



Instructions Manual

**INSPECTIS<sup>®</sup> Basics** V7.2

Subscription and Unlimited Versions

# Contents

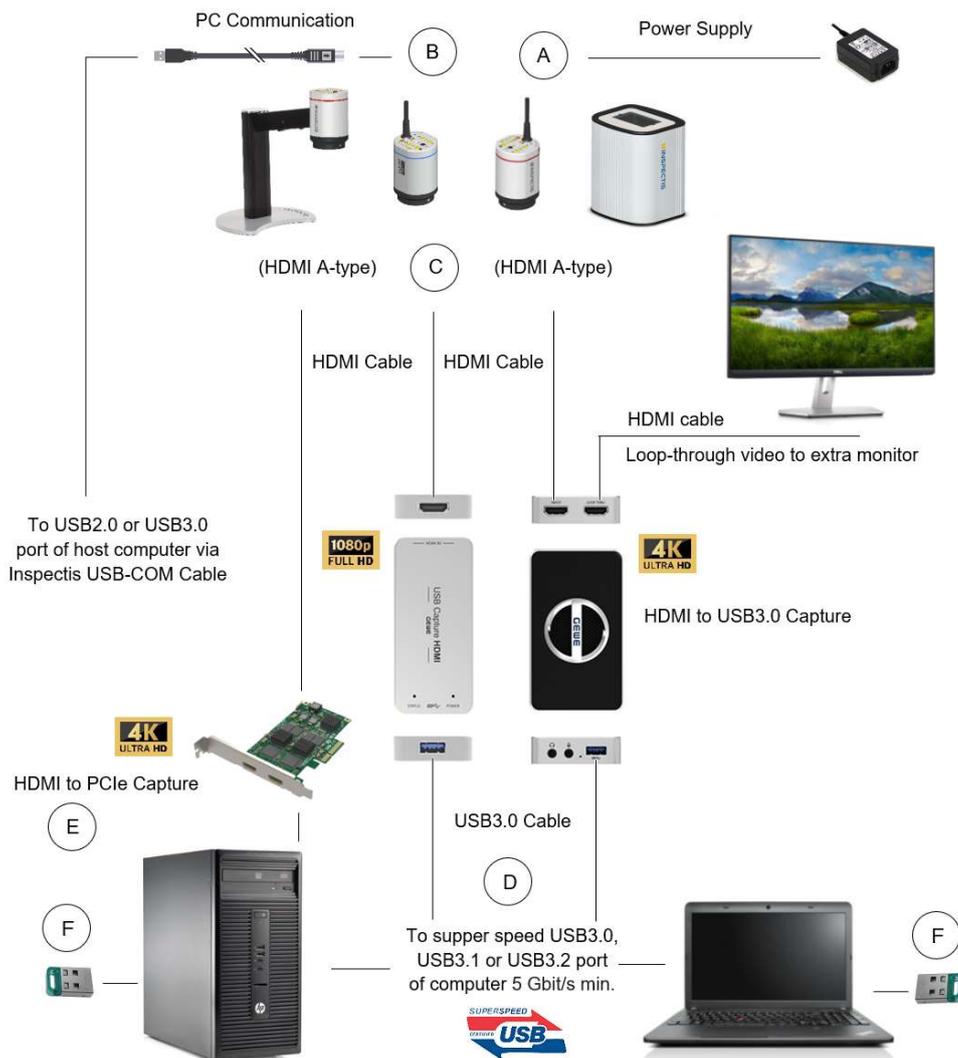
<b>Installation and Setup .....</b>	<b>4</b>
Connecting the 4k or FDH Digital Microscopes .....	4
Installing the USB Digital Microscopes .....	5
Installing INSPECTIS Software.....	6
Running INSPECTIS Basics for the First Time .....	6
Software Preferences .....	7
Device Settings.....	8
<b>Camera Connection, Control and Setup .....</b>	<b>10</b>
Connecting U and F type Digital Microscopes to INSPECTIS Software.....	10
Connecting USB Digital Microscopes to INSPECTIS Software .....	12
Setting up the Camera and the Lens .....	13
Optics (Focus, Zoom, Iris) .....	14
White Balance .....	16
Brightness (Shutter, Gain, Contrast, Clarity) .....	17
Image Flip and NIR Mode.....	18
Reset Lens .....	19
Presets.....	19
Hide and Disconnect .....	20
<b>Working with INSPECTIS Software .....</b>	<b>21</b>
Live Video and Still Images .....	22
Zooming .....	22
Image and Video Adjustments.....	23
Distortion Correction .....	25
Folder Structure and Thumbnail View.....	26
Saving Images.....	28
Loading Images.....	28
<b>Measurements and Analysis Tools .....</b>	<b>29</b>
Magnification and Calibrations .....	30
Magnification Manager .....	31

Adding a New Magnification .....	32
Selecting Magnification .....	32
Calibration of Magnifications.....	33
Measurement Tools .....	35
Saving and Exporting Measurements .....	36
Annotation Tools .....	36
Reference Overlay Tools .....	37
<b>Report Tools .....</b>	<b>38</b>
<b>Subscription Renewal .....</b>	<b>41</b>
<b>Notes .....</b>	<b>43</b>
<b>System Requirements.....</b>	<b>44</b>

## Installation and Setup

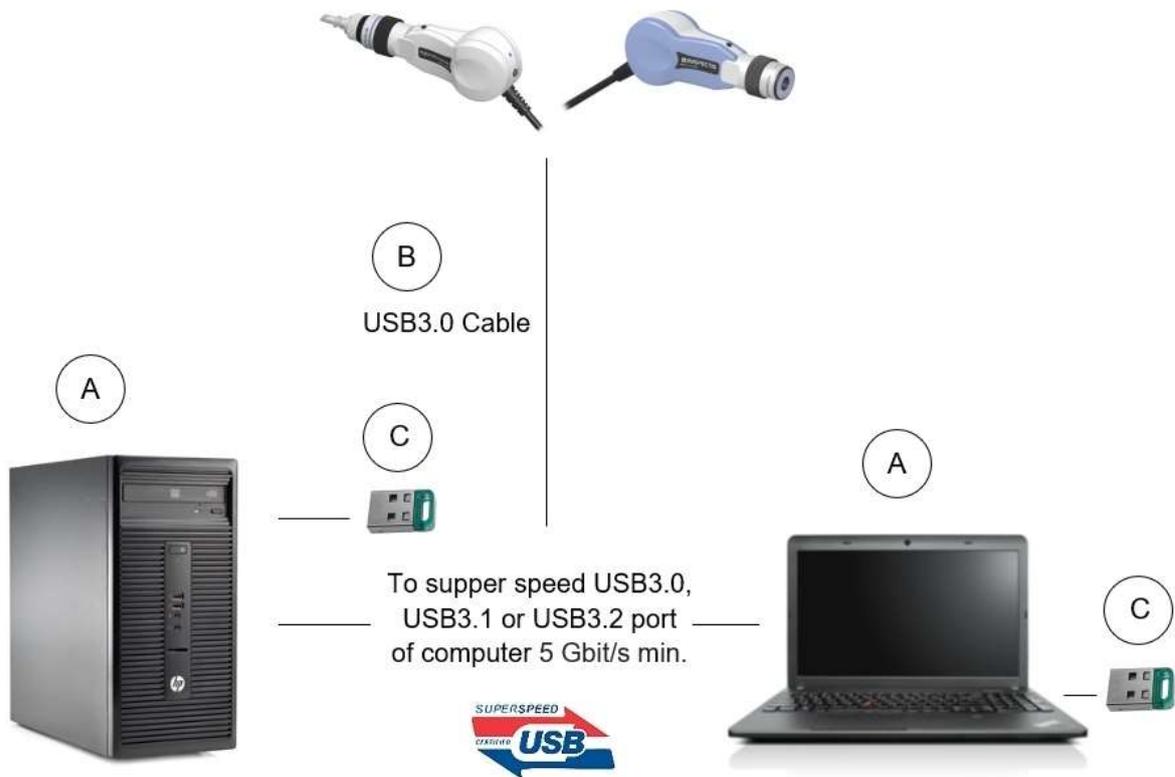
### Connecting the 4k or FDH Digital Microscopes

- A. Connect the provided power supply to MiniDin 5P input of the digital microscope.
- B. Attach the USB-COM cable to MiniDin 8P of the digital microscope and USB port of the computer.
- C. Attach HDMI video output of the digital microscope to the HDMI input of the Capture device.
- D. Attach USB output of the Capture device to a super speed USB3.0, USB3.1 or USB3.2 port of the computer. Minimum bandwidth of the USB port shall be 5Gbit/s to stream the live video with high frame rate.
- E. If your HDMI capture is a PCIe card, plug it into the computer first and install its driver. The USB3.0 HDMI capture devices are plug&play and does not require driver installation.
- F. Plug the software protection Dongle to a free USB port of the computer. Dongle is not needed if you intend to install the 15 days trial version of INSPECTIS software.
- G. Install INSPECTIS software. Refer to page 6 for detailed instructions.



## Installing the USB Digital Microscopes

- A. Plug the Digital Camera to a free USB3.0, USB3.1 or USB3.2 port of the computer. Minimum bandwidth requirement for the USB port is 5Gbit/s.
- B. Plug the provided software protection Dongle to a free USB port of the computer. The protection dongle will be found inside the product box. Dongle is not needed if you intend to install the 15 days trial version of INSPECTIS software.
- C. Install INSPECTIS software. Refer to page 6 for detailed instructions.

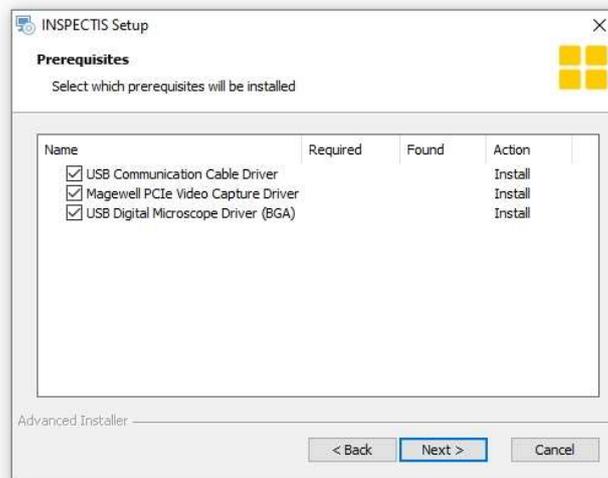


## Installing INSPECTIS Software

- Installation shall be done with full administration privileges.
- You might need to disable antivirus system of your computer temporary during the installation.

