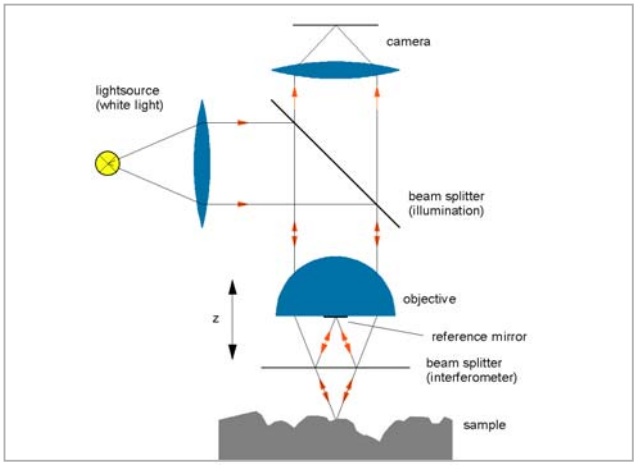

schematic presentation of the measuring principle

Measuring Principle

White light interferometry (WLI) is a fast method to perform 3D topographical measurements. It utilizes a light source with very low temporal coherence. By means of a beam splitter this light is separated into a reference beam (reflected to a reference mirror) and an object beam that strikes the surface to be measured.

The light reflected from both, the reference mirror and the measured object, is overlayed. This interference pattern is captured by a camera. Whilst performing the topography measurement, the objective is gradually moved in small steps into z-direction. At each position the camera takes a single image. Then, all images are compiled into an image stack, which is used to render the 3D topography.

Due to the low temporal coherence of the white-light the WLI characterizes reflective and rough surfaces as well as step heights with very good height resolution, which is typical for interferometric measurement approaches.

Measuring Features

- non-contact topography measurement
- sub-nanometer height resolution
- very fast 3D measurements
- measurement of highly reflective, rough or structured surfaces

Very Fast, High Resolution, Non-Contact Topography Measurement

Typical Applications

- roughness measurement in nm-range, e.g. on optical components such as mirrors or lenses
- evaluation of micro structures (e.g. MEMS, microfluidics, microoptics)
- measurement of step-height in the field of semiconductors
- measurement on different materials (e.g. metal, semiconductors, glass, plastics, paper, lacquers, and coatings)
- measurement on liquids

Scope of Delivery

- FRT WLI FL measuring head
- 10x und 20x lens *1
- piezo-controller
- manual

FRT WLI measuring head on MicroProf® 200

Technical Specifications

Lens (Mirau)	10x	20x	50x*1
measuring range z	100 µm*2	100 µm*2	100 µm*2
measuring range x, y	1.6 mm x 1.2 mm	0.8 mm x 0,6 mm	0.32 mm x 0.24 mm
working distance	3.6 mm	3.6 mm	1.7 mm
sampling intervall (x, y)	2.5 µm	1.25 µm	0.5 µm
resolution z	0.1 nm	0.1 nm	0.1 nm
working temperature	20°C ± 2°C*3	20°C ± 2°C*3	20°C ± 2°C*3

*1 50x lens optional
*2 optional up to 400 µm
*3 operating temperature: 5°C - 40°C

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
Schott Glas
SGL Carbon AG
SIEMENS AG
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Fries Research & Technology GmbH • Friedrich-Ebert-Strasse • D-51429 Bergisch Gladbach
Tel. +49 (0)2204 - 84 24 30 • Fax. +49 (0)2204 - 84 24 31 • info@frt-gmbh.com • www.frt-gmbh.com