

# SENSOFAR

# METROLOGY



## Large Area 3D Optical Metrology System



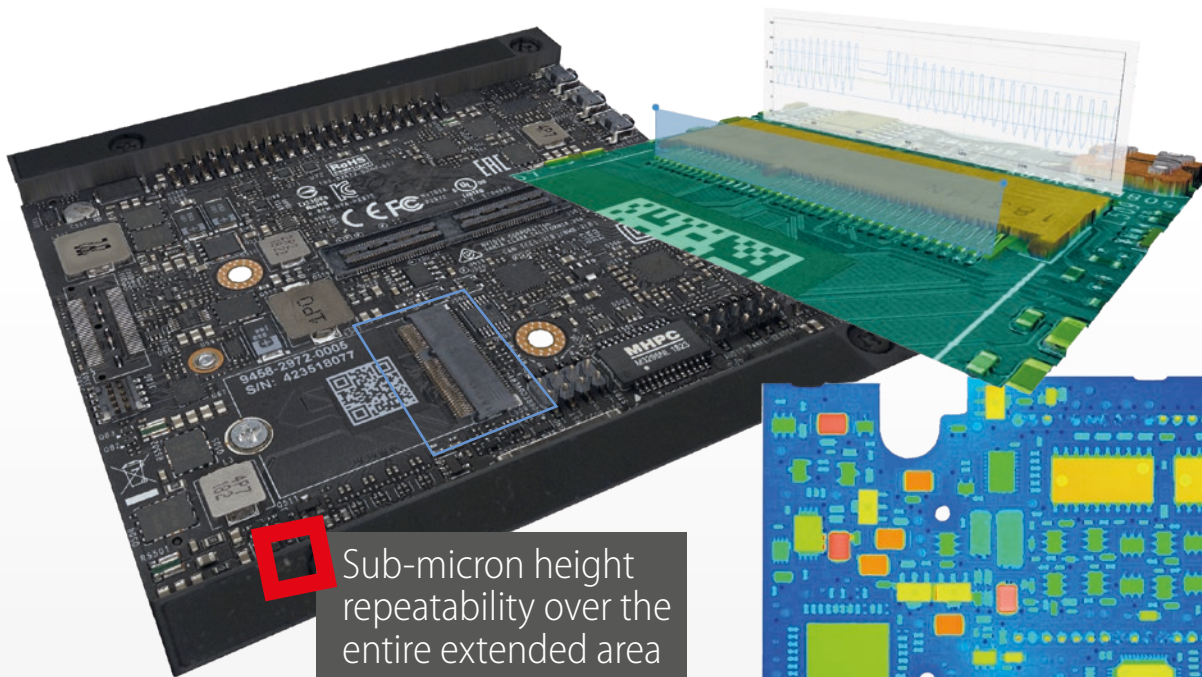
Surface Metrology

S

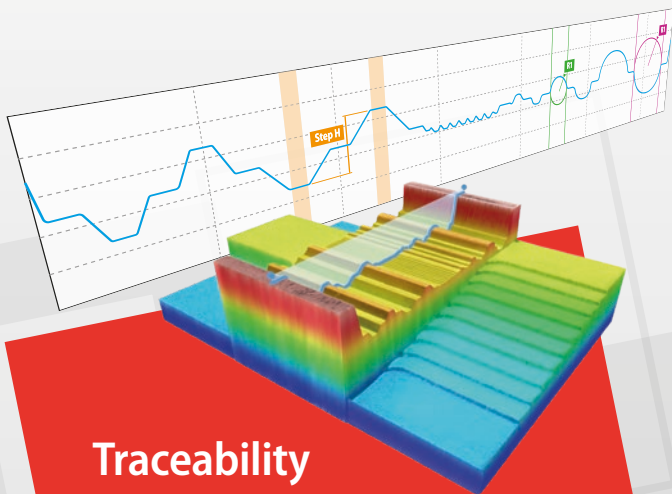
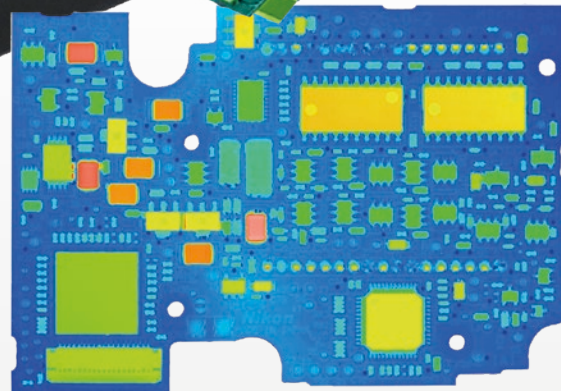
wide

# The next metrology tool for

The S wide is a dedicated system designed to rapidly measure large sample areas up to 300 x 300 mm. It provides all the benefits of a digital microscope integrated into a high resolution measuring instrument. Extremely easy-to-use with one single button acquisition.

