
rough surfaces:	up to 90° (max. slope)	
camera		
pixel:	1920 x 1200	
speed full resolution:	169 Hz	
speed subsampling:	533 Hz (960 x 600 pixel)	
speed ROI:	up to 3.2 kHz	
optional 5x objective		
field of view:	3.7 x 2.3 mm²	
point spacing:	1.9 µm	
optional 10x objective		
field of view:	1.8 x 1.2 mm²	
point spacing:	0.96 µm	
optional 20x objective		
field of view:	0.91 x 0.58 mm²	
point spacing:	0.48 µm	
optional 50x objective		
field of view:	0.37 x 0.23 mm²	
point spacing:	0.19 µm	

optional 100x objective field of view: 0.18 x 0.12 mm² point spacing: 0.1 µm **optional 115x objective**** field of view: 0.16 x 0.1 mm² point spacing: 0.08 µm **control unit** industrial 19” rack housing piezo controller LED light controller motorized XY positioning system controller (optional) PC, Windows10 pro, Core I5, 16 GB RAM, 500 GB SSD, CUDA® compatible graphic board for the fast 3d calculation with installed software **documentation** factory acceptance protocol CE declaration manuals *Sq/√2 – profile difference of 2 scans, EPSI, single scan, without profile averaging, laboratory conditions, 1 million points after 3x3 denoising filter **Olympus 100x WLI objective – the mentioned magnification is calculated in relation to the 100x Nikon objective	

smartWLI extended / 5 MP camera		**SE 1002**
technology measurement		
principle:	white-light interferometer	
scanning device:	Piezo positioning system	
system parameters		
objectives:	up to 4 objectives manual exchangeable / automated detection	
max. range Z axis:	400 µm	
topography reproducibility*:	< 0.1 nm	
digitalization:	up to 0.01 pm	
scanning speed:	approx. 5.2 – 129 µm/s up to 400 µm/s – ROI	
0.4 µm step height:	< 1 nm (1-σ reproducibility)	
12 µm step height:	< 3 nm (1-σ reproducibility)	
100 µm step height:	< 20 nm (1-σ reproducibility)	
smooth surfaces:	up to 53° (max. slope)	
rough surfaces:	up to 90° (max. slope)	
camera		
pixel:	2456 x 2054	

speed full resolution:	77 Hz
speed ROI:	up to 2 kHz
optional 5x objective	
field of view:	3.4 x 2.8 mm²
point spacing:	1.4 µm
optional 10x objective	
field of view:	1.7 x 1.4 mm²
point spacing:	0.69 µm
optional 20x objective	
field of view:	0.85 x 0.71 mm²
point spacing:	0.35 µm
optional 50x objective	
field of view:	0.34 x 0.28 mm²
point spacing:	0.14 µm
optional 100x objective	
field of view:	0.17 x 0.14 mm²
point spacing:	0.07 µm
optional 115x objective**	
field of view:	0.15 x 0.12 mm²
point spacing:	0.06 µm
control unit	
industrial 19” rack housing	
piezo controller	
LED light controller	
motorized XY positioning system controller (optional)	
PC, Windows10 pro, Core I5, 16 GB RAM, 500 GB SSD, CUDA® compatible graphic board for the fast 3d calculation with installed software **documentation** factory acceptance protocol	
CE declaration	
manuals	

*Sq/√2 – profile difference of 2 scans, EPSI, single scan, without profile averaging, laboratory conditions, 1 million points after 3x3 denoising filter

