Opti*Pix*

User's Manual

Image View, Capture and Measurement Software

Optilia Instruments AB

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***, you need to install your camera Device Drivers**.

To install Opti*Pix* you have to run the provided installer file. Double click on it. A new window is displayed.

- Click on the "Next" button for further instructions.

- Choose a folder where to install OptiPix. Choose for which user OptiPix will be installed and then click on the "Next" button.

- Click on the "Next" button to install OptiPix.

When the installation is complete click the "Close" button to exit the window.

1.2 Using Opti*Pix* for the first time

1. Insert your software protection dongle to a free USB port on your computer. You will find the dongle inside the product box if you have ordered full version of the software.

2. Click "start/All Programs/Optilia/OptiPix" and run **Opti*Pix***.

3. Select language from the list.

4. On "Introduction" dialog box, select

   1) "Full Version" if you have ordered a full license and the software protection USB dongle. All software functions will be enabled.

   2) "Lite Version" if you have ordered a lite license. Image view, capture, annotation and only distance measurement on image will be enabled.

   3) 30 days demo for 30 days trial. All software functions will be enabled only during 30 days. Skip part d.

5. Fill in your license number and the additional information.

6. PLEASE READ THE LICENSE AGREEMENT CAREFULLY before using **Opti*Pix*.**

7. Select your device (i. e. Optilia 2.0MP Camera) from the Input Device list and software will start monitoring live image of the camera.
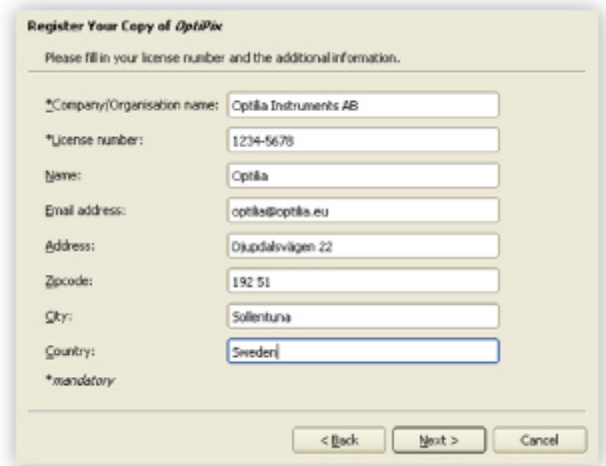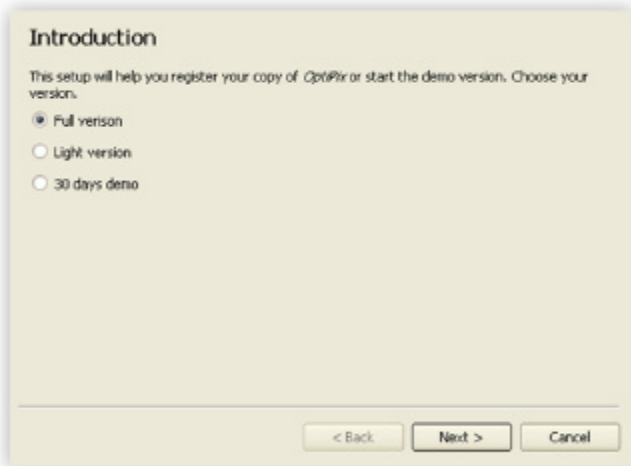
1.3 Device Resolution and Properties

You have to choose a device upon the first start of the program. This device is stored in the register and will be automatically loaded next time you start the program. If you want to use another device later, select "Device/Input Device".


To change device resolution click on this icon [icon] or select "Device/Device Resolution".

To change device properties click on this icon [icon] or select "Device/Device Properties".

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

1.4 Language

It's possible to set language for Opti*P*ix upon first start up. Alternatively, the language can be change from the "Help/Language" menu.
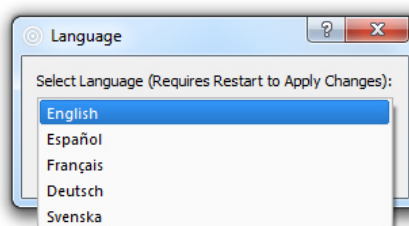
After selecting the new language, the software should be restarted to apply the changes.

