MarSurf Optical Metrology from Mahr

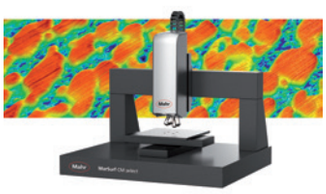
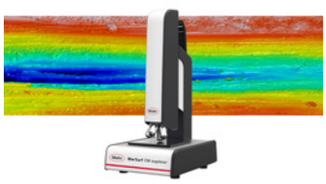
3D Surface Metrology for Industry and Research

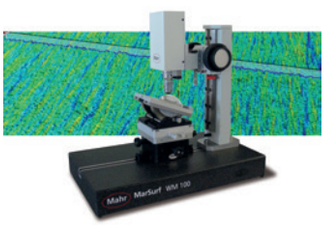
Optical analysis of surface topographies and geometries

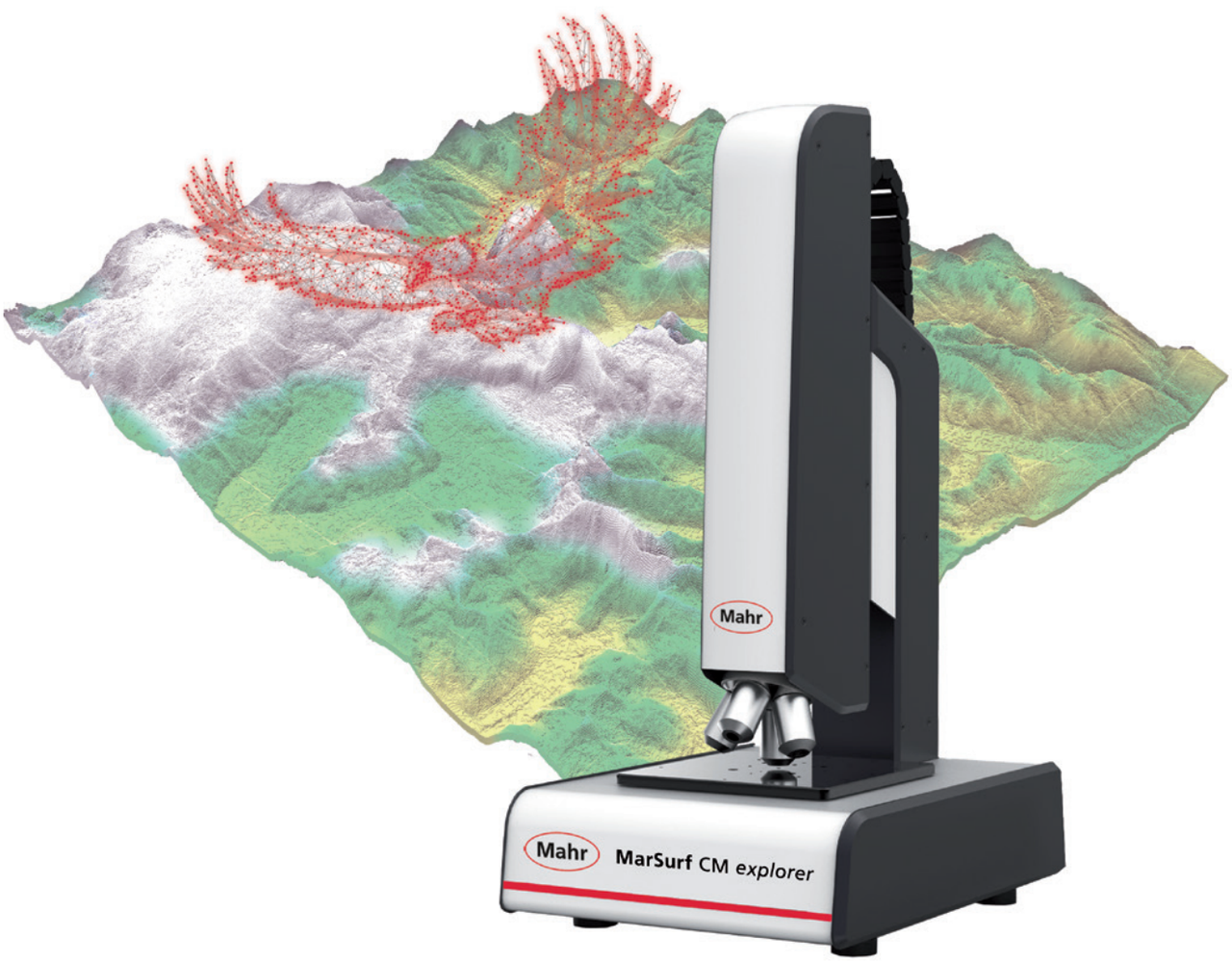
Due to their versatility, MarSurf measuring systems can be used in many areas of industry, from quality control to serial measurements. Within a few seconds, they deliver accurate and repeatable 3D measurements of almost any material – metals, glass, ceramics, semiconductors, polymers or organic materials.

