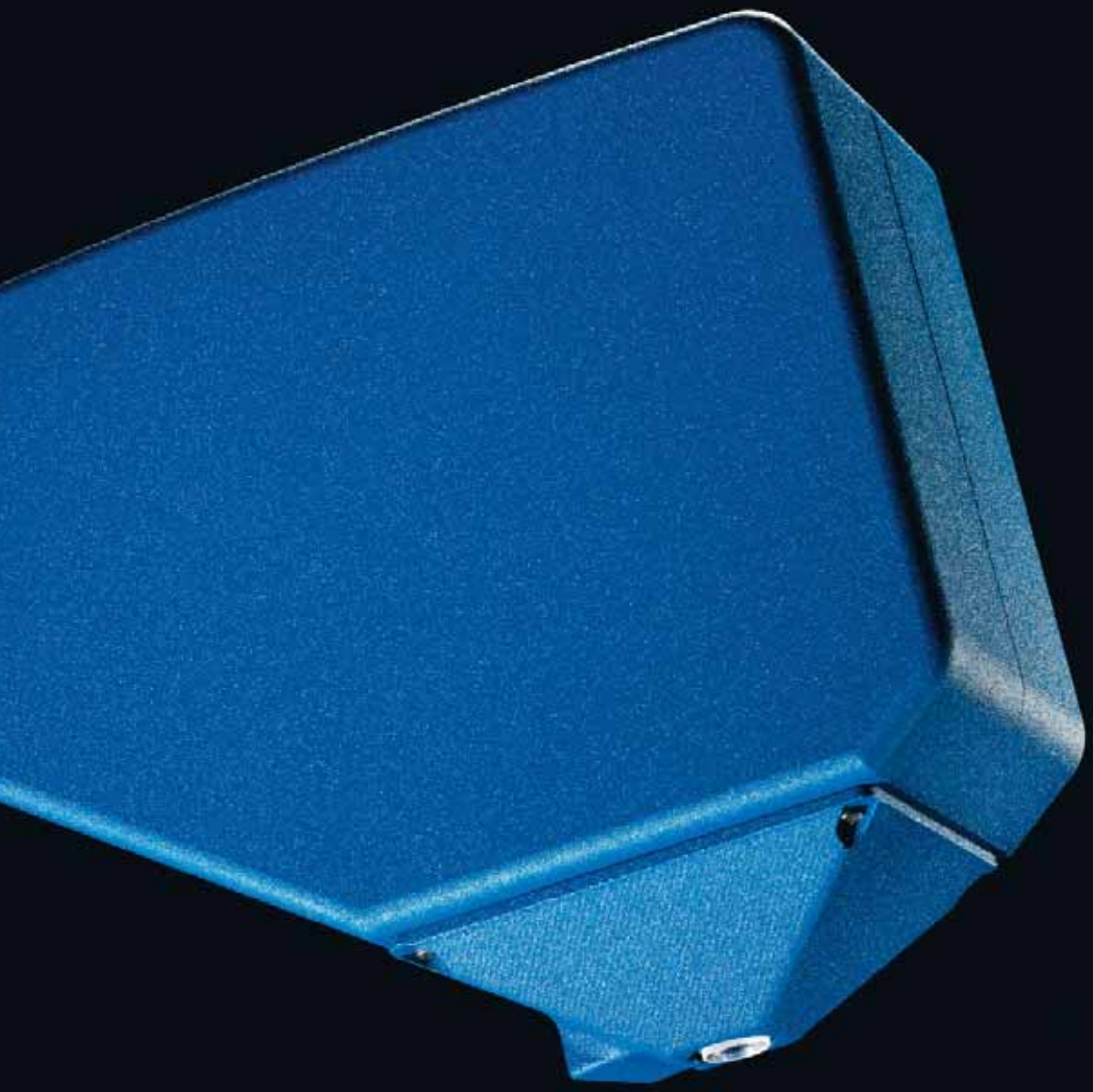
AF16 Autofocus Sensor

Leading edge technology for dependable results.



OPM

Optische Präzisionsmesstechnik

See the difference!

AF16 Autofocus Sensor

The superior non-contacting measurement solution for profilometry, resulting in superior fidelity and dependable results, suitable for a wide range of applications including soft or sensitive surfaces.

- The uncompromising construction unites unequalled resolution, precision and measurement speed within a single appliance
- Robust, free of maintenance, long-lived
- Determination of flatness, altitude or position
- Calculation of properties like roughness, area or volume
- Vibration analysis

Ideally suited in applications like

- thick film and hybrids
- optics, telecommunication, electrical engineering, electronics industry
- material testing, tribology
- mechanical engineering (form, flatness, waviness, roughness)
- IC packaging (warpage, coplanarity, bump height and volume)

Section of a CCD array

Laser-trimmed thick film resistor

Artificial leather

Chip card contacts

AF16 sensor

Principle of Operation	Dynamical focussing based on astigmatic detection. This detection principle is symmetrical around the optical axis and does not exhibit any preference of direction. Technical surfaces can be measured in any direction, measurement results are independent of direction.
Controller design type	Stand-alone unit 260 x 180 x 80 mm, or 19" 3 HE rack
Microscope	Integrated bright-field microscope with a field of view of 800 x 600 µm. The microscope allows for a simple and precise positioning of the sensor. The surface is imaged through the sensor's objective and shows the measurement spot even during measurement.
Measurement range	1500 µm
Resolution	10 nm. The measurement signal is generated by a glass scale of highest quality. The physical reference of the glass scale allows for long-term stability and does not require periodic calibration.
Linearity deviation	≤ 0.2 µm over the measurement range of 1500 µm
Reproducibility	σ≤ 10 nm (50 measurements on a step standard of 150 µm)
Stand-off	2.0 mm
Laser source	780 nm semiconductor laser diode
Laser class	Laser class 1 according to DIN EN 31252
Measurement spot diameter	1.9 µm, diffraction-limited
Maximum surface tilt	90° ± 25° on a mirror, more on scattering surfaces
Sampling frequency	16 Hz – 10 kHz, independent of the surface
Tracking speed	60 mm/s (e.g. 950 Hz on a sinusoidal profile of 20 µm peak-to-peak)
Data transmission	RS232 max 1400 samples/s profile channel only max 960 samples/s profile+reflection channel
Internal buffer	64 kB
Weight	Approx. 5 kg sensor Approx. 4 kg controller

Specifications subject to change.

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