

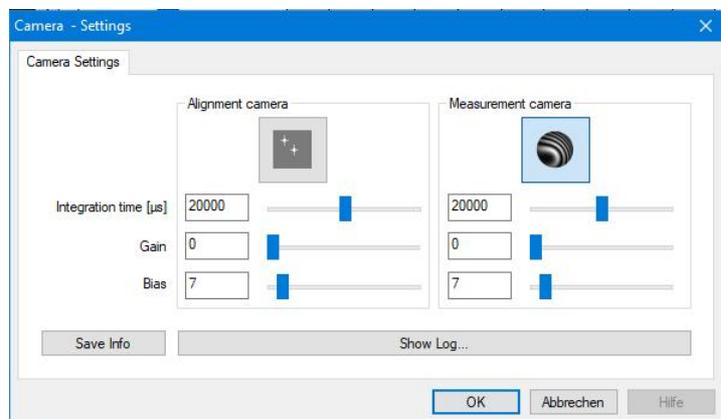
Feature: Camera Settings

General

The µShape™ software supports different cameras by providing a universal plug-in interface. There are interfaces for several real and virtual cameras available. The term “real camera” refers to usually physical cameras and frame grabbers to capture images. “Virtual cameras” denotes interfaces for special purposes, e.g. to read camera bitmap files or simulate fringe images. Each plug-in has an own individual settings dialog for controlling properties of the camera that can be accessed in the Live Image View.

1 The different µShape™ camera plug-ins

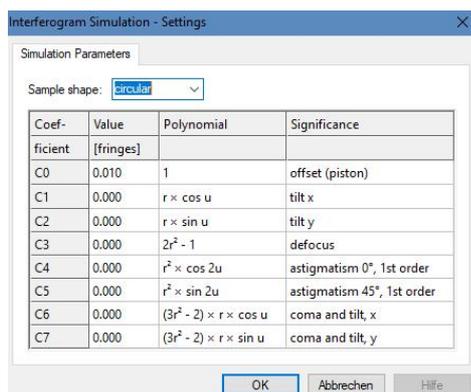
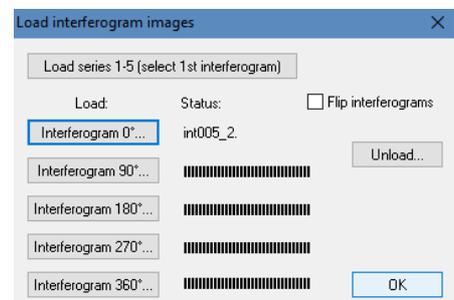
The µPhase® camera plug-in is used for setups basing on µPhase® interferometers. The µPhase® (only µPhase® 2/ µPhase® 3) contains two cameras. The alignment camera helps the user to align the interferometer in respect to the sample. The measurement camera captures the fringe images during measurement. The settings dialog for this plug-in allows the user to change several settings of both µPhase® cameras (see right). The integration time controls the illumination time of the sensor pixel for each image capture. The value can range from 1 to 8000 ms. The gain value controls the internal pixel gain to increase the intensity. A change of the bias value controls the signal base level which defines the zero grey value of the image.



The MilCam camera plug-in refers to the Generic Package software package for interfacing analog and digital third party cameras. There are only two settings available. The offset value defines the image base level, which refers to the zero value of the image. The gain controls the analog video signal amplifier of the frame grabber.

The DirectShow camera plug-in is used for any direct show compatible camera. It provides the same settings like the MilCam plug-in.

The image to the right shows the settings dialog of the FileCam camera plug-in. This plug-in is only available for use with µShape™ Analyzer software version. It provides the

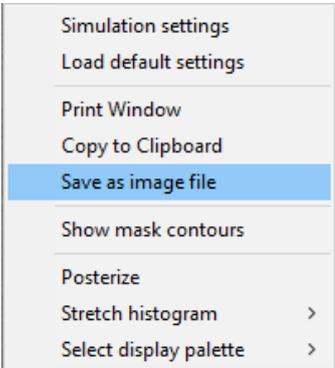


possibility to read stored fringe images. Five phase shifted fringe images are required for the µShape™ default phase shifting algorithm to calculate the resulting aberration.

The DemoCam camera plug-in (left) is part of the µShape™ Demo software version. You can simulate different fringe patterns using of the well-known Zernike polynomials.

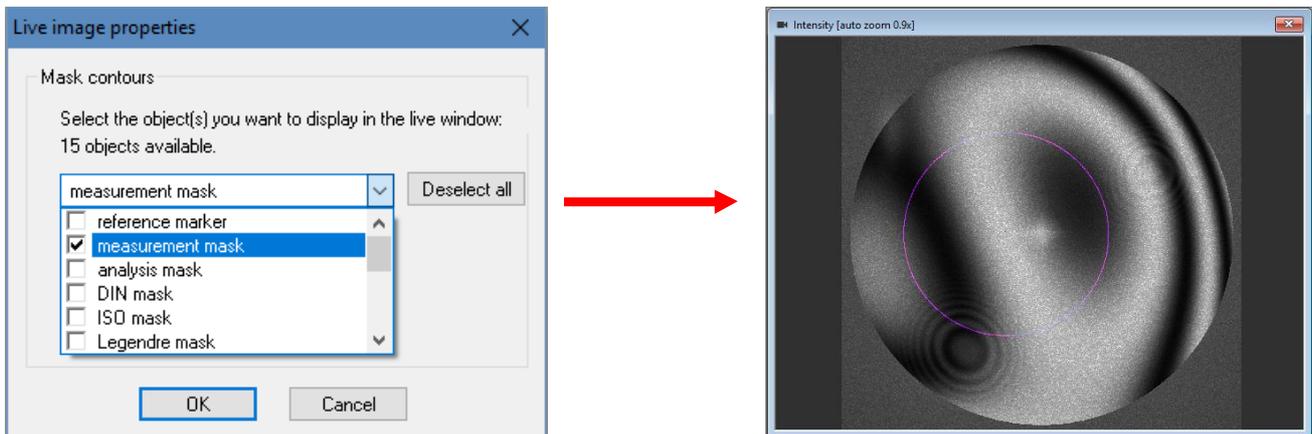
2 Additional Live view Features

In addition to the features mentioned above the µShape™ Live Image has some other helpful features. The list of options, available via right-mouse click menu, depends on the current camera plug-in.



For example is it possible to copy the currently displayed camera image to clipboard to use it in other programs. It can be also saved as image file in different graphic formats (bmp, jpeg, png, tif).

Another useful feature is the possibility to display the mask contours of one of the µShape™ masks in the live image window. (For more information about masks see [G1].) This is done by choosing **Show mask contours** from the popup menu. A dialog opens listing all available masks. The contour of the selected mask is then overlaid to the current fringe image.



It is possible to select several masks simultaneously. If a selected mask is not available, e.g. Zernike mask selected but no Zernike analysis activated, the contour is not displayed in the live image. But as soon as the corresponding analysis is activated the mask contour is displayed.

The different masks are indicated by different colors.

Finally there are options (posterize, stretch histogram, display palette) to change the appearance of the grabbed camera image in the Live image window. This is useful for example to emphasize the fringes.

3 Reference Documents

[G1] µShape Feature: Masking (“mShape_Masks.pdf”)

The references can be found in our download area (www.trioptics-berlin.com/downloads).

If you need more information don't hesitate to contact us at software@trioptics-berlin.com.