- Contactless, independent of material, and fast
- Reproducible and automatic measurements
- User-independent evaluation and documentation
- 2D/3D roughness measurement according to ISO 25178 / ISO 4287
- Topography measurement (volume, wear ...)
- Geometry

The MarSurf product range offers versatile solutions for your applications.





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MarSurf CM *explorer*

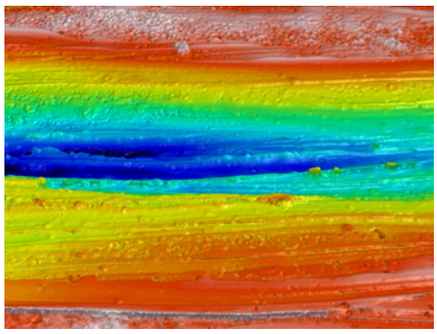
3D Surface Measurement

DESCRIPTION

- **The flexible, all-round measuring solution**
- The MarSurf CM ***explorer*** is a compact confocal microscope for the three-dimensional measurement and analysis of surfaces – ***contactless, independent of material, and fast***.
- The MarSurf CM ***explorer*** is suitable for use in test laboratories and equipped for quality assurance in production environments due to its robust construction and insensitivity to environmental influences.

Key benefits:

- High measuring speed – even at full resolution
- User-friendly concept
- Safety through collision detection in all directions to protect your workpiece and measuring system
- High Dynamic Range (HDR) function, 16-bit
- Consistent high resolution output of large measuring surfaces due to HD stitching
- **This established optical measuring system is successfully used, for example, for:**
- Roughness measurement according to DIN EN ISO 4287 / 25178
- Topography measurement (including volume, wear, isotropy)
- Measurement of microgeometry and layer thicknesses
- Users value the MarSurf CM ***explorer*** as a reliable measuring system that provides quantitative traceable **3D characteristics for many industries**.



TECHNICAL DATA

CM explorer	
Measuring principle	Confocal High-performance LED (505 nm / white)

Supplied with: MarSurf CM ***explorer***

- Confocal measuring head
  – HDR camera (B/W or color camera)
  – 4x lens revolver with identification
- L-tripod including control electronics
- Motorized XY table (50x50 mm) with glass scales for sample positioning and image field merging (“stitching”)
- Motorized Z-axis (70 mm) with glass measuring scale
- Measuring system computer with 24” TFT monitor
- Objective lenses:
  – 5x to 100x selectable
- MarSurf MSW for intuitive data acquisition
- MarSurf MfM for professional evaluation, graphical representation and creation of measuring records (choice of Standard, Extended or Premium version)

APPLICATIONS

Mechanical Engineering

- To qualify and quantify roughness, geometry and wear volume

Electronics and semiconductors

- Component inspection down to the sub-micrometer range for defect-free products

Medical Technology

- Quality assurance of medical surfaces in production and laboratory

Material Science

- Optimization of functional properties of new surfaces and products

Microsystems Technology

- Measure complex surface geometries of smallest components with nanometer precision

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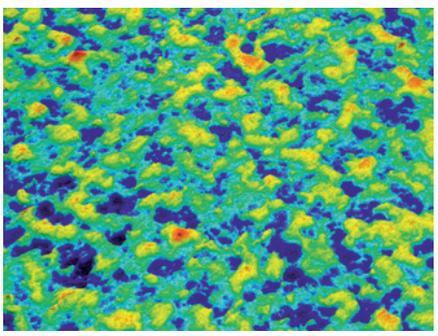
MarSurf CM *expert*

3D Surface Measurement

DESCRIPTION

- **Automatable, high-end measuring system**
- The MarSurf CM ***expert*** is a powerful confocal microscope for the three-dimensional measurement and analysis of surfaces – **contactless, independent of material, and fast**.
- The MarSurf CM ***expert*** is suitable for use in test laboratories and equipped for quality assurance in production environments due to its robust construction and insensitivity to environmental influences.
- With additional manual Z positioning, a large x and y travel range and the possibility of automation, it offers excellent ease of use. The option of performing user-independent, fully automatic measurements makes this surface measuring system ideal for straightforward and efficient use in quality assurance.



TECHNICAL DATA

CM expert	
Measuring principle	Confocal High-performance LED (505nm / white)

Key benefits:

- User-independent serial measurements by automation software
- High measuring speed – even at full resolution
- User-friendly concept
- Safety through collision detection in all directions to protect your workpiece and measuring system
- High Dynamic Range (HDR) function, 16-bit
- Consistent high resolution output of large measuring surfaces due to HD stitching
- **This established optical measuring system is successfully used, for example, for:**
- Roughness measurement according to DIN EN ISO 4287 / 25178
- Topography measurement (including volume, wear, isotropy)
- Measurement of microgeometry and layer thicknesses
- Users value the reliability of this measuring system, which provides quantitative, traceable
- **3D characteristics for many industries**.

