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.

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
**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.

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**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-axis 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**

| **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

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**Questions? Talk to an expert!**

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**FRT partners:**

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