

# SENSOFAR

METROLOGY



Gateway to  
high-end metrology



Compact 3D Profiler

# Simplified high



# performance



## High-speed versatility

Collect and analyze data with exceptional speed—that is the goal of the S lynx 2. It ensures maximal data capture by featuring three distinct measuring techniques – Interferometry, Confocal, and Ai Focus Variation – each faster than the last. Thrive in your data analysis using the full power of your PC as acquisition calculations are performed in the sensor head.



## Practical operability

Explore the comfort of an effortless system. This bench-top system combines manual and motorized components, making recurring tasks like finding the focus, leveling, and navigating your sample easier than ever. Sensofar's systems also come with best-in-class longevity, facilitating your work for the years to come.



## Compact convenience

The small size and compact design of the system allow it to fit into the tightest spaces of your lab or production floor. Moreover, setting up the S lynx 2 is incredibly easy, thanks to its plug-and-play configuration and flexibility to run with any PC.



## It's a Sensofar!

The S lynx 2 is part of the Sensofar ecosystem, inheriting our wealth of technical expertise developed for optical area profilers. Additionally, we have built a powerful suite of analysis software and a user portal full of resources.

# Precision across every surface

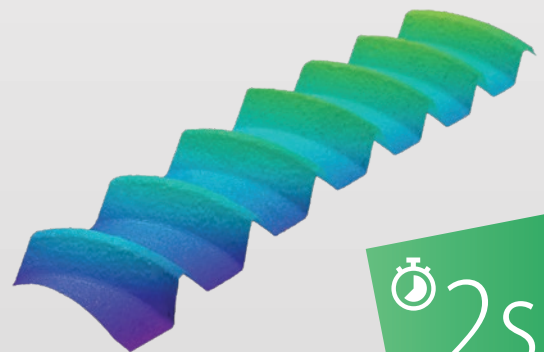
## Use the best acquisition technology

The S lynx 2 is equipped with three very powerful measuring techniques: Ai Focus Variation, Confocal, and Interferometry. This dynamic trio allows for data collection across a wide range of materials using the optimal technology for every surface, guaranteeing unparalleled measurement accuracy.

**Fast scan, fast analysis**



Throughput is important. That is why this system is designed for lightning-fast measurements across every measuring technology. Plus, the acquisition calculations are executed within the sensor head, allowing the PC's full power to be utilized for the data analysis.



**Ai Focus Variation**



2s

			
	Ai Focus Variation	Confocal	Interferometry

Shapes or micrometric roughness



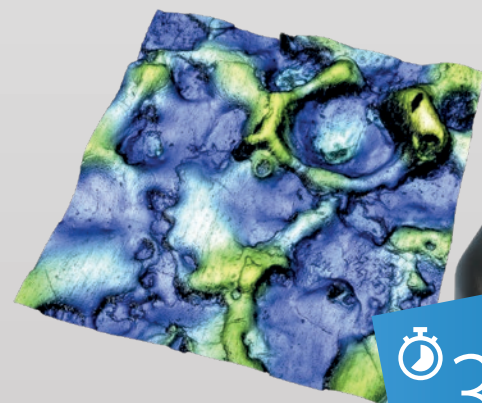
Hybrid surfaces or miniaturized shapes



Nanometric roughness and features



Thickness measurements



**Confocal**



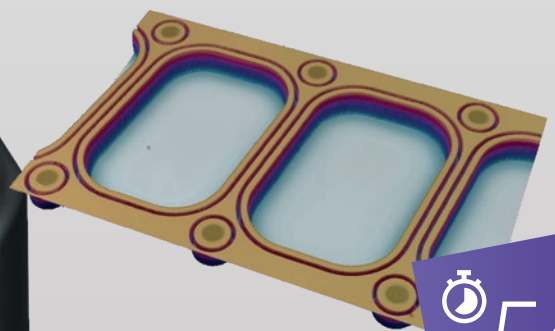
3s



## Two interferometric techniques, one system

**Extended Phase Shifting Interferometry (ePSI)** achieves measurement noise levels of 0.1 nm, making it the ideal technique for super-smooth surfaces that include steps, slopes, or patterned areas.

**Coherence Scanning Interferometry (CSI)** utilizes white-light illumination. It is particularly well-suited for larger or more irregular areas, where the surface may be discontinuous, rough, or variable in height, thereby providing robust measurements of shape and texture.

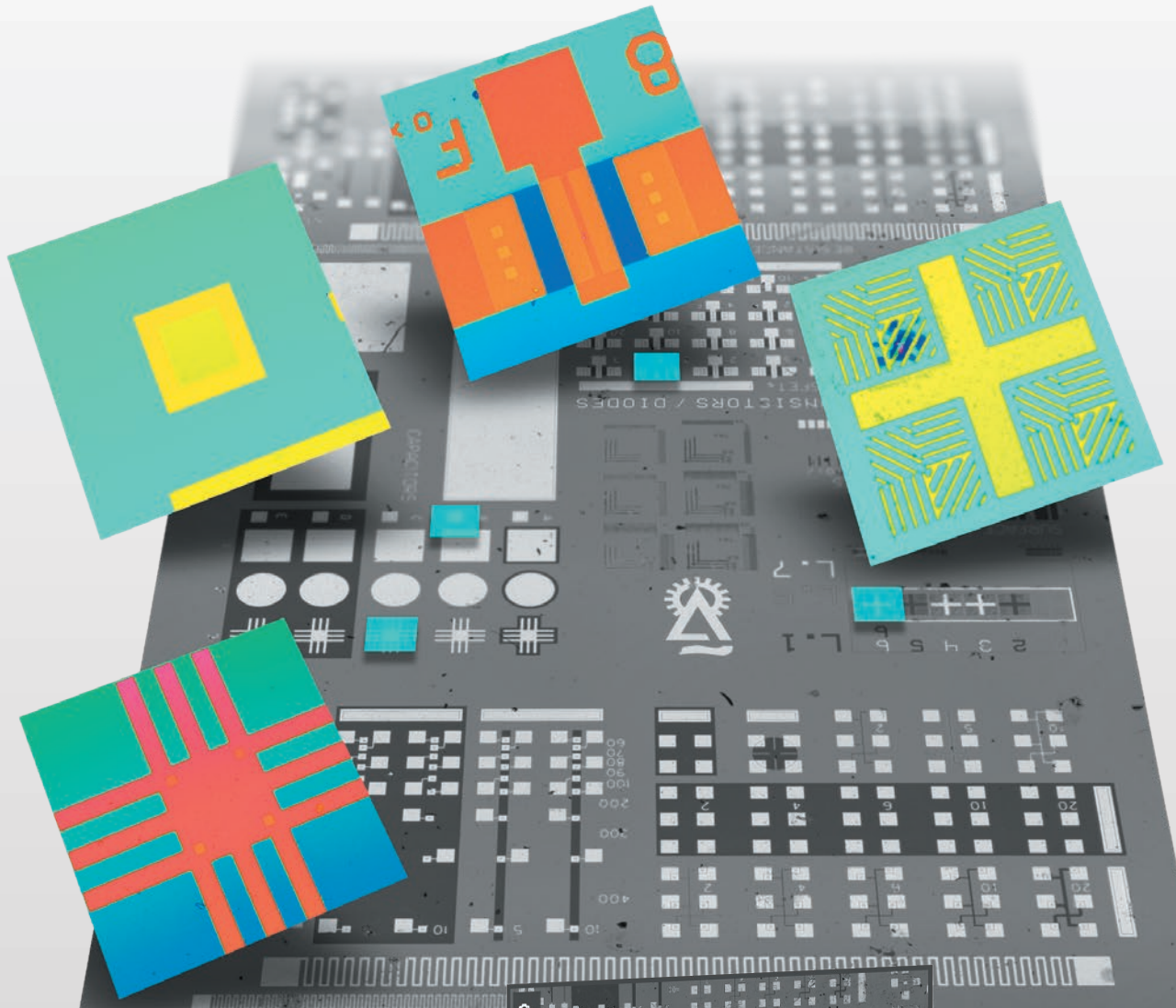


Interferometry



5s

# Streamlined file



## Boost efficiency, get reliable results

Using APM eliminates repetitive manual actions, delivering consistent and reliable results with increased efficiency. Ideal for patterned samples or workflows that require repeated measurements.

section mmm.MMR

MMR | User Selected

Name: section mmm.MMR  
Description:

Total # measurements: 4

#	X Abs.	Y Abs.	Z Abs.
1	-10.1185	5.7828	-8.0817
2	-9.7855	6.8393	-8.0817
3	-8.5462	8.3183	-8.0818
4	-7.2427	6.0412	-8.0840

+ ADD POSITION

# xibility

## Automation that adapts to your workflow

The Automated Procedures Module (APM) allows users to define, control, and execute complex measurement procedures automatically.

## Large extended measurements

The advanced stitching capabilities allow you to capture high-resolution data over larger areas. Our innovative algorithms cover the entire motorized stage range, spanning an impressive 125 x 75 mm for the system's compact size.



# Our mos

Discover how easily our bench-top system balances cutting-edge and timeless components, integrating manual and motorized elements for practical excellence.

## Easy focusing across variable sizes

Easily fit and focus on samples with an adjustable column accommodating up to 100 mm of movement. Achieve precision and fine-tuned focus for even the smallest samples with the 20 mm travel range of the motorized Z stage.

## Extended lifetime

As a result of using LEDs as light sources and requiring no moving mechanisms for imaging, the S lynx 2 operates smoothly without consistent maintenance efforts, extensive calibration, or regular replacements.



# st practical approach



## Simplified sample positioning

Effortlessly place and navigate your samples with the motorized XY stage, with a travel range of 125x75 mm, and easily level them using a tip-tilt stage perfectly aligned to the optical axis.