**Olympus 100x WLI objective – the mentioned magnification is calculated in relation to the 100x Nikon objective

2 smartWLI compact

smartWLI compact / 2.3 MP camera		**SE 1201**
technology measurement		
principle:	white-light interferometer	
scanning device:	Piezo positioning system	
system parameters		
objectives:	1 objective manual exchangeable	
max. range Z axis:	400 µm	
topography reproducibility*:	< 0.15 nm	
digitalization:	up to 0.01 pm	
scanning speed:	11.4 – 218 µm/s - full camera resolution up to 400 µm/s – ROI	
0.4 µm step height:	< 1 nm (1-σ reproducibility)	
12 µm step height:	< 3 nm (1-σ reproducibility)	
100 µm step height:	< 20 nm (1-σ reproducibility)	
smooth surfaces:	up to 53° (max. slope)	
rough surfaces:	up to 90° (max. slope)	
camera		
pixel:	1920 x 1200	
speed full resolution:	169 Hz	
speed subsampling:	533 Hz (960 x 600 pixel)	
speed ROI:	up to 3.2 kHz	
optional 2.5x objective		
field of view:	7.3 x 4.6 mm²	
point spacing:	3.8 µm	
optional 5x objective		
field of view:	3.7 x 2.3 mm²	
point spacing:	1.9 µm	
optional 10x objective		
field of view:	1.8 x 1.2 mm²	
point spacing:	0.96 µm	
optional 20x objective		
field of view:	0.91 x 0.58 mm²	

point spacing: 0.48 µm **optional 50x objective** field of view: 0.37 x 0.23 mm² point spacing: 0.19 µm **optional 100x objective** field of view: 0.18 x 0.12 mm² point spacing: 0.1 µm **optional 115x objective**** field of view: 0.16 x 0.1 mm² point spacing: 0.08 µm **control unit** industrial 19" rack housing piezo controller LED light controller motorized XY positioning system controller (optional) PC, Windows10 pro, Core I5, 16 GB RAM, 500 GB SSD, CUDA® compatible graphic board for the fast 3d calculation with installed software **documentation** factory acceptance protocol CE declaration manuals *Sq/√2 – profile difference of 2 scans, EPSI, single scan, without profile averaging, laboratory conditions, 1 million points after 3x3 denoising filter **Olympus 100x WLI objective – the mentioned magnification is calculated in relation to the 100x Nikon objective	

smartWLI compact / 5 MP camera		**SE 1202**
technology measurement		
principle:	white-light interferometer	
scanning device:	Piezo positioning system	
system parameters		
objectives:	1 objective manual exchangeable	
max. range Z axis:	400 µm	
topography reproducibility*:	< 0.1 nm	
digitalization:	up to 0.01 pm	
scanning speed:	5.2 – 129 µm/s - full camera resolution up to 400 µm/s – ROI	
0.4 µm step height:	< 1 nm (1-σ reproducibility)	
12 µm step height:	< 3 nm (1-σ reproducibility)	
100 µm step height:	< 20 nm (1-σ reproducibility)	

smooth surfaces:	up to 53° (max. slope)
rough surfaces:	up to 90° (max. slope)
camera	
pixel:	2456 x 2054
speed full resolution:	77 Hz
speed ROI:	up to 2 kHz
optional 2.5x objective	
field of view:	6.8 x 5.7 mm²
point spacing:	2.8 µm
optional 5x objective	
field of view:	3.4 x 2.8 mm²
point spacing:	1.4 µm
optional 10x objective	
field of view:	1.7 x 1.4 mm²
point spacing:	0.69 µm
optional 20x objective	
field of view:	0.85 x 0.71 mm²
point spacing:	0.35 µm
optional 50x objective	
field of view:	0.34 x 0.28 mm²
point spacing:	0.14 µm
optional 100x objective	
field of view:	0.17 x 0.14 mm²
point spacing:	0.07 µm
optional 115x objective**	
field of view:	0.15 x 0.12 mm²
point spacing:	0.06 µm

control unit

industrial 19” rack
housing
piezo controller
LED light controller
motorized XY positioning system controller (optional)
PC, Windows10 pro, Core I5, 16 GB RAM, 500 GB SSD, CUDA® compatible graphic board for the fast 3d calculation with installed software **documentation** factory acceptance protocol
CE declaration
manuals

*Sq/√2 – profile difference of 2 scans, EPSI, single scan, without profile averaging, laboratory conditions, 1 million points after 3x3 denoising filter