To install INSPECTIS software:

1. Plug the provided software protection Dongle to a free USB port of your computer. The protection dongle will be found inside the product box.
2. Run the setup file. The installation wizard will start and guide you through the installation.
3. All device drivers will be installed automatically by the installation wizard. If drivers are already installed in your computer, or if you are not using PCIe Converter or USB Digital Microscope devices, uncheck the relevant boxes.



4. Follow on-screen instructions to complete the installation.
5. When the installation is complete click "Close" to exit the window.

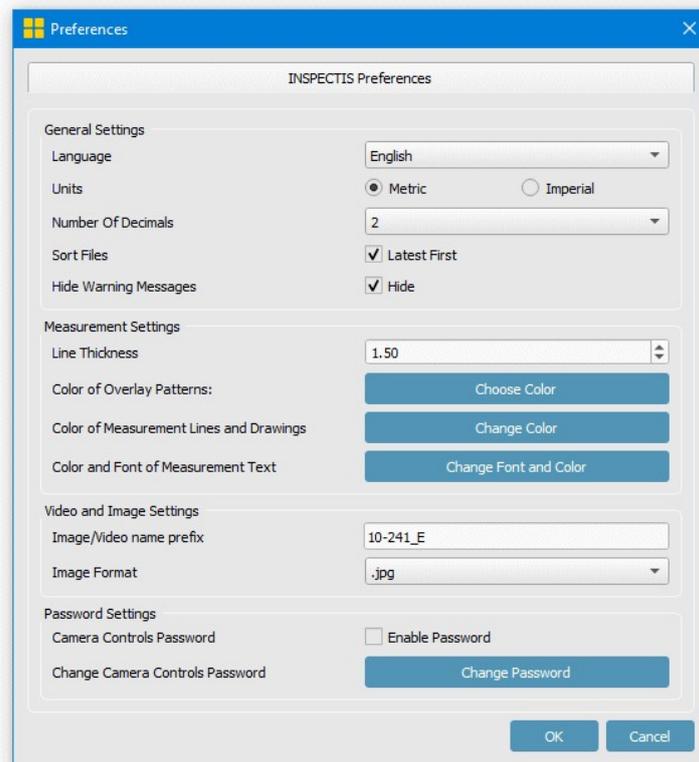
## Running INSPECTIS Basics for the First Time

1. Before launching INSPECTIS software please make sure your Inspectis digital microscope is connected to the computer. Refer to previous chapter on how to connect your device.
2. Make sure the software protection dongle is plugged into a free USB port on computer.
3. Right-click on INSPECTIS  icon on your computer desktop and select **Run as Administrator** first time. Running as Administrator will enable you to register and activate the software automatically over internet.
4. Select language from the list.
5. From the "Software Version" selection window, select:

- **"INSPECTIS Basics"** if a full license has been ordered.
  - 15 days trial version for trying the software for 15 days. All software functions will be enabled for 15 days. Skip part 5 (license number).
6. Fill in license number (found in the package) and other requested information.
  7. If automatic on-line registrations is not possible, complete the Off-line Registration form and email it to [info@inspect-is-com](mailto:info@inspect-is-com) to get an software activation key.
  7. PLEASE READ THE LICENSE AGREEMENT CAREFULLY before using INSPECTIS software.

## Software Preferences

In Preferences, overall settings of the INSPECTIS software are defined. Click  icon to display the preferences window.



Setup your preferred Language, Units and Number of Decimals to be displayed for measurements. Type the Prefix you prefer to be added to the name of saved imaged and videos. Review other software preferences and change the default if crucial for your application.

Entering a password blocks unauthorized access to the Preferences and Camera Control dialog box.

## Device Settings

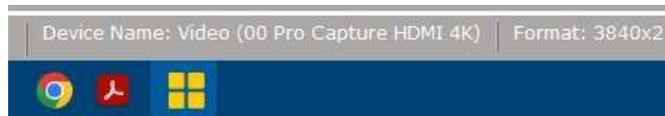
### Selecting Device

Click  to show the device settings menu and select  to see list of the available Inspectis devices. Select your device to connect it to INSPECTIS.

Your Device	Device Name
FHD HDMI to USB3.0 Converter	-> <b>USB Capture HDMI</b>
4K HDMI to USB3.0 Converter	-> <b>USB Capture HDMI 4K+</b>
4K HDMI to PCIe Converter	-> <b>Video (00 Pro Capture HDMI 4K), Video (Pro Capture)</b>
USB3.0 Digital Microscope (BGA)	-> <b>Inspectis 5MP Camera</b>

Once the device is selected, software automatically sets the optimum device settings. Your device will be automatically set by INSPECTIS next time you launch the program.

INSPECTIS software displays connected device names on the status bar.



If another device is preferred, right click on the device name on the status bar to display the list and select the desired device.

To automatically select your device click  under Device Settings group. Software will search for Inspectis devices and select one according to following priority:

1. **Inspectis 5MP Camera** -> (BGA)
2. **Video (Pro Capture HDMI 4K)** -> (PCI Converter)
3. **USB Capture HDMI 4K+** -> (USB3.0 Converter)

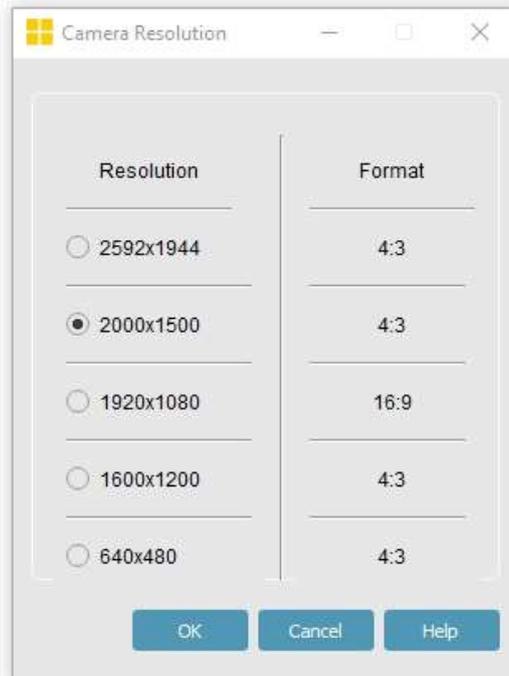
To restart your device while software is running, press F12 on your computer keyboard.

## Device Resolution

When attached to U, F and C series digital microscope, output resolution of converter devices can be changed between 4K and FHD (1080p) and HD (720p) by clicking  under Device Settings group. For PCIe converter default resolution is set to 3840x2160. For USB3.0 converters default resolution is set to 1920x1080. If your USB3.0 converter supports 3840x2160 you can change Device Resolution to 4K.



When attached to USB3.0 digital camera (BGA inspection system), Resolution and Format (aspect ratio) of the live image can be set according to the below tab. Default resolution for USB3.0 digital camera head is 2000x1500 pixels.

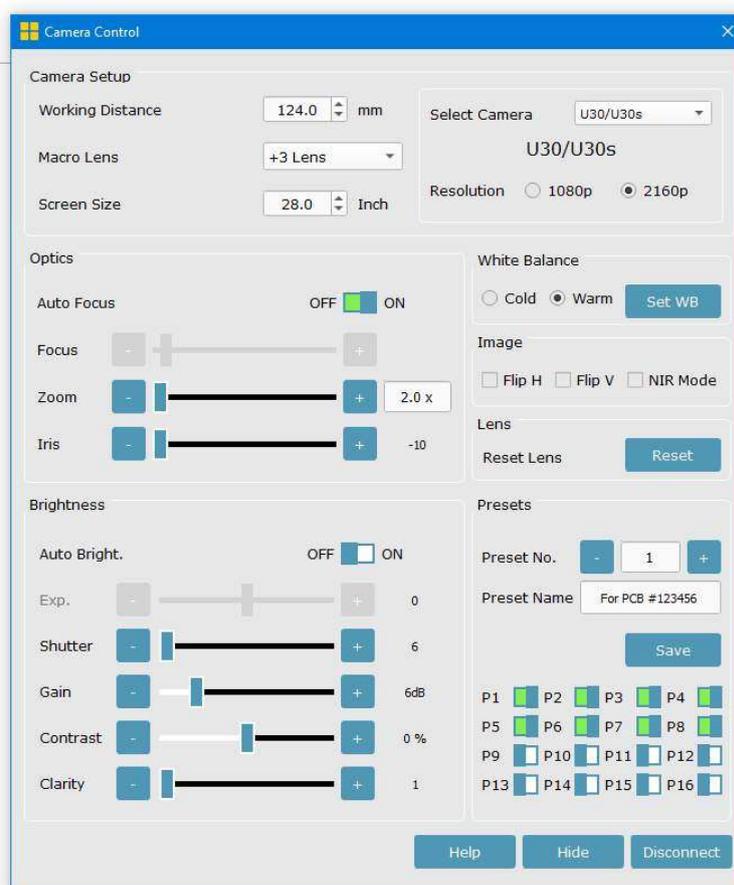


## Camera Connection, Control and Setup

### Connecting U and F type Digital Microscopes to INSPECTIS Software

INSPECTIS software needs to be connected to F and U type Digital Microscope via Inspectis USB-COM communication cable. Inspectis 5MP Camera (BGA) communicates with the software via its USB interface.

Click on  icon to establish the camera connection if the software did not connect automatically at start-up. INSPECTIS will automatically detect the port, connect digital microscope to the computer and display Camera Control dialogue.

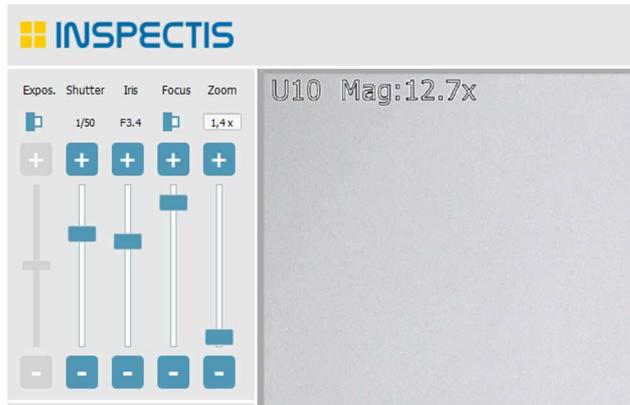


For learning how different lens and camera attributes affect the picture, refer to the white paper provided by Inspectis.

To disconnect the camera right click on  icon or Disconnect  button at bottom-right of the Camera Control dialogue.

