

# Calibration



ATOMS  
Precision V2

Calibration is a process used to validate device image capturing devices. Device can be a camera or a source device such as optical scanners. Validation is done for the following parameters.

- Image cropping.
- Selection of Contour computation algorithm.
- Pixel size calculation.

Validation results saved as an optical profile file. Calibration process is not required for DXF files.

## IMAGE CROPPING

Select **Start** tab as shown in figure 1.

Select **Import Source Base file** from Image source panel.

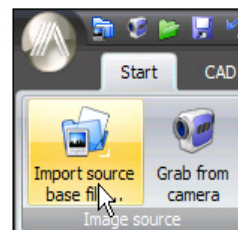


Figure 1

Select **Calibration.jpeg** from tutorials folder.

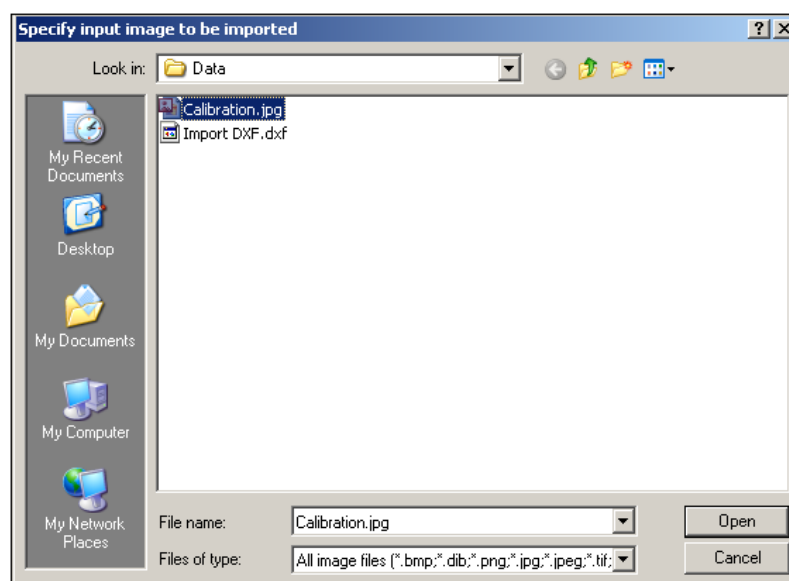


Figure 2

Select **Default** from the optical profile selection window.  
Click **OK** to open image file in Calibration tab.

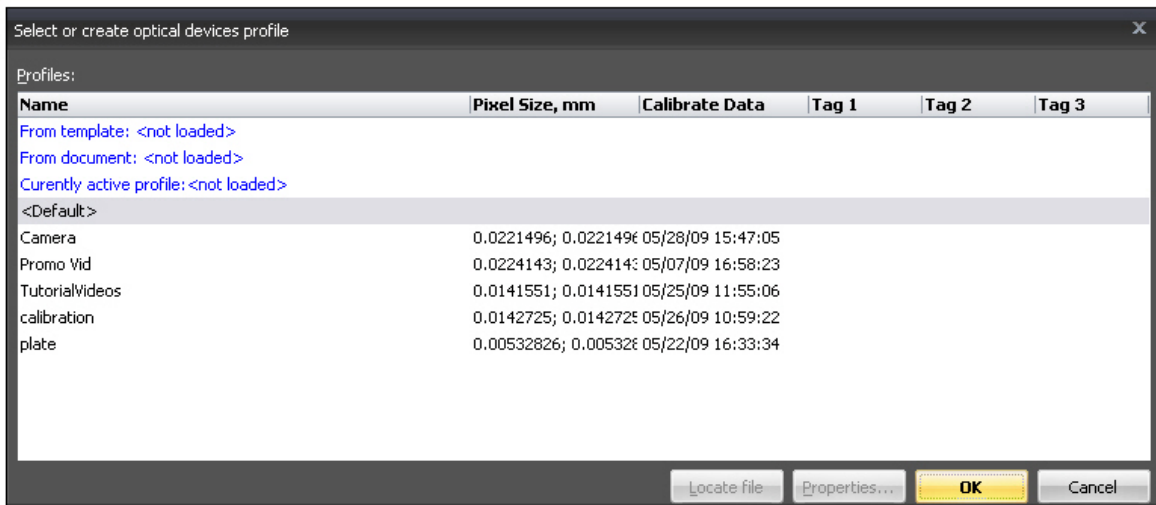


Figure 3

Click **Calibration tab**  
Right click on status bar. Select **Image Cropping** from tool pop up menu.