**Olympus 100x WLI objective – the mentioned magnification is calculated in relation to the 100x Nikon objective

3 smartWLI extended range

smartWLI extended range 2.3 MP camera		**SE 1203**
technology measurement		
principle:	white-light interferometer	
scanning device:	mechanical scanning axis	
system parameters		
objectives:	1 objective manual exchangeable	
max. range Z axis:	5000 µm	
topography reproducibility*:	< 7 nm	
digitalization:	up to 0.1 nm	
scanning speed:	11.4 – 218 µm/s - full camera resolution up to 400 µm/s – ROI	
0.4 µm step height:	< 10 nm (1-σ reproducibility)	
12 µm step height:	< 20 nm (1-σ reproducibility)	
100 µm step height:	< 30 nm (1-σ reproducibility)	
smooth surfaces:	up to 53° (max. slope)	
rough surfaces:	up to 90° (max. slope)	
camera		
pixel:	1920 x 1200	
speed full resolution:	169 Hz	
speed subsampling:	533 Hz (960 x 600 pixel)	
speed ROI:	up to 3.2 kHz	
optional 2.5x objective		
field of view:	7.3 x 4.6 mm²	
point spacing:	3.8 µm	
optional 5x objective		
field of view:	3.7 x 2.3 mm²	
point spacing:	1.9 µm	
optional 10x objective		
field of view:	1.8 x 1.2 mm²	
point spacing:	0.96 µm	
optional 20x objective		
field of view:	0.91 x 0.58 mm²	
point spacing:	0.48 µm	
optional 50x objective		
field of view:	0.37 x 0.23 mm²	
point spacing:	0.19 µm	
optional 100x objective		
field of view:	0.18 x 0.12 mm²	
point spacing:	0.1 µm	

optional 115x objective**	
field of view:	0.16 x 0.1 mm²
point spacing:	0.08 µm
control unit	
industrial 19” rack	
housing	
scanning axis controller	
LED light controller	
motorized XY positioning system controller (optional)	
PC, Windows10 pro, Core I5, 16 GB RAM, 500 GB SSD, CUDA® compatible graphic board for the fast 3d calculation with installed software **documentation** factory acceptance protocol	
CE declaration	
manuals	
*Sq/√2 – profile difference of 2 scans, EPSI, single scan, without profile averaging, laboratory conditions, 1 million points after 3x3 denoising filter	
**Olympus 100x WLI objective – the mentioned magnification is calculated in relation to the 100x Nikon objective	

smartWLI extended range 5 MP camera		**SE 1204**
technology measurement		
principle:	white-light interferometer	
scanning device:	mechanical scanning axis	
system parameters		
objectives:	1 objective manual exchangeable	
max. range Z axis:	5000 µm	
topography reproducibility*:	< 5 nm	
digitalization:	up to 0.1 nm	
scanning speed:	5.2 – 129 µm/s - full camera resolution up to 400 µm/s – ROI	
0.4 µm step height:	< 10 nm (1-σ reproducibility)	
12 µm step height:	< 20 nm (1-σ reproducibility)	
100 µm step height:	< 30 nm (1-σ reproducibility)	
smooth surfaces:	up to 53° (max. slope)	
rough surfaces:	up to 90° (max. slope)	
camera		
pixel:	2456 x 2054	
speed full resolution:	77 Hz	
speed ROI:	up to 2 kHz	

optional 2.5x objective
field of view: 6.8 x 5.7 mm²
point spacing: 2.8 µm
optional 5x objective
field of view: 3.4 x 2.8 mm²
point spacing: 1.4 µm
optional 10x objective
field of view: 1.7 x 1.4 mm²
point spacing: 0.69 µm
optional 20x objective
field of view: 0.85 x 0.71 mm²
point spacing: 0.35 µm
optional 50x objective
field of view: 0.34 x 0.28 mm²
point spacing: 0.14 µm
optional 100x objective
field of view: 0.17 x 0.14 mm²
point spacing: 0.07 µm
optional 115x objective**
field of view: 0.15 x 0.12 mm²
point spacing: 0.06 µm
control unit
industrial 19" rack
housing scanning axis
controller LED light
controller
motorized XY positioning system controller (optional)
PC, Windows10 pro, Core I5, 16 GB RAM, 500 GB SSD, CUDA® compatible graphic board for the fast 3d calculation with installed software **documentation** factory acceptance protocol
CE declaration
manuals