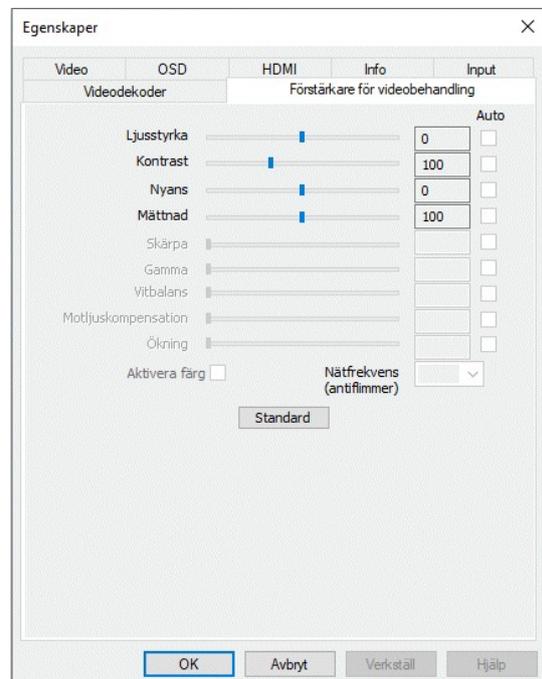
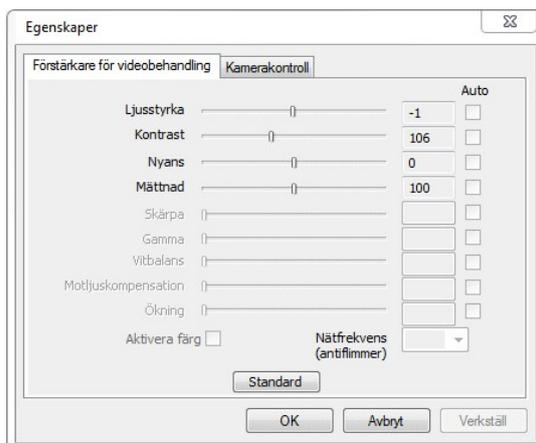
To hide Camera Control dialogue press Hide  button.

Camera and lens control bars will be enabled on INSPECTIS main window when Camera Control dialogue is hidden and not password protected.



Camera Control dialogue can be password protected. Password protection can be enabled under Preferences.

External device settings window like below may be displayed if the Inspectis USB-COM cable is not attached or if real-time communication between Inspectis digital cameras and software is not established by any reason.

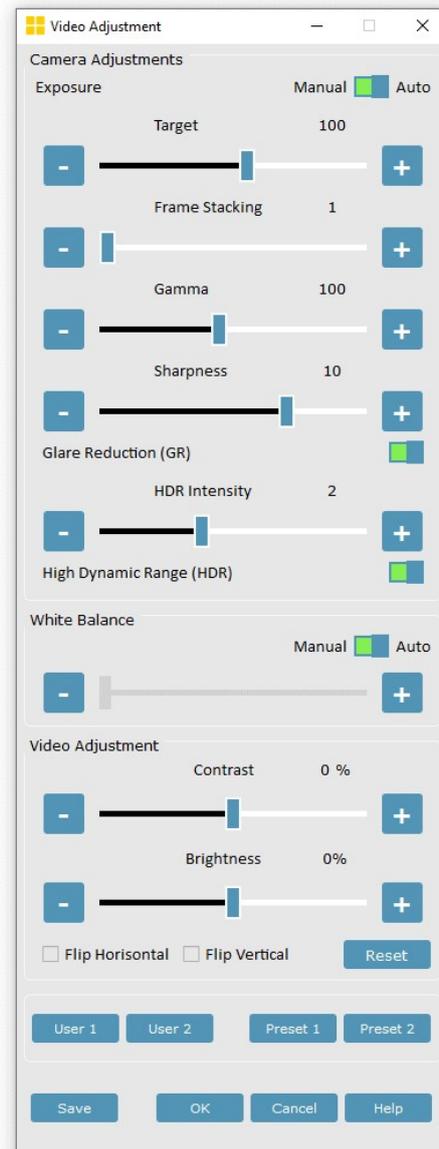


## Connecting USB Digital Microscopes to INSPECTIS Software

Inspectis 5MP Camera (BGA) communicates directly with the software via its USB interface.

Camera adjustments dialogue for USB digital microscope (BGA Inspection) is as illustrated below.

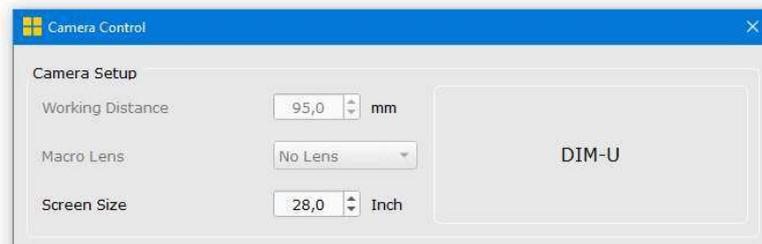
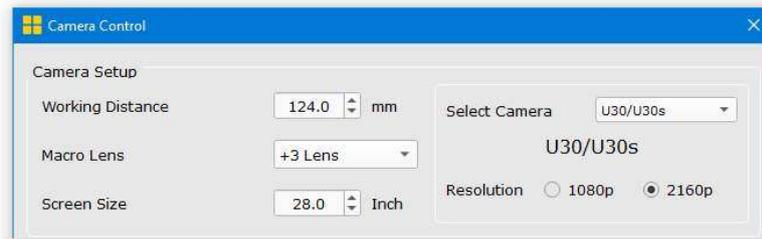
User buttons  or Preset buttons  at INSPECTIS main window recalls previously configured and saved Camera setups.



## Setting up the Camera and the Lens

Thanks to the real-time communication with the Digital Microscope, INSPECTIS Basics can auto-track zoom position of the lens and display (factory) calibrated magnification of the image for current zoom position.

You need to enter current Working Distance (Object Distance), Screen Size and Macro Lens (close-up lens) if any is attached to your device. The calculated on-screen magnification will be displayed on the upper left corner of the live image filed. If you are running a DIM (Digital Inverted Microscope) only Screen Size can be adjusted.



### Working Distance

Working distance is defined as the distance measured from the front surface of your Digital Microscope lens housing to the object at maximum zoom factor. WD of DIM microscopes is fixed and cannot be changed.

### Macro Lens

If any macro lens (close-up) is attached to the Digital Microscope, select the corresponding macro lens. Enter the correct working distance value to the Working Distance field when a Close-up lens is attached to your device.

### Screen Size

Diagonal size of the screen in inches. The on-screen magnification displayed on the upper left corner of the live image filed is calculated based on the screen size.

## Select Camera

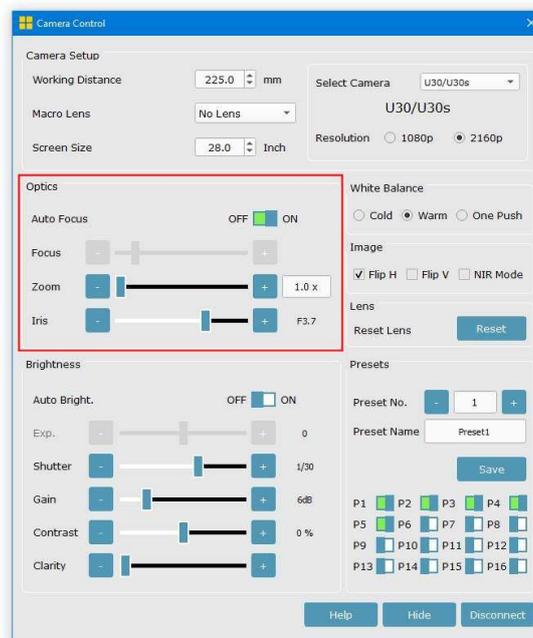
If your F30s, F35x or U30s camera is Long Working Distance, select it from the menu. Pre-defined calibrations of the LWD type cameras are different and will be automatically loaded when you select the LWD.

## Resolution

Video output of all Inspectis 4K cameras can be switched to 1080p, 60 frame rate per second. If your application requires high frame rate, select 1080p.

## Optics (Focus, Zoom, Iris)

Lens attributes are controlled under Optics.



## Auto Focus

All Inspectis 4K cameras as well as F35/F35s apply so called “spot focus” which means only central part of object field is used for finding best focus. F30/F30s cameras apply “field focus”. It means the entire object field is used for calculation the best focus.

## Manual Focus

When switched to manual, the focus is positioned to create a sharp image of the object at 230mm working distance. This position is marked by a thin indication line.

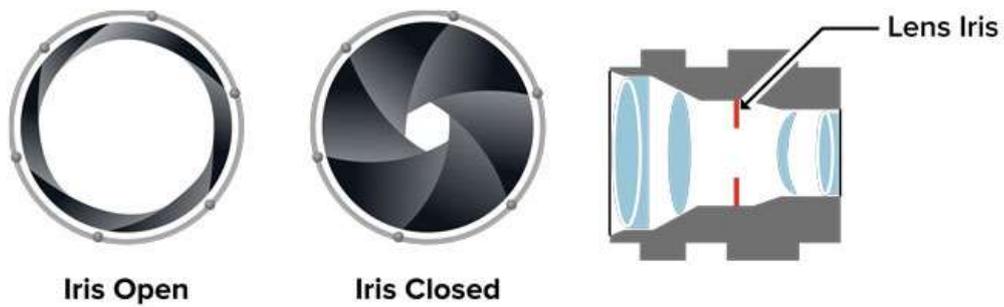
Use +/- buttons or drag the focus handle.

Hover the mouse cursor over the focus bar handle and turn mouse wheel to fine focus.

Hover the mouse cursor over the focus bar handle, hold down Ctrl key and turn mouse wheel to focus in bigger steps.

### Iris

This function adjusts aperture of the lens (F-number). The intensity of illumination as well as depth of field (depth of focus) is controlled by adjusting Iris.

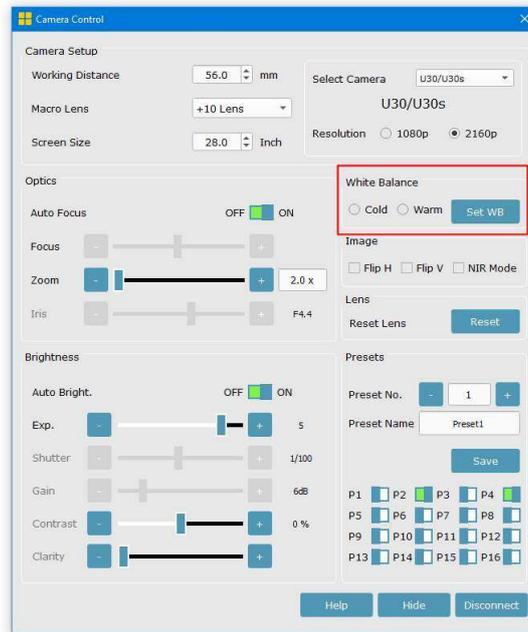


If your application requires a large depth of field, close the Iris a few steps (e. g. use higher F-numbers) and compensate for the image brightness lost with more illumination, slower shutter speed and/or more gain. Pay attention to the fact that too slow shutter will affect frame rate of the live video.