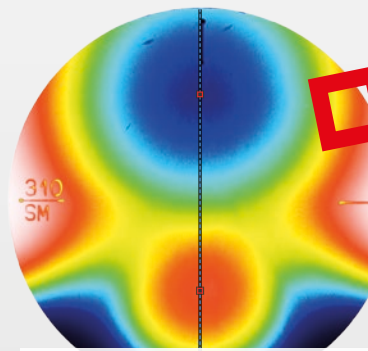


Sub-micron height repeatability over the entire extended area



## Traceability

Every S wide is manufactured to deliver accurate and traceable measurements. Systems are calibrated using traceable standards according to ISO 25178 and VDI 2634-2.



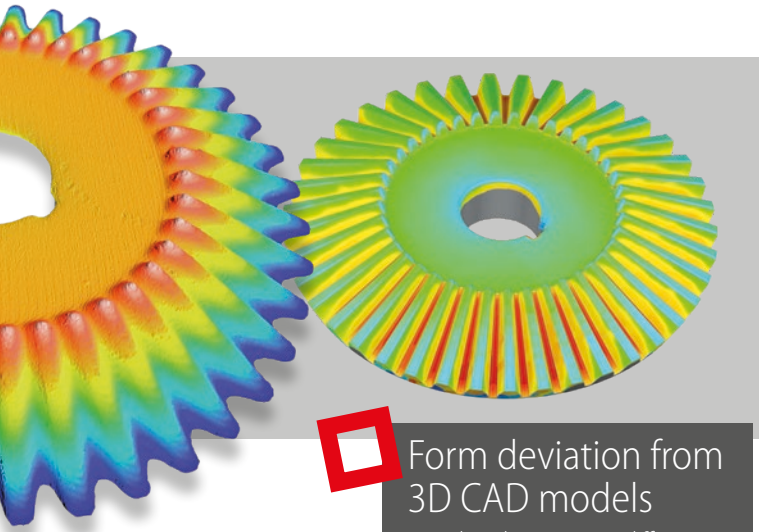
One shot height measurement up to 40 mm without Z scanning



$dL = 3.4358 \text{ cm}$   
 $dZ = 653.29 \text{ }\mu\text{m}$



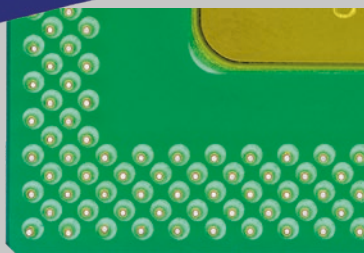
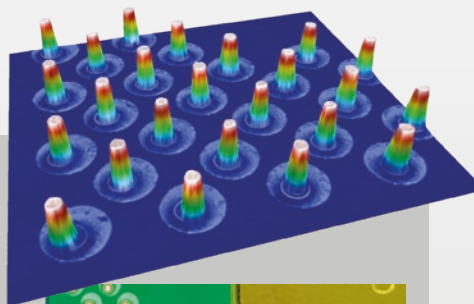
# wide areas



Form deviation from 3D CAD models providing the geometric difference and tolerance measurement

## Solutions

- Advanced manufacturing
- Archaeology & Paleontology
- Consumer electronics
- Medical devices
- Molding
- Optics
- Watch industry



Bi-telecentric lenses with very low field distortion providing accurate metrology

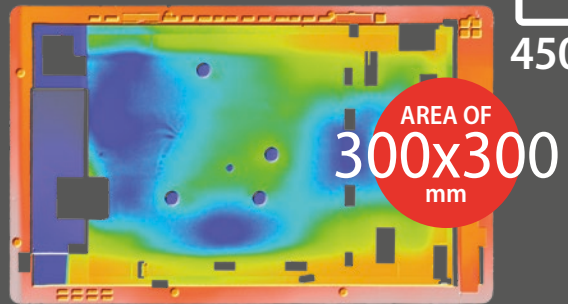
# Software

## SensoSCAN

Software drives the system with its clear, intuitive and user-friendly interface. The operator is guided through the 3D environment, delivering a unique user experience.

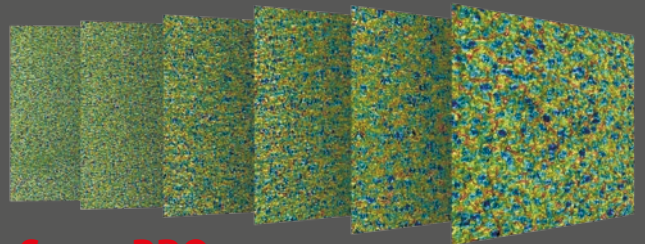
### EXTENDED MEASUREMENTS MODULE

SensoSCAN's extended measurements module allows the user to easily define the measurement layout. Wide areas of up to 450 million pixels are possible.