*Sq/√2 – profile difference of 2 scans, EPSI, single scan, without profile averaging, laboratory conditions, 1 million points after 3x3 denoising filter
**Olympus 100x WLI objective – the mentioned magnification is calculated in relation to the 100x Nikon objective

4 smartWLI nanoscan

smartWLI nanoscan		**SE 1205**
technology measurement		
principle:	white-light interferometer	
scanning device:	Piezo positioning system	
system parameters		
objectives:	1 objective manual exchangeable	
max. range Z axis:	100 µm	
topography reproducibility*:	< 0.03 nm	
digitalization:	up to 0.01 pm	
scanning speed:	5 – 100 µm/s up to 200 µm/s – ROI	
0.4 µm step height:	< 1 nm (1-σ reproducibility)	
12 µm step height:	< 3 nm (1-σ reproducibility)	
smooth surfaces:	up to 53° (max. slope)	
rough surfaces:	up to 90° (max. slope)	
camera		
pixel:	2456 x 2054	
speed full resolution:	77 Hz	
speed ROI:	up to 2 kHz	
optional 2.5x objective		
field of view:	3.4 x 2.8 mm²	
point spacing:	1.4 µm	
optional 5x objective		
field of view:	1.7 x 1.4 mm²	
point spacing:	0.7 µm	
optional 10x objective		
field of view:	0.85 x 0.71 mm²	
point spacing:	0.35 µm	
optional 20x objective		
field of view:	0.42 x 0.36 mm²	
point spacing:	0.175 µm	
optional 50x objective		
field of view:	0.17 x 0.14 mm²	
point spacing:	0.07 µm	

optional 100x objective field of view: 0.09 x 0.07 mm² point spacing: 0.035 µm **optional 115x objective**[**] field of view: 0.075 x 0.06 mm² point spacing: 0.03 µm **control unit** industrial 19” rack housing piezo controller LED light controller motorized XY positioning system controller (optional) PC, Windows10 pro, Core I5, 16 GB RAM, 500 GB SSD, CUDA® compatible graphic board for the fast 3d calculation with installed software **documentation** factory acceptance protocol CE declaration manuals *Sq/√2 – profile difference of 2 scans, EPSI, single scan, without profile averaging, laboratory conditions, 1 million points after 3x3 denoising filter **Olympus 100x WLI objective – the mentioned magnification is calculated in relation to the 100x Nikon objective	

5 smartWLI CylinderInspector3D

smartWLI CylinderInspector3D		**CI 1001**
technology measurement		
principle:	white-light interferometer	
scanning device:	Piezo positioning system	
technical parameters		
manual rotation:	360°	
max. insertion depth:	190 mm	
system parameters		
objectives:	1 objective manual exchangeable	
max. range Z axis:	200 µm	
topography reproducibility*:	< 1 nm	
digitalization:	up to 0.01 pm	
scanning speed:	6 – 120 µm/s up to 200 µm/s – ROI	
12 µm step height:	< 5 nm (1-σ reproducibility)	
smooth surfaces:	up to 44° (max. slope)	
rough surfaces:	up to 90° (max. slope)	

camera	
pixel:	2000 x 2000
speed full resolution:	88 Hz
speed ROI:	up to 2 kHz
optional 5x objective	
field of view:	2.8 x 2.8 mm²
point spacing:	1.4 µm
optional 10x objective	
field of view:	1.4 x 1.4 mm²
point spacing:	0.7 µm
optional 20x objective	
field of view:	0.7 x 0.7 mm²
point spacing:	0.35 µm
optional 50x objective	
field of view:	0.28 x 0.28 mm²
point spacing:	0.14 µm
optional 100x objective	
field of view:	0.14 x 0.14 mm²
point spacing:	0.07 µm
control unit	
industrial 19” rack housing	
piezo controller	
LED light controller	
PC, Windows10 pro, Core I5, 16 GB RAM, 500 GB SSD, CUDA® compatible graphic board for the fast 3d calculation with installed software **documentation** factory acceptance protocol	
CE declaration	
manuals	
*Sq/√2 – profile difference of 2 scans, EPSI, single scan, without profile averaging, laboratory conditions, 1 million points after 3x3 denoising filter	

