MicroSpy® Profile

the art of metrology™

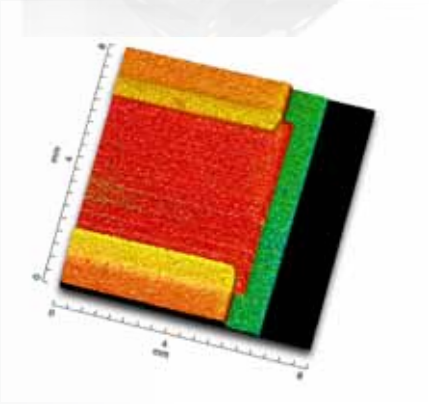
The **MicroSpy® Profile** is an optical profilometer that offers cost-efficient access to contact-free 2D- and 3D-surface metrology.
Users in development and production inspect various surfaces, from smooth to very rough, from matte to glossy, or even transparent, with this FRT surface metrology device. Even strongly absorting surfaces can be measured fast and reliably, since the device uses the chromatic distance measurement and is equipped with a brilliant long-living, and energy-efficient LED. For the chromatic measurement sensors from the FRT CWL sensor family are used. Various sensors with different measuring range are available, so that the device can be perfectly optimized for the actual measuring task.

MEASURING TASKS

Roughness *Step Height* ***Film Thickness*** *Wear*
Defect Inspection *3D Map* ***Flatness*** *Waviness*
Surface Structure *Profiles* ***...***

SYSTEM CHARACTERISTICS

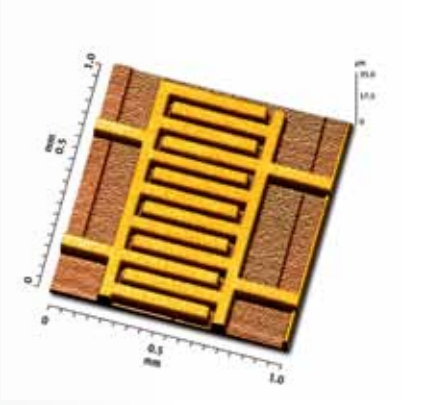
- Integrated CCD-camera with add-on illumination
- Brilliant, long-living, and energy-efficient LED
- Manual sensor approach with high-precision axis
- Control and measurement computer with TFT monitor
- Simple and efficient control with FRT Acquire software
- User-friendly FRT Mark III evaluation software with numerous evaluation and display options according to DIN-ISO and SEMI standards



Backside metallization of a solar cell

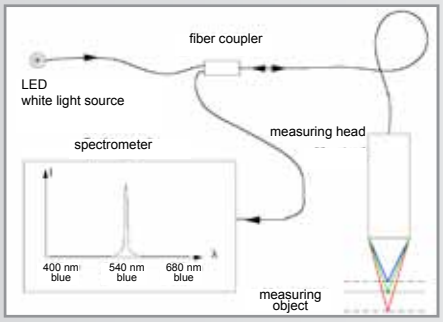
BENEFITS

- Attractive price-performance ratio
- Highly sophisticated hard- and software
- Professional quality assurance based on precise optical metrology
- High performance and economical measuring tool
- Durable, minimal servicing and low maintenance
- Intuitive handling with fast evaluation of results
- Application specific consulting and service from skilled FRT experts



3D topography of a MEMS structure

MicroSpy® Profile



Measuring Principle

The **MicroSpy® Profile** uses the principle of chromatic distance measurement. White-light is focused on the surface by a measuring head with a strongly wavelength-dependent focal length. The spectrum of the light scattered on the surface generates a peak in the spectrometer.

The wavelength of this peak is used to determine the height on the sample. The measuring tool handles transparent, highly reflective or even light absorbing surfaces and materials.

System	
Assembly	Adjustable Stand
Sensor	Point Sensor
Scanning Stage	
Travel	50 mm x 50 mm
Drive Type	Ball Screw
Bearing Type	Crossed Roller Bearing
Encoder Resolution	0.25 µm
Flatness	< 2 µm / 50 mm
Max. Speed	50 mm / s
Load Capacity	1 kg
z-Axis	Manual Axis
z-Axis Travel	80 mm
System Requirements	
Environmental Requirements	Clean, Vibration Free, Stable Temperature
Input Voltage	110 V / 220 V AC, 1 Phase
Footprint (L x W x H)	300 mm x 400 mm x 600 mm
Weight	approx. 64 kg (Measurement Device 24 kg)
Measuring Characteristics (Measuring Head)	**CWL 600 µm**
Measuring Range xy	50 mm x 50 mm
Measuring Range z	600 µm
Resolution (lateral)	2 µm
Resolution (vertical)	6 nm

Questions? Talk to an Expert!

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