## Expanded imaging capabilities

Experience what is possible by switching between objective lenses at any time during operation using a 6-position motorized nosepiece. Select from a wide range of compatible lenses, including specific options with super long working distances and water immersion capabilities.



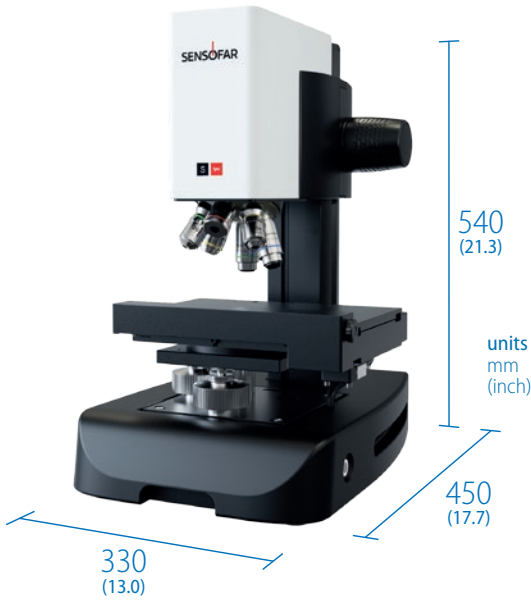
**Compact  
dimensions**

Its small size and compact design let you place the system anywhere on your production floor or laboratory.

# Adaptable to your needs

Experience hassle-free setup with the S lynx 2. Easily find a place for it, as no extra components are under the table. Get it up and running by simply connecting two cables between the profiler and the PC.





## Tailor your acquisition experience

SensoSCAN ML, the software running the S lynx 2, gives the possibility to customize the acquisition interface. Simply display the critical settings for your samples.



## PC flexibility

Operate the S lynx 2 seamlessly with the computer system of your choice. Whether you opt for our recommended PC configuration or leverage your own, the flexibility is yours to tailor the setup that precisely matches your requirements.



## Ready for any operator level

Discover the versatility of SensoSAR ML with three distinct operator levels. Unlock advanced capabilities such as calibration and recipe modification at the highest level while restricting lower levels to predefined recipes and acquisitions.

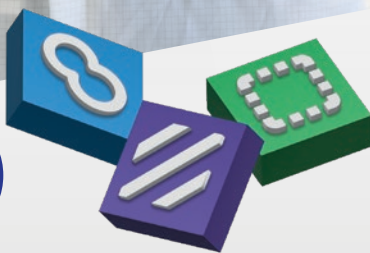
# It's a Sensofar

Owning a Sensofar system is not just having a high-end optical profilometer; it is your ticket to unlocking a world of tools and content, empowering you to fully engage with the process of surface characterization.



## Sensofar ecosystem

As part of our Sensofar community, you have access to all our software analysis options, helping you find the perfect solution. Additionally, we offer an interconnected software suite for comprehensive characterization.



## Metrology excellence

Our commitment to metrology pushes us to pursue the closest representation of a real surface. That is why every Sensofar product measures areas and follows ISO 25178 standard, providing a truly reliable instrument for surface characterization.

## System validation package



Every S lynx 2 system undergoes rigorous calibration, validation and verification of its metrological characteristics to ensure traceable and accurate measurements.

# SENSOFAR



AUTOMATIC  
3D

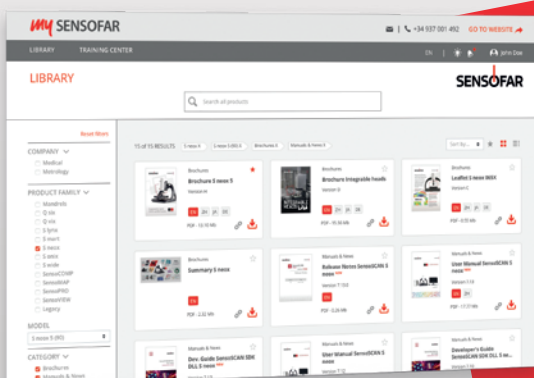
## Intuitive user experience

Sensofar's software is designed with a very intuitive interface, reducing training time. The interface of every Sensofar software package is consistent. Once you learn how to navigate one Sensofar program, you can effortlessly navigate them all.

## Helper acquisition mode

Our systems have a special feature called 3D auto that measures any in-focus sample by iteratively searching for suitable measurement settings. It provides users with the sample's topography with the maximum measured points. Plus, users can see and learn the measuring settings previously identified.

**my** SENSOFAR



Discover an extensive collection of exclusive content on our online portal designed to help you use and learn about your system. MySensofar offers a range of resources, including manuals and white papers tailored to specific applications. Benefit from our 20+ years of metrology expertise in the optical field, all conveniently accessible in one place!



