

MarOpto. Fizeau Interferometers

Versatile and Powerful in Measuring Rooms and Production

Powerful MarOpto Fizeau interferometers can provide contactless measurements on flats and spherical surfaces and of transmitted wavefronts. MarOpto interferometers are ideal for measuring optical components such as flats, prisms and lenses or precision metal workpieces including bearings, sealing surfaces and polished ceramics.

Measurements can be performed by means of simple interference ring detection, IntelliPhase static spatial carrier analysis, or phase-modulated interferogram analysis. MarOpto Fizeau interferometers offer the flexibility and excellent performance that today's industrial applications demand.



MarOpto FI 1040 Z

Fizeau Interferometer

DESCRIPTION

40 mm Fizeau interferometer for flats and spherical surfaces

The MarOpto FI 1040 Z is a powerful interferometer that can provide contactless measurements on flats and spherical surfaces and of transmitted wavefronts. The MarOpto FI 1040 Z is ideal for measuring optical components such as flats, prisms and lenses or precision metal workpieces including bearings, sealing surfaces and polished ceramics. Measurements can be performed by means of simple interference fringe detection, IntelliPhase static spatial carrier analysis, or phase-modulated interferogram analysis. The MarOpto FI 1040 Z offers the flexibility and excellent performance that today's industrial applications demand.



FEATURES

- 6x / 3x zoom for workpieces with a diameter of up to 1.5 mm
- 3 modes of interferogram analysis: Phase shifting, IntelliPhase – static spatial carrier analysis, or fringe tracing (automated or manual)
- Small size allows easy integration into OEM systems
- Compact, rugged design
- Transmission spheres from F / 0.7 to F / 6.0

APPLICATIONS

- Transmission and surface testing of small optics
- Measurements on optics, machined parts, ceramics, semiconductors, and wafers
- Integrated radius of curvature measurements



For more information, please visit our website: www.mahr.com

MarOpto FI 1100 Z

Fizeau Interferometer

DESCRIPTION

High accuracy measurement capability with unsurpassed flexibility and versatility

The MarOpto FI 1100 Z offers contactless measurements on flats and spherical lenses. It can also be used for transmitted wavefront measurements of optical components and assemblies. Measurements may be made by means of simple interference fringe analysis or phase-modulated interferogram analysis. The established IntelliWave Software offers superior measurement and analysis capability. The MarOpto FI 1100 Z provides the versatility and reliability to handle today's advanced applications at unrivaled value for money.



FEATURES

- Total USB connectivity option (laptop or desktop) with 1k x 1k true spatial resolution
- Excellent versatility, stability and repeatability
- 1x to 6x zoom, focus and attenuation controls
- Vibration-insensitivity can be accomplished via Mahr's IntelliPhase™ Static Spatial Carrier Acquisition and Analysis Software
- Compact, lightweight and rugged design
- Compatible with all industry standard 4" (100 mm) reference optics and accessories
- High accuracy measurements at an affordable price
- Configurations include horizontal, vertical look up and vertical look down. Optional workstations for flats and for radius of curvature measurements

APPLICATIONS

- Measurement of flat, concave or convex surfaces
- Prism, corner cube, wedge angle and homogeneity measurements
- Measurement of machined, ceramic, and wafer surfaces
- Wavefront analysis of optical systems & components
- Integration into OEM systems



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MarOpto FI 1150 Z

Fizeau Interferometer

DESCRIPTION

Powerful 150 mm Fizeau interferometer for flats and spherical surfaces

The MarOpto FI 1150 Z offers contactless measurements on flats and spherical lenses. It can also be used for transmitted wavefront measurements of optical components and assemblies. Measurements may be made by means of simple interference fringe analysis or phase-modulated interferogram analysis. The established IntelliWave Software offers superior measurement and analysis capability. The MarOpto FI 1150 Z provides the versatility and reliability to handle today's advanced applications.



FEATURES

- Total USB connectivity option (laptop or desktop) with 1k x 1k true spatial resolution
- Excellent versatility, stability and repeatability
- 1x to 6x zoom, focus and attenuation controls
- Vibration-insensitivity can be accomplished via Mahr's IntelliPhase Static Spatial Carrier Acquisition and Analysis Software
- Compact, lightweight and rugged design
- Compatible with all industry standard 6" (150 mm) reference optics and accessories
- Configurations include horizontal, vertical look up and vertical look down. Optional workstations for flats and for radius of curvature measurements

APPLICATIONS

- Measurement of flat, concave or convex surfaces
- Prism, corner cube, wedge angle and homogeneity measurements
- Measurement of machined, ceramic, and wafer surfaces
- Wavefront analysis of optical systems components
- Integration into OEM systems



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MarOpto MT 100

Measuring Towers

DESCRIPTION

Mahr presents the Fizeau interferometer measuring towers of the MarOpto MT series. These are modern workshop interferometer towers for operation close to production. Vertical tower solutions offer easy handling of lenses, quick measurement, including vibration damping and requires little space. Besides testing form deviation, towers with scales can produce highly accurate radius measurements as well. Motorized axes allow easy and fast operation.

