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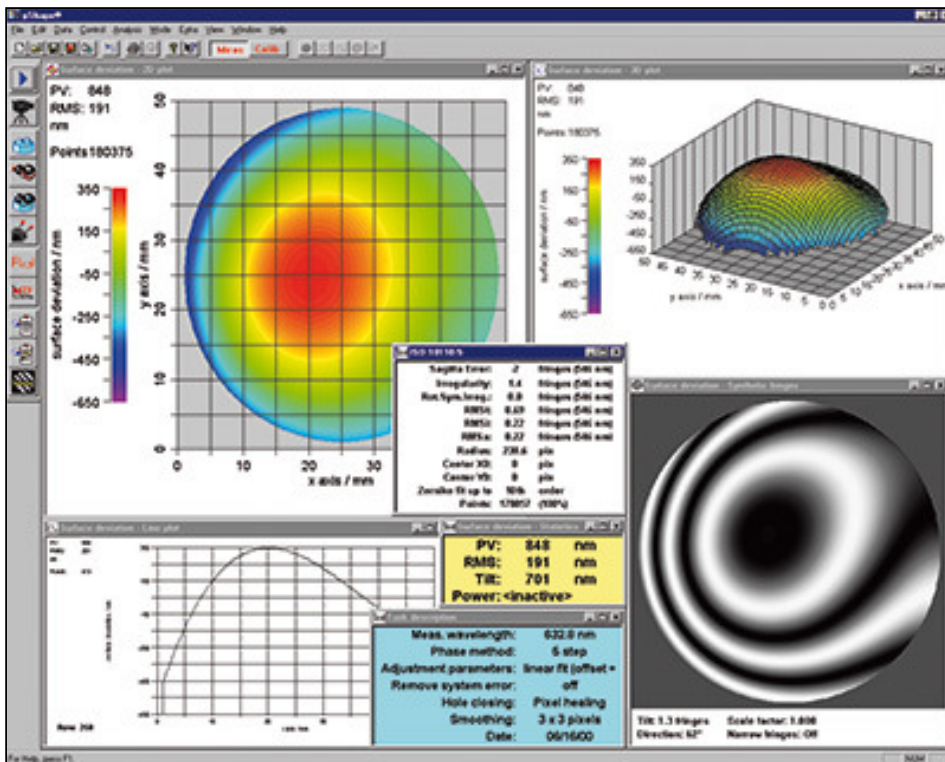
μPhase® Software

μShape™ Interferometry Software

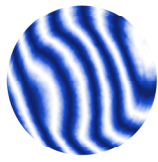
μShape™ Interferometer Software was originally developed for the μPhase® compact interferometers, today interferometers from other manufacturers work with μShape™, too.

With its clear and menu driven user interface μShape™ perfectly deals with the variety of measurement requirements and provides several modules which expand the capabilities of μShape™. Here it pays off that the interferometer software development team from TRIOPTICS Berlin, formerly FISBA OPTIK, Berlin, has 20 years of experience in software development, especially in the field of optical metrology. The advanced level of the software is demonstrated each time whenever the software is sold to support other interferometers on the market.

In general, μShape™ works with all Windows® systems including Windows® 7 and is designed for ease-of-use as well as full functionality. It controls and displays the measurement results, stores and documents all measurement raw data and ensures maximum transparency and traceability.



Typical μShape™ Screen



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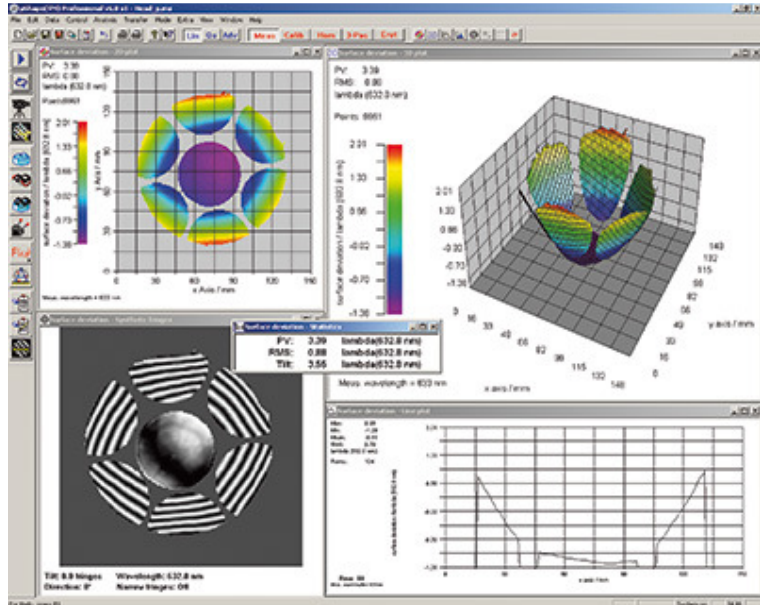
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μ Shape™ Professional Software

The Professional version is the all-rounder amongst the μ Shape™ family. It is used for measuring the topography of flat, spherical, cylindrical, toric and aspherical surfaces or wavefronts and is employed in production, laboratory and research. Add-on modules enable to adapt the software to custom specific demands. These modules can be added at any time even after the purchase.

The μ Shape™ Professional software is pre-installed on a state-of-the-art PC, included with every TRIOPTICS' μ Phase® interferometer system.