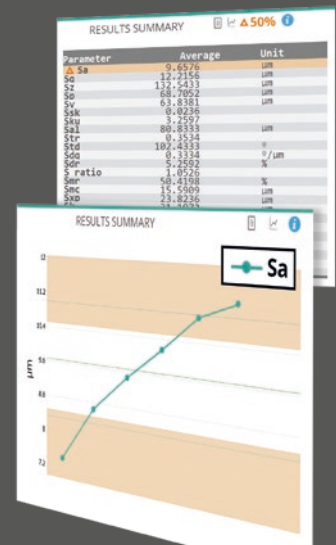
### AUTOMATED PROCEDURES MODULE

Automated measurements are obtained using the Recipes tool, which is a customizable way to create quality control procedures. It is extremely easy to define procedures for automating measurements with sample identification and automatic fiducial recognition.



## SensoPRO

It has never been so easy to perform rapid quality control on a production line. Thanks to SensoPRO, the operator only needs to load the sample and follow guided instructions to get "pass or fail" criteria. Plug-in-based data analysis algorithms provide a high degree of flexibility.



## System specifications

Measuring principle	Fringe Projection (Gray code & Slit, Gray code & Phase Shift)
Observation types	Bi-telescopic lens with 0.243X magnification and 0.015 NA
Color camera	5Mpx: 2448x2048 pixels (60 fps)
Total magnification (27" screen)	11X
Display resolution	0.001 $\mu\text{m}$
Max. Extended measuring area	300x300 mm with 10x12 stitched fields (Max. resolution 450 Mpx)
Vertical measuring range	10 mm (up to 40 mm)
XY stage range	Manual: 150x100 mm; Motorized: 154x154 mm, 302x302 mm
LED light sources	Green (530 nm) and blue (460 nm)
Ring light illumination	White
Sample weight	up to 25 Kg
Sample height	105 mm (standard); 280 mm (optional)
User management rights	Administrator, advanced operator, operator
Advanced software analysis	Included: SensoVIEW; Optional: SensoPRO, SensoMAP, Geomagic®
Power	Line Voltage 100-240 V AC; frequency 50/60 Hz single phase
Computer	Latest INTEL processor; 3840x2160 pixels resolution (4K) (27")
Operating system	Microsoft Windows® 10, 64 bit
Weight <sup>4</sup>	55 Kg (121 lbs) table-top system; 8 Kg (18 lbs) integrable head
Environment	Temperature 10 °C to 35 °C; Humidity <80 % RH; Altitude <2000 m

## Objective lenses

	FRINGE PROJECTION
MAG	0.243X
NA	0.015
WD (mm)	80
FOV <sup>1</sup> (mm)	34.7 x 29.1
Spatial sampling <sup>2</sup> ( $\mu\text{m}$ )	14.2
Optical resolution <sup>3</sup> ( $\mu\text{m}$ )	9.35

## Accuracy and repeatability

Standard	U, $\sigma$
Step height	U = 2.5 $\mu\text{m}$ , $\sigma$ = 0.05 $\mu\text{m}$
Area roughness (Sa)	U = 1 $\mu\text{m}$ , $\sigma$ = 0.01 $\mu\text{m}$
Profile roughness (Ra)	U = 1 $\mu\text{m}$ , $\sigma$ = 0.05 $\mu\text{m}$

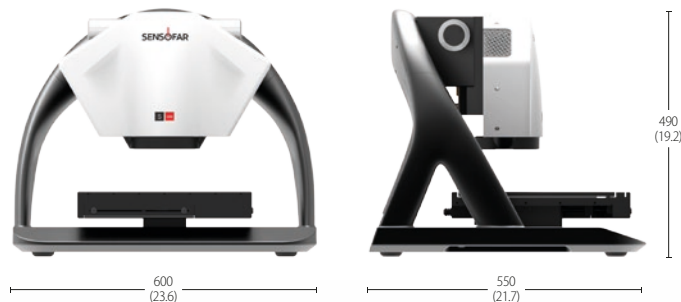
**1** Maximum field of view with 3/2" camera. **2** Pixel size on the surface. **3** L&S: Line and Space. Values for blue LED. **4** Adjustable stand with H105 XY Stage.

Since 2007, Sensofar has been member of the Technical Committee of the International Organization for Standardization (ISO/TC213 WG16).



## Dimensions

mm (inch)



# SENSOFAR

# METROLOGY

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