Supplied with: MarSurf CM ***expert***

- Confocal measuring head
  – HDR camera (B/W or color camera)
  – 4x lens revolver with identification
- L-tripod including control electronics
- Motorized XY table (100x100 mm) with glass scales for sample positioning and image field merging (“stitching”)
- Motorized Z-axis (70 mm) with glass measuring scale
- Measuring system computer with 24” TFT monitor
- Objective lenses:
  – 5x to 100x selectable
- MarSurf MSW for intuitive data acquisition
- MarSurf ASW for automation (optional)
- MarSurf MfM for professional evaluation, graphical representation and creation of measuring records (choice of Standard, Extended or Premium version)

APPLICATIONS

Mechanical Engineering
- To qualify and quantify roughness, geometry and wear volume

Electronics and semiconductors
- Component inspection down to the sub-micrometer range for defect-free products

Medical Technology
- Quality assurance of medical surfaces in production and laboratory

Material Science
- Optimization of functional properties of new surfaces and products

Microsystems Technology
- Measure complex surface geometries of smallest components with nanometer precision

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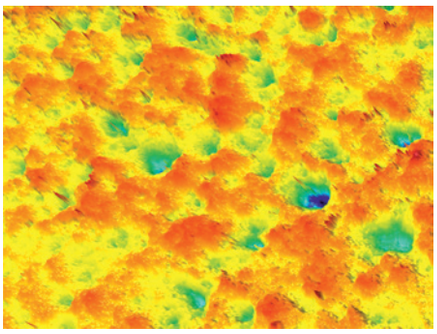
MarSurf CM *mobile*

3D Surface Measurement

DESCRIPTION

- **Ready for use anywhere**
- The compact MarSurf CM ***mobile*** is a portable confocal microscope for the three dimensional measurement and analysis of surfaces – non-tactile, independent of material and fast.
- Its low weight and operation via a laptop allow for flexible use when measuring on large objects and difficult to move workpieces, such as rollers.

- Mobile application enables testing directly on the component / tool – even if they are only briefly accessible
- Compact system (5 kg) with motorized axes for HD stitching
- Robust and reliable for use in production
- High measuring speed – even at full resolution
- User-friendly concept
- Consistently high resolution even with large measurement areas thanks to HD stitching
- **The established optical measuring system is successfully used, for example for:**
- Roughness measurement according to DIN EN ISO 4287 / 25178
- Topography measurement (including volume, wear, isotropy)
- Measurement of microgeometry and layer thicknesses
- Users value the MarSurf CM ***mobile*** as a reliable measuring system that provides quantitative traceable **3D characteristics for many industries**.



TECHNICAL DATA

CM mobile	
Measuring principle	Confocal High-performance LED (505 nm)

Supplied with: MarSurf CM *mobile*

- Confocal measuring head
  – B/W camera
  – 4x lens revolver
- Control electronics integrated in the system
- Motorized XY table (50x50 mm) with glass scales for positioning and image field merging (“stitching”)
- Motorized Z-axis (35 mm)
- Laptop or measuring system computer with 24” TFT monitor selectable
- Objective lenses:
  – 5x to 100x selectable
- MarSurf MSW for intuitive data acquisition
- MarSurf for professional evaluation, graphical representation and creation of measuring records (choice of Standard, Extended or Premium version)

APPLICATIONS

Mechanical Engineering
- To qualify and quantify roughness, geometry and wear volume

Electronics and semiconductors
- Component inspection down to the sub-micrometer range for defect-free products

Medical Technology
- Quality assurance of medical surfaces in production and laboratory

Material Science
- Optimization of functional properties of new surfaces and products

Microsystems Technology
- Measure complex surface geometries of smallest components with nanometer precision

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MarSurf CM *select*

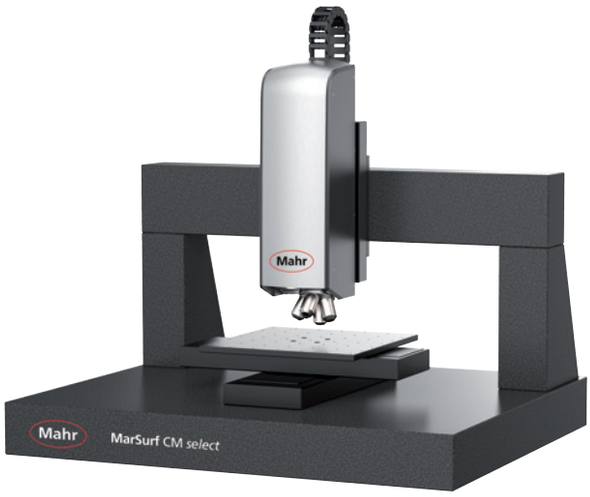
3D Surface Measurement

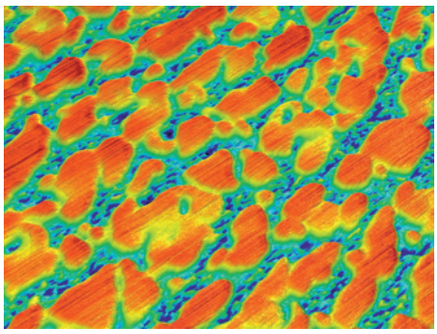
DESCRIPTION

- **Tailor-made measurement of surfaces**
- The MarSurf CM ***select*** is a powerful, configurable confocal microscope for the three-dimensional measurement and analysis of surfaces – **contactless, independent of material, and fast**.
- Axes and isolation systems as well as software modules can be combined individually. This allows the measuring system to be adapted to different measuring tasks.
- As a multi-sensor system, the MarSurf CM ***select*** also offers the possibility of combining different sensor technologies in one measuring device. Depending on the measuring task, the optimal point sensor can also be flexibly selected.
- The MarSurf CM ***select*** meets your individual requirements for automation, measuring comfort and accuracy – right up to the fully automated measuring solution.

Key benefits:

- Designed for continuous operation
- Automation software with industrial interfaces for transfer to QA systems
- High measuring speed – even at full resolution
- Individually configurable to your sample size
- Multi-sensor system
- User-friendly concept
- Safety through collision detection in all directions to protect your workpiece and measuring system
- High Dynamic Range (HDR) function, 16-bit
- Consistent high resolution output of large measuring surfaces due to HD stitching
- **This established optical measuring system is successfully used, for example, for:**
- Roughness measurement according to DIN EN ISO 4287 / 25178
- Topography measurement (including volume, wear, isotropy)
- Measurement of microgeometry and layer thicknesses
- Users value the reliability of this measuring system, which provides quantitative, traceable **3D characteristics for many industries**.





TECHNICAL DATA

CM select	
Measuring principle	Confocal High-performance LED (505 nm / white)

Supplied with: MarSurf CM *select*

- Confocal measuring head
  – HDR camera (B/W or color camera)
  – 4x lens revolver with identification (optional)
- Gantry design including control electronics
- Motorized XYZ axes available in different variants
- Industrial computer including two 24" TFT monitors
- Objective lenses:
  – 5x to 100x selectable
- Vibration damping system available
- Multi-sensor system (optional)
- Overview camera (optional)
- MarSurf MSW for intuitive data acquisition
- MarSurf ASW for automation (optional)
- MarSurf MfM for professional evaluation, graphical representation and creation of measuring records (choice of Standard, Extended or Premium version)

APPLICATIONS

Mechanical Engineering
- To qualify and quantify roughness, geometry and wear volume

Electronics and semiconductors
- Component inspection down to the sub-micrometer range for defect-free products

Medical Technology
- Quality assurance of medical surfaces in production and laboratory

Material Science
- Optimization of functional properties of new surfaces and products

Microsystems Technology
- Measure complex surface geometries of smallest components with nanometer precision

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MarSurf WM 100

3D Surface Measurement

DESCRIPTION

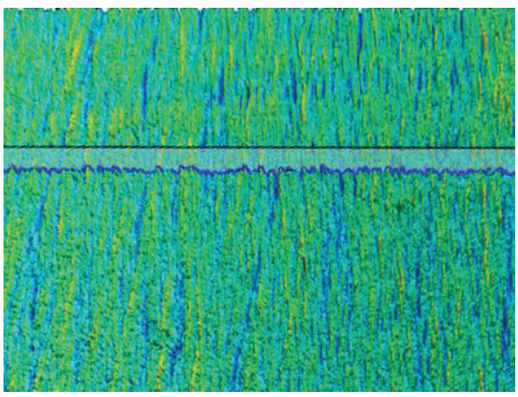
High-precision white light interferometry.The MarSurf WM 100 with new camera and functionally enlarged Interferometer Software offers sub-nanometer resolution and precision.

Key benefits:

- Maximum precision with sub-nanometer resolution and measuring accuracy
- Fast and simple measurements- reliable results
- Suitable for all optical and reflective surfaces, fine technical surfaces and surfaces of circuit boards, semi-conductor products and biological tissue
- Three different measuring modes: VSI, EPSI and PSI
- Special evaluation mode for small steps
- 2D surface analysis and measurement evaluations
- Topographical 3D surface analysis and measurement evaluations
- Manual table and object positioning in up to 4 axes
- Wide choice of lenses for perfect adjustment to the measuring object
- Sturdy design with granite base plate

Supplied with:

- Sensor system consisting of:
  - WLI sensor head
  - Camera, 1280 x 1024 pixels, up to 169 fps
  - 100 µm piezo drive z-measuring head
- WLI software module, operating Software
- PC with Windows 10 and 24" screen
- Granite base and column with manual positioning of sensor system
- Manual XY object table for object positioning
- 20x0.4 DI lens (white light Interferometer)



TECHNICAL DATA

WM 100	
Measuring principle	By interferometer, by white light interferometer Light source (WLI): LED, 505 nm
Measuring range	Sensor unit can be moved manually over 200 mm in Z Object table can be moved manually in X and Y Interferometer, white light interferometer: Measuring range (WLI): Up to 100 µm (vertical). More on request.

APPLICATIONS

Mechanical Engineering

- To qualify and quantify roughness of metal surfaces (ground, rolled, etc.)

