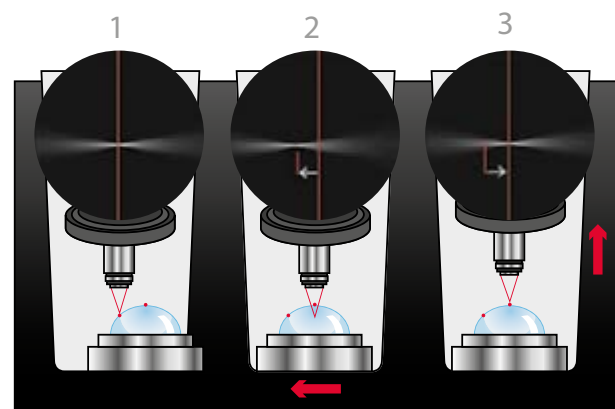


Non-contact 3D metrology for aspheric and free-form optics

Confocal Tracking

The measurement principle is based on Sensofar's proprietary algorithm Confocal tracking. Using structured illumination and high numerical aperture microscope objective allows a very precise determination of sample focus. Once precise focus has been determined the sample is moved along the horizontal axis while the sensorhead executes a coordinate move along the vertical axis to keep the sample in focus. The sample profile is reconstructed by coupling the movement of the horizontal and vertical axis.



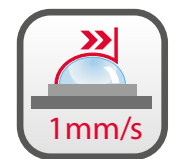
Measurement sequence



Automatic lens center finding tool



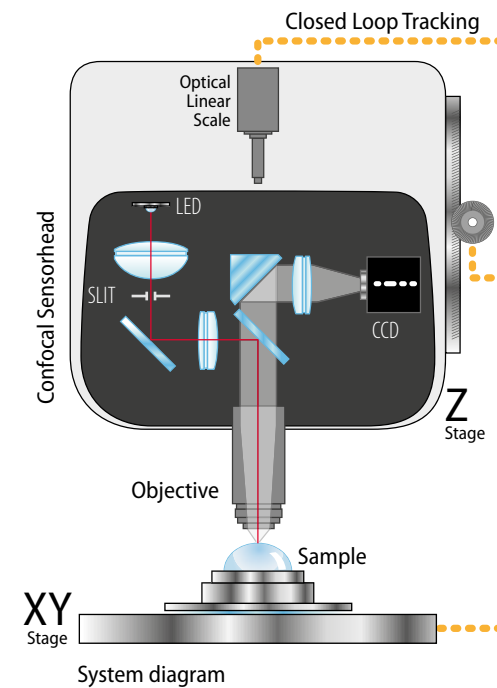
Tilt alignment



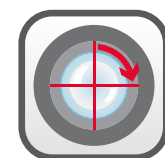
Fast measurement across the sample (1mm/s typical)



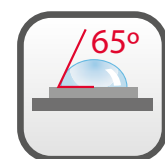
PLu apex is able to measure any optical surface from aspheric to flat or free-form optics. Its innovative design, based on Sensofar's core technology, confocal profilometry, allows a non-contact and high precision measurement.



3D measurement



Automatic 0/90° measurement



Ability to measure up to 65° slope

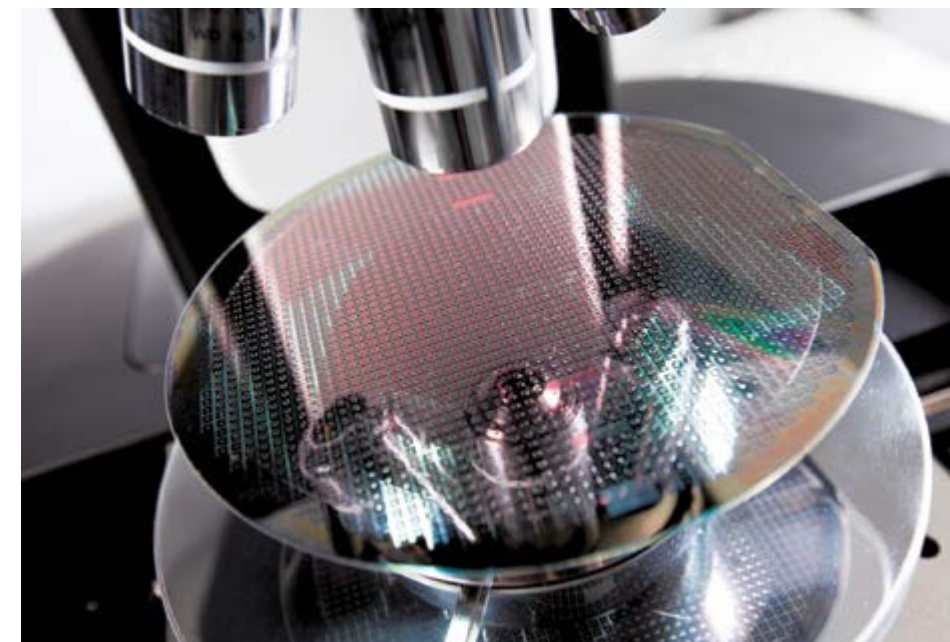
Applications

Non-contact metrology plays a key role in aspheric and free-form optics manufacturing industries, either in machined optics and molds or molded optics applications.