smartWLI CylinderInspector3D extended insertion depth		**CI 1002**
technology measurement		
principle:	white-light interferometer	
scanning device:	Piezo positioning system	
technical parameters		
manual rotation:	360°	
max. insertion depth:	270 mm	
system parameters		
objectives:		
	1 objective manual exchangeable	
max. range Z axis:	200 µm	
topography reproducibility*:	< 1 nm	
digitalization:	up to 0.01 pm	
scanning speed:	6 – 120 µm/s up to 200 µm/s – ROI	
12 µm step height:	< 5 nm (1-σ reproducibility)	
smooth surfaces:	up to 44° (max. slope)	
rough surfaces:	up to 90° (max. slope)	
camera		
pixel:	2000 x 2000	
speed full resolution:	88 Hz	
speed ROI:	up to 2 kHz	
optional 5x objective		
field of view:	2.8 x 2.8 mm²	
point spacing:	1.4 µm	
optional 10x objective		
field of view:	1.4 x 1.4 mm²	
point spacing:	0.7 µm	
optional 20x objective		
field of view:	0.7 x 0.7 mm²	
point spacing:	0.35 µm	
optional 50x objective		
field of view:	0.28 x 0.28 mm²	
point spacing:	0.14 µm	
optional 100x objective		
field of view:	0.14 x 0.14 mm²	
point spacing:	0.07 µm	

control unit industrial 19” rack housing piezo controller LED light controller PC, Windows10 pro, Core I5, 16 GB RAM, 500 GB SSD, CUDA® compatible graphic board for the fast 3d calculation with installed software **documentation** factory acceptance protocol CE declaration manuals *Sq/√2 – profile difference of 2 scans, EPSI, single scan, without profile averaging, laboratory conditions, 1 million points after 3x3 denoising filter	

smartWLI CylinderInspector3D MotoStitch		**CI 1003**
technology measurement		
principle:	white-light interferometer	
scanning device:	Piezo positioning system	
technical parameters		
manual rotation:	360°	
max. insertion depth:	200 mm / motorized	
system parameters		
objectives:		
	1 objective manual exchangeable	
max. range Z axis:	200 µm	
topography reproducibility*:	< 1 nm	
digitalization:	up to 0.01 pm	
scanning speed:	6 – 120 µm/s up to 200 µm/s – ROI	
12 µm step height:	< 5 nm (1-σ reproducibility)	
smooth surfaces:	up to 44° (max. slope)	
rough surfaces:	up to 90° (max. slope)	
camera		
pixel:	2000 x 2000	
speed full resolution:	88 Hz	
speed ROI:	up to 2 kHz	
optional 5x objective		
field of view:	2.8 x 2.8 mm²	
point spacing:	1.4 µm	
optional 10x objective		
field of view:	1.4 x 1.4 mm²	
point spacing:	0.7 µm	

optional 20x objective field of view: 0.7 x 0.7 mm² point spacing: 0.35 µm **optional 50x objective** field of view: 0.28 x 0.28 mm² point spacing: 0.14 µm **optional 100x objective** field of view: 0.14 x 0.14 mm² point spacing: 0.07 µm **control unit** industrial 19” rack housing piezo controller LED light controller insertion axis (motorized) controller PC, Windows10 pro, Core I5, 16 GB RAM, 500 GB SSD, CUDA® compatible graphic board for the fast 3d calculation with installed software **documentation** factory acceptance protocol CE declaration manuals *Sq/√2 – profile difference of 2 scans, EPSI, single scan, without profile averaging, laboratory conditions, 1 million points after 3x3 denoising filter	

6 Vibration isolation system

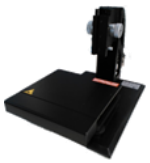
Accurion Halcyonics Nano 30		**AV 1001**
type:	active vibration isolation system	
variant:	external controller with sensors and actuator LEDs	
dimensions:	400 x 300 x 75 mm³	
resonant frequency:	< 5 Hz	
load capacity:	up to 120 kg	
weight (isolation):	5.6 kg	
weight (controller):	2 kg	

