UNITRON®

# enVision AF

## Autofocus Inspection Microscope


# MANUAL for Windows PC Software

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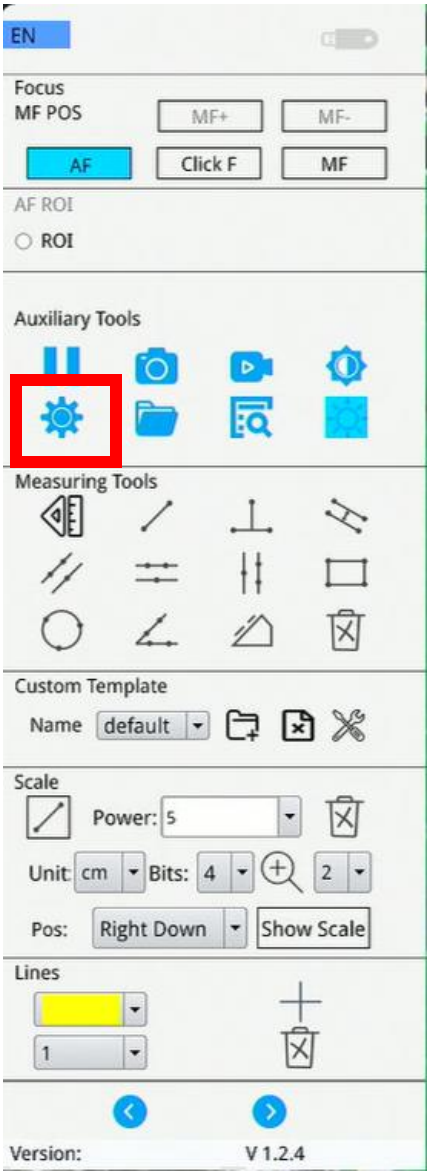
# Contents

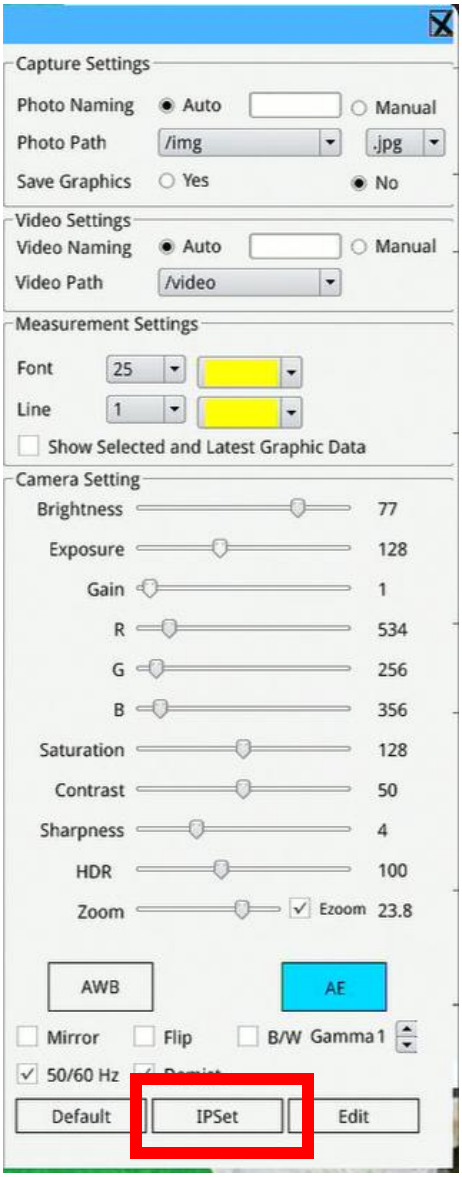
# Connect enVision AF to PC by Ethernet (LAN)

To use the enVision AF with a Windows PC, you must first establish a network connection between the two.

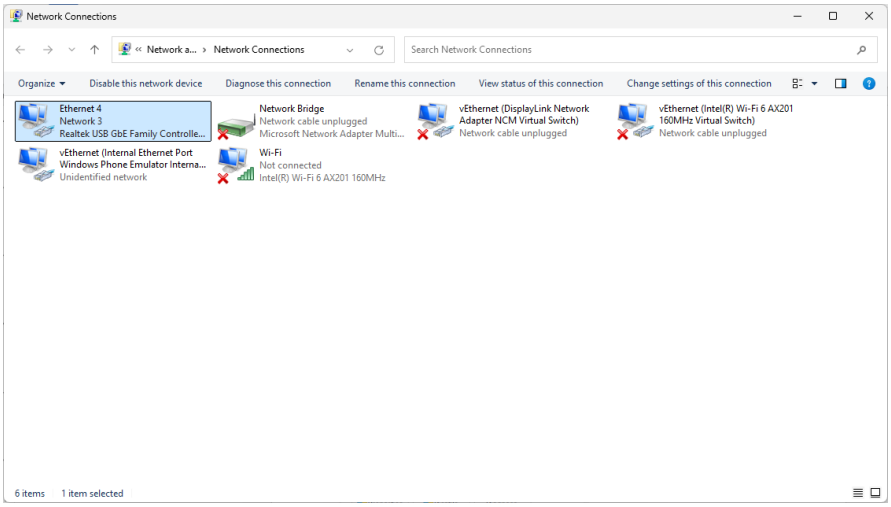
1. Connect mouse and HDMI monitor to the microscope (enVision AF).
2. Connect microscope to LAN (Ethernet cable).
3. Power the microscope on.
4. In Auxiliary Tools in the built-in software of the microscope, open Settings (red box).



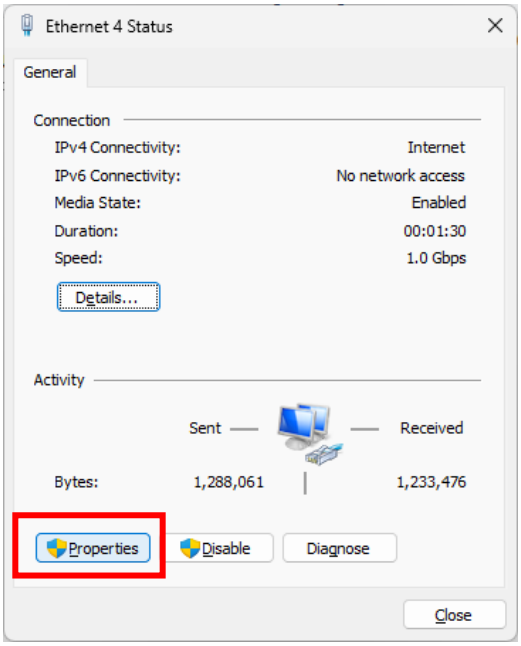

5. At bottom of new pop-up menu, choose IPSet (red box) to show the camera IP address. Make a note of this IP address, then click OK to close the IP address window.



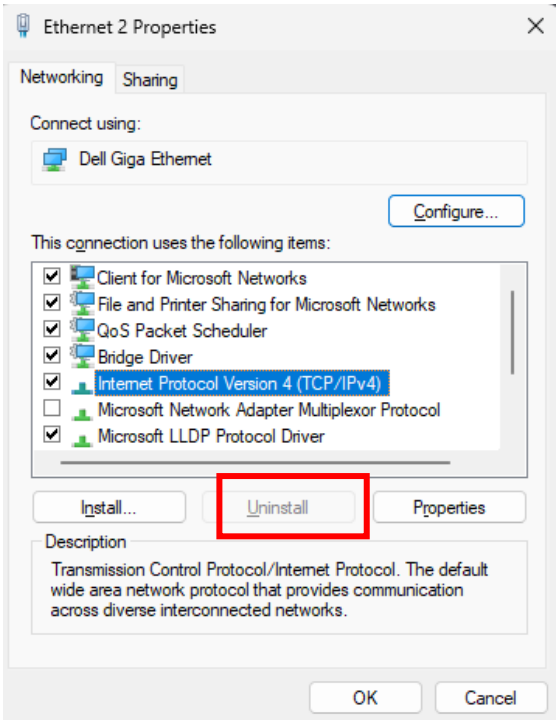

6. Close the Settings window by clicking the X at the top right corner.
7. Install enVision microscope software on PC.
8. Connect PC to LAN (shared Ethernet cable with enVision).
9. Launch the software. Note that the enVision microscope/camera will not be recognized in Device Manager.
10. Open Network Connections on PC.



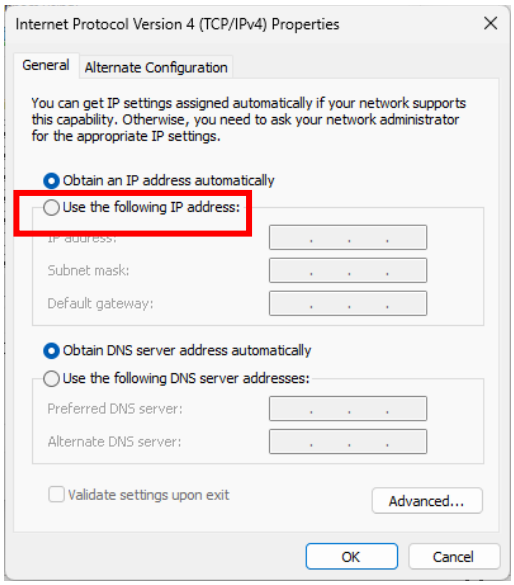

11. Choose Ethernet Status (double-click Ethernet Network to open). Your Ethernet assignment may vary by computer and LAN.
12. Click Properties.




13. Select Internet Protocol Version 4 and choose Properties.