2. OptiPix Overview

2.1 Destination Folder and Image Archive

In the folder structure, you can choose the folder you want use to load or save images. You can also 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 you can choose from a number of different tools like copy/paste and rename.

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 you want to open.

To load a thumbnail image or a document from the destination folder, double click on it or right click and choose open. If the image contains measurement objects, the measurement results will also be loaded. Note that these measurements are a part of the image and cannot be changed as they are "burnt into" the image.
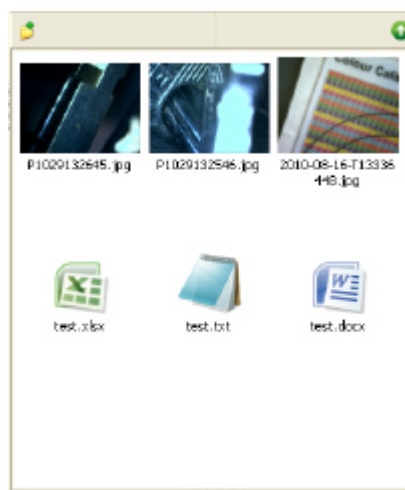
To save an image, there are three options:

- You can 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 results as .txt file. This is done by clicking on this icon or selecting "File/Save Image". *Hot key: Ctrl + S.*

- You can 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.*

- You can save a copy of the image by defining the image name and destination folder. This is done by clicking this icon or selecting "File/Save a Copy".

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.

Note: To pan the image when zoomed in, you can use the middle button of the mouse.

2.3 Zoom

There are four ways to zoom digitally, both in live and still image mode: zoom in, zoom out, zoom to fit and full size.

- Zoom In

Zoom in by clicking on the icon or select "View /Zoom In".
Hot key: F4.

- Zoom Out

Zoom out by clicking on the icon or select "View /Zoom Out".
Hot key: F3.

- Zoom to Fit

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

- Full Size

To apply full size (no digital zoom) select "View/Full Size".
Hot key: F5

- 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.

Note: You can scroll through images with scroll wheel in Full Screen mode. Right click will display pop-up menu to exit Full Screen mode.
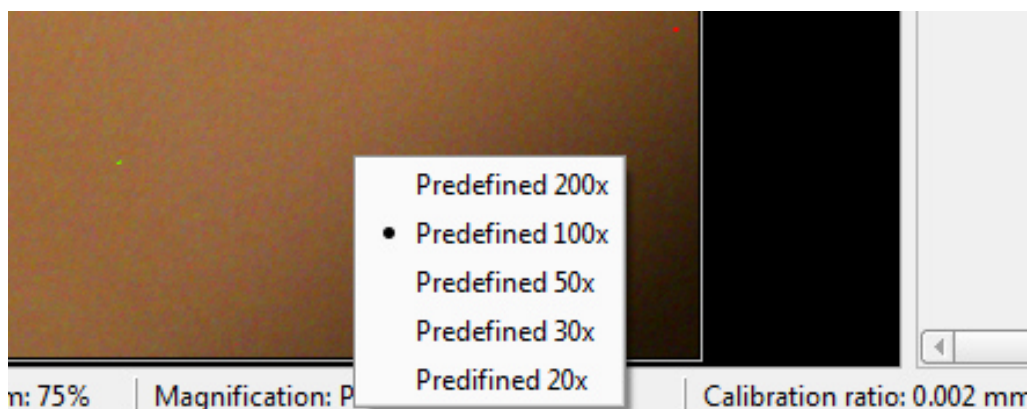
3. Magnifications and Calibrations

3.1 Magnification

You can choose between any of the 5 pre-calibrated magnifications under "Magnifications" (for Optilia Mediscope lenses) or you can create a new magnification.

To create a new magnification, select "Magnifications /Edit User Magnifications", and then click on the "Add…" button to add a new magnification. See picture below. Select the new magnification and click on the OK button. To start calibrating, click on the calibrate icon. See next section for further instructions


For quick magnification selection, right click on the Magnification's status label and choose desired magnification.