# SensoVIEW

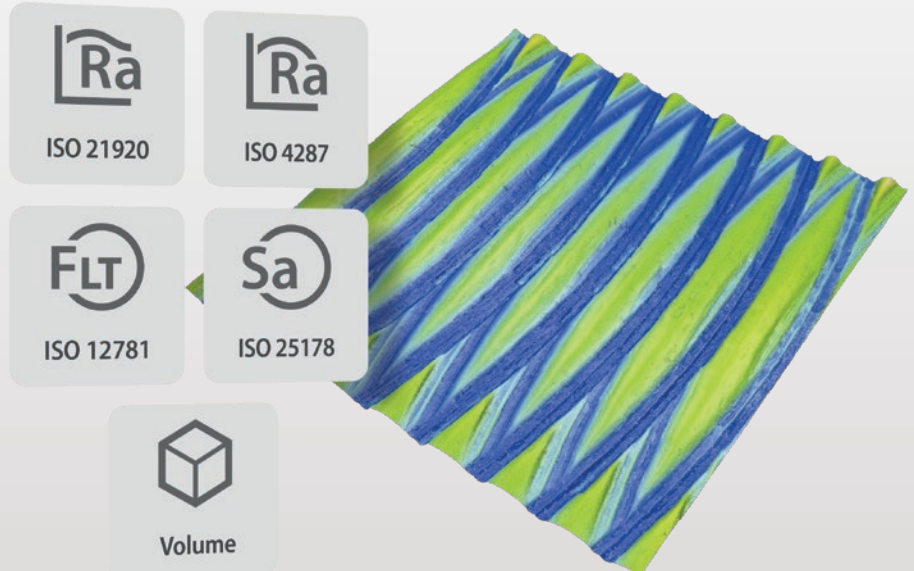
## Broadening analysis horizons

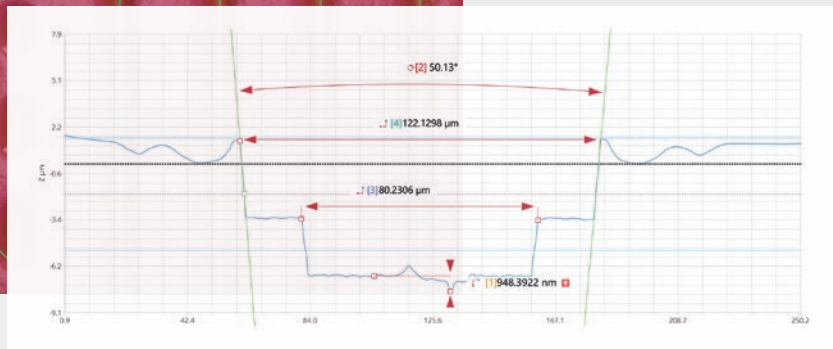
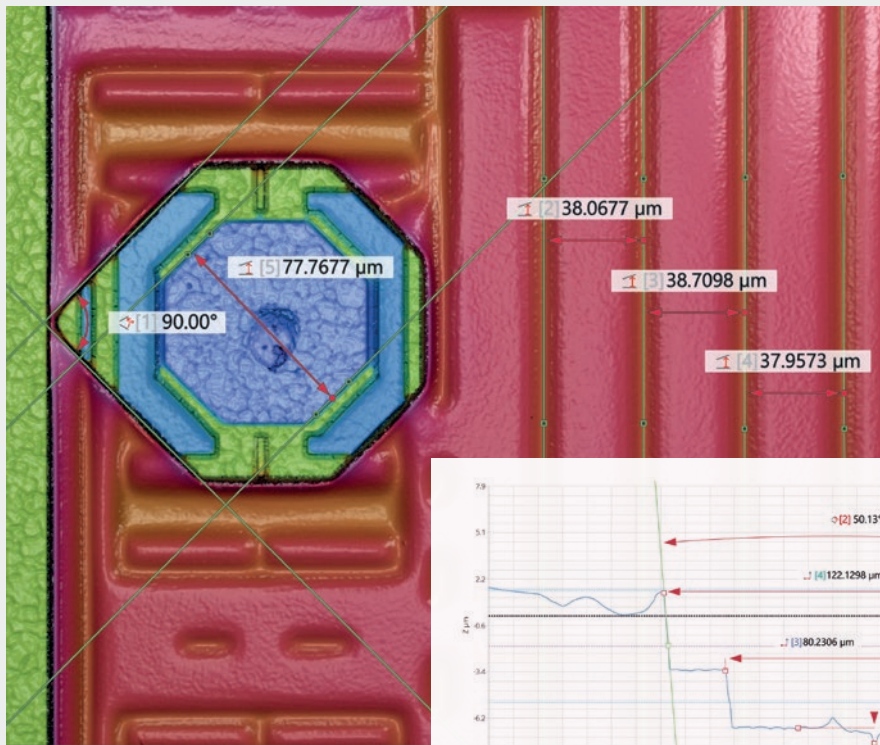


SensoVIEW is the ideal analysis software for a wide range of tasks. It features a complete toolkit for preparing and extracting data from both 2D and 3D datasets.

