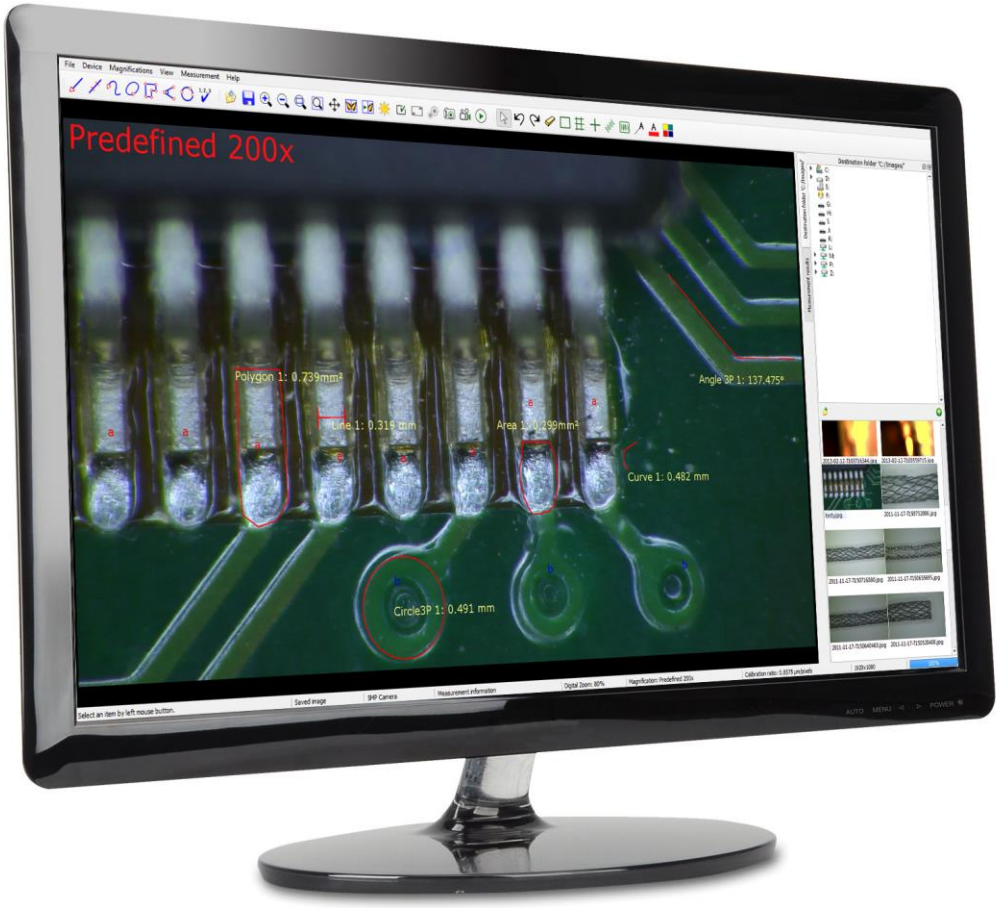
Opti*Pix 1.7.x*

User's Manual



This manual describes how to use Opti*Pix* Full and Opti*Pix* Lite software

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1. Installation and Startup (First time)

1.1 How to Install OptiPix

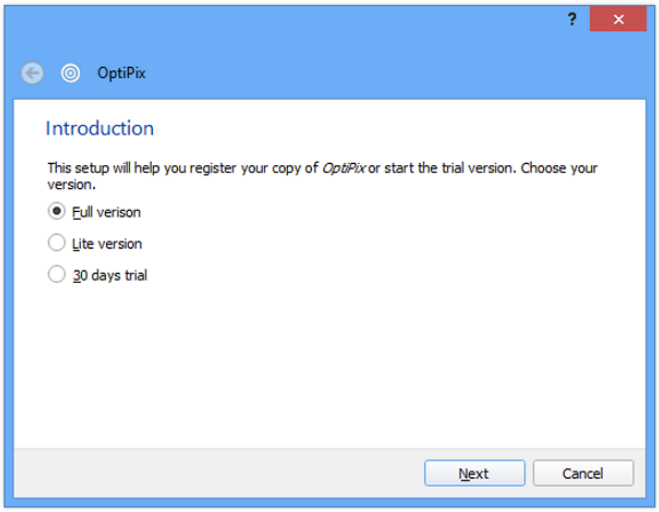
Prior to installing **Opti*Pix*** the user needs to install camera Device Drivers**.**

To install Opti*Pi*x the user has to run the provided installation file. Double-click on it and a new window will be displayed.

1) Click “Next” to continue.
2) Choose a folder in which to install OptiPix. Click “Next” and “Next” again to start the installation.
3) When the installation is complete click “Close” to exit the window.

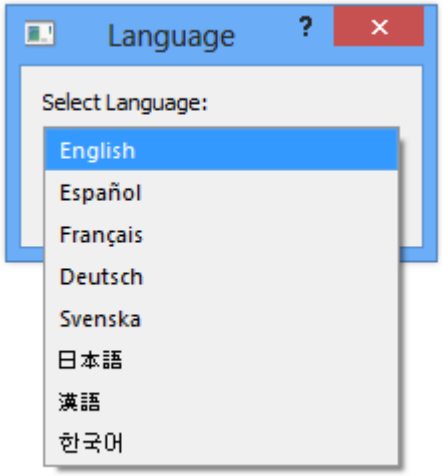
1.2 Using Opti*Pix* for the first time

1) Before launching OptiPix please make sure your Optilia device is connected.
2) Insert the software protection dongle into a free USB port on computer. If a full version of the software has been ordered, the protection dongle will be found inside the product box.
3) From Windows main menu, click “Start/All Programs/Optilia/OptiPix” and run **Opti*Pix***.
4) Select language from the list.
5) From the “Introduction” dialog box, select:
   a. “Full Version” if a full license has been ordered with the software protection USB dongle. All software functions will be enabled.
   b. “Lite Version” if a lite version has been ordered only image view, capture, annotation and distance measurement on image will be enabled.
   c. 30 days trial version for trying the software for 30 days. All software functions will be enabled for 30 days. Skip part 5 (license number).
6) Fill in license number (found in the package) and the other requested information.
7) PLEASE READ THE LICENSE AGREEMENT CAREFULLY before using **Opti*P*ix.**
8) The software will automatically detect and select the installed Optilia device.