Decreasing the Iris a few steps (higher F-number), especially in the F30/F30s cameras, produces in most cases a better picture with less residual aberrations and more depth of field.

## White Balance

Inspectis cameras feature three WB modes, Cold, Warm and Set WB (One Push). Select right WB depending on colour temperature of the illumination.



**Warm** is adapted to colour temperature of the Inspectis illumination devices.

**Set WB** (one push) makes an instant calculation of the WB based on the colour temperature of the current object at entire field of view. To **Set WB** put a white paper under the microscope, set Brightness to Auto and push **Set WB** button.

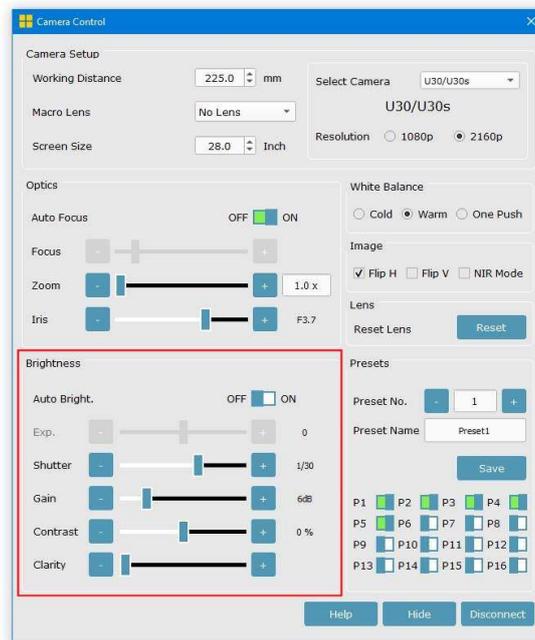
One push WB data is lost when the camera power is turned off.

WB of the video can also be set anytime using the white button on top of the Digital Microscope.



## Brightness (Shutter, Gain, Contrast, Clarity)

Digital camera attributes are controlled under Brightness.



### Auto Brightness

Auto Bright. adjusts both electronic gain and iris using an internal algorithm. Level of the auto brightness control is set by Exp. Image brightness at this mode is controlled by gain if the scene is dark, and by iris if too bright.

As Gain adds electronics noise to the image, try to avoid using the camera at Auto Brightness mode if the object illumination is not sufficient.

### Shutter

Shutter is exposure time of the image sensor. The shorter exposure time (higher shutter speed) the less light will be collected by the image sensor resulting in a darker image.

CMOS image sensors capture images line-by-line (rolling shutter), why there will be a slight time difference between the top and bottom of the scanned object. As a result, video image may appear skewed if the object is moving. This phenomenon is more visible if the frame rate of the video is low.

Some shutter speeds may interfere with frequency of the light source and cause flicker. If you notice flicker at a specific shutter, try another shutter speed.

### Gain

Gain is electronic amplification of the video signal resulting in brighter image. Gain, however, will also amplifies the image noise. For producing a good picture with minimum noise try to keep the Gain at low values (less than 9dB).

## Contrast

Contrast is the difference in colours that makes the image distinguishable. By adjusting the contrast level, you change the entire range of the image colour tones.

Adding contrast to the image of digital microscope requires some extra image processing that may result in drop of frame rate. If high frame rate is required in an application, set contrast to zero.

## Clarity

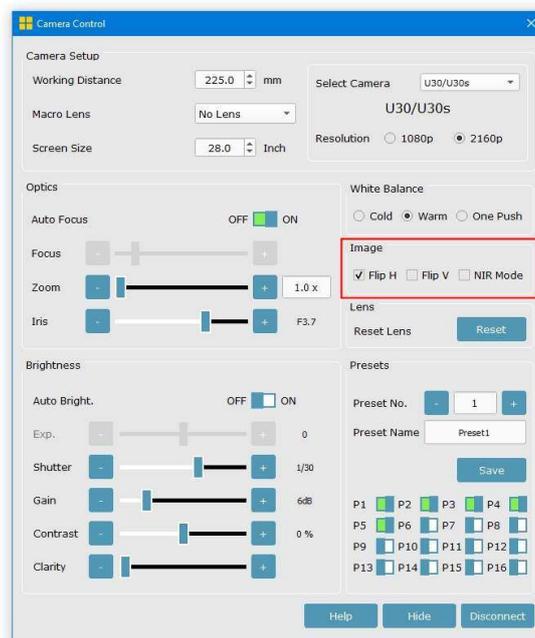
Clarity adjusts only the mid-tones of the image colours and makes the object appear clearer and sharper.

Clarity is especially useful for highlighting details of the inspecting object. Adding clarity does not affect frame rate.

## Image Flip and NIR Mode

Flip reverses the video output from the camera vertically and horizontally.

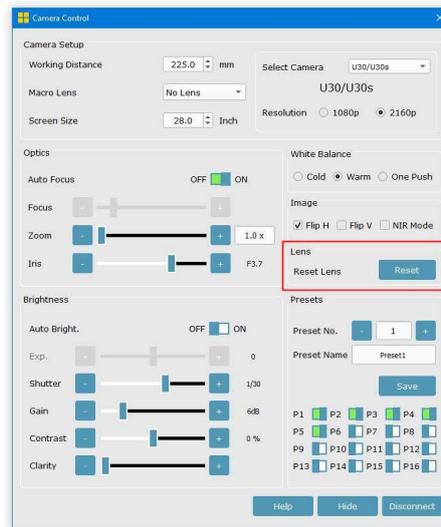
The NIR mode removes the near-infrared short-pass filter that is physically installed in front of the image sensor. The sensitivity in the near infrared region ( $\lambda$  660-1000 nm) is increased by disengaging the NIR filter. When the NIR Mode is selected, the image becomes black and white.



## Reset Lens

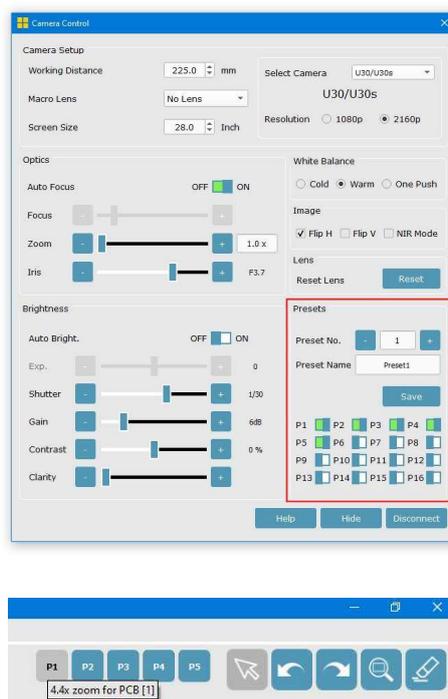
This function initializes the zoom and focus lens stepper motors and sends them their initial positions. When the camera is turned on or when the camera is connected to the software, the lens is automatically reset to its starting point.

Reset lens manually if the digital microscope or the software is not turned off or restarted for a long time. Doing this will maintain accuracy of calibrations and measurement.



## Presets

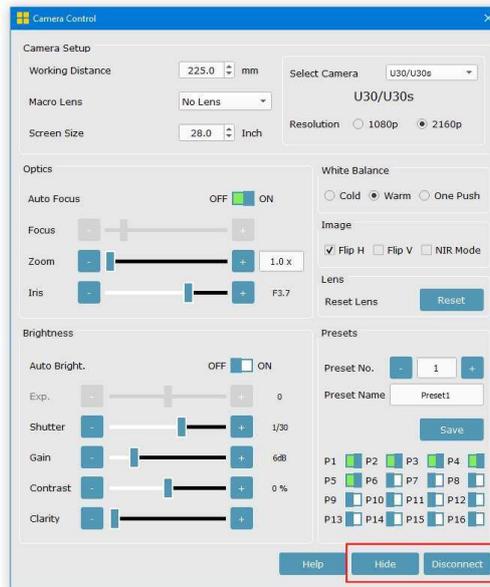
Up to 16 camera and lens configurations can be defined, saved, and recalled via hotkey icons on the INSPECTIS main window. Hotkeys are numbered P1 – P16. Their user-defined names can be displayed by hovering over the buttons.



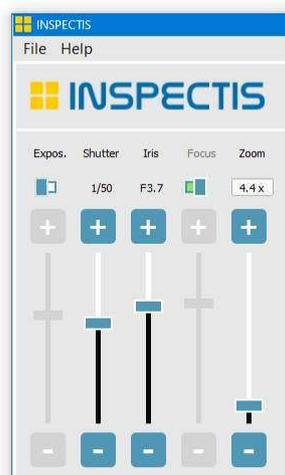
## Hide and Disconnect

Pressing Hide closes the camera control dialog and returns to the main INSPECTIS window while communication is still active. Basic camera and lens controls are visible at the top left of the main window.

Disconnect interrupts communication between the camera and the software.