### Surface characterization

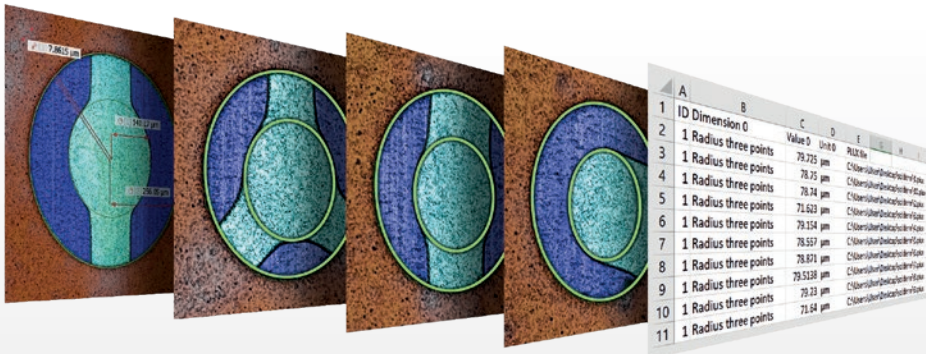
SensoVIEW provides dedicated operators with a user-friendly, step-by-step interface for extracting flatness and surface texture parameters, following the corresponding ISO standards, volume calculations, and more.





## Dimensional measurements

A variety of tools for critical dimensions are available for contour and profile views. Each one is equipped with an auto-adjustment feature and the capability to incorporate tolerances, ensuring a thorough dimensional analysis.



## Analysis templates



Templates can be created from any performed analysis, storing all the processes applied: data modifiers, surface texture operators, critical dimensions, and reporting preferences.

## Customizable reports

Discover SensoVIEW's flexible reporting to present your results in clean, well-structured documents.



Tailor headers and footers to your taste



Select the content you want in your report



Choose the style to display your results



Edit your template to personalize it further

# Rapid Quality Control



**Automatic recognition of the features of interest**



**Analysis of a massive datasets (>100 files)**



**One second processing time per file**



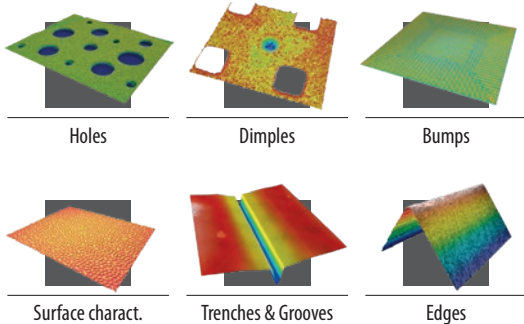
**Configurable processing settings and parameters**



**Command line available for external SensoPRO integration**



**Pass/Fail reports based on predefined tolerances**



## Guide tool for the QC manager

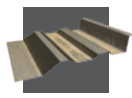
SensoPRO additionally includes a guiding assistant that simplifies establishing tolerances and highlights the parameters that can distinguish between different data sets for enhanced production control.

## Generic plugins

An extensive collection of general plugins addresses common structures and shapes encountered in surface characterization, offering efficient solutions for surface analysis.



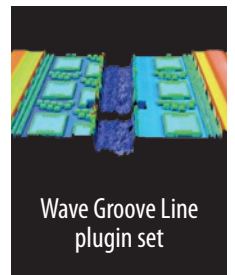
Traces



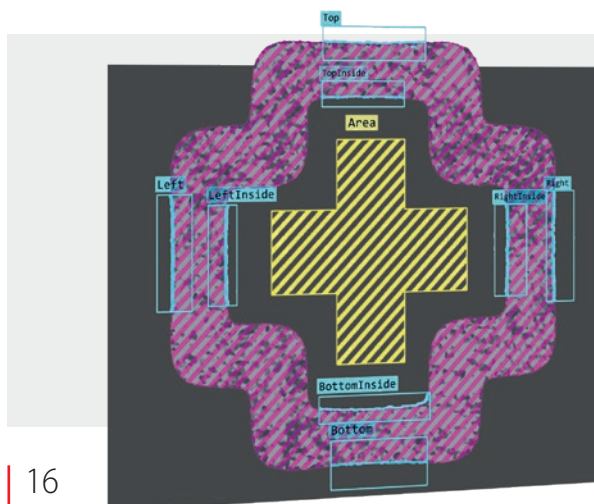
Step height

## Custom plugins

What sets SensoPRO apart is its ability to fulfill custom requirements. With over 60 plugins developed, SensoPRO has covered the distinctive needs of applications that demand complete automated analysis.



Wave Groove Line plugin set



## Draw your own analysis recipe – in a plugin style

With PROcanvas, you control every step: detect, measure, calculate, and automate. Turn complex analyses into a personalized, repeatable workflow that fits your needs.