The **MarOpto MT 100** is a high-precision Fizeau interferometer measuring tower for the testing of spherical and flat glass surfaces. The stable and vibration-isolated design makes this 4" interferometer measuring tower an ideal tool for the production of high-performance optics. Also available as an inverse measuring tower **MarOpto MT 100i**.

Highest precision in the production environment:

- Rigid granite tower with passive vibration isolation by four shock absorbers
- Measuring table with clearance-free bearings on linear slides
- Measuring table positioner via a servo motor and ball screw
- Fine selection of speed using joystick
- Manual fine adjustment of the measuring table with fine thread screw via backlash-free preloaded precision cross-roller guides
- 3-axes table: Z-axis in the basic unit and cross table for lenses up to 100 mm
- High-precision glass scale for the absolute measurement of radii, mounted close to the optical axis (Abbe comparator principle)

Options:

The interferometer measuring tower MarOpto MT 100 can optionally be expanded with a lens extension, lens protection and lens holder.

- Remote control for focus and zoom
- Tilting table 120 mm



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MarOpto TWI 60

Tilted Wave Interferometer

DESCRIPTION

Tilted Wave Interferometer for the quick and flexible measurement and analysis of aspherical lenses.

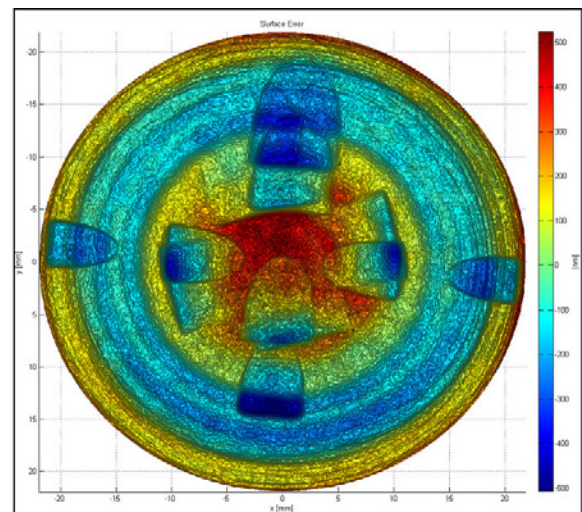
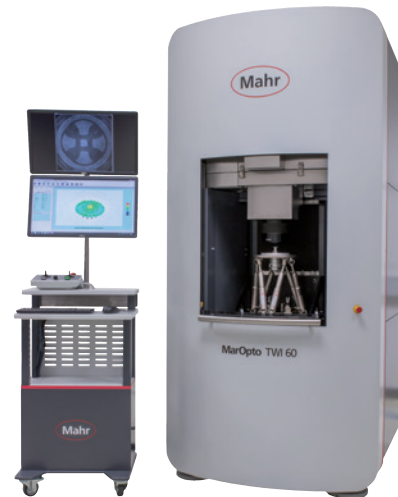
The Tilted Wave Interferometer (MarOpto TWI 60) is a new and highly flexible interferometer for the quick and high precision measurement of aspheres.

The second picture shows the surface deviations measured in the A5 demonstrator asphere (free aperture 50 mm, best fit radius 40.8 mm, deviation from best-fit sphere 600 μm , gradient deviation 8°).

The lateral resolution is approx. 30 μm . During the data acquisition time of approximately 30 seconds, the entire surface of the asphere is measured at a high lateral resolution and with low measurement uncertainty. Most importantly, neither a CGH (Computer Generated Hologram) nor stitching is required.

FEATURES

- Flexible interferometric measurements of aspherical lenses without CGH
- Measurements without the need for stitching
- Short data acquisition time of approximately 30 s
- Beam diameter 100 mm
- Permitted aspherical deviation compared to a best-fit sphere approximately 1.5 mm



Measured surfaces defects as well as the form deviation of an asphere with MRF footprints



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MarOpto FI 100

Fizeau interferometer

DESCRIPTION

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- Total USB connectivity (laptop or desktop) with 1k x 1k true spatial resolution
- Excellent versatility, stability and repeatability
- Digital zoom, focus and attenuation controls
- Vibration-insensitivity can be accomplished via Mahr's Intelli-Phase Static Spatial Carrier Acquisition and Analysis Software
- Compact, lightweight and rugged design
- Compatible with all industry standard 4" (100 mm) reference optics and accessories
- High accuracy measurements at an affordable price
- Configurations include horizontal, vertical look up and vertical look down. Optional workstations for flats and for radius of curvature measurements



APPLICATIONS

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