Accurion Halcyonics i4		**AV 1002**
type:	active vibration isolation system	
variant:	internal controller with sensors and actuator LEDs	
dimensions:	400 x 500 x 90 mm³	
resonant frequency:	< 5 Hz	
load capacity:	up to 20 kg	
weight:	20 kg	

Accurion Vario Basic 40		**AV 1003**
Type:	active vibration isolation system	
variant:	external controller with sensors and actuator LEDs	
dimensions:	396 × 120 × 110 mm³	
resonant frequency:	< 5 Hz	
load capacity:	up to 300 kg	
weight (isolation):	6.8 kg (per isolation element)	
weight (controller):	4.5 kg	

Fabreeka ISO Tab-L 13 Granit		**AV 1101**
type:	passive pneumatic vibration isolation system	
variant:	Granit Serie G (ISO-13G)	
dimensions:	300 x 450 x 95 mm³	
resonant frequency:	3.0 Hz (vertical) / 4.0 Hz (horizontal)	
load capacity:	up to 90 kg	
weight:	15 kg	

7 Stands and positioning tables

stand with manual 73x55 table		**PL 1001**
XY positioning device		
positioning range:	73 x 55 mm²	
Z positioning device		
max. / coarse positioning range:	70 mm	
fine positioning range:	1.9 mm	
levelling device		
tilting angle:	± 3°	
load capacity:	1 kg	

stand with motorized 75x50 table		**PL 1101**
XY positioning device		
Positioning area:	75 x 50 mm²	
Z positioning device		
max. / coarse positioning range:	70 mm	
fine positioning range:	1.9 mm	
levelling device		
tilting angle:	± 3°	
load capacity:	1 kg	

stand with motorized 100x100 table	**PL 1102**
XY positioning device Positioning area: 100 x 100 mm² **Z positioning device** max. / coarse positioning range: 70 mm fine positioning range: 1.9 mm **levelling device** tilting angle: ± 3° load capacity: 2 kg	

stand with motorized 150x150 table	**PL 1103**
XY positioning device Positioning area: 150 x 150 mm² **Z positioning device** max. / coarse positioning range: 70 mm fine positioning range: 1.9 mm **levelling device** tilting angle: ± 3° load capacity: 3 kg	

stand with motorized 200x200 table	**PL 1104**
XY positioning device Positioning area: 200 x 200 mm² **Z positioning device** max. / coarse positioning range: 70 mm fine positioning range: 1.9 mm **levelling device** tilting angle: ± 3° load capacity: 3 kg	

stand with motorized 300x300 table	**PL 1105**
XY positioning device Positioning area: 300 x 300 mm² **Z positioning device** max. / coarse positioning range: 70 mm fine positioning range: 1.9 mm **levelling device** tilting angle: ± 3° load capacity: 5 kg	

8 Measurement software

software package smartVIS3D	**SW 1001**
visualization of the camera image control of the piezo positioning device synchronization of camera and piezo system real time calculation of the 3d point cloud measuring mode VSI, EPSI fast autofocus adaptation of the scanning range start of MountainsMap macros for automated push button measurements and evaluation of predefined functionality data export lateral calibration functionality for objectives based on calibration standards with defined dot patterns control of motorized XY positioning device for stitching (MountainsMap® Imaging Topography computes the positioning data for stitching measurements)	

smartVIS3D DLL	**SW 1002**
library including all sensor functionality for integration in third party Windows software or for automation without graphical user Interface GUI C++ C#	

integrator support package	**SW 1003**
phone support network/internet support	

9 Analysis software and add-one modules

MountainsMap® Premium M8P	**MM 1101**
High-end surface metrology & analysis software compatible with all profile & areal surface measuring instruments (multi-instrument compatibility)	

MountainsMap® Imaging Topography M8P	**MM 1102**
Surface metrology & analysis software for areal optical profilometers measuring topography & intensity/colour images, confocal & focus variation microscopes & white-light interferometers	

Automotive M8P	**MM 1103**
Asses functional performance with a full set of 2D parameters	

Advanced Profile M8P	**MM 1104**
Advanced surface texture analysis for profiles	

Contour M8P	**MM 1105**
Basic geometric dimensioning & tolerancing of contour profiles	