# SensoCOMP

# 3D inspection made easy

SensoCOMP is Sensofar's 3D inspection software for dimensional analysis and CAD-based comparison. It allows users to validate and compare 3D measurements using intuitive tools, cross-section analysis, and tolerance-based evaluations.



### Compare CAD to measurement

Compare CAD to measurement 2D and 3D deviation mapping against nominal models.



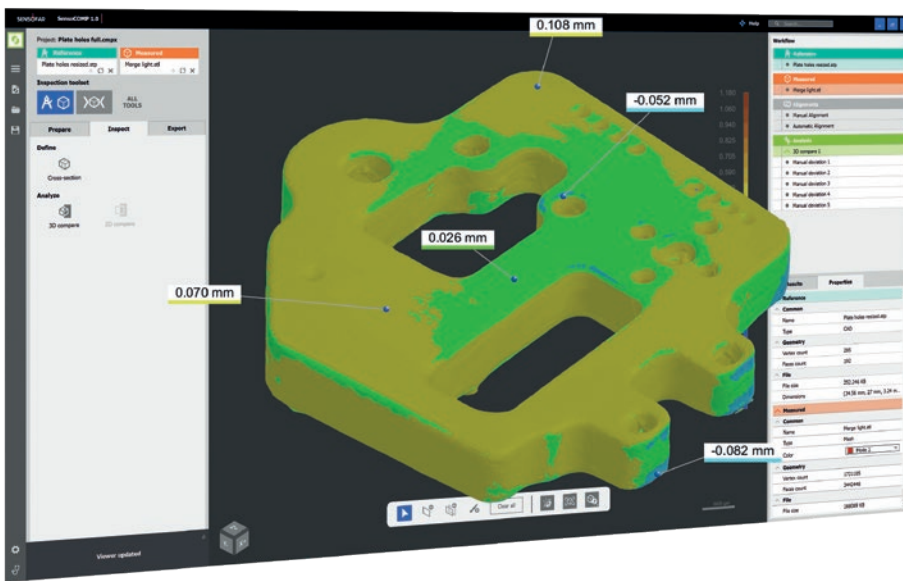
### Analyze cross-sections

Measure dimensions like distances, diameters and angles.



### Apply tolerance limits

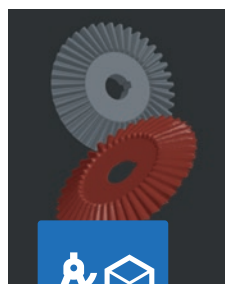
Pass/fail evaluation of dimensional features.



## Guided design

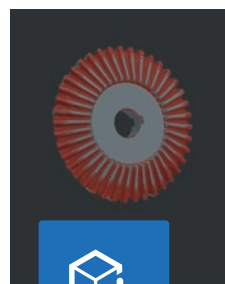
Step-by-step inspection workflow, built for metrology

SensoCOMP has been developed to lead users through the inspection process with clarity and control. Whether you are a metrology expert or inspecting for the first time, the software follows a clean four-step workflow.



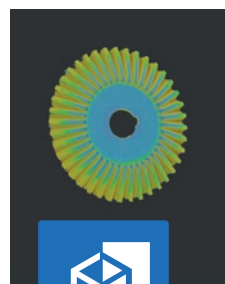
### Import your data

Load CAD models, point clouds, or mesh data, including native Sensofar's .plux files.



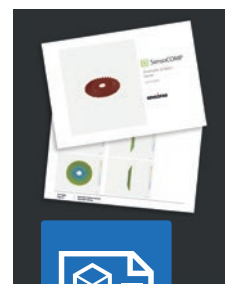
### Prepare your setup

Align CAD and measurement data manually or automatically, apply filters, and define ROIs.



### Inspect your part

Compare complex geometries, extract cross-sections, apply dimensional evaluations, and visualize deviations.

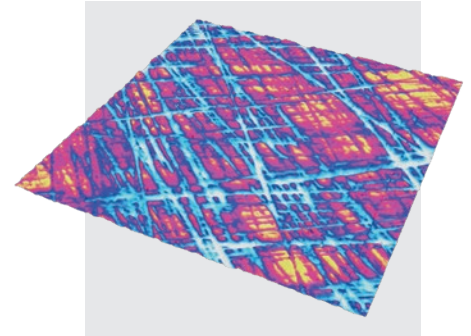


### Export your results

Generate reports, and deviation maps — ready for documentation or traceability.