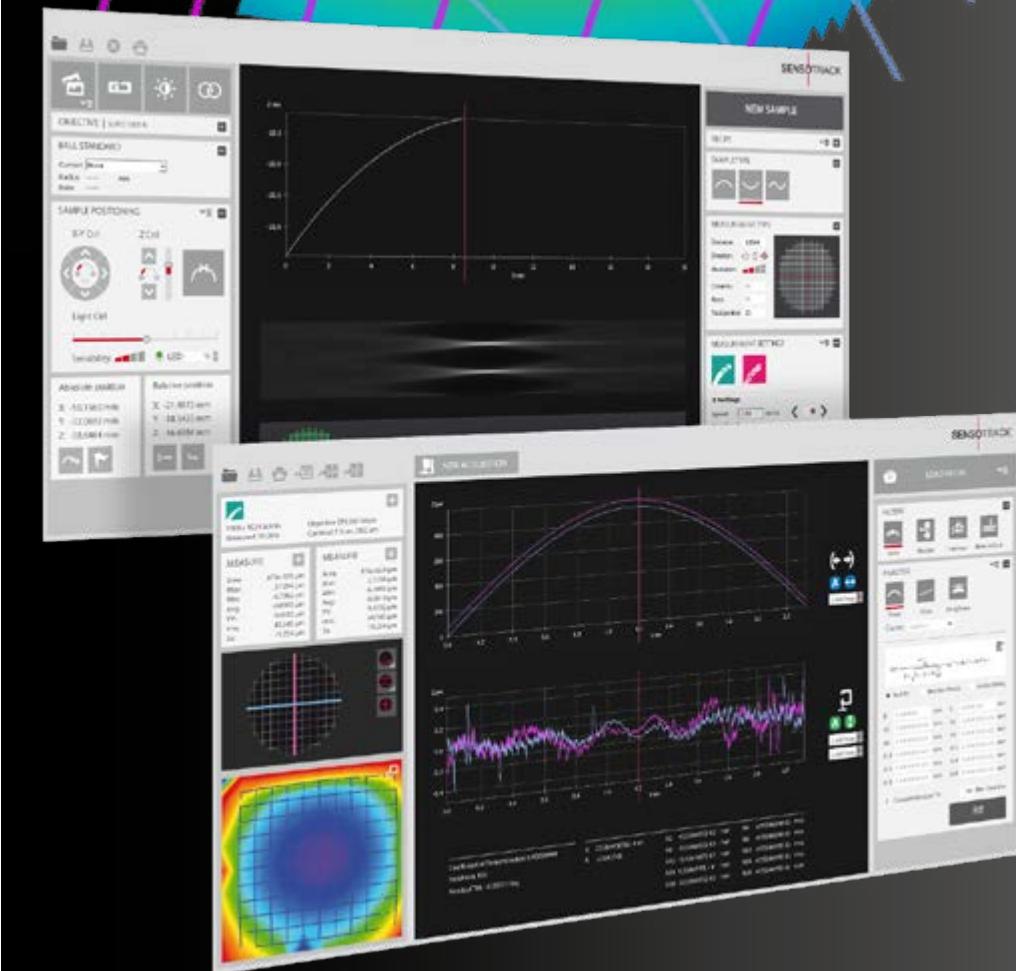
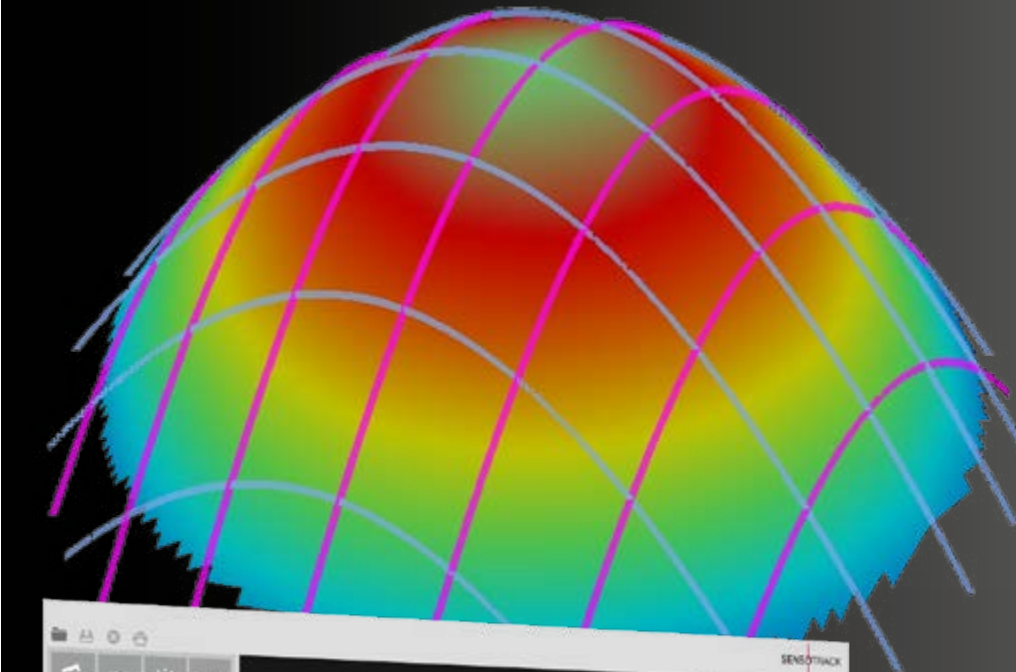
Machined optics & molds

