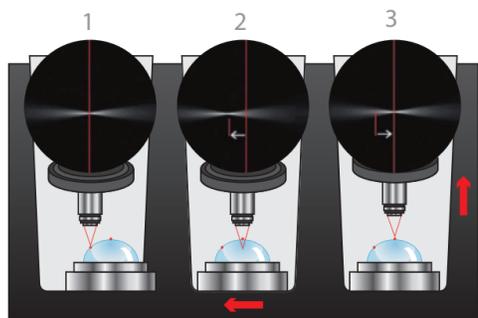


Non-contact metrology for aspheric and free-form optics

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



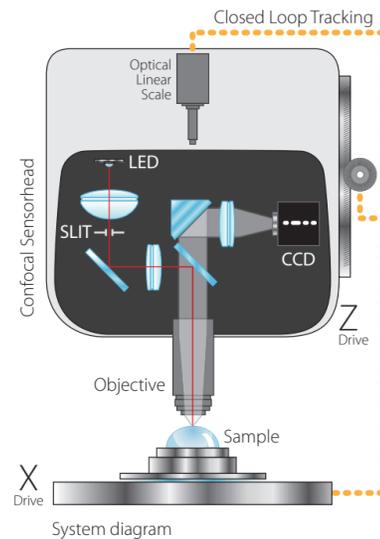
Fast measurement across the sample (1mm/s typical)



Automatic lens center finding tool



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.



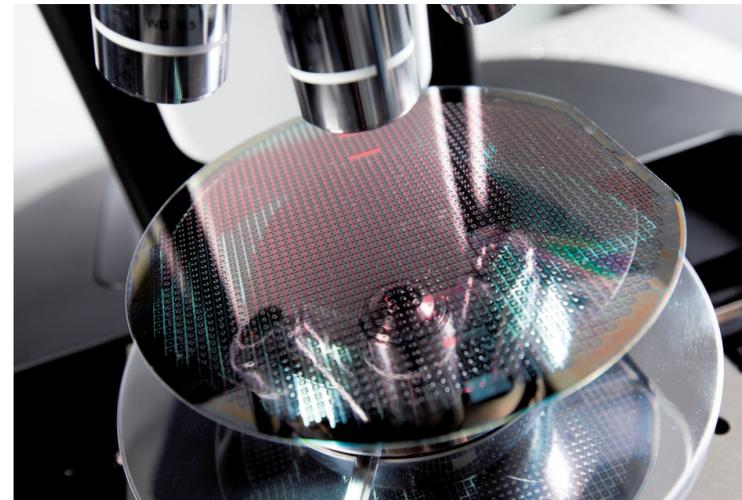
Automatic 0/90° measurement



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 mass production or high precision applications.



- ➔ High precision optics
- ➔ Astronomical instrumentation
- ➔ Optical data storage
- ➔ Photolithography



- ➔ Mass production optics
- ➔ Blu-ray and DVD lenses
- ➔ Cellphone and PDA camera lenses
- ➔ Digital cameras and projector lenses



Powerful curve analysis software

Software SensoTRACK

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 aspheric analysis module provides form assessment with respect to a design or a reference form.

Specifications

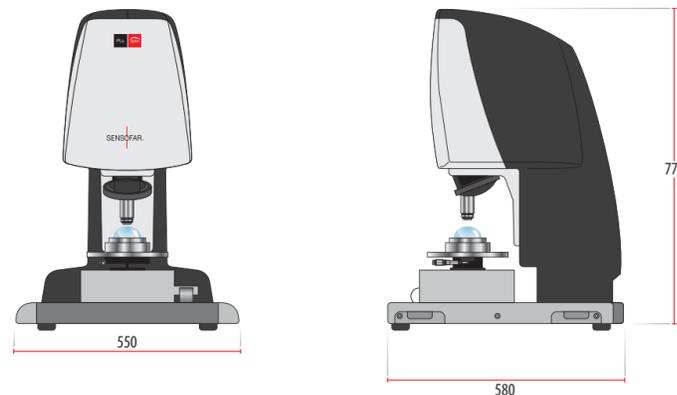
Displacement Range	XY: 100 x 100 mm Z: 50 mm
Camera	GigE CCD 768x576 pixels @ 50 Hz
Light source	Green LED
Measurement objectives	10X – 100X
Measurement length (XY)	0.1 – 100 mm
Measurement range (Z)	Up to 50 mm ^{1/2}
Measurement speed	0.01 – 1 mm/s
System noise	1 nm
Radius uncertainty	< 0.01 %
Form 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
Antivibration system	Passive air isolation ⁴
Environment	Temperature: 20 °C
Operating System	Microsoft Windows 7 / 32 bit

(1) see objectives table (2) sample geometry dependent (3) typically smaller than 50 nm
(4) optional



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

We provide high accuracy optical profilers based on interferometry and confocal techniques. From standard setups for R&D and quality inspection laboratories to complete non-contact metrology solutions for online production processes, Sensofar offers technology that enables our customers to achieve breakthroughs, particularly in the semiconductor, precision optics, data storage, display devices, thick and thin film and material testing technologies fields. SENSOFAR is represented in over 20 countries through channel partners and has its own offices in Japan and the United States.



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 ELWD	3.5 mm	0.80	± 45°
100x SLWD	6.5 mm	0.70	± 35°

SENSOFAR®

Non-contact
profiler for
aspherical
optics



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