Electronics and semiconductors

- Surface analysis of coatings, measurement and analysis of electronic and semi-conductor components

Medical Technology

- Metal, ceramic and plastic surfaces of implants, prostheses and Instruments

Optics

- Roughness analysis of optical components (all materials)

ACCESSORIES

Optional:

- CT 120 two-axis tilting table
- Tilting table for large angles +/–30°
- Set of standards
- WLI Objective lenses: 2.5x0.075; 5x0.13; 10x0.3; 20x0.4; 50x0.55; 100x0.7
- MarSurf MfM for professional evaluation, graphical representation and creation of measuring records (choice of Standard, Extended or Premium Version)
- Active vibration isolation system (for optimum damping for measurements in the nanometer and sub-nanometer range)

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MarSurf CWM 100

3D Surface Measurement

DESCRIPTION

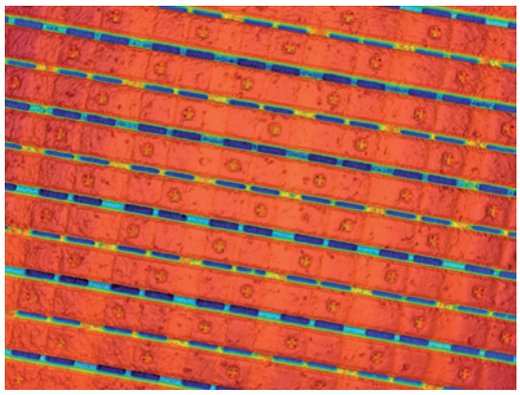
The multi-measurement solution MarSurf CWM 100 is a precise optical measuring instrument with sub-nanometer resolution combining a confocal microscope with a white light Interferometer.

Key benefits:

- Highest precision with sub-nanometer resolution
- Universal suitability for technical, optical and reflective surfaces. Also for surfaces of printed circuit boards and semiconductor products as well as biological tissues
- 2D surface analysis and measuring evaluations
- Topographic 3D surface analysis and measuring evaluations
- Intelligent measuring strategies - fast measurements – short measuring times
- Microscope image field sizes, easily expandable by fully automatic stitching
- Automatic table or object positioning: 100 mm x 100 mm, longer distances on request
- A wide range of lenses allows for an ideal adaptation to the measurement object
- Solid construction with granite base plate and granite column for the best possible vibration damping

Supplied with:

- Sensor system consists of:
  - Confocal microscope & WLI with 6x nosepiece
  - Camera, 780 x 580 pixels, up to 48 images/s (standard version)
  - 100 mm CNC controlled Z axis with integrated Heidenhain glass scale
- One operating software with WLI and confocal software modules
- Granite base frame and column with sensor system and CNC controlled object table
- CNC controled motorized Z axis and XY table for probe positioning and image field merging
- Lenses (optional)
  - 4x to 150x (confocal microscope)
  - 2.5x to 100x (white light Interferometer)



TECHNICAL DATA

CWM 100	
Measuring principle	By interferometer, by white light interferometer and confocal Light source (CM and WLI): LED, 505 nm
Measuring range	Sensor unit can be moved 100 mm in Z, CNC controlled Object table can be moved 100 mm in X and Y, CNC controlled Interferometer, white light interferometer: Measuring range (WLI): More as 4 mm (Standard mode), more as 20 mm in extended mode Confocal microscope: Measuring range (CM): more than 12 mm (depending on resolution in Z and lens)

APPLICATIONS

Mechanical Engineering

- To qualify and quantify roughness, geometry and wear volume

Electronics and semiconductors

- Component inspection down to the sub-micrometer range for defect-free products

Medical Technology

- Quality assurance of medical surfaces in production and laboratory

Material Science

- Optimization of functional properties of new surfaces and products

Microsystems Technology

- Measure complex surface geometries of smallest components with nanometer precision

ACCESSORIES

Optional:

- CT 120 two-axes tilting table
- Tilting table for large angles +/–30°
- Set of standards
- WLI Objective lenses: 2.5x0.075; 5x0.13; 10x0.3; 20x0.4; 50x0.55; 100x0.7
- Confocal microscope objective lenses: 10x0.3; 10x0.5; 20x0.4; 20x0.75;50x0.6; 50x0.8; 100x0.9
- MarSurf MfM for professional evaluation, graphical representation and creation of measuring records (choice of Standard, Extended or Premium Version)
- Active vibration isolation system (for optimum damping for measurements in the nanometer and sub-nanometer range