1.3 Language

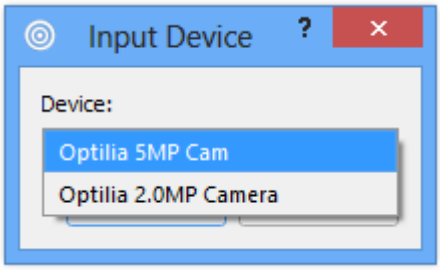
It is possible to set language for Opti*P*ix upon first start up. Alternatively, the language settings can be changed from the “File/Preferences” menu. Available languages are English, Spanish, French, German, Swedish, Korean, Japanese and Chinese.



1.4 Device Resolution and Properties

The software finds automatically the installed Optilia device upon the start of the program. If another device is preferred please go to input device later and select “Device/Input Device”.

To automatically select a device while the software is running click on this icon or select “Device/Automatically Detect Device”



To change device resolution click on this icon or select “Device/Device Resolution”.

To change device properties click on this icon or select “Device/Device Properties”.

Note: *To quickly change Input Device, right click on the camera status label and choose desired device.*

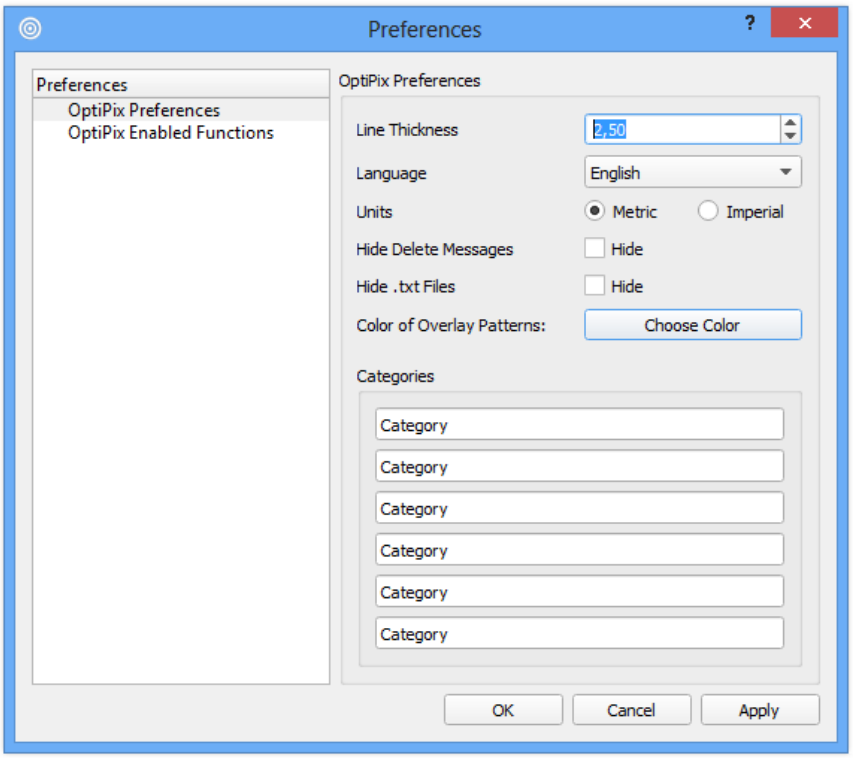
1.5 Preferences

Preferences can be found in “File/Preferences” menu.

In Preferences, the user may change overall settings of the OptiPix software, preferably modifications that rarely need to be altered. The preference window consists of preference categories on the left and settings for the selected category on the right.

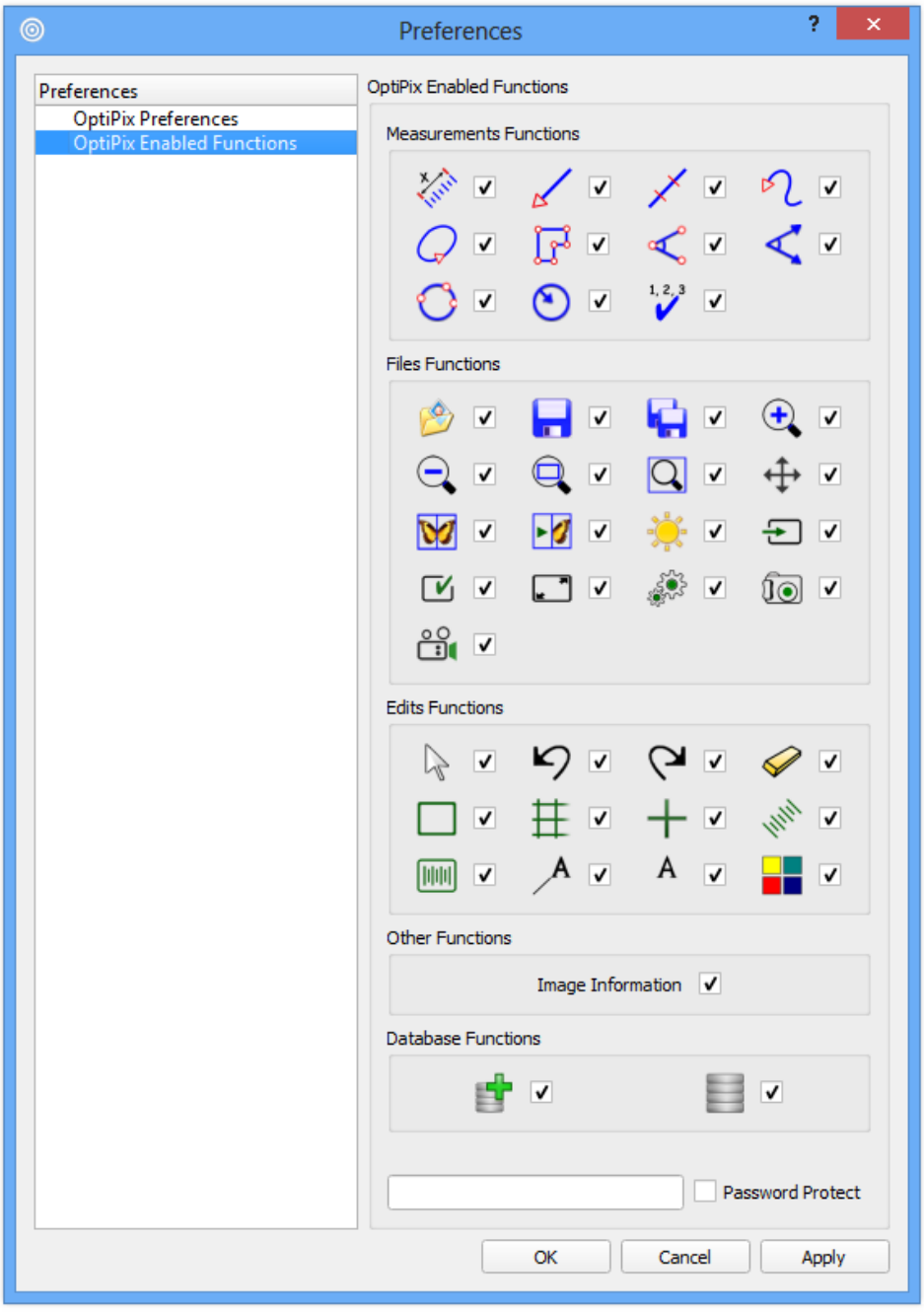
1.5.1. OptiPix Preferences

On the OptiPix Preferences category the following may be changed: line thickness, measurement units (between metric and imperial), hide delete messages, hide .txt files, choose colour of overlay patterns and define custom categories for the “Count” function. Changing the line thickness will change the thickness for the selected measurement and annotations as well as the overall patterns. Using a thickness of 0 will make the line visible but will keep the same thickness even if the user digitally zooms in our out.

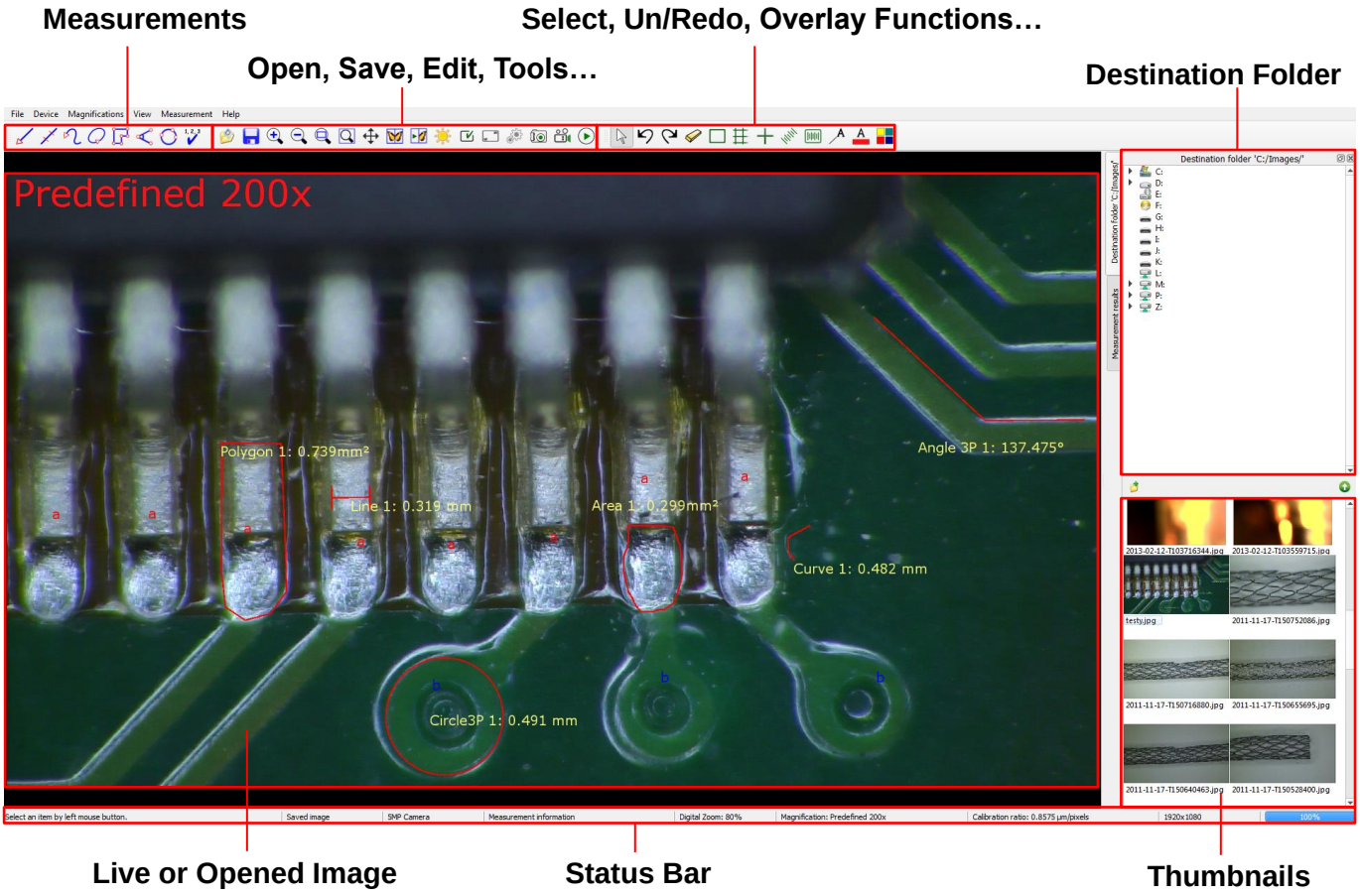


1.5.2. OptiPix Enabled Functions

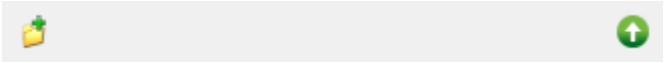
On the OptiPix Enabled Functions it is possible to disable or enable functions in OptiPix. This is convenient if the user finds some functions unnecessary and would like to make the user interface cleaner. The changes are possible to protect using a password.



2. Opti*Pix* Overview



2.1 Destination Folder and Image Archive



In the folder structure, the user can choose the folder destination in which to save or recall images. Choose a destination folder by selecting “File/Set Destination Folder”. The images in this folder are displayed as thumbnails beneath the folder structure. To hide the folder structure, click this icon .

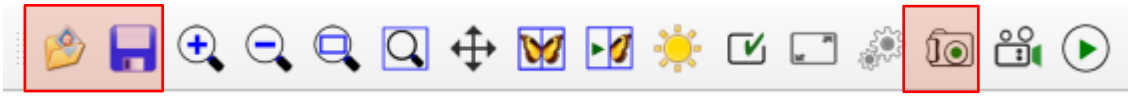
To create a new folder, click this icon or right click inside the box to choose new folder.

The created folder will now be the destination folder.

***Note**: By right clicking in the file structure or on the thumbnails user can choose from a number of different tools like copy/paste and rename.*

***Note:** In preferences it is possible to hide txt files that are shown in the thumbnails view.*

2.2 Open and Save Images



To open an image but keeping the destination folder click this icon or select “File/Open Image”, then choose which image to be opened.

To load a thumbnail image or a document from the destination folder, left click on it or right click and choose open. If the image contains measurement objects, the measurement results will also be loaded to the measurement table.

Note that these measurements are part of the image and cannot be changed as they are “burnt into” the image.

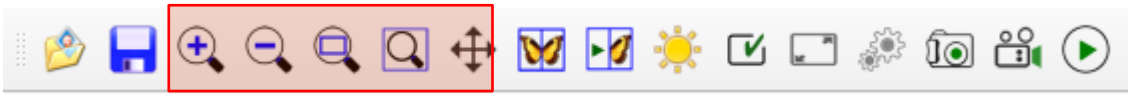
To save an image, there are two options:

- Save the image with a user specified name. The measurement results will be saved with the same name. The image is stored as a .jpg file and the measurement results as .txt file. This is done by clicking on this icon or selecting “File/Save Image”. *Hot key: Ctrl + S.*

- Take a snapshot of the image. The file will be automatically labeled with date and serial number. This is done by clicking this icon . *Hot key: F11.*

To export the measurement results only, right click on the measurements results table and choose “Export Measurement Results” or select “Measurements/Export Measurement Results”. This file will be saved in the destination folder.

2.3 Zoom and Panning



There are four ways to zoom digitally, both in live and still image mode: zoom in, zoom out, zoom to fit and full size. Turning the wheel of the mouse zooms in/out, using the cursor as center of the zoom.

2.3.1 Zoom In

Zoom in by clicking on the icon or select “View /Zoom In”. [**Hot key: F4]**

2.3.2 Zoom Out

Zoom out by clicking on the icon or select “View /Zoom Out”. [**Hot key: F3]**

2.3.3 Zoom to Fit

Zoom to fit the screen size by clicking on the icon or select “View /Zoom to Fit”.
[Hot key: F2]

2.3.4 Full Size

To apply full size (no digital zoom) select “View/Full Size”. **[Hot key: F5]**

2.3.5 Full Screen

Zoom to full screen by clicking on the icon or select “View/Full Screen”. [**Hot key: F6]**

To close the full screen view press ESC. The snap and the trigger functions will work as usual even under full screen view. In Full Screen mode, the user can browse through images by turning the wheel of the mouse. A right click will give the option to exit Full Screen mode.

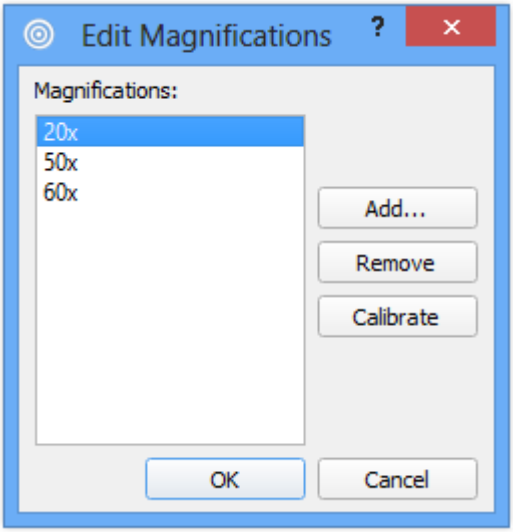
2.3.6 Panning

To pan the image when zoomed in, use the middle button of the mouse, or click on the icon.

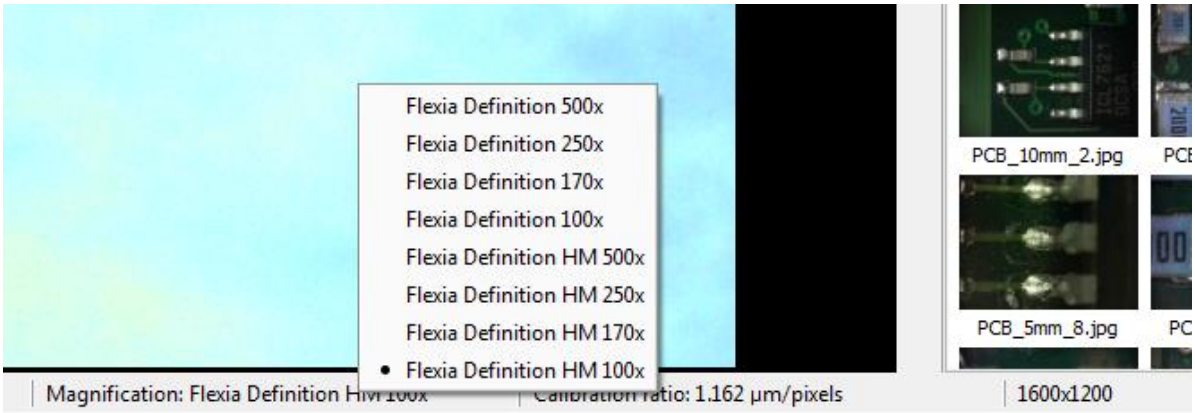
3. Magnifications and Calibrations

3.1 Magnification

To select a magnification go to the “Magnification” and choose the desired one in the menu list. Both predefined as well as user-defined magnifications will be listed. To create a new magnification, select “Magnifications/Edit Magnifications”, and then click on the “Add…” button. Type preferred name of the magnification and hit the OK button. This will automatically go to the calibration procedure, please see next chapter.

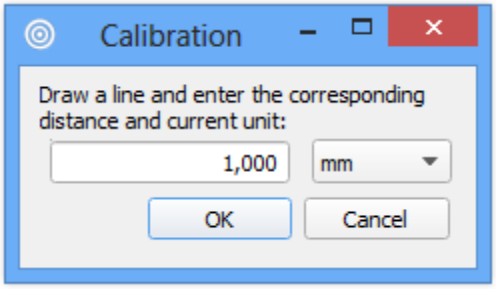


For quick selection of magnification, right click on the Magnification (bottom of the OptiPix window) and choose desired magnification.

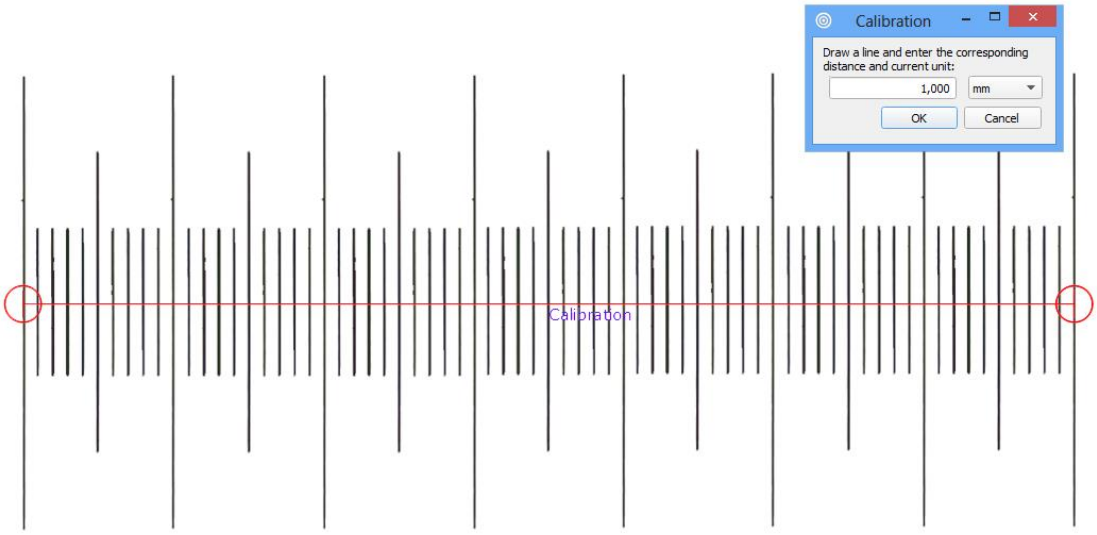


3.2 Calibration

To calibrate a selected magnification, place a Micrometer Scale or a Ruler, depending on the magnification of current optics, in the live image and focus. To start calibrating, go to "Magnifications/ Edit Magnifications", select the preferred magnification in the list and click on the Calibrate-button. The image of the Micrometer Scale or the Ruler will be frozen and a new dialog window will appear. See image below.



On the image, there will be an already drawn line. Select and drag the ends of the line to match the ruler in the background.



Type in the distance and select the desired unit. If imperial units are selected in the preferences, imperial units are shown in the calibration window. Selected calibration ratio will be seen on the status bar at the bottom of the Opti*P*ix window.

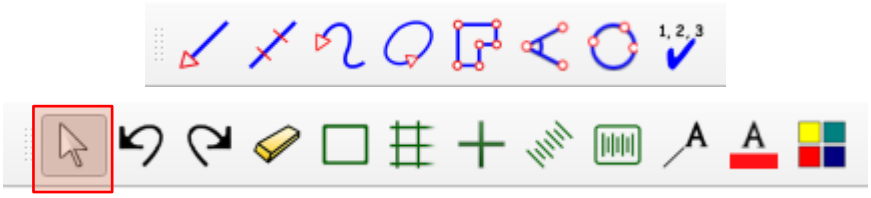
Note: *Predefined magnifications cannot be calibrated.*

Note: *The last calibration used will always be stored upon closing the program, and reloaded when starting the program.*

Note: *The selected calibration will always be saved together with the image.*

4. Measurement and Analysis

4.1 Measurements



There are several ways to make measurements on the picture. It is possible to measure distances, radius, curve length, areas and angles. The measurement value will be displayed dynamically while being made.

The displayed values will have 3 significant figures, and dynamically change depending on the measurement. For example:

- If the measurement is more than 1 mm it will be displayed as **“x.xx mm”** or **“xx.x mm”** or **“xxx mm”**
- if the measurement is less than 1 mm it will be displayed as “**“x.xx µm”** or **“xx.x µm”** or **“xxx µm”**

Before making measurements, current magnification (e.g. optical lens) should be calibrated in the software. If no magnification has been selected the measurement results will be presented in pixels. See section Magnification and Calibration.

4.1.1 Distance

To measure a distance click on the icon or select "Measurements / Distance “. Click and drag the distance to measure in the image.

4.1.2 Smart Distance

To measure a distance using Smart Distance click on the icon or select “Measurements / Smart Distance”. Click and drag the distance to measure in the image, though slight outside the measurements points. The smart distance automatically finds the closest edges on each ends of the line and changes the points to these edges. It is important that the user verify that the measurements points are correct.

4.1.3 Radius

To measure a radius, there are two different methods: either by selecting three points on the perimeter, or by dragging the radius. In order to use the first method, press the icon or select "Measurements/Radius/Radius 3 Points". In order to use the second method, select "Measurements /Radius/Radius By Radius".

4.1.4 Angle

To measure an angle, there are two different methods: either by selecting three points or by drawing two lines. In order to use the first method, starting with the center point, press the icon or select "Measurements/Angle/Angle 3 Points". In order to use the second method, select "Measurements/Angle/Angle 2 Lines".

4.1.5 Curve

To measure a length of a curve, press the icon or select "Measurements / Curve". Click and draw the curve in the picture.

4.1.6 Area

To measure an area click on the icon or select "Measurements / Area". Click and draw the perimeter of the area. The area will close when releasing the mouse button.

4.1.7 Polygon

To measure using a polygon click on the icon or select “Measurements/Polygon”. Click the polygon’s corners and double-click to close it.

4.1.8 Count

To count objects click on the icon or select "Measurements / Count". A new window will appear where users can choose a category. When user has chosen desired category, start counting objects in the image by clicking on them. When you name a category, the counting object will be marked with the first letter of that name in a certain colour. In the measurement results window, however, the full name will be displayed. To count using another category, simply choose another category in the category window. When finished counting objects, press done. To modify the name of the categories, go to “File/Preferences”.

> ***Note:*** *Make sure not to close the category window while counting.*
>
> ***Note:*** *It is possible to change font and size of the items, but not the colour.*

4.1.9 Select

To use the selection tool click on the icon or select “Measurements/Select”. Select an object (measurement) on the image to change, move or delete it. Please see chapter 4.4 for more in-depth information.

Note: *When selected, right click on the object to change or delete it.*

4.1.10 Export Measurement Results

Measurement results are recorded in a “text” file with same name as the image file in current destination folder. The results can also be exported to a new text file and/or renamed.

4.2 Annotation

4.2.1 Annotation with Line

To write an annotation with a line, click on the icon or select "Measurements/Annotation Line". Draw the line and a text window will appear. Write a text or leave it blank.

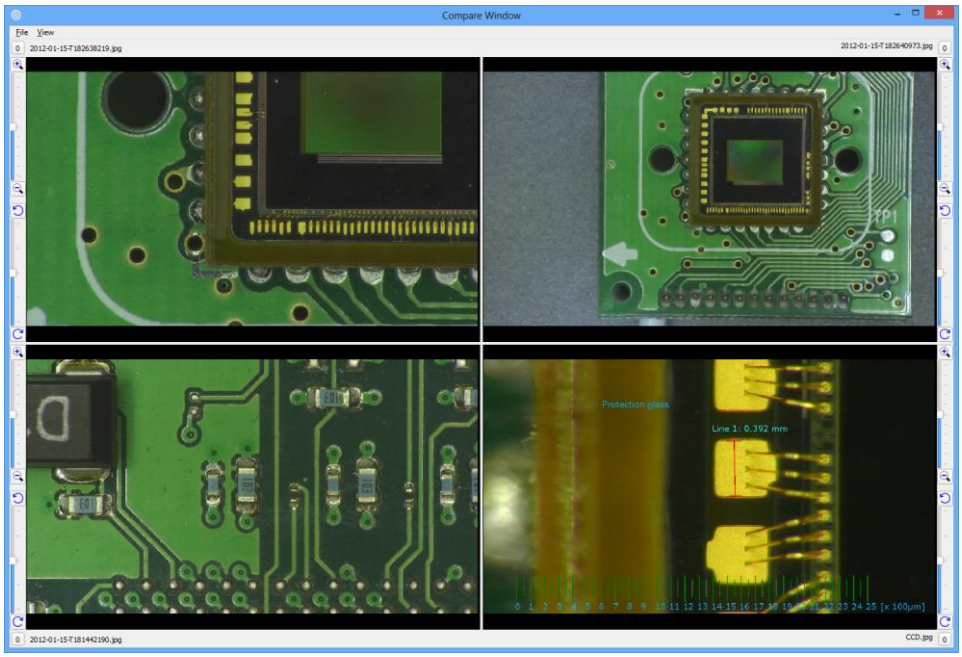
Note*: Leave the text blank to just draw a line.*
Note*: Just click to only annotate a text*

4.3 Tools

4.3.1 Compare Images

To compare images click on the icon or select “View/Compare Images”. A new window will appear. Select “View” and choose between 1, 2 or 4 images. To start comparing images click on desired image images or drag one thumbnail and drop it onto one a frames in the compare window. To remove an image right click on it with the mouse. Click on “File/Clear Window” to clear all images.

The user can Zoom In/Out and rotate each individual image. Slide the rotation bar or click the rotation buttons to rotate the image up to 180 degrees.



4.3.2 Compare Live Image

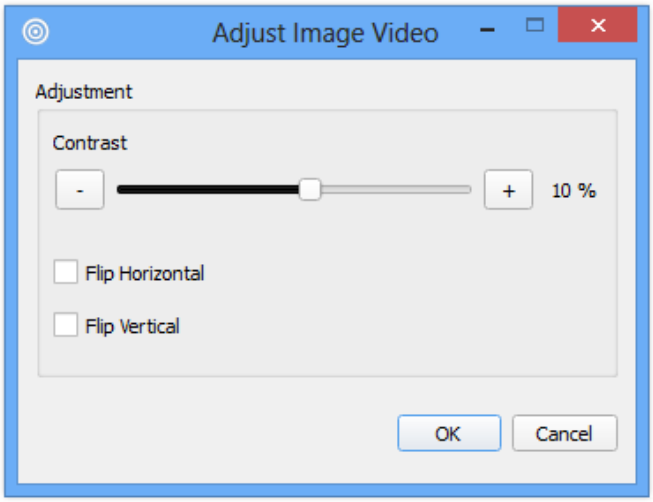
To compare the live image with a reference image, click on the icon or select “View/Compare Live Image”. A new window will appear. To start comparing images click on it or drag a thumbnail and drop it onto the reference image frame in the compare window. It is possible to use the overlay functions on top of the live image.

The reference image can be saved and reloaded by clicking “File/Save Compare Live Window” and “File\Load Compare Live Window”.

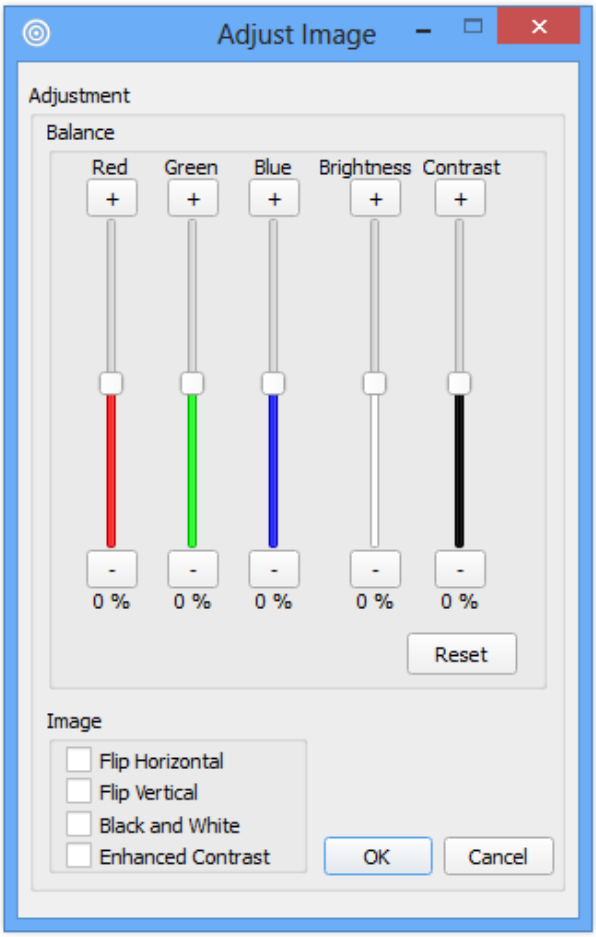
4.3.3 Image Adjustment

To adjust colour, contrast and other graphics properties of the image, click on the icon or select “View/Image Adjustment”. A new window will appear. If Opti*P*ix is in live or still image mode different windows will be shown.

In *live image mode* user can only flip the image and change the contrast. The contrast will have different default depending on connected USB dongle and device.



In *still image mode* user can also change the red, green and blue colour mix as well as brightness and contrast. An enhanced contrast is possible to apply to the image by selecting “Enhanced Contrast” in the window.

