MicroProf® 300

300 mm stand-alone device - for bigger tasks

The **MicroProf® 300** is part of the high-performance and versatile **MicroProf®** generation and is particularly used in quality assurance, development and manufacturing. The smallest deviations from the ideal surface shape must be determined contact-free without destroying the sample as the surface must be precise down to the sub-µm range. Besides roughness of the sample surface, shape is one of the most important parameters. Narrow tolerances must be precisely determined. The **MicroProf® 300** is perfect for these requirements and can also be integrated into production in a fully automated way. An extensive range of sensors and the option of conducting double-sided sample inspections (TTV) make it possible to optimally and individually adapt the **MicroProf® 300** to suit your measuring task at any time. Furthermore, the simple automation of measurements boosts productivity and process reliability.

MicroProf® 300

MEASURING TASKS

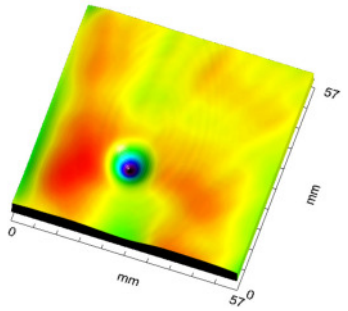
Roughness ***Step Height*** *Film Thickness* ***Wear*** *Warp* ***TTV***
Bow ***Defect Inspection*** *3D Map* ***Waviness*** *Layer Stacks* ***Bumps***
Flatness ***Topography*** ***...***

SYSTEM CHARACTERISTICS

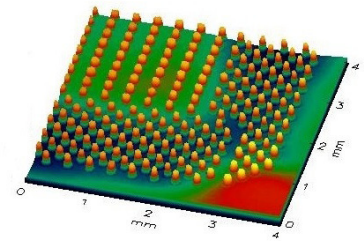
- full multi-sensor capability
- integrated CCD camera with add-on illumination
- motorized sensor approach with high-precision axis
- vertical stitching function to expand the height measuring range
- control and measurement computer with TFT monitor
- simple and efficient control with FRT Acquire software

BENEFITS

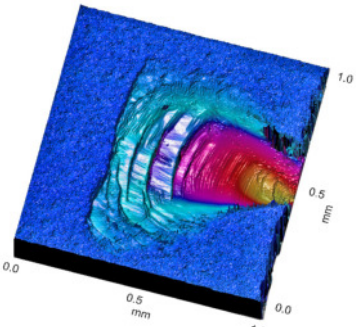
- attractive price-performance ratio
- 3D measurements with micro- and (sub)-nanometer resolution
- professional quality assurance based on precise optical metrology
- high performance and economical measuring tool
- durable, minimal servicing and low maintenance
- fast availability and simple operation
- application-specific consulting from skilled FRT experts
- qualified and worldwide operating service network



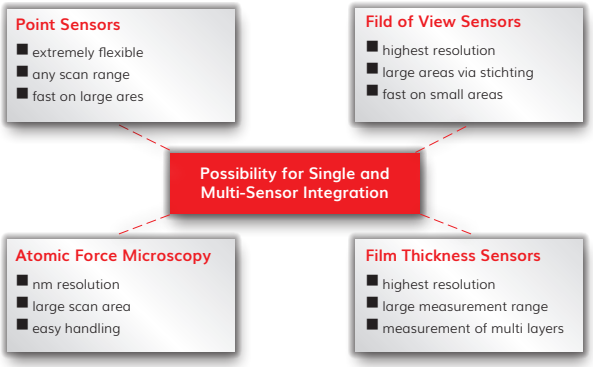
Dimple in a wafer



Ball grid array (BGA) of a structured wafer



Edge defect on a solar wafer



Measuring Principle

Diverse measurement tasks require variable solutions – the **MicroProf® 300** can be equipped with various sensors for measuring topography, coating thickness and sample thickness. FRT multi-sensor technology offers a wide range of optical point and field of view 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.

System	
assembly	gantry design
sensor	multi-sensor
Scanning Stage	
travel	415 mm x 305 mm
drive type	direct drive
bearing type	crossed roller bearing
encoder resolution	50 nm
flatness	< 2 µm / 100 mm
max. speed	300 mm / s
load capacity	5 kg
z-axis	motorized axis
z-cxis travel	50 mm (100 mm optional)
System Requirements	
environmental requirements	clean, vibration free, stable temperature
input voltage	110 V / 220 V AC, 1 Phase
footprint (L x W x H)	1500 mm x 1010 mm x 1850 mm
weight	approx. 900 kg
Measuring Characteristics	**CWL 600 µm ***
measuring range xy	415 mm x 305 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!

Germany
FRT GmbH
+49 2204 84-2430
+49 2204 84-2431
info@frt-gmbh.com

Asia / Pacific
FRT Shanghai Co., Ltd.
+86 21 3876 0907
+86 21 3876 0917
info@frt-china.cn

America
FRT of America, LLC (West)
+1 408 261 2632
+1 408 261 1173
info@frtofamerica.com

FRT partners: