

KF₃ Confocal Sensor KF₃ Tele Confocal Sensor

The versatile sensors for all topographies.



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Optische Präzisionsmesstechnik

See the difference!

KF3 Confocal Sensor

KF3 Tele Confocal Sensor

The universal measurement solution for non-contacting profilometry on technical surfaces with difficult topography. The sensors are ideally suited for sensitive, soft or liquid surfaces. The small footprint simplifies integration into existing systems.

- ▶ Easy operation and extraordinary dynamic range in combination with high measurement speed perfectly matches the requirements of automated measurement tasks. Reliable results even with untrained personnel.
 - ▶ Robust, long-lived construction, no moving parts outside the closed compartment.
 - ▶ Determination of flatness, altitude or position
 - ▶ Calculation of properties like area, thickness or volume
 - ▶ The KF3/Tele sensor with the extraordinary stand-off simplifies measurements in industrial or inaccessible environments.
- Universal application, for example
- ▶ micromechanical engineering, electrical engineering, and optical industry
 - ▶ plastics and paper industry
 - ▶ inspection tasks in the semiconductor and PCB industry
 - ▶ tool industry, mechanical engineering

KF3 and KF3 Tele sensor

Principle of Operation	Determination of the maximum light density on the sample's surface, using an oscillating object lens. After each semi-period of the oscillation, the profile value is available. Arbitrary profile steps in the measurement range are reproduced within 5 ms. Measurement results are independent of the measurement direction.
Controller design type	260 x 180 x 80 mm, stand-alone unit
Sensor size	▶ KF3: 122 x 70 x 27 mm ▶ Tele: Compartment 132 x 111 x 50 mm Objective lens 65 x Ø 30 mm
Measurement range	1000 µm
Resolution	20 nm
Straightness deviation	▶ KF3: ≤ 1 µm ▶ Tele: ≤ 2 µm
Reproducibility	▶ KF3: σ ≤ 15 nm (50 measurements on a step standard of 504 µm) ▶ Tele: σ ≤ 15 nm (50 measurements on a step standard of 504 µm)
Stand-off	▶ KF3: 4 mm ▶ Tele: 13.5 mm
Laser source	▶ KF3: 670 nm semiconductor laser diode ▶ Tele: 780 nm semiconductor laser diode
Laser class (DIN EN 31252)	▶ KF3: Laser class 2 ▶ Tele: Laser class 1
Measurement spot diameter	▶ KF3: <2 µm, diffraction-limited ▶ Tele: 2.0 µm, diffraction-limited
Maximum surface tilt	90° ± 25° on a mirror, more on scattering surfaces
Dynamic range	Accepts reflection signal ratio greater than 5000:1 within a single range, independent of the sampling frequency
Sampling frequency	16 Hz – 1 kHz, independent of the sample
Signal rise time	5 ms
Data transmission	RS232 1000 samples/s in real time
Weight	▶ KF3: Sensor approx. 250 g ▶ Tele: Sensor approx. 2 kg Controller approx. 4 kg
Options	Analogue output, 0 to 10 V for profile and reflection signal

Specifications subject to change.



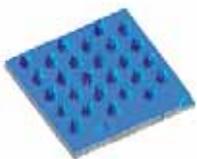
Bumps on a wafer



Fibre fixture



Thick film resistor



Solder paste on a pcb



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