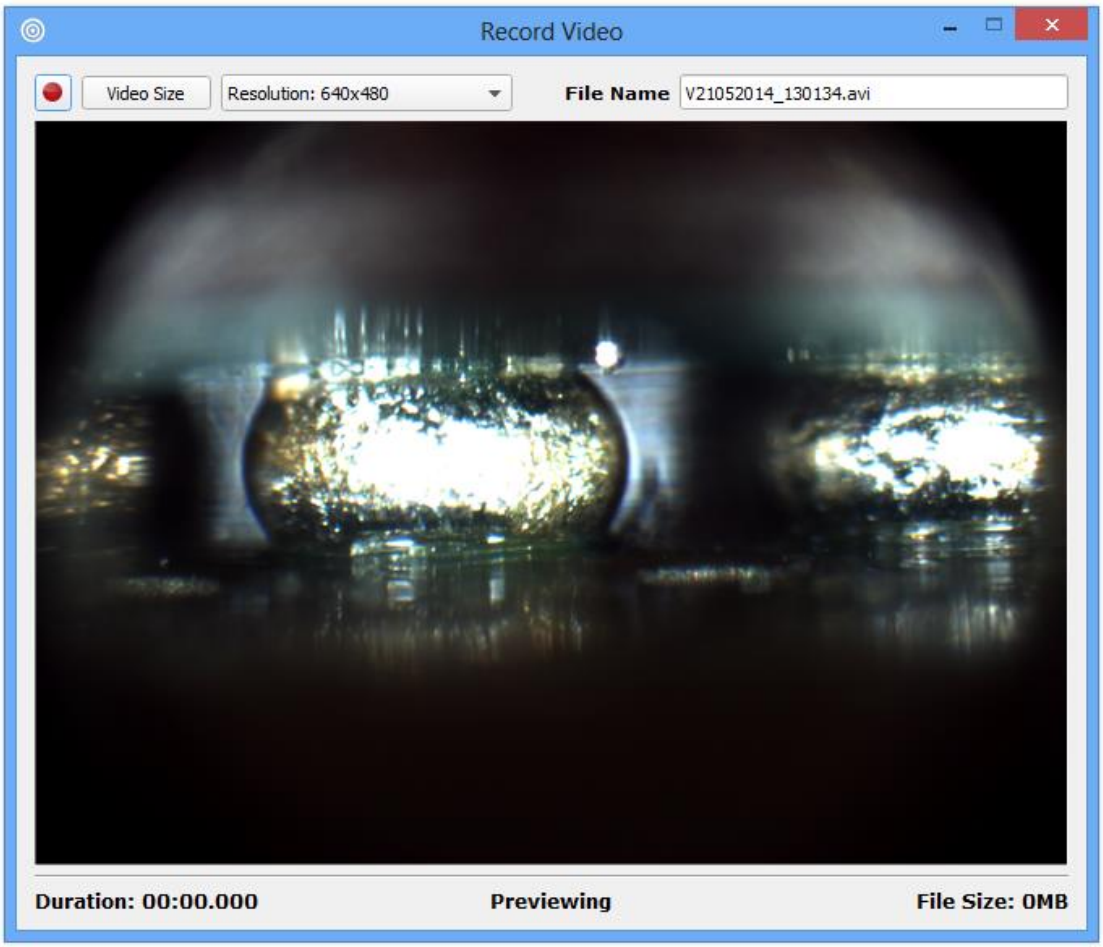


Note: *Select both flip horizontal and flip vertical to rotate the image 180°*

4.3.4 Record Video

To start recording a video select this icon found on the Opt*iP*ix Toolbar. The file size or the recording time of the video can be set from "*Video Size"* menu. The video filename will be generated automatically; however it can be modified before recording a video.

For normal file sizes and good frame speed, it is recommended to use 640x480 resolution.



To playback a recorded video, click on the video file thumbnail and the default media player will automatically start playing the recorded file.

Note: *Recording is only possible using Optilia's 5MP camera, the icon will only be displayed if the device is connected*

4.3.5 Ruler

To show the ruler click the icon or select "Measurements/Show Ruler". The size of the ruler depends on the current calibration. To rotate the ruler, select the object and right click on it when the select tool is used.

4.3.6 Grid

To project the grid on the screen, click on the icon or select "Measurements/Show Grid". A new window will appear to input the size of each grid cell in mm or inches.

4.3.7 Crosshair

To project the crosshair on the screen, click on the icon or select "Measurements/Show Crosshair".

4.3.8 Rectangle

To project the rectangle on the screen, click on the icon or select "Measurements / Rectangle". A new window will appear to input the length of the sides of the rectangle in mm or inches.

4.3.9 Graticule

To project a reference (semi-transparent) image on screen, click on the icon and select the reference image with exactly the same resolution as the live image. The graticule should be in .PNG format with fully transparent areas. Opti*P*ix will automatically switch to full screen and project the graticule over the live image. Press ESC to exit full screen.

4.3.10 Change Font & Colour

To change the font click on the icon. A new window appears where user can choose font type, colours for the text. If a measurement, annotation or overlay function is selected it will also be changed. This will be stored in the register.

4.3.11 Change Colour of objects

To change the colour of the objects click on the icon. A new window appears where user can choose colours of the objects. If a measurement, annotation or overlay function is selected it will also be changed. This does not affect the colours of the overlay functions.

4.4 Select

The select function is a powerful tool to use when measurements, annotation and overlay functions need to be adjusted. It is possible to change the color of each item, change font and also adjust the measurement after they have been made. When the item is selected it will be displayed with dashed lines. If measurements are overlapping, a pop-up menu will be displayed where it is possible to select the desired one. To unselect, click on the image where there are no items. The text for each item is possible to select and drag to desired location. It is possible to change color and font of each item individually, see previous chapter for more information.

4.4.1 Change a distance measurement

To change a distance click on one of the lines' ends and drag it to the desired location. To move the entire line select the center line, with some distance from the ends, and drag to preferred position.

4.4.2 Change a radius measurement

A radius may be changed by selecting the circle's outer line and then drag it to desired position. To move the circle select inside it and drag to desired location.

4.4.3 Change an angle measurement

To change an angle click on one if its ends and drag to desired position. To move the entire angle select one of the lines, with some distance from the ends, and drag to preferred location.

4.4.4 Change a curve or area measurement

To move a curve or area, click on it and drag to desired location.

4.4.5 Change a polygon measurement

To change a polygon click on one of the corners and drag to desired location. To move the entire polygon select inside the polygon and move to preferred position.

4.4.6 Change an annotation line

To change the annotation line click on one of the ends and drag to desired location.

4.4.7 Change a ruler

To move a ruler click on it and drag to desired location. To rotate a ruler, right click on it and

type preferred angle.

4.4.8 Change a rectangle

To move a rectangle click on it and drag to desired location.

Notes

System Requirements

Component	System recommendation
Computer	Intel Pentium , Intel i5 2.8GHz or higher Recommended systems: Station: HP PRO 35XX MT, Win7P or similar Laptop: HP ProBook, Intel i5, 15.6” HD or 17.3” HD+ LED Laptop: MSI GE60, Intel i5, 15.6” Full HD
Operating System	Windows XPP, Windows 7P, Windows 8P & Windows Home Premium (32 or 64 bit)
Memory	1 GB or higher of RAM, Recommended: 2 GB
Hard disk	Minimum: 200 GB of Free Space Recommended: 500 GB of Free Space
Display	Minimum: Laptop: 15.6” / 1600x900 (HD+) PC: 22” /1920 x 1080 (Full HD) Recommended: Laptop: 15.6" - 17.3” / 1920x1080 (Full HD) PC: 24” /1920 x 1080 (Full HD)
Graphic card	Direct X compatible graphics card is recommended to avoid unnecessary load on the CPU. Example cards are nVidia, G-Force or ATI Recommended: ATI Radeon HD 5000/6000 Series nVIDIA GTX400/500
Other	Three USB2.0 ports. PCI express x1, One USB 3.0 Port with NEC chipset.

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