3.2 Calibrate

To calibrate a selected magnification, place a Micrometer Scale or a Ruler (depending on the magnification of your current optics) in the live image of the device at best possible focus. To calibrate, select "Magnification/ Calibrate Magnification". The image of the Micrometer Scale or the Ruler will be frozen and a new dialog window will appear. See image below.
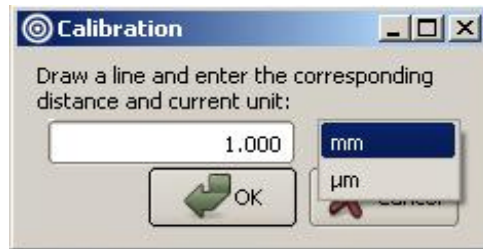
In the image window, click and drag the desired distance according to the measuring device.

Type in the distance and select the desired unit. Selected calibration ratio will be seen on the status bar at the bottom of the Opti*P*ix window.

Note: The following are pre-defined magnifications: 20x, 30x, 50x, 100x, and 200x. Predefined magnifications cannot be calibrated. You can only calibrate User-Defined magnifications.

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

Note: The 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, curves, areas and angles. If no magnification has been selected the measurement results will be presented in pixels.

Before making measurements, your current magnification (e.g. your optical lens) should be calibrated in the software. See section Magnification and Calibration.

- Distance

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

- Circle

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/Circle/Circle3Points". In order to use the second method, select "Measurements / Circle / CircleByRad".

- 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, press the icon or select "Measurements/Angle/Angle3Points". In order to use the second method, select "Measurements/Angle/Angle2Lines".

- Curve

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

- 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.

- Polygon

To measure a polygon click on the icon or select "Measurements/Polygon". Click the polygon's corners and double click to close it.

- Count ✔ 1,2,3

To count objects click on the icon or select "Measurements / Count". A new window will appear where you can choose a category. When you have chosen your desired category you start counting objects in the image by clicking on them. The objects will be marked with a small color coded letter. If you want to change category you simply choose another category in the category window. When done counting objects you press done.

Note: Make sure not to close the category window while counting.

- Select ▶

To use the selection tool click on the icon or select "Measurements/Select". You can select an item (measurement) on the image if you want to change, move or delete it.

Note: When using select you can also right click on items to change them or delete them.

- Export Measurement Results

Measurement values are recorded in a "text" file with same name as the image file in current destination folder. You can also "Export" measurement results to a new "text file" and name it by selecting "Export Measurement Results" or by right-clicking on the measurement result "Table".

4. 2 Annotation

- Text **A**

To write text in an image click on the icon or select "Measurements/Text". Click on the image where you want to put the text. A new window appears where you input the text.

- Annotation with Line ✎**A**

To write an annotation with a line click on the icon or select "Measurements/Annotation Line". Draw the line and a new window will appear. In this window you input the text. You can also just leave the text blank which means that there will only be a line. The text will be positioned at the end of the line.

Note: Leave the text blank to just draw a line.

4. 3 Tools

- 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 drag one thumbnail and drop it on one of the frames in the compare window, see image below. To clear the compare view, click to "File/Clear Window".

User can Zoom In/Out and out and rotate the each individual frame. Rotate Left/Right buttons will rotate the image 180 degrees.
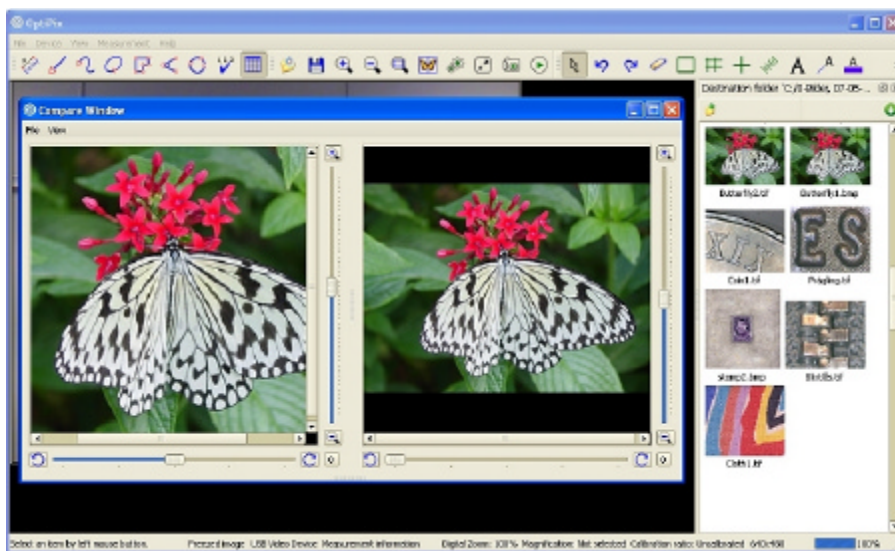

- Compare Live Image

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 drag a thumbnail and drop it onto the reference image frame in the compare window.