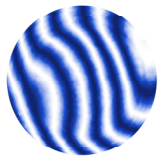


Typical μ Shape™ Screen

General Functions of the μ Shape™ Measuring and Analysis Software

- Different levels with different access rights
- Shortcuts for most used program functions
- Comprehensive context-sensitive online help
- Various program modes enable the separate visualization of calibration and measuring processes and its parameters with an integrated live camera image
- Automatic updates of displays and images after every change of analysis parameters and new measurement
- Easily pre-configured templates for a wide range of measuring tasks and analyses
- Storage of all parameters and settings, including window size and position, with specimen data in μ Shape™ program file
- Graphic windows can be stored in several graphic formats (bmp, jpg,...)
- Export of individual parameters or of selected data fields as text, binary or other common file formats (e.g. QED, Zygo XYZ, DigitalSurf) for external processing
- The measurement results are presented in parameters or graphically as a cross section, in 2D or 3D
- Printout of selected graphic displays or of the entire window
- Measurement protocol shows the results at a glance and can be widely configured including the customer's logo

Access protection and configuration of add-on modules by dongle.



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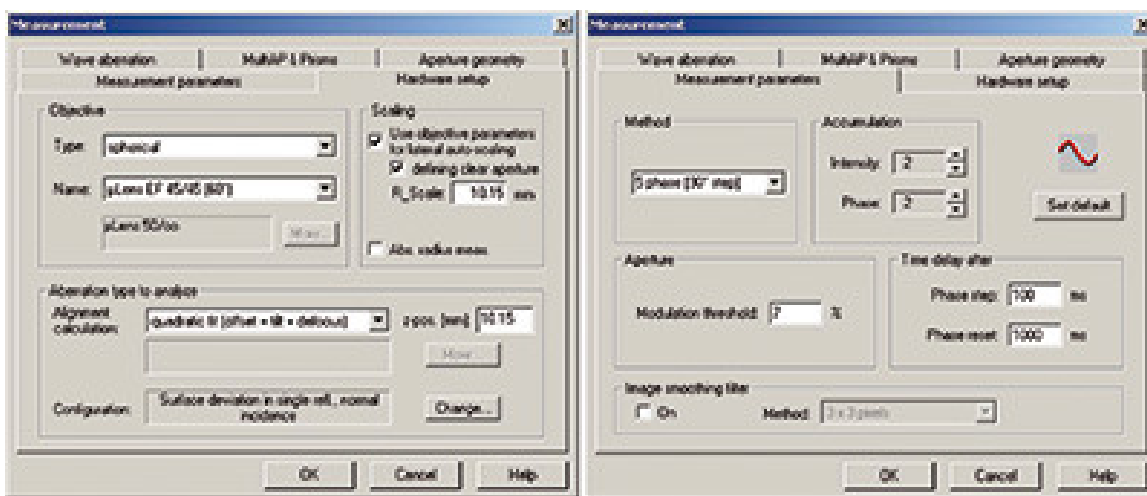
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Basic Measuring and Calibration Settings of μ Shape™ Software

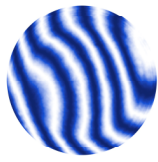
- **Measuring parameters**
Sets measuring parameters for any given measuring configuration: choice of phase measurement method, phase computation, and phase-shift wait times, separately for calibration and measurement of specimen.
- **Wavefront parameters**
This function sets all parameters necessary for the computation of wavefronts, such as subtraction of calibration data; activation of various smoothing and holeclosing methods; compensation of adjustment errors for flat, spherical, cylindrical, aspherical and toric specimen; and geometrical operations (rotation, mirroring and data-field shift).
- **Masks**
Sets geometrical elements (circles, ellipses, rectangles, squares and polygons) in any combination as transparent or opaque masks
- **Configuration**
Selects test setups, such as measurement of surfaces in perpendicular reflection, wavefronts in double transmission, automatic conversion of results and scaling of the measured field in units of length.

Visualization

Graphic display of data fields (intensity, phase image, measured data) displayed as a cross-section, 2D or 3D image. All parameters and statistical values in table form. Display of statistics, DIN and ISO parameters, Zernike and Seidel coefficients is available.



Hardware setup and measurement parameters dialogs



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μShape™ Add-On Modules

For extended measurement tasks and further analysis the μShape™ software offers a great variety of add-on modules which can be added by the user if needed. Among these are:

- Analysis of aspherical surfaces in spherical or CGH setups
- Analysis of cylindrical or toric surfaces
- External communication interface for controlling the interferometer by external programs, e.g. in an automated system
- Measuring of homogeneity of glass plates
- MTF analysis of focal or afocal optical components and systems
- Measuring multiple apertures in one shot, e.g. on polishing heads
- Statistical analysis of multiple sub-apertures at the same time
- Prism and wedge measurement and analysis
- Considering known sample deviations e.g. deviations caused by the optical design
- Analysis of the tool offset of lathe machines
- Analysis of wafer plates
- Roughness and PSD analysis
- Static fringe analysis for fast measurements in instable environments

Special μShape™ versions

In case the powerful μShape™ Professional software does not meet the customers' needs TRIOPTICS offers special and customized software solutions.

μShape™ FastFringe Software

The FastFringe Software is designed for interferometers without phase-shifters. The measurement results are calculated by a static fringe analysis from a single interferogram. The analysis features are very similar to the μShape™ Professional with only a few exceptions not useful for non-shifting setups.

μShape™ Customized Software

The Customized version is an individual version of the Professional Software, which is specifically designed and created for special customer needs. A variety of add-on modules are available, enabling to extend the functions of the software.

Customized analysis and display functions, add-on modules or exclusive modules for customer specific measuring tasks are provided with the customized version of the software.

μShape™ Generic Software Package for Third-Party Interferometers

The μShape™ Generic Package can be used with the majority of commercial phase-measuring interferometers or individual interferometer setups. Each package includes drivers for nearly all kinds of camera interfaces and optionally a piezo-element preamplifier.

Contact TRIOPTICS or Armstrong Optical for further details and an offer tailored to your needs.