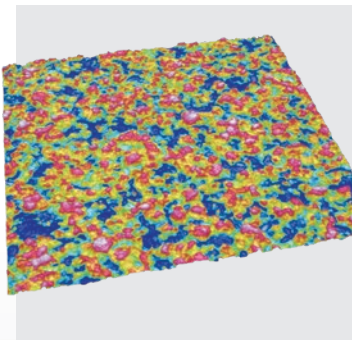
# Applications

The S lynx 2 is a general-purpose system that fulfills multiple applications in diverse settings, including manufacturing and research requirements. Discover some real-world examples:

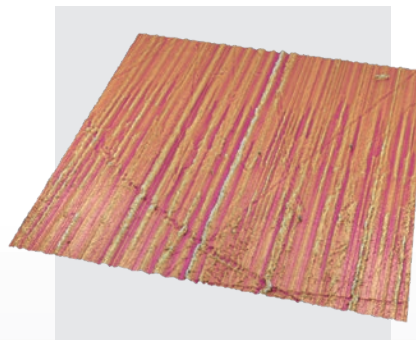


AEROSPACE  
Cylinder liner

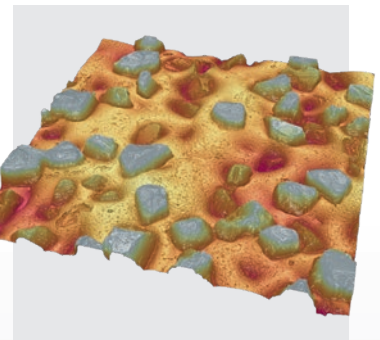
## Surface texture characterization



CONSUMER ELECTRONICS  
Copper substrate



MEDICAL DEVICES  
Knee implant



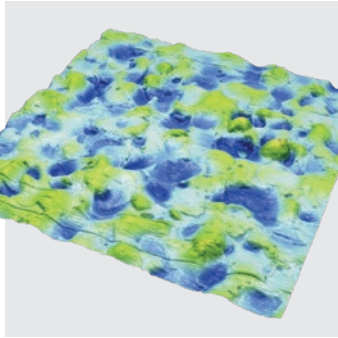
ADVANCED MANUFACTURING  
Grinding tool

## System specifications

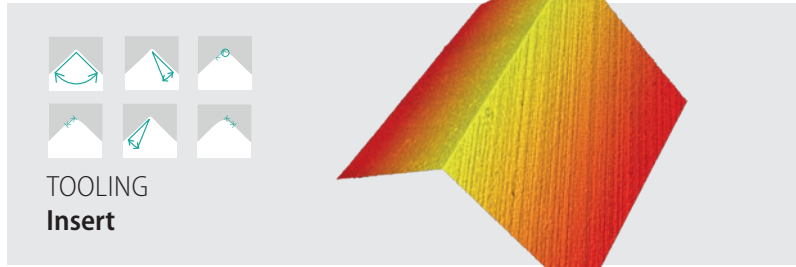
Measuring principle	Confocal, CSI, ePSI and Ai Focus Variation
Measurement types	Image, 3D, 3D thickness
Confocal frame rate	60 fps
Range of magnifications	2.5X - 100X
Field of view	From 0.14 to 5.6 mm (single shot)
Z stage travel range	20 mm
Max. Z measuring range	Confocal & Ai Focus Variation 12 mm; CSI 1 mm; ePSI 0.4 mm
XY stage range	Motorized 125x75 mm
Max. Extended measurement area <sup>1</sup>	125x75 mm
Tip-tilt stage	Manual up to $\pm 4^\circ$ of tilting
LED light sources	Blue (460 nm); white (580 nm); center)
Nosepiece	6 position fully motorized
Sample reflectivity	0.05 % to 100%
Sample weight	Up to 3 kg

Sample height <sup>2</sup>	Up to 100 mm
User management rights	Administrator, advanced operator, operator
Advanced Software Analysis	Inc: SensoVIEW; Op: SensoPRO, SensoMAP
Computer requirements	Intel Core i5/i7 processor, Ethernet connectivity, minimum 1920 x 1080 display resolution
Operating system	Microsoft Windows 10 or higher
Dimensions	330x450x540 mm
Weight <sup>3</sup>	34 kg
Power	Line Voltage 100-240 V AC; frequency 50/60 Hz single phase
Environment	Temperature 10 °C to 35 °C; Humidity <80 % RH; Altitude <2000 m

