

# MicroProf® 100

The **MicroProf® 100** is the universal surface metrology tool for quick and easy determination of topography, film thickness and sample thickness. As a compact tabletop unit and thus the smallest member of the MicroProf® multi-sensor family, the MicroProf® 100 also offers the full flexibility of its bigger brothers. It is based on proven FRT multi-sensor technology, in which different optical measurement methods – which can otherwise only be found in individual solutions – are merged into a universal and space-saving device.

In addition, the MicroProf® 100 can be equipped with the TTV option for double-sided sample inspection. This allows you to measure the top and bottom of the sample simultaneously and also determine the sample thickness during the same measurement process. Due to its modular design, this metrology tool can be tailored to your specific application. In addition to the various sensors with which the device can be equipped, the software can also be individually configured and measurement tasks can be performed either manually or automatically.



## MEASURING TASKS

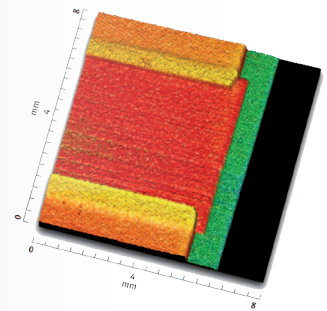
*3D Map*   *Topography*   *Film Thickness*   *Sample thickness*  
*Layer Stacks*   *Waviness*   *Roughness*   *Flatness*  
*Step Height*   *Wear*   *TTV*   *Profile*   ...

## SYSTEM CHARACTERISTICS

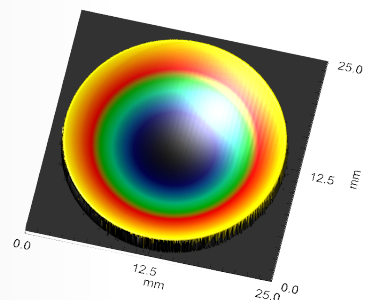
- Tabletop unit with housing in modern industrial design
- Based on the tried and tested FRT multi-sensor technology
- TTV option for double-sided sample inspection possible
- Integrated CCD camera with add-on illumination
- Motorized sensor approach with high-precision axis
- Simple and efficient control with FRT Acquire Software
- User-friendly FRT Mark III evaluation software with numerous evaluation and display options according to DIN-EN-ISO and SEMI standards
- Fully automated 2D, 3D and film thickness measurements through FRT's Acquire Automation XT metrology software

## BENEFITS

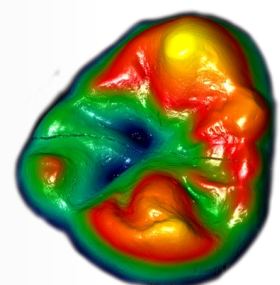
- Attractive price-performance ratio
- Surface measuring instrument for the highest demands in industry and research
- One measuring system for multiple tasks and applications
- 3D measurements of topography, film thickness and sample thickness with micro- and nanometer resolution
- Wide range of sensors (point and field of view sensors)
- Professional quality assurance based on precise optical metrology
- High performance and economical measuring tool
- Application specific consulting and service from skilled FRT experts



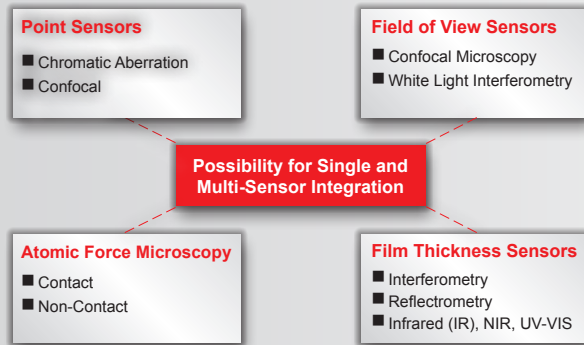
Back side metallization of a wafer



Curvature of a lens



Topography of a tooth



## Measuring Principle

Diverse measurement tasks require variable solutions – the MicroProf® 100 can be equipped with various sensors for measuring topography, coating thickness and sample thickness. FRT multi-sensor technology offers a wide range of optical spot and zone sensors or even an atomic force microscope. Depending on your requirements, these can be combined in the MicroProf® or retrofitted at any time.

Use both the flexibility of point sensors with freely adjustable measuring field sizes and the speed of the field of view sensors for your measurements. A variety of measurement tasks can be performed within a large measurement range (from centimeters down to the sub-nanometer range) using a flexible and cost-effective tool which can be expanded at any time.

<b>System</b>	
Assembly	Gantry Design
Sensor	Multi-Sensor
<b>Scanning Stage</b>	
Travel	150 mm x 100 mm
Drive Type	Ball Screw
Bearing Type	Crossed Roller Bearing
Encoder Resolution	0.5 µm
Flatness	~ 1 µm / 100 mm
Max. Speed	100 mm / s
Load Capacity	5 kg
z-Axis	Motorized Axis
z-Axis Travel	50 mm (100 mm optional)
<b>System Requirements</b>	
Environmental Requirements	Clean, Vibration Free, Stable Temperature
Input Voltage	110 V / 220 V AC, 1 Phase
Footprint (L x W x H)	550 mm x 400 mm x 690 mm
Weight	approx. 100 kg
<b>Measuring Characteristics (Measuring Head)</b>	<b>CWL 600 µm *</b>
Measuring Range xy	150 mm x 100 mm
Measuring Range z	600 µm
Resolution (lateral)	2 µm
Resolution (vertical)	6 nm

\* Sensor CWL 600 µm taken as an example, other sensors are available.

## Questions? Talk to an expert!

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