Advanced Contour M8P	**MM 1106**
Advanced geometric dimensioning & full form deviation analysis	

Advanced Topography M8P	**MM 1107**
Advanced surface texture analysis for surfaces	

Fourier and Wavelets M8P	**MM 1108**
Advanced FFT-based and wavelets tools	

Colocalization M8P	**MM 1109**
Combines data from different instruments for correlative analysis	

4D Series M8P	**MM 1110**
Analysis of surface evolution with respect to time or any other physical dimension	

Particle Analysis M8P	**MM 1111**
Advanced analysis of structured surfaces	

Statistics M8P	**MM 1112**
Statistical analysis of measured data with support for static or dynamic populations	

GBS MountainsMap® add-on module honing structures (for cylinder inspection)	**AO 1001**
MountainsMap® add-on module for advanced evaluation of honing structures for cylinder inspection produced by the GBS mbH	

GBS MountainsMap® add-on module statistical evaluation of cavities	**AO 1002**
MountainsMap® add-on module for advanced statistical evaluation of cavities produced by GBS mbH	

10 Objectives

2.5x Nikon CF IC EPI Plan DI (Michelson)	**OB 1001**
working distance: 10.3 mm numerical aperture: 0.075	

5x Nikon CF IC EPI Plan DI (Michelson)	**OB 1002**
working distance: 9.3 mm numerical aperture: 0.13	

10x Nikon CF IC EPI Plan DI (Mirau)	**OB 1003**
working distance: 7.4 mm numerical aperture: 0.3	

20x Nikon CF IC EPI Plan DI (Mirau)	**OB 1004**

working distance: 4.7 mm numerical aperture 0.4	

50x Nikon CF IC EPI Plan DI (Mirau)	**OB 1005**
working distance: 3.4 mm numerical aperture: 0.55	

100x Nikon CF IC EPI Plan DI (Mirau)	**OB 1006**
working distance: 2 mm numerical aperture: 0.7	

115x / Olympus 100x **(Mirau, nominal magnification calculated relative to the Nikon objectives)**	**OB 1007**
working distance: 0.7 mm numerical aperture: 0.8	

11 Calibration Targets

Calibration target for 2,5x interferometry objective	**DM 1001**
diameter: 60 µm pitch: 120 µm	

Calibration target for 5x interferometry objective	**DM 1002**
diameter: 50 µm pitch: 100 µm	

Calibration target for 10x interferometry objective	**DM 1003**
diameter: 30 µm pitch: 60 µm	

Calibration target for 20x interferometry objective	**DM 1004**
diameter: 15 µm pitch: 30 µm	

Calibration target for 50x interferometry objective	**DM 1005**
diameter: 10 µm pitch: 20 µm	

Calibration target for 100x interferometry objective	**DM 1006**
diameter: 5 µm pitch: 10 µm	

factory calibration certificate	**DM 1007**
certificate for the average distance of dots (pitch) DM 1001 … DM 1006	

step height standard 230 nm		**DM 1101**
nominal step height:	230 nm	
certification:	optional factory or PTB certifications available	

step height standard 450 nm		**DM 1102**
nominal step height:	450 nm	
certification:	optional factory or PTB certifications available	

step height standard 20 µm		**DM 1103**
nominal step height:	20 µm	
certification:	optional factory or PTB certifications available	

step height standard 100 µm		**DM 1104**
nominal step height:	100 µm	
certification:	optional factory or PTB certifications available	

step height standard 200 µm		**DM 1105**
nominal step height:	200 µm	
certification:	optional factory or PTB certifications available	

factory certification certificate	**DM 1106**
certificated step height for DM 1101 … DM 1105	

PTB certification certificate	**DM 1107**
certificated step height for DM 1101 … DM 1105 tracible to national standards PTB: National Metrology Institute of Germany	

Surface combination standard Mahr MSS-3		**DM 1201**
nominal roughness values:	Ra 1 µm; Rz 3 µm; R max 3 µm uncertainty roughness: 3 %	
nominal step height:	Pt 12 µm	
uncertainty step height:	0.05 µm	
certification:	tracible DKD certificates	