

Feature: Automatic Pupil finding & Mask Coupling

General

The described feature is available for all µShape™ versions.

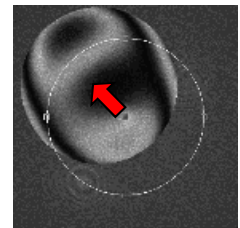
The Automatic Pupil Finding algorithm searches the measured pupil automatically and moves the analysis mask to the found pupil. Mask Coupling connects the special analysis masks (Zernike, ISO, etc.) to the analysis mask. This simplifies the alignment of samples, because the software can search the phase map on its own and carry out the entire analysis on the correct sample area. For more general information about masks see [G1].

1. Automatic Pupil Finding

- Autom. Pupil Finding
- Autom. Resize

Automatic Pupil Finding (APF) is activated by a check box in the **Analysis mask** dialog and works with all types of mask objects including combined masks.

When APF is activated, the point of gravity of the measured phase map is calculated after each phase calculation. For the current analysis mask the point of gravity is determined, too. Along the translation vector, which connects both gravity points, the analysis mask is moved to the gravity point of the current phase map. The translated mask is used as new analysis mask. The mask is moved only to the new position. It is not resized or rotated.



If the analysis mask consists of only one single mask object (e.g. circle or rectangle) the check box "Automatic Resize" is enabled. By checking it the mask is resized automatically to the detected area of valid data points. This is done by determining the mean distance of all aperture points to their center of gravity and resizing the mask object accordingly. Non-symmetric mask objects (rectangles, ellipses) keep their user-defined aspect ratio.

2. Mask Coupling

For all special analysis masks (e.g. Zernike, Seidel, MTF, ...) a couple status must be set, marking the relationship of the analysis mask to the special mask. **Free** masks work independently of the analysis mask. **Linked** masks have a fixed coupling vector, describing the distance of gravity points between both masks. When the couple status is set to **equal**, the special analysis function uses the analysis mask.



All coupled masks are moved accordingly it's couple status, when the Analysis Mask is moved, e.g. by automatic pupil finding.

The status equal is only available when an analysis mask type is defined which is suitable for the special analysis. For the Zernike calculation e.g. a transparent circular mask is required. Masks can be linked to any type of analysis masks.

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.