



schematic presentation of the measuring principle

Measuring Principle

An oscillating lens emits a focussed and punctiform laser beam onto an object's surface. The reflected light from the given measuring position passes through a half mirror onto a pinhole. Behind the pinhole sits a light sensitive detector.

Every time the laser beam focusses on the object's surface, the maximum amount of the emitted laser light is able to pass the pinhole.

In this moment, the position of the oscillating lens is measured which then allows to calculate the exact height information of the measured position.

Technical Specifications

- measuring range z: 1000 μm
- measuring distance: 4 mm
- measuring rate: max. 1000 Hz
- resolution z: 20 nm
- resolution x, y: 1 μm
- measuring angle: approx. $90^\circ \pm 25^\circ$ *¹
- light source: semiconductor laser, 660 nm, class 2 *²

*¹ diffusive surfaces allow for wider measuring angles

*² in accordance with DIN EN 31252

Non-contact, high-resolution laserlight measurement

Measuring Features

- non-contact measurements
- high-resolution measurements
- precise results even with changes in the surface reflectance at different measurement positions
- fast measurements even on surfaces with very low reflectance

Typical Applications

- fast topography and profile measurement even on sensitive and soft materials
- measurement of microstructures
- measurement of ground and polished optical components
- control of electronic components
- inspection of tools and products in the field of plastic injection moulding
- inspection of dimensions, step-height etc. on printed circuit boards

Scope of Delivery

- confocal point sensor
- sensor control and analysis unit
- serial cable, sensor cable, power cord
- manual



Sensor FRT CFP on FRT MicroSpy®

Reference Customers

ASE Inc.
Audi AG
Ball Packaging Europe GmbH
Bayer AG
Beiersdorf AG
BMW AG
Boehringer Ingelheim microParts GmbH
Carl Zeiss SMT AG
DAIMLERCHRYSLER
Dow Benelux N.V.
EKO Stahl GmbH
Fraunhofer-Institute
Freescale
Fuji Magnetics GmbH
General Electric Plastics B.V.
Gillette
HILTI AG
Hoechst Trespaphan GmbH
Human Optics AG
IBM
Infineon Technologies AG
Lexmark International, Inc.
MAN Roland Druckmaschinen AG
Matsushita Electric Works
Nortel Networks Optical Components (Switzerland) AG
Océ-Technologies B.V.
Optische Werke G. Rodenstock GmbH
Philips Electronics Nederland B.V.
Robert Bosch GmbH
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