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

- 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. Depending if you are in live or still image mode different windows will be shown. In *live image mode* you can only flip the image.
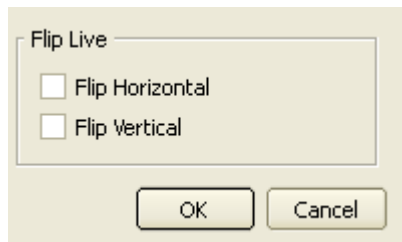
In *still image mode* you can also change the red, green and blue colour mix as well as brightness and contrast.
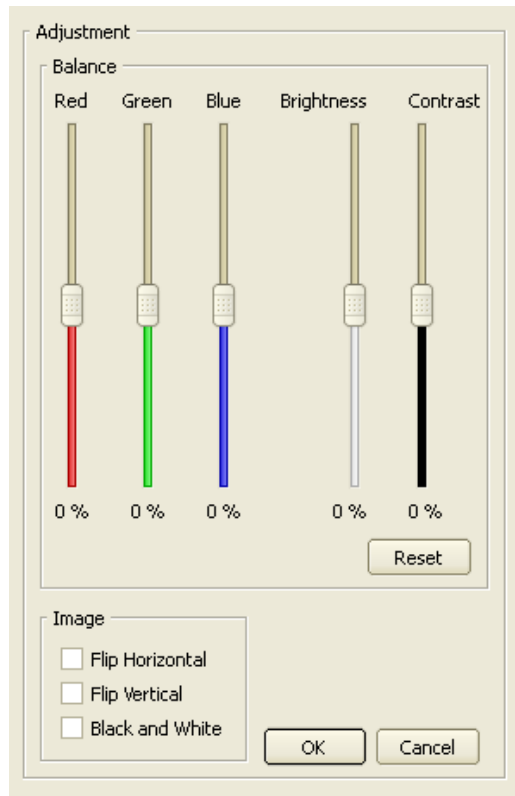
Note: Check both flip horizontal and flip vertical to rotate the image 180°

• 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 use select and right click on the ruler.

Note: To rotate the ruler, use select and then right click on the ruler and click on Rotate.

• Grid

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

- Crosshair

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

- Rectangle

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

- Change Font

To change the font click on the icon. A new window appears where you can choose font type, font size etc. This will be stored in the register.

- Change Font Color

To change the font color click on the icon. A new window appears where you can choose colors for the text. This will be stored in the register.

- Change Color of Items

To change the color of the items click on the icon. A new window appears where you can choose colors of the items. This does not affect the color of the grid nor the crosshair.

Notes:

System Requirements:

Component	System recommendation
Computer	Intel Core i5 2410M 2,3 GHz or similar Recommended systems: Station: HP PRO 34XX MT, Win7P or similar Laptop: HP ProBook 4730s 17.3" HD+ LED or similar
Operating System	Windows XPP, Windows 7P (32 or 64 bit)
Memory	512 MB or higher of RAM, Recommended: 1 GB
Hard disk	Minimum: 10 GB of Free Space Recommended: 100 GB of Free Space
Display	Laptop: 15,6 " / 1366 x 768 (WXGA) PC: 22" /1920 x 1080 (Full HD) Recommended: Laptop: 15,6 " / 1600x900 (HD+) PC: 24" /1920 x 1200
Graphic card	Direct X compatible graphics card is recommended to avoid unnecessary load on the CPU. Please avoid using integrated simple graphics cards. Example cards are nVidia G-Force or ATI Recommended: ATI Radeon HD 5000/6000 Series nVIDIA GTX400/500
Other	Two USB2.0 ports. PCI express x1

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