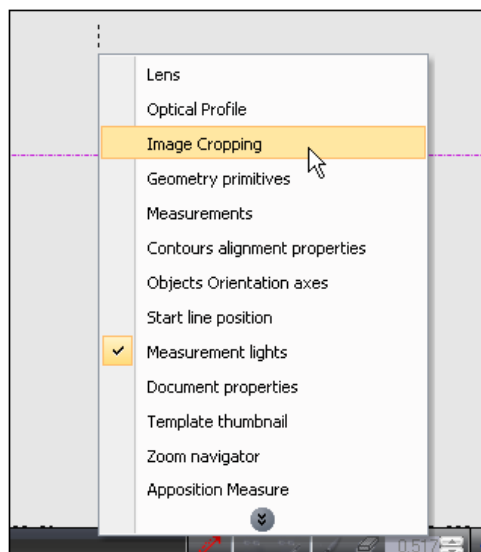


Figure 4

Select **Enable**. Select **Paint** in drawing area panel.  
The cursor changes to Paint Tool.

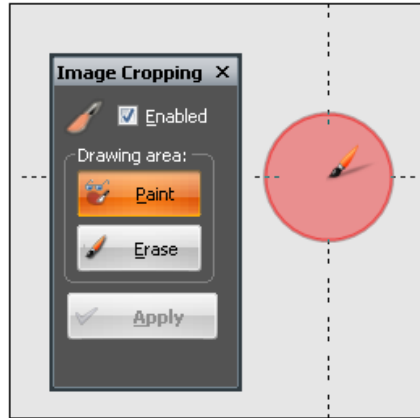


Figure 5

Mask unwanted area using paint tool by holding Left Mouse Button (LMB) and drag on the image.

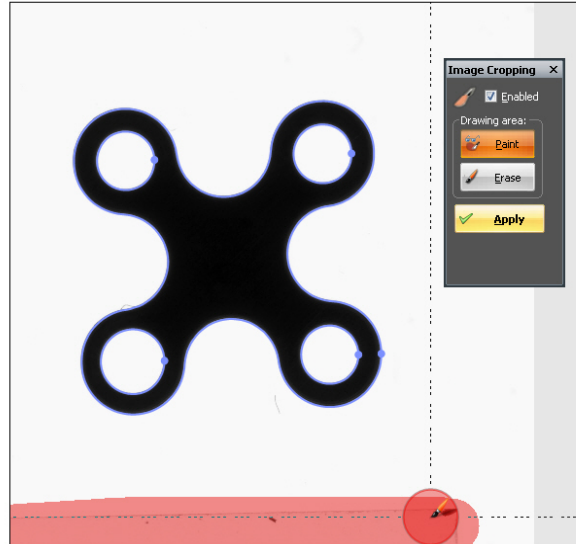


Figure 6

To erase mask area, please select **Erase** button from image cropping panel. The cursor changes to erase tool. Erase mask area.

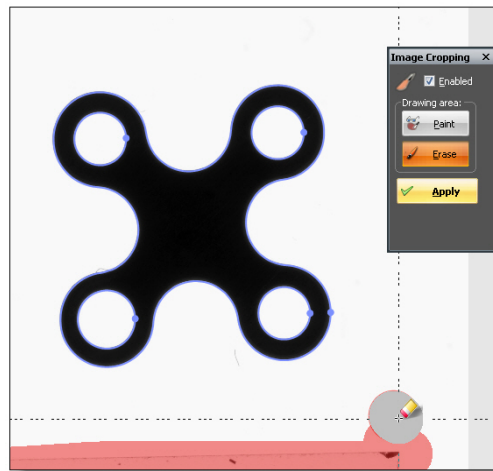


Figure 7

Select **Apply** from Image cropping panel to erase masked area from the image.

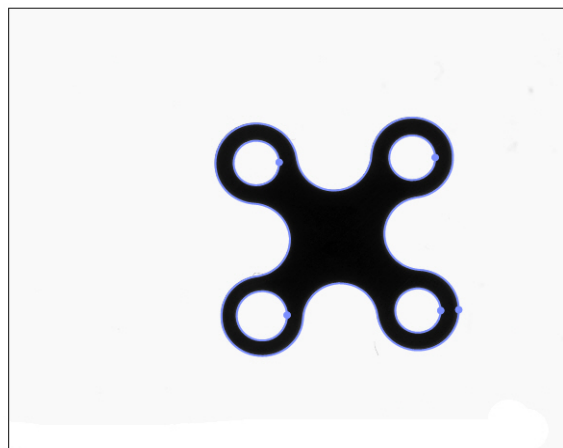


Figure 8

### CONTOUR COMPUTATION ALGORITHM

Contour computation is the process of distinguishing the real edges of the imported image from the background. It defines the boundary of the inspection object.

Sigma Global is an edge detection algorithm, which is used for contour computation. Accuracy of edge detection depends on image quality.

Before apply this algorithm make sure background is single colored. This algorithm cannot be used on backgrounds with varying color and contrast.

Select **Sigma Global** from Modes panel.

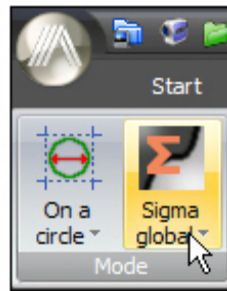


Figure 9

### PIXEL SIZE CALCULATION

Select **Calibration by a diameter** from Mode panel.