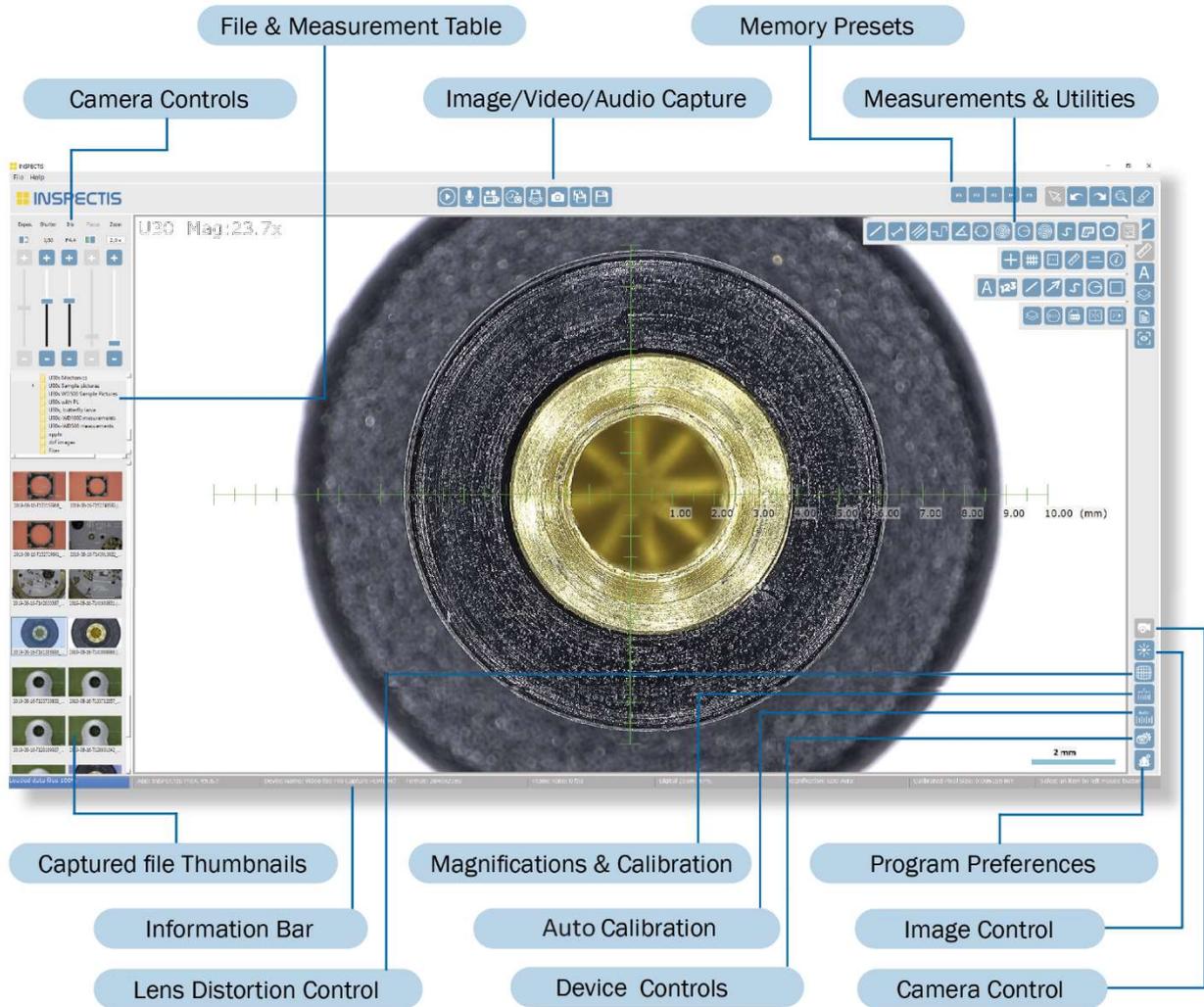


Basic camera and lens controls are visible on top-left of the Inspectis main window once you hide Camera Control dialogue.



## Working with INSPECTIS Software

INSPECTIS software is designed with an icon-based graphical user interface to help users navigate quickly. Most of the functions are available with a shortcut key indicated as [key] for quick access.



Some of the tools in above picture may are not available in INSPECTIS© Basics.

Most of the functions are available with a shortcut key indicated as [key] for quick access.

## Live Video and Still Images

INSPECTIS software automatically shows the live image of your device on start. To pause the live image,

click  or SPACE BAR.

To start the live image again click  icon or press SPACE BAR.

## Zooming

Both live and still images can be digitally zoomed in and out. Zoom functions are accessed by right-

clicking the Zoom Group icon .



**Zoom In** [Shortcut Key: F4]



**Zoom Out** [Shortcut Key: F3]



**Zoom to Fit Screen** [Shortcut Key: F5]



**Full Screen** [Shortcut Key: F6]. To close the full screen view, press ESC or press the



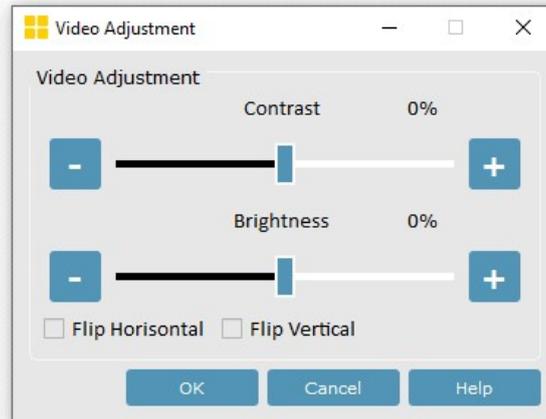
icon.

Digital zooming in and out can also be done using the mouse wheel. The mouse pointer defines the centre of the zoomed area. To pan the image after zooming in, press and hold the middle mouse button.

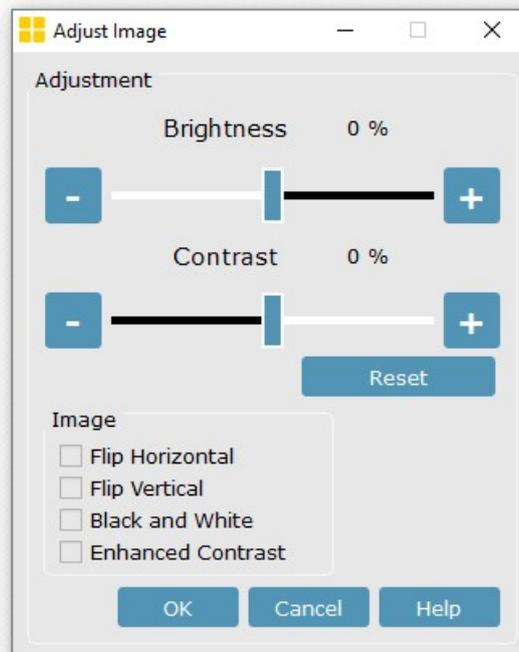
## Image and Video Adjustments

To adjust contrast and brightness of the image, click  icon. Depending on the connected device and live or still image, different adjustment windows will appear.

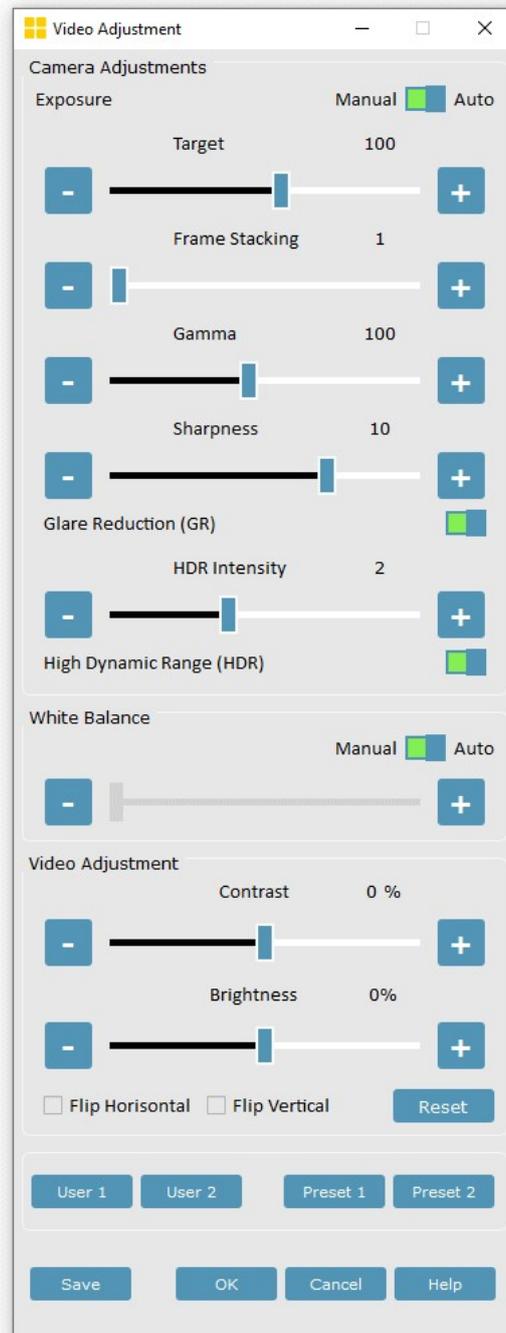
If image is Live user can change orientation of the image, brightness, and contrast values. Notice frame rate of captured video might be affected if Contrast and Brightness are added to live video.



If the image is Still, its brightness and contrast can be adjusted. In addition, Black and White and Enhanced Contrast can also be applied to still images.

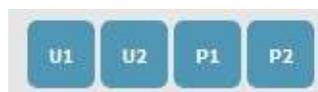


If your connected device is Inspectis 5MP Camera (BGA), the Video Adjustment dialogue will be according to below picture:



Two factory-set camera settings **Preset 1** and **Preset 2** are also available. These presets are fixed and cannot be changed.

If your device is Inspectis 5MP Camera (BGA), **User 1**, **User 2**, **Preset 1** and **Preset 2** settings will be available as **U1**, **U2**, **P1** and **P2** quick-access buttons on top-right of the INSPECTIS main window.

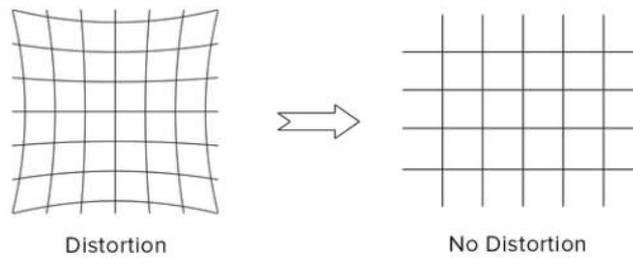


## Distortion Correction

Lens distortion is inherited to most wide-field optical systems.

Automatic distortion correction is enabled automatically when the camera is connected to the software.

Switch off/on the Distortion Correction using  icon.



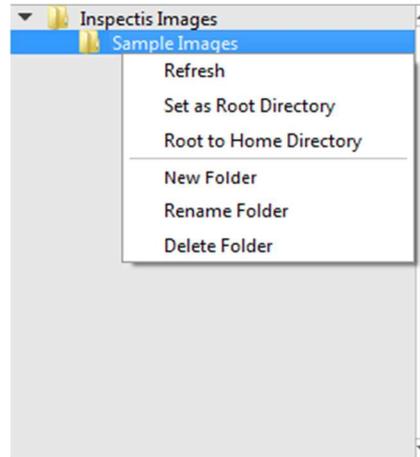
Distortion Correction is applied for 1x to 4x zoom factors only. Notice frame rate of the live video is reduced when DC is processing.

## Folder Structure and Thumbnail View

### Folder Structure

Right click on the folder structure and choose the working folder to be used for saving the images and files. Working folder can be also selected via "File Menu -> Select Folder". Images and other files in the working folder are displayed as thumbnails in the Thumbnail View beneath the folder structure.

By right clicking on the file structure below folder functions can be accessed:

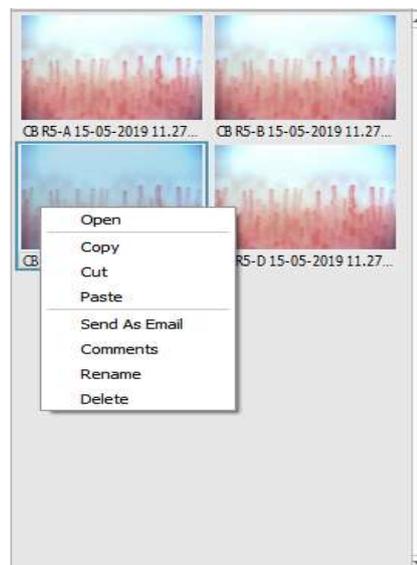


By clicking "Set as Root Directory", other folders except for the selected working folder will be hidden.

Clicking "Root to Home Directory" will display all folders.

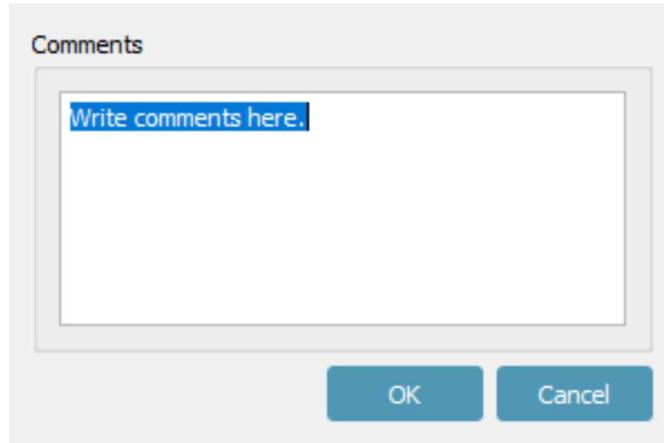
### Thumbnails and Image Functions

By right-clicking on a saved image thumbnail, image functions are displayed



You can select one or multiple images at a time to Copy, Cut, Paste, E-mail or Delete.

Comments will be saved to the selected image file. Comments will also be automatically printed on the Report when you attach the image to the report.



## Saving Images

There are four options for saving an image:



**Save Averaged Images** [Shortcut Key: F9]. Captures multiple images and combines them before saving the final image. Results in a clearer image with less noise.



**Capture Live Image** [Shortcut Key: F11]. Captures a still image from live video and saves it under current working folder as .jpg (default) or .png. Image will be automatically labelled with date and serial number.

If the live image is paused and there are measurements and overlays on it,  will only save the image without overlays and measurements.



**Save Image As** [Shortcut Key: Ctrl+A]. Saves the image with user specified name and folder.

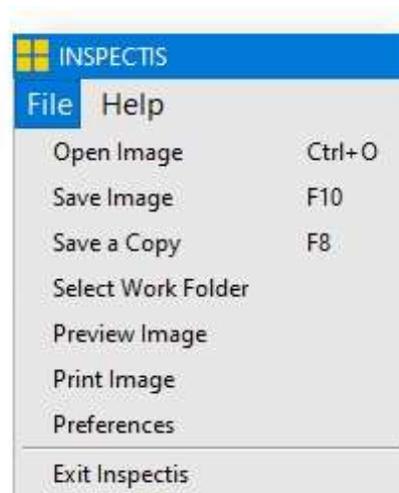


**Save Image** [Shortcut Key: F10]. Saves the image together with measurements and overlays under the current working folder. Image will be automatically labelled with date and serial number with "*\_measured*" suffix.

## Loading Images

To load a thumbnail image, video, or a document from the working 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.

To load an image from another location, click "File -> Open Image", then select the image to be opened.



## Measurements and Analysis Tools

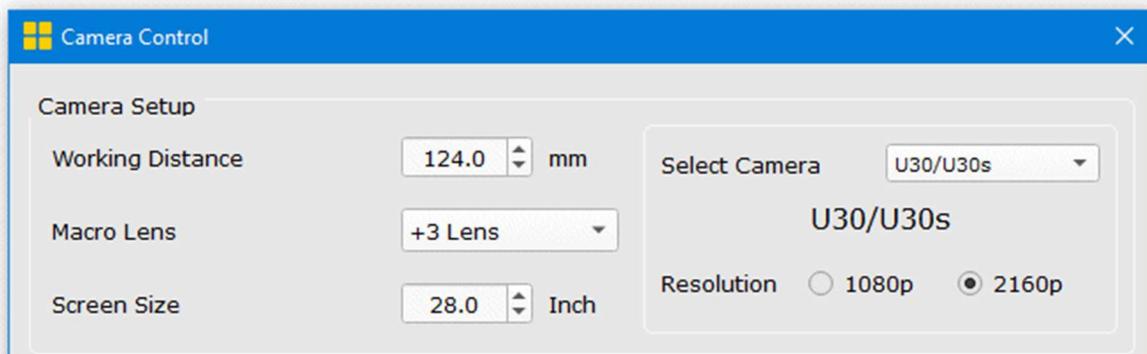
For performing accurate measurements, current magnification must be calibrated and working distance be kept unchanged.

If your digital microscope is connected to the host computer via the Inspectis communication cable, factory default calibrations will be loaded automatically.

The software tracks the zoom and displays the calibrated magnifications of the video image at all zoom positions automatically at the top left of the INSPECTIS image field.

Note that the factory settings are only valid and correct when the working distance of the microscope is correctly set.

Before performing geometric measurements, make sure that the Working Distance, any Macro Lens (close-up) and the Screen Size of your computer are correctly selected on the Camera Control dialog.



If you select an uncalibrated image, measurement results will be presented in pixels.

## Magnification and Calibrations

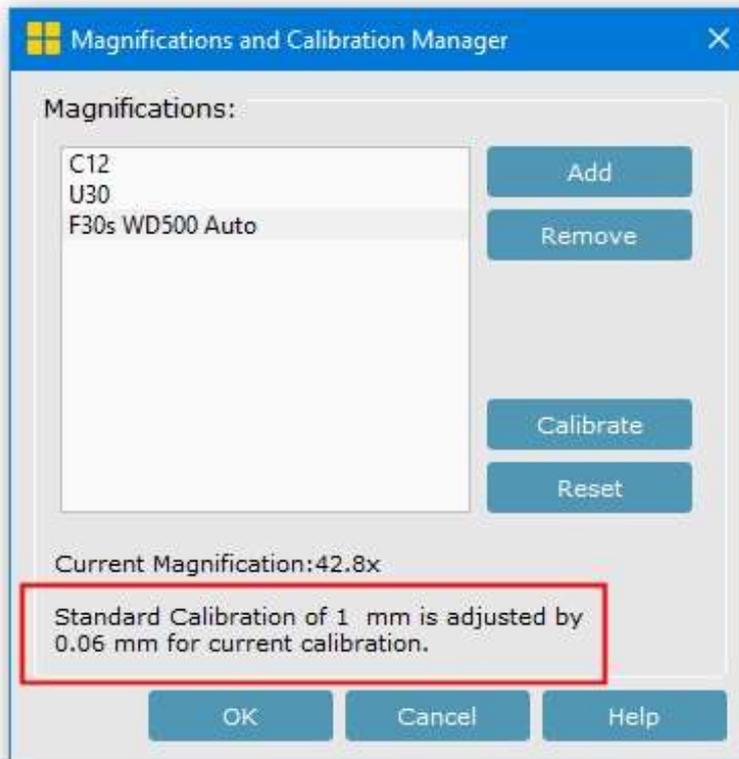
All Inspectis digital microscopes are pre-calibrated. However, to achieve high measurement accuracy, you must perform new careful manual or automatic calibrations for your preferred magnifications and working distances.

Each new custom calibration will adjust the default calibration in INSPECTIS by a correction factor. Information about how much the default calibration is adjusted is displayed for each magnification in the Magnification and Calibration Manager dialog.

You can reset any custom-made calibration and return to the factory set value any time by using Reset

Reset

button on Magnification and Calibration Manager dialogue.

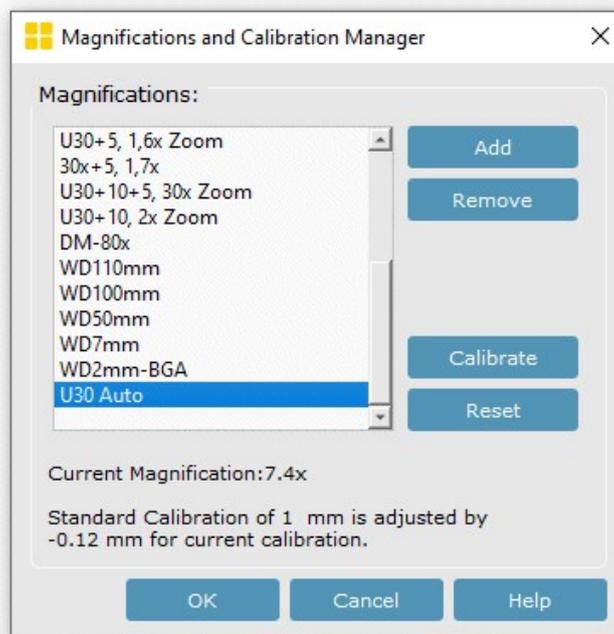


## Magnification Manager

When your digital microscope is connected to the software, automatic magnification will be used by default. This is displayed at the top left of the INSPECTIS image bar as "xx Auto", where "xx" is the name of your U, F, C or DIM digital microscope.

However, custom magnifications for any specific zoom position can be added and calibrated to the software via the Magnification and Calibration Manager.

Click the icon  to display the dialog. You can select and use a custom magnification as long as the zoom position of the digital microscope is unchanged. When the digital microscope zoom position is changed, the software returns to the xx.Auto Magnification mode.



Every new custom calibration will adjust the Standard Calibration in INSPECTIS by a correction factor. Information about how much the Standard Calibration is adjusted is displayed for each magnification on Magnification and Calibration Manager dialogue.

You can reset the custom-made calibration and return to factory set any time by using Reset

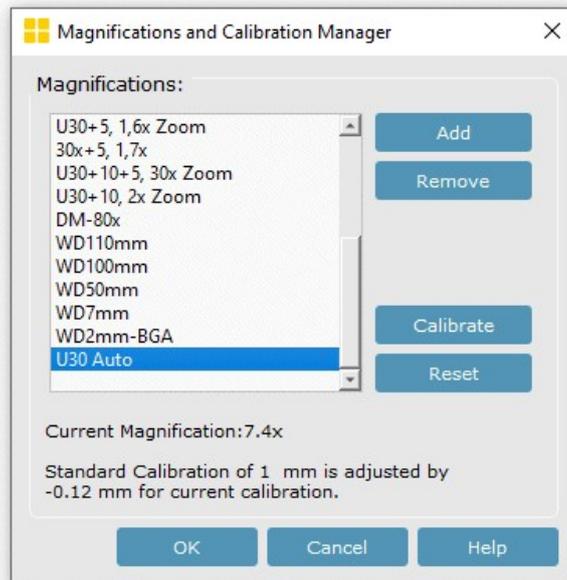
 Reset

button on Magnification and Calibration Manager dialogue.

## Adding a New Magnification

Before adding a new magnification, place an accurate ruler or micrometre scale under the microscope, adjust and fix the working distance, and ensure that the live image is in focus.