- ➔ Astronomical instrumentation
- ➔ Digital cameras and projector lenses
- ➔ Photolithography



Molded optics

- ➔ Blu-ray and DVD lenses
- ➔ Smartphone and tablet camera lenses
- ➔ Optical fiber connector lenses
- ➔ Contact and intraocular lenses



Software SensoTRACK



Powerful curve analysis software

SensoTRACK software provides a user-friendly interface simplifying sample measurement and a basic set of tools for displaying and analyzing data. It also assists the user when aligning the sample for measurement. A powerful analysis module provides form assessment with respect to a design or a reference form.

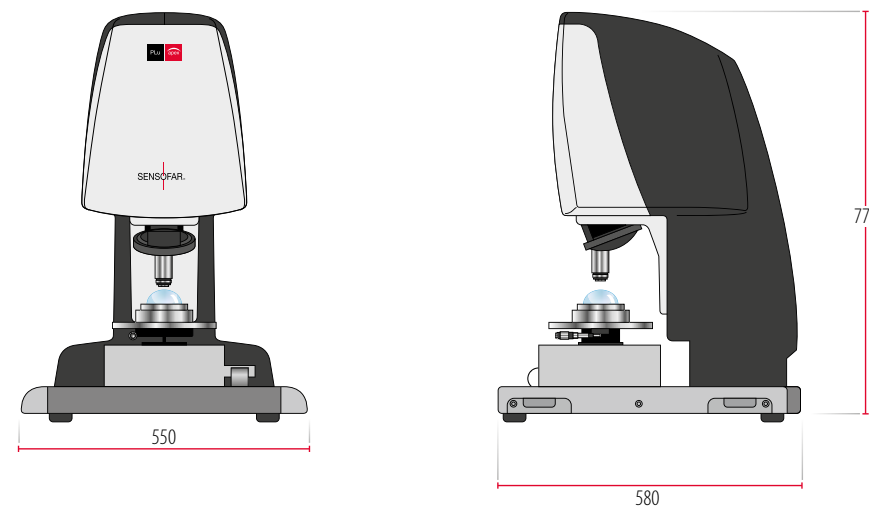
Specifications

Displacement Range	XY: 100 x 100 mm Z: 50 mm
Camera	GigE CCD 768x576 pixels @ 50 Hz
Light source	Green LED
Measurement objectives	10X – 100X
Measurement length (XY)	0.1 – 100 mm
Measurement range (Z)	Up to 50 mm ^{(1) (2)}
Measurement speed	0.01 – 1 mm/s
System noise	1 nm
Radius uncertainty	< 0.01 %
Form accuracy	< 100 nm ⁽³⁾
Sample	Maximum Weight: 15 Kg Maximum Height: 50 mm
System	Dimensions: 550 x 580 x 770 (W x D x H) Power: 115/230V AC
Anti-vibration system	Passive air isolation ⁽⁴⁾
Environment	Temperature: 20 °C
Operating System	Microsoft Windows 7
Measurement type	2D, XY cross 2D, 3D
Software capabilities	Powerful curve analysis, export data in txt, advanced reporting
Tip-tilt	Manual or Motorized

¹ See objectives table ² Sample geometry dependent
³ Typically smaller than 50 nm ⁽⁴⁾ optional

Dimensions

(units: mm)



Objectives

	Working distance	Numerical aperture	Max. slope
100x EPI 0.95	0.3 mm	0.95	± 65°
100x EPI	1.0 mm	0.90	± 60°
100x LWD	2.0 mm	0.90	± 60°
100x ELWD	4.5 mm	0.80	± 45°
100x SLWD	10.0 mm	0.60	± 35°



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

Sensofar Metrology 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. Sensofar Metrology offers technology that enables our customers to achieve real breakthroughs, particularly in semiconductor, precision optics, data storage, display devices, thick and thin film and materials testing technology fields.

The Sensofar Group has its headquarters in Barcelona, also known as Spain's technological heart. The Group is represented in over 20 countries through a global network of partners and has its own offices in Asia and the United States.



SENSOFAR
METROLOGY

Non-contact
3D profiler
for aspheric
and free-form
optics



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