

FDM series

Measuring in the smallest of spaces

Where high speed meets dimensional accuracy

Accurate and Fast

The precision sensor technology of the FDM series achieves measurement rates of up to 40 kHz and enables high-resolution non-contact measurements even in confined installation spaces. For roughness measurements, the sensors operate significantly faster than comparable tactile methods. Automatic signal optimization ensures stable and consistent measurement results even on heterogeneous surfaces.

Automated 100% Inpection

Configurable interfaces allow seamless integration into automated manufacturing processes – close to production, inline, or machine-integrated. Measurement data is available directly for comprehensive quality assurance and process monitoring.



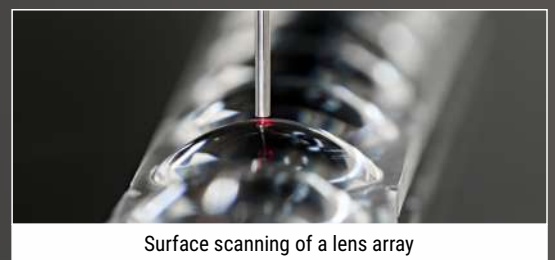
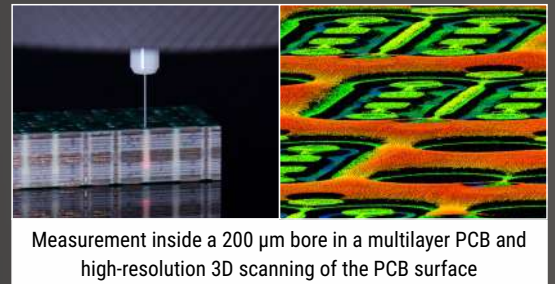
The series FDM fiber optic distance measuring systems

In industrial manufacturing, reliable measurement data is essential for functionality, design, and quality. The fiber optic measurement systems of the FDM series support non-contact inspection of distance, form, and surface features, even in demanding geometries. With diameters starting from 50 μm , the miniaturized probes can access even the smallest cavities and microstructures. For efficient quality assurance in production environments.

Technical Data

Application

- ✓ Measurements in confined spaces such as microbores or gaps
- ✓ Characterization of surface roughness and waviness
- ✓ Measurement of form and position tolerances, e.g. roundness, flatness, straightness, and parallelism
- ✓ Precise position detection for the alignment of components and tools, including multi-probe configurations
- ✓ Measurement of optics, optical components, and forming tools
- ✓ Measurements in scanning mode, e.g. for 3D representation of freeform surfaces
- ✓ Measurement of expansion, drift, wear, and vibrations on precision and machine tools
- ✓ Integration into measuring instruments, inspection systems, or industrial equipment



System Specifications

	FDM-1 (High precision)	FDM-2 (Large Measurement Range)
Measuring Range	80 µm	1 mm
Distance-Equivalent Noise	< 15 nm	< 100 nm
Diameter of Measurement Probe	from 50 µm	from 50 µm
Measurement Principle	Low-Coherence Interferometry	
Measurable Materials and Surfaces	Glass, metal, ceramic, plastic, etc. – transparent, reflective, or matte	
Min. measurable inner \varnothing or gap width	from 0.1 mm	
Measurement Direction	axial (0°), angled (45°- 90°)	
Measurement Frequency	up to 40 kHz (depending on the measurement object)	
Multi-Point Measurement	Supports parallel or sequential readout of multiple probes	
Software	FDMControl (Control Software) / Fiometrics (Analysis Software)	
Programming Interfaces	API, DLL	
Configurable System Interfaces	Trigger IN, Gate IN, Trigger OUT: TTL 5V, Ethernet	
Power Supply	100–240 V AC, 50/60 Hz	

We develop customized solutions tailored to individual measurement tasks. Please feel free to contact us.