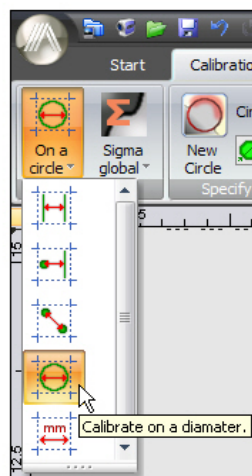


Figure 10

Mask contour to create circle object.

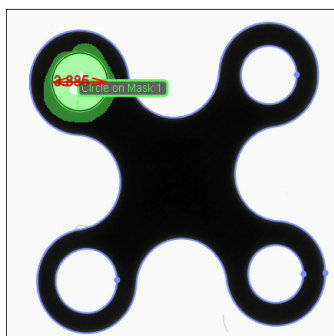


Figure 11

Enter actual value ( 2.5mm) in Calibration sample and press **Enter**. New pixel values are calculated.

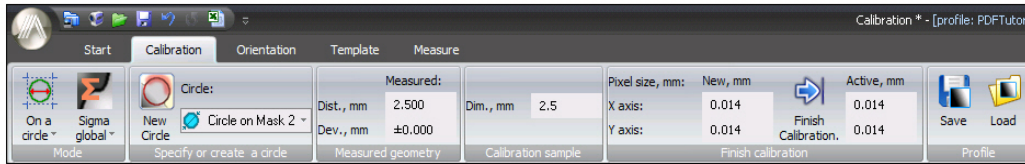


Figure 12

Select **Finish Calibration** button. New pixel value is applied to the image.

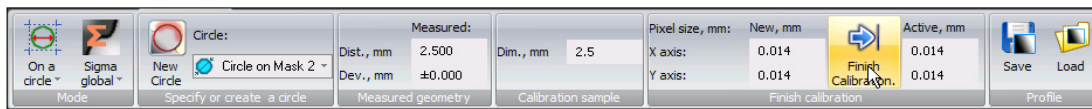


Figure 13

Select **Save** from profile panel. Select optical profile name defined in step 6. Use load option to check pixel values are updated.

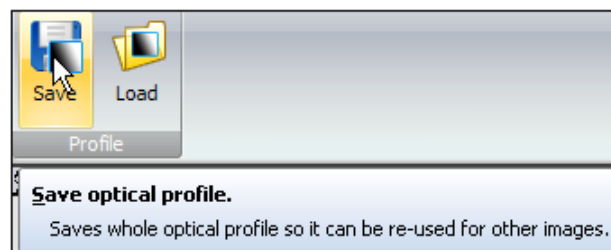


Figure 14

Select save as new profile.

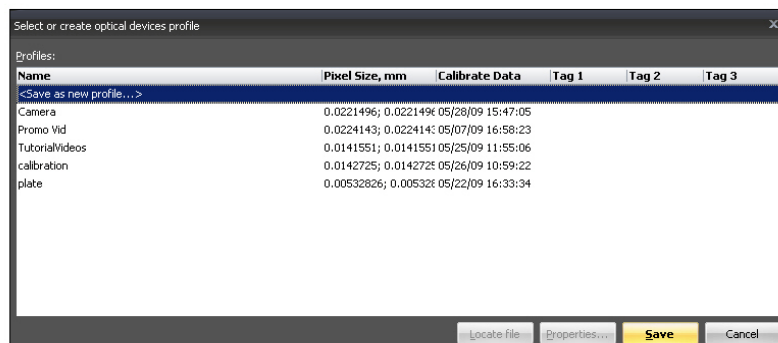


Figure 15

Enter optical profile file name and save.

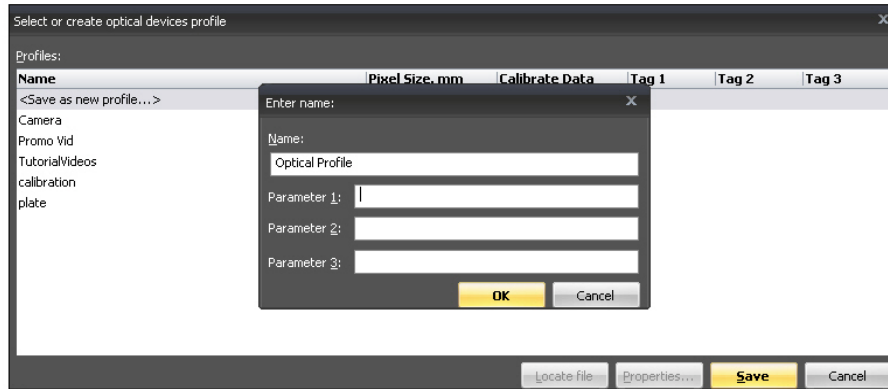


Figure 16

New optical profile file is loaded. We can check this in the title bar.

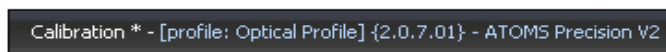


Figure 17