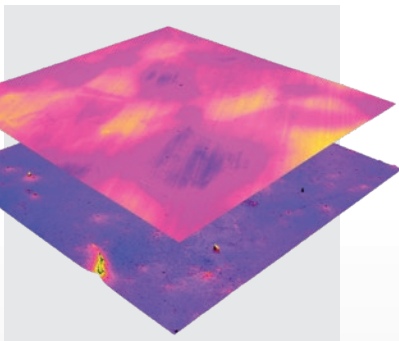
## Dimensional measurements



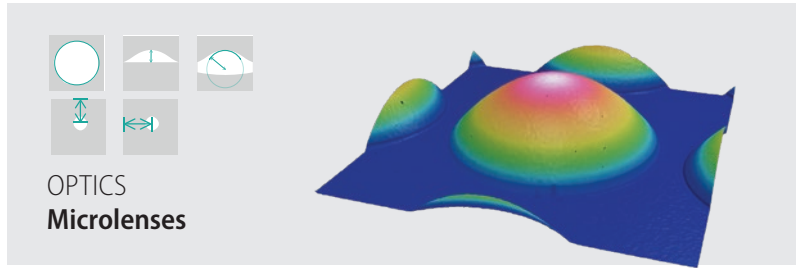
ADVANCED MANUFACTURING  
Molding



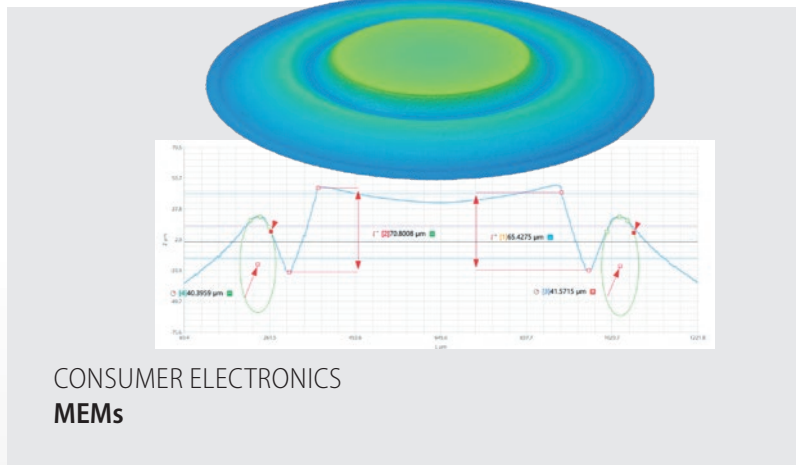
TOOLING  
Insert



AUTOMOTIVE  
Battery film



OPTICS  
Microlenses



CONSUMER ELECTRONICS  
MEMs

## Objective lenses

### Brightfield

### Interferometric

Magnification	5X BF	10X BF	20X BF	50X BF	100X BF	2.5X TI	5X MC	10X MC	10X MR	20X MC	20X MR	50X MR	100X MR
NA	0.15	0.30	0.45	0.80	0.90	0.075	0.14	0.10	0.28	0.10	0.38	0.50	0.70
WD (mm)	20.00	15.80	3.00	1.00	1.00	10.30	13.00	25.00	8.00	16.70	6.00	3.60	2.00
FOV <sup>4</sup> (μm)	2826 x 2826	1413 x 1413	707 x 707	283 x 283	141 x 141	5652 x 5652	2826 x 2826	1413 x 1413	1413 x 1413	707 x 707	707 x 707	283 x 283	141 x 141
Spatial sampling <sup>5</sup> (μm)	2.76	1.38	0.69	0.27	0.14	5.52	2.76	1.38	1.38	0.69	0.69	0.27	0.13
Optical resolution <sup>6</sup> (μm)	0.94	0.47	0.31	0.18	0.16	2.34	1.25	1.75	0.63	1.75	0.46	0.35	0.25
Measurement noise <sup>7</sup> (nm)	120	45	10	4	3	CSI < 1 nm, ePSI < 0.1 nm							
Maximum slope <sup>8</sup> (°)	9	17	27	53	64	4	8	6	16	6	22	30	44

## Accuracy and repeatability<sup>9</sup>

Standard	Value	Uncertainty (U)	Repeatability (σ)	Technology
Step height (H)	< 10 μm	U = (0.005 + H/50) μm	< 10 nm	Confocal, Ai FV and CSI
	> 10 μm	U = (0.120 + H/120) μm	> 10 nm	Confocal, Ai FV and CSI
Area roughness (Sa)	0.79 μm	40 nm	6 nm	Confocal, Ai FV and CSI

**1** With the 2.5XTI objective. **2** Size for top positions of the regulable column and motorized Z stage. **3** Without objectives, or antivibration table. **4** Maximum field of view with 2/3" camera and 0.25X optics. **5** Pixel size on the surface. **6** L&S: Line and Space, half of the diffraction limit according to the Rayleigh criterion. Values for blue LED in brightfield objectives and for white LED in interferometric objectives. **7** Values are assessed through repeated measurements on a reference standard performed under environmentally controlled conditions in accordance with Sensofar's metrology protocols. **8** On smooth surfaces. Up to 72° on rough surfaces. Other objectives are available. **9** Values obtained in a VC-E vibration environment. Objective used for Confocal and Ai Focus Variation 50X 0.80 NA and for CSI 50X 0.50 NA. Resolution 1024x1024 pixels. Extended uncertainty (U) according to ISO/IEC guide 98-3:2008 GUM:1995, K=1,96 (level of confidence 95%). σ according to 25 measures.



SENSOFAR is a leading-edge technology company that has the highest quality standards within the field of surface metrology

Sensofar provides high-accuracy optical profilers based on confocal, interferometry, and focus variation techniques, from standard setups for R&D and quality inspection laboratories to complete non-contact metrology solutions for in-line production processes. The Sensofar Group has its headquarters in Barcelona, a European technology and innovation hub. The Group is represented in over 30 countries through a global network of partners and has its own offices in Asia, Germany, and the United States.

#### HEADQUARTERS

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