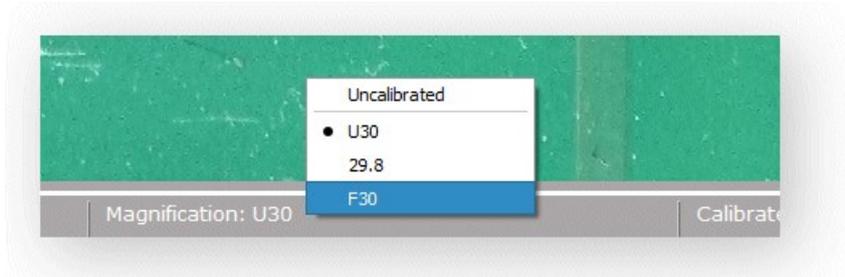
Open the Magnification and Calibration Manager and click the Add button. Write the desired name on the magnification and press the OK button. The live image is paused, and the calibration procedure starts. See the next section for the calibration procedure.



## Selecting Magnification

To select a Magnification, open the Magnification and Calibration Manager dialogue , select the desired magnification, and click OK button.

For quick selection of magnifications, right-click on the magnification in the INSPECTIS status bar and select the desired magnification.

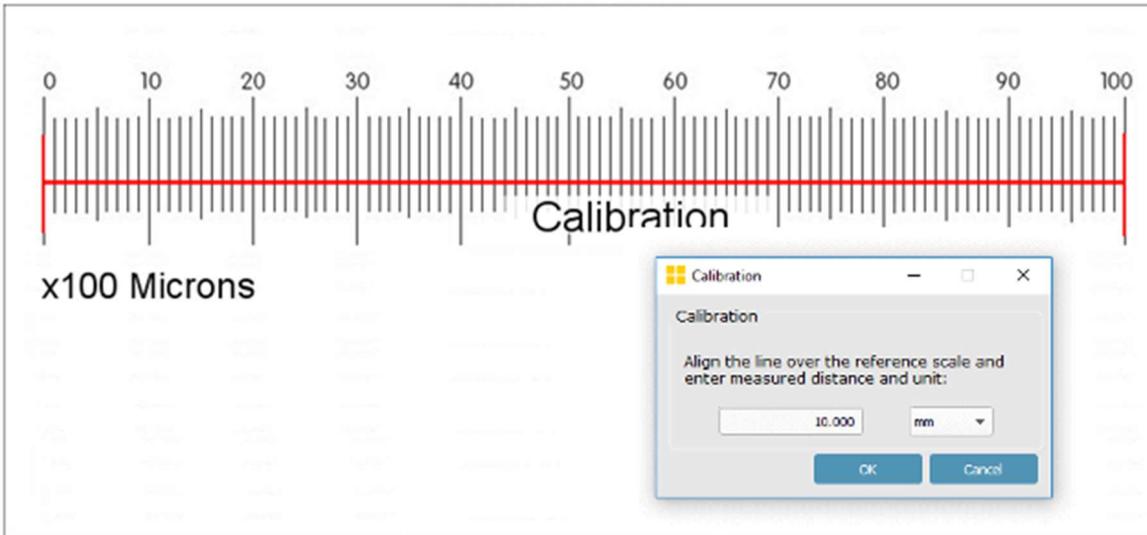


Note working distance of the current camera setup defined as the distance between the camera and the focused object shall not be changed after making the calibration. Altering working distance will change the magnification resulting in incorrect calibration.

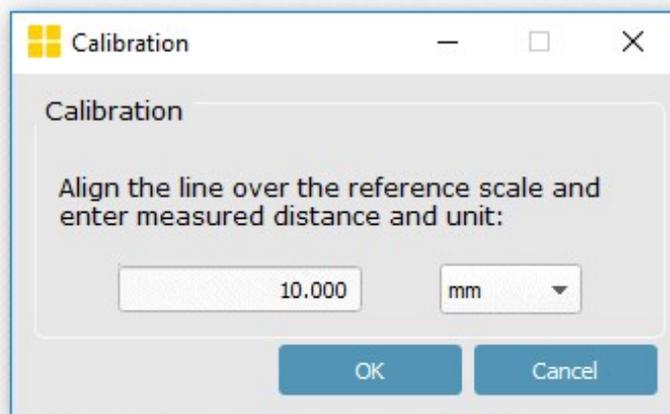
## Calibration of Magnifications

Before starting to calibrate a magnification, place an accurate ruler or micrometre scale under the

microscope, adjust the working distance and make sure the live image is on focus. Click  to open Magnifications and Calibration Manager, select the desired magnification and click Calibrate. The live image will be frozen and calibration windows with a calibration line will appear.

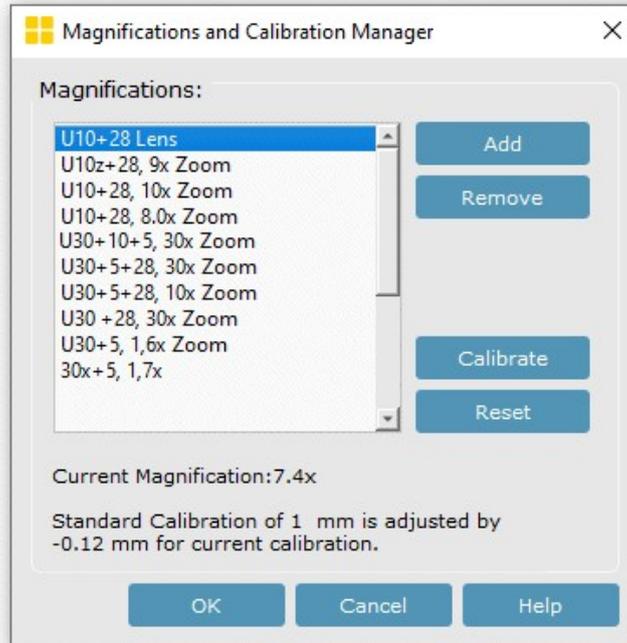


Select, drag, and align both ends of the calibration line to the matching lines on the reference image. Type in the distance and select the unit (**mm** or **µm**) in the calibration window. If imperial units are selected in Preferences, imperial units (**inch**, **mil**) will be shown in calibration window. Click OK to end the calibration process.



Note working distance of the current camera shall not be changed after calibration. Altering working distance will change the magnification resulting in incorrect calibration.

When you re-calibrate your factory-set Magnification (device is connected to INSPECTIS software via COM-cable), the new calibration will override the Standard Calibration. Information about how much the Standard Calibration is adjusted for this magnification is displayed below the magnification list on Magnification and Calibration Manager dialogue.



You may reset a custom-made calibration to factory set Standard Calibration any time by using Reset

A blue rectangular button with the word "Reset" in white text.

button.

## Measurement Tools



**Measure Distance.** To measure a linear distance press and hold the left mouse button, drag to

draw a line from A to B on the image and release the button to finish. Select  automatically activates after each measurement to fine-tune the measurement line if necessary.

To fine-tune the start and end position of the measurement line:

- Click and drag the ends of the measurement line to change the distance.
- Click and drag the measurement line to move the line.
- Click and drag the text box to move it to another position.

Press and hold Ctrl key on computer keyboard before drawing the measurement line to make Horizontal or Vertical Distance measurements.

Number of decimals for measurement results can be set in Preferences (1 to 5 decimals).

Thickness and Colour of measurement lines as well as Font Size and Colour of the text can be changed in Preferences.

To modify, move or delete a measurement activate the Select Tool  and right-click on the specific measurement line.

All measurements can be undone or redone using Undo  and Redo  respectively.

To delete and clear all items, click on .

If you select an uncalibrated image, measurement results will be presented in pixels.

Measurement Table on top-left of INSPECTIS window is automatically displayed as soon as a measurement tool is selected.

Measurement Table  				
	Tool	Parameter	Value	Unit
1	D1	Length	4,04	mm
2	D2	Length	4,4	mm
3	D3	Length	2,98	mm
4	Ø1	Diameter	3,64	mm
5	Ø1A	Area	10,41	mm <sup>2</sup>
6	α1	Angle	39,86	°

## Saving and Exporting Measurements

Measurement results as well as calibration information are always saved together with the picture as described in Saving Images section. All the saved measurements are part of the image and cannot be changed as they are burned into the image.

Measurement results are also displayed under Measurement Table field on INSPECTIS and can be exported  to Excel or other CSV file compatible software.

Measurements can be burned to the image and saved together with the image using Save Image  or Save as Copy  button.

## Annotation Tools

To select an Annotation tool right click on  or  icon on the right menu bar. Annotation tool menu will pop-up.



 **Annotation with Line:** Draw a line and a text window will appear. Write in the text field or leave it blank to just draw an arrowhead line. To insert a text without line, just click on the image field instead of

drawing a line. Select  is automatically activated when annotation is completed to let you adjust position of the line and text box! Select the annotation line or text box by left click and right-click your mouse button to delete all or to rename annotation text.

 **Counting Objects:** Check the desired category A-F from the counting window and count the objects on the image by left clicking on each item. The counted object will be mark with the first letter of the selected category followed with the current count.

After finishing counting objects, click OK to close category window.

The results are also displayed under Measurement Table field on INSPECTIS and can be exported to Excel or other programs in CSV file format.

Name of the categories as well as their font size and colour can be changed in Preferences.

## Reference Overlay Tools

To select a reference tool for display on live image, right click on the current icon  on the right menu bar. Reference tool group will pop-up.



Left click on the desired tool activate/deactivate. Last selected tool icon will replace the menu icon for quick access.



**Cross-hair:** Left click to activate/deactivate Cross-hair on the screen. Thickness and colour of cross-hair can be changed in Preferences.



**Grid:** Left click to activate/deactivate Grid on the screen. When Grid is selected first time, a new window will appear to define size of the grid. Right click on the Grid icon to change the grid size next time. Grid can be moved across the image field. Right mouse click to move it back to default centre position. Thickness and colour of cross-hair can be changed in Preferences.



**Rectangle:** Left click to activate/deactivate Rectangle on the screen. When Rectangle is selected first time, new window will appear to define width and height of the rectangle. Right click on the Rectangle icon to change the rectangle size next time. To move the rectangle, click on it and drag to the desired location. Rectangle can be moved across the image field. Right mouse click to move it back to default centre position. Thickness and colour of rectangle can be changed in Preferences.