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

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MarSurf MFM - Software

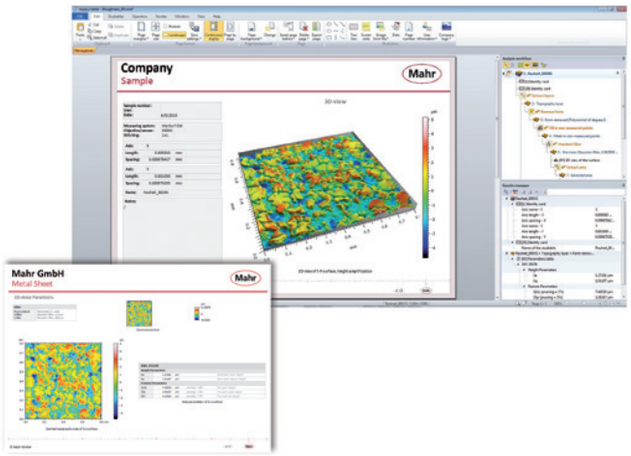
Powerful Software Solution

DESCRIPTION

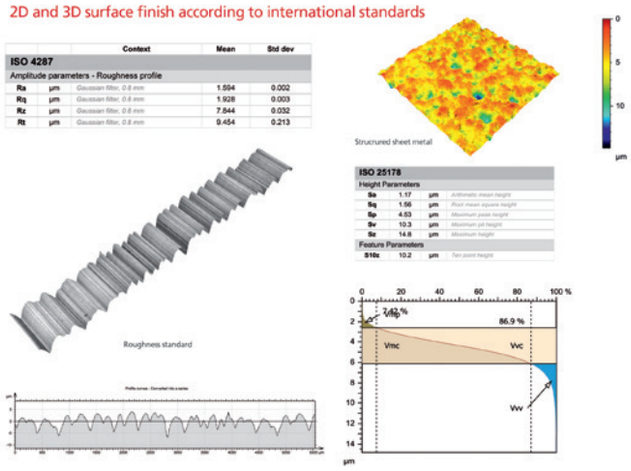
Effective analysis and documentation of all kinds of measured surface features. Standardized or customizable.

- User-independent
- Powerful automation options
- Customer-specific adaptation and analysis
- 3D analysis, ISO 25178, ISO 13565, ISO 12781,...
- 2D analysis, ISO 4287
- Geometry, volumes, contour, CAD comparsion, …

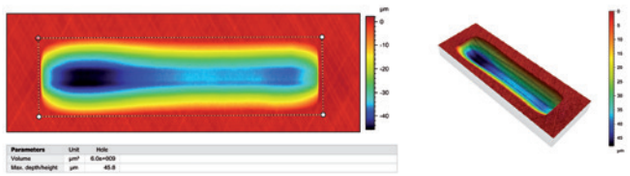
- The MarSurf MfM software offers everything needed to present and analyze structure, roughness, waviness, level heights, contours and other surface characteristics.
- Complex analysis reports can be created at the push of a button in the intuitive, multi-language user interface. Diverse presentation options such as the profile view, 3D reconstruction or reflection image generate detailed measurement protocols.
- The software always contains filter functions and the latest standard parameters. The software is available as a standard, extended and premium version. Further special modules, for example statistical evaluation, are available.



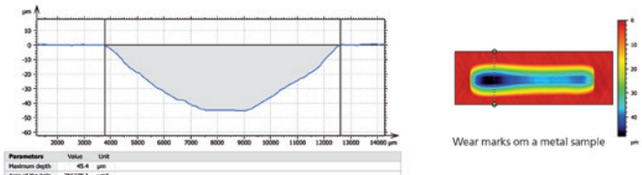
2D and 3D surface finish according to international standards



Volume / Wear



Cross-sectional area



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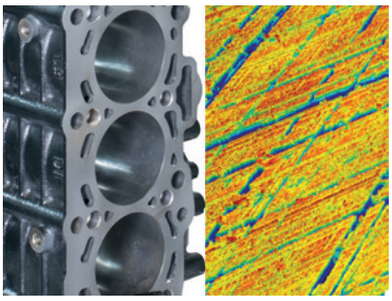
MarSurf 3D Surface Metrology - Industries

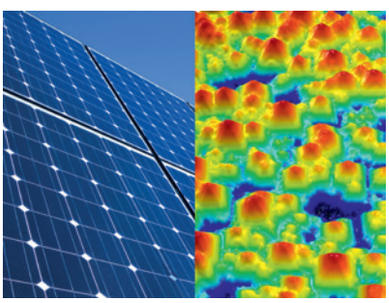
Automotive

- Powertrain
- Body-in-white
- Interior
- Electronics
- Glass components
- Coatings



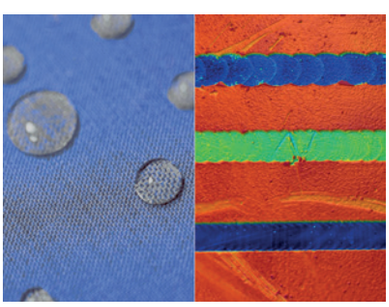
Energy

- Solar cells
- Fuel cells
- Batteries
- Gearbox and turbines



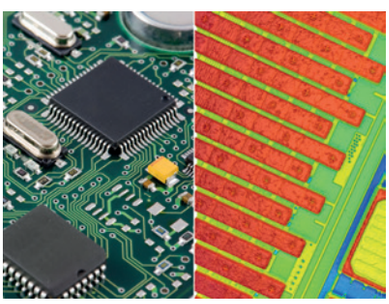
Printing and security

- Printing cylinder
- Printing plates
- Paper sieves
- Bank notes
- Security features
- Works of art
- Chip cards



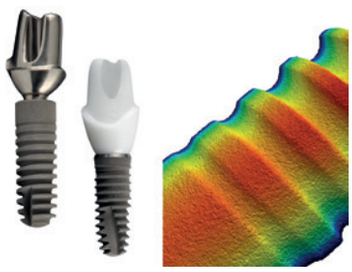
Electronic and semiconductor

- BGA
- MEMS
- High performance electronics
- Microelectronics
- Microvias
- Hybrid technology
- Conductor tracks and plates



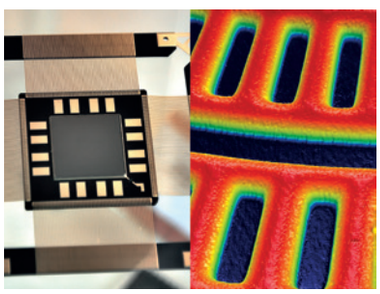
Medical Technology

- Implants
- Microfluidics
- Sensors
- Stents
- Microtomes
- Smart materials



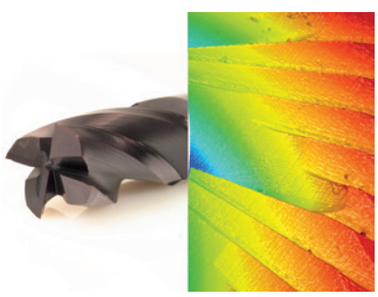
Microsystems

- MEMS
- LED
- High performance electronics
- BGA
- Micro-optics



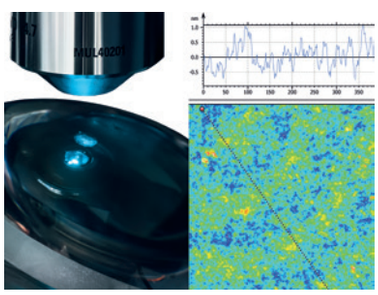
Tools

- Cutting and milling tools
- Razor blades
- Sand paper
- Coatings
- Micro-tools



Optics

- Lenses
- Plane optics
- Freeform
- Aspheres
- Laser and x-ray mirrors



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MarSurf WI 50 M

3D surface measurement

DESCRIPTION

Powerful entry-level solution

The MarSurf WI 50 M is a compact white light interferometer for the three-dimensional measurement and analysis of surfaces – ***contactless, independent of material, and fast***.

The new WI 50 M meets all requirements that your measuring tasks in the nanometer range demand – at maximum performance and a convincing cost-benefit-ratio. With the help of a functional tip/tilt table and the manual stages, adjustment and focusing are easy for you. Due to the concentration on essentials, its compact design and large positioning volume this tool satisfies the needs of an optimum entry-level solution in the best way.

Key benefits:

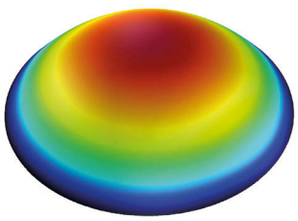
- High measuring speed – even at full resolution
- Eays handling
- Fast measurements
- Cost efficient
- High Dynamic Range (HDR) function, 16-bit
- Robust and reliable

This established optical measuring system is successfully used, for example, for:

- Roughness measurement according to DIN EN ISO 4287 / 25178
- Topography measurement (including volume, wear, isotropy)
- Measurement of microgeometry and layer thicknesses
- Users value the reliability of this measuring system, which provides quantitative, traceable **3D characteristics for many industries**

Supplied with:
MarSurf WI 50

- Interferometric measuring head – HDR camera (2 MP or 5 MP)
- L-tripod including control electronics
- Motorized XY table (105x220 mm)
- Manual Z-axis (220 mm)
- Measuring system computer with 24" TFT monitor
- Objective lenses:
  – 2.5x to 100x selectable
- MarSurf MSW for intuitive data acquisition
- MarSurf MfM for professional evaluation, graphical representation and creation of measuring records (choice of Standard, Extended or Premium version)



TECHNICAL DATA

WI 50M	
Measuring principle	White Light Interferometer High-performance LED (650 nm / white)
Resolution	up to 0.2 (nm) vertical
Measuring speed	up to 140 fps
Surface parameters	ISO 4287, ISO 13565, ISO 25178 …

APPLICATION:

- **Mechanical Engineering**
  To qualify and quantify roughness, geometry and wear volume
- **Electronics and semiconductors**
  Component inspection down to the sub-micrometer range for defect-free products
- **Medical Technology**
  Quality assurance of medical surfaces in production and laboratory
- **Material Science**
  Optimization of functional properties of new surfaces and products
- **Microsystems Technology**
  Measure complex surface geometries of smallest components with nanometer precision

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

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Servicio de Att. al Cliente

MarSurf WI 50

3D surface measurement

DESCRIPTION

The flexible, all-round measuring solution

The MarSurf WI 50 is a compact white light interferometer for the three-dimensional measurement and analysis of surfaces – ***contactless, independent of material, and fast***.

Allrounder-measurement solutions, flexible at all times, exactly where it comes down to the sub-nanometer: this is what the new MarSurf WI 50 stand for. These high-precision measurement tools for research and quality assurance deliver reliable 3D measuring data – quickly and straightforward in very few steps.

Key benefits:

- measuring speed – even at full resolution
- CNC-functionalitiy for all axes
- Safety through collision detection in all directions to protect your workpiece and measuring system
- High Dynamic Range (HDR) function, 16-bit
- HD-stitching: Consistent high resolution output of large measuring surfaces

This established optical measuring system is successfully used, for example, for:

- Roughness measurement according to DIN EN ISO 4287 / 25178
- Topography measurement (including volume, wear, isotropy)
- Measurement of microgeometry and layer thicknesses
- Users value the reliability of this measuring system, which provides quantitative, traceable **3D characteristics for many industries**

Supplied with:
MarSurf WI 50

- Interferometric measuring head
  – HDR camera (2 MP or 5 MP)
  – 4x lens revolver with identification
- L-tripod including control electronics
- Motorized XY table (50 x 50 mm) with glass scales for sample positioning and image field merging (“stitching”)
- Motorized Z-axis (70 mm) with glass measuring scale
- Measuring system computer with 24” TFT monitor
- Objective lenses:
  – 2.5x to 100x selectable
- MarSurf MSW for intuitive data acquisition
- MarSurf MfM for professional evaluation, graphical representation and creation of measuring records (choice of Standard, Extended or Premium version)

TECHNICAL DATA

WI 50	
Measuring principle	White Light Interferometer High-performance LED (650 nm / white)
Resolution	up to 0.2 (nm) vertical
Measuring speed	up to 140 fps
Surface parameters	ISO 4287, ISO 13565, ISO 25178 …

APPLICATION:

- **Mechanical Engineering**
  To qualify and quantify roughness, geometry and wear volume
- **Electronics and semiconductors**
  Component inspection down to the sub-micrometer range for defect-free products
- **Medical Technology**
  Quality assurance of medical surfaces in production and laboratory
- **Material Science**
  Optimization of functional properties of new surfaces and products
- **Microsystems Technology**
  Measure complex surface geometries of smallest components with nanometer precision

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MarSurf WI 100

3D surface measurement

DESCRIPTION

Automatable, high-end measuring system

The MarSurf WI 100 is a powerful white light interferometer for the three-dimensional measurement and analysis of surfaces – **contactless, independent of material, and fast**.

Allrounder-measurement solutions, flexible at all times, exactly where it comes down to the sub-nanometer: this is what the new MarSurf WI 100 stand for. These high-precision measurement tools for research and quality assurance deliver reliable 3D measuring data – quickly and straightforward in very few steps.

With additional manual Z positioning, a large x and y travel range and the possibility of automation, it offers excellent ease of use. The option of performing user-independent, fully automatic measurements makes this surface measuring system ideal for straightforward and efficient use in quality assurance.

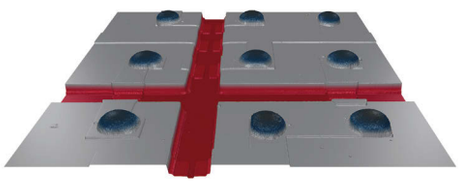
Key benefits:

- User-independent serial measurements by automation software
- High measuring speed – even at full resolution
- User-friendly concept
- Safety through collision detection in all directions to protect your workpiece and measuring system
- High Dynamic Range (HDR) function, 16-bit
- HD-stitching: Consistent high resolution output of large measuring surfaces

This established optical measuring system is successfully used, for example, for:

- Roughness measurement according to DIN EN ISO 4287 / 25178
- Topography measurement (including volume, wear, isotropy)
- Measurement of microgeometry and layer thicknesses

Users value the reliability of this measuring system, which provides quantitative, traceable **3D characteristics for many industries**



TECHNICAL DATA

WI 100	
Measuring principle	White Light Interferometer High-performance LED (650 nm / white)
Resolution	up to 0.2 (nm) vertical
Measuring speed	up to 140 fps
Surface parameters	ISO 4287, ISO 13565, ISO 25178 …

Supplied with:
MarSurf WI 100

- Interferometric measuring head
  – HDR camera (2 MP or 5 MP)
  – 4x lens revolver with identification
  L-tripod including control electronics
- Motorized XY table (100 x 100 mm) with glass scales for sample positioning and image field merging (“stitching”)
- Motorized Z-axis (70 mm) with glass measuring scale
- Additional manual Z-Axis (100 mm)
- Measuring system computer with 24”-TFT-monitor
- Objective lenses:
  – 2.5x to 100x selectable
- MarSurf MSW for intuitive data acquisition
- MarSurf ASW for automation (optional)
- MarSurf MfM for professional evaluation, graphical representation and creation of measuring records (choice of Standard, Extended or Premium version)

APPLICATION:

- **Mechanical Engineering**
  To qualify and quantify roughness, geometry and wear volume
- **Electronics and semiconductors**
  Component inspection down to the sub-micrometer range for defect-free products
- **Medical Technology**
  Quality assurance of medical surfaces in production and laboratory
- **Material Science**
  Optimization of functional properties of new surfaces and products
- **Microsystems Technology**
  Measure complex surface geometries of smallest components with nanometer precision

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