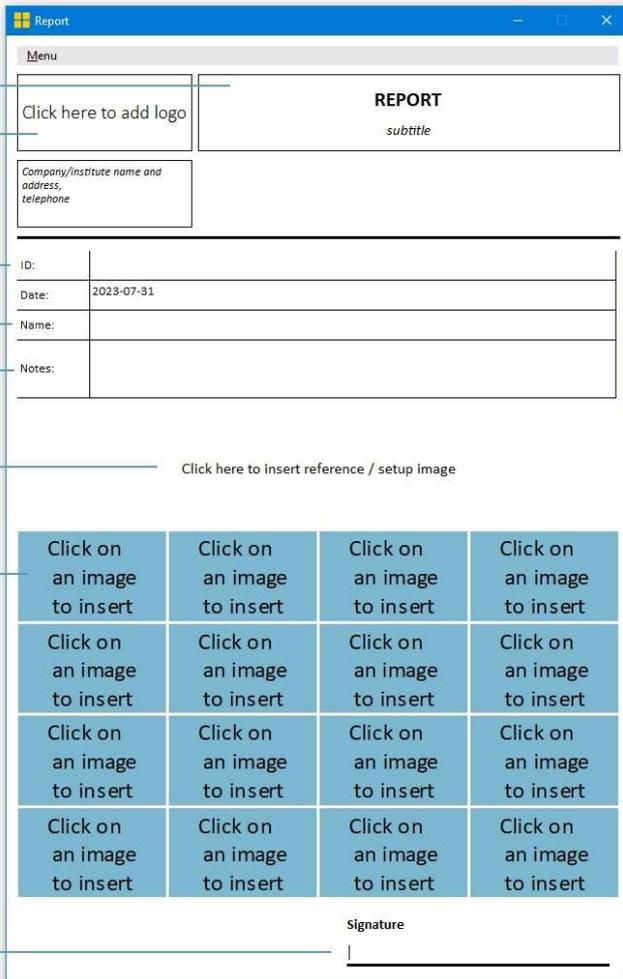


**Reference Scale:** Left click to activate/deactivate a calibrated Reference Bar on the screen. Colour of Reference Scale bar can be changed in Preferences.

## Report Tools

To start creating a report click .

Under Menu you can create a New Template including 16 or 32 pictures or open an existing report template. Click on saved picture thumbnails to insert them into the report template. When the report is completed Save it as PDF in your computer or directly Send it as email.



The screenshot shows a window titled "Report" with a "Menu" tab. The interface is divided into several sections:

- Report Title:** A field for the main title of the report.
- Logo:** A field with the text "Click here to add logo" for inserting a logo.
- Company/Institute name and address, telephone:** A field for entering organizational details.
- ID number:** A field labeled "ID:" for patient identification.
- Name:** A field labeled "Name:" for patient name.
- Notes:** A field labeled "Notes:" for additional patient information.
- Reference picture:** A field with the text "Click here to insert reference / setup image" for adding a reference image.
- Images:** A 4x4 grid of 16 blue buttons, each labeled "Click on an image to insert", for selecting report images.
- Signature:** A field labeled "Signature" for the operator's name or signature.

**Logo area:** Left-click to add a logo in JPG or PNG format.

**Report name and Subtitle area:** Add title/subtitle to the report by clicking on the respective area.

**Company/Institute details:** Editable field to update organisation details. "Menu -> Save Template" also saves company details.

**ID/name and Notes:** Editable field to insert patient details.

**Signature:** Editable field to text operator name or signature.

Select **Menu** -> **Save** Template to save a template for future use. Company details, logotype and other common information will be saved into the new template.

## Shortcut key list (Hot-keys)

Following quick-access shortcut keys (Hot-keys) are available in INSPECTIS Basics:



Save Image [Shortcut Key: F10].



Save Image As [Shortcut Key: F8].



Capture Live Image [Shortcut Key: F11].



**Play/Pause Video** [Shortcut Key: **Space**].



**Zoom In** [Shortcut Key: **F4**].



**Zoom Out** [Shortcut Key: **F3**].



**Zoom to Fit Screen** [Shortcut Key: **F5**].



**Full Screen** [Shortcut Key: **F6**].



**Clear all Items** [Shortcut Key: **Ctrl+Del**].

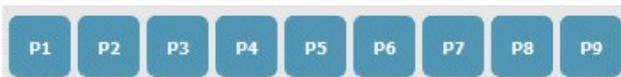


**Undo** [Shortcut Key: **Ctrl+Z**].



**Redo** [Shortcut Key: **Ctrl+Shift+Z**].

**For U, F, C and DIM type Digital Microscopes:**



**Preset 1 to 9** [Shortcut Key: **1 to 9**].

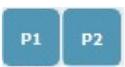


**Preset 10 to 16** [Shortcut Key: **Shift+0 to Shift+6**].

**Preset recalls for Inspectis 5MP Camera (BGA Inspection):**



**User 1, 2** [Shortcut Key: **1, 2**].



**Preset 1, 2** [Shortcut Key: **3, 4**].

**Camera Controls (U, F, C and DIM type Digital Microscopes):**

**Zoom in** [Shortcut Key: **up**].



**Zoom out** [Shortcut Key: **down**].



**Focus Near** [Shortcut Key: **F**].



**Focus Far** [Shortcut Key: **Ctrl+F**].



**Increase Iris** of the lens [Shortcut Key: **Right**].

If Auto Expos. is on, **Right** highers exposure control reference level)



**Decrease Iris** of the lens [Shortcut Key: **Left**].

If Auto Expos. is on, **Left** lowers exposure control reference level)



**Increase Exposure time (Shutter speed)** [Shortcut Key: **S**].



**Decrease Exposure time (Shutter speed)** [Shortcut Key: **Ctrl+S**].



**Increase Auto Exposure** [Shortcut Key: **Right arrow**].



**Decrease Auto Exposure** [Shortcut Key: **Left arrow**].



Switch between Manual/Auto focus [Shortcut Key: **M**].



Switch between Manual/Auto Exposure [Shortcut Key: **E**].

**USB3.0 Digital Microscope Camera Controls (BGA Inspection):**

**Reset and Restart Camera** [Shortcut Key: **F12**].



**Increase Contrast** [Shortcut Key: **up arrow**].



**Decrease Contrast** [Shortcut Key: **down arrow**].



**Increase Exposure time** [Shortcut Key: **Right**].

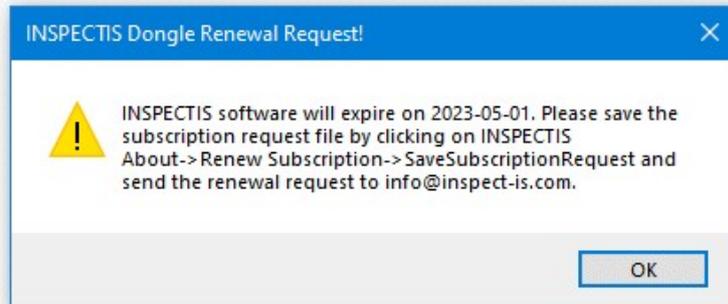


**Decrease Exposure time** [Shortcut Key: **Left**].

## Subscription Renewal

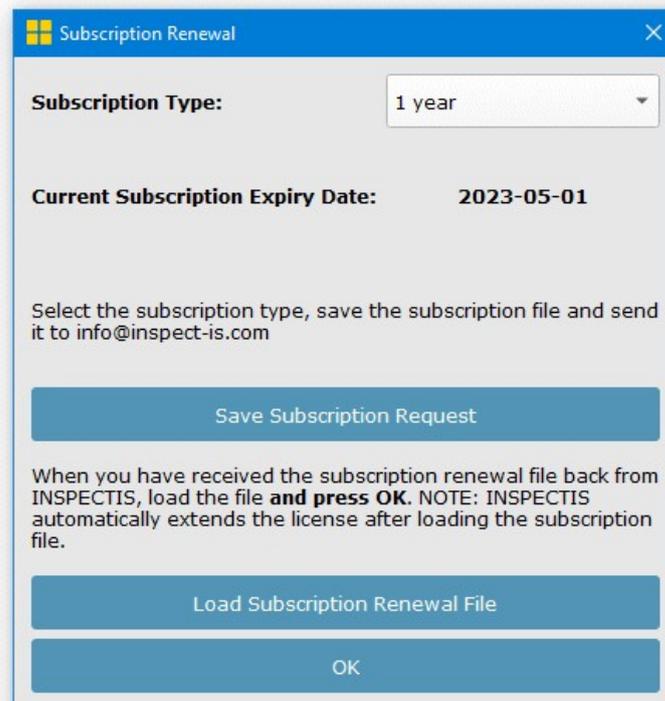
INSPECTIS Basics Subscription comes with one year's free subscription. If you intend to continue using the Software, you must order a new 1-year, 3-year, or 5-year subscription option.

A pop-up window warns of subscription renewal when the expiration time is approaching.



For renewing your subscription click **Help -> Subscription Renewal**. Select the subscription length, (1-year, 3-years, or 5-years) and click Save Subscription Request. Email the Subscription File to [info@inspect-is.com](mailto:info@inspect-is.com).

After processing your order, you will receive a Subscription Renewal File from Inspectis. Load the Subscription file and press OK to activate.



Your Subscription Expiration Date is shown under About INSPECTIS.





## System Requirements

---

### Minimum System requirements:

Component	Minimum specification
CPU	Intel Core i5, CPU @ 2.4 GHz or faster
Operating System	Windows 10/11 (x64 version Professional, Enterprise)
Memory	8 GB of RAM
Hard disk	200 GB of Free Space
Display	Laptop: 15.6" / 1920 x 1080 (Full HD) PC: 24"-27" / 3840 x 2160 (4K)
Ports	One USB 3.0 or USB3.1 or USB3.2 port (5Gbit/s) Two USB 2.0 port One PCIe Gen2 x4 (if PCIe converter is used)

### Recommended computers by Inspectis:

- **Station:** DELL Precision Workstation, Intel Core i7, 16 GB RAM
- **Laptop:** DELL Latitude, Intel Core i7, @ 5.0 GHz, 8 GB RAM 15.6", Full HD  
HP EliteBook, Intel Core i7, 16 GB RAM 15.6", Full HD

---

All rights reserved. The information contained herein is designed only for use with Inspectis AB's systems. Inspectis AB is not responsible for any use of this information for other purposes. Inspectis ABs shall not be liable to the purchaser of this product or third parties for damages, losses, costs, or expenses incurred by the purchaser or third parties as result of: accident, misuses or abuse of this product or unauthorized modifications, repairs or alternations to this product, or failure to strictly comply with Inspectis AB's operating and maintenance instructions. Inspectis AB shall not be liable for any damages or problems arising from the use of any options or any products other than those designated as original Inspectis AB products or products by Inspectis AB. Inspectis AB shall not be held liable for any damages resulting from electromagnetic interference that occurs from the use of any interface cables or devises other than those provided by or designated as Inspectis AB- approved Products by Inspectis AB.

**INSPECTIS© software is developed by Inspectis AB**



Email: [info@inspectis.com](mailto:info@inspectis.com)

Web: [www.inspect-is.com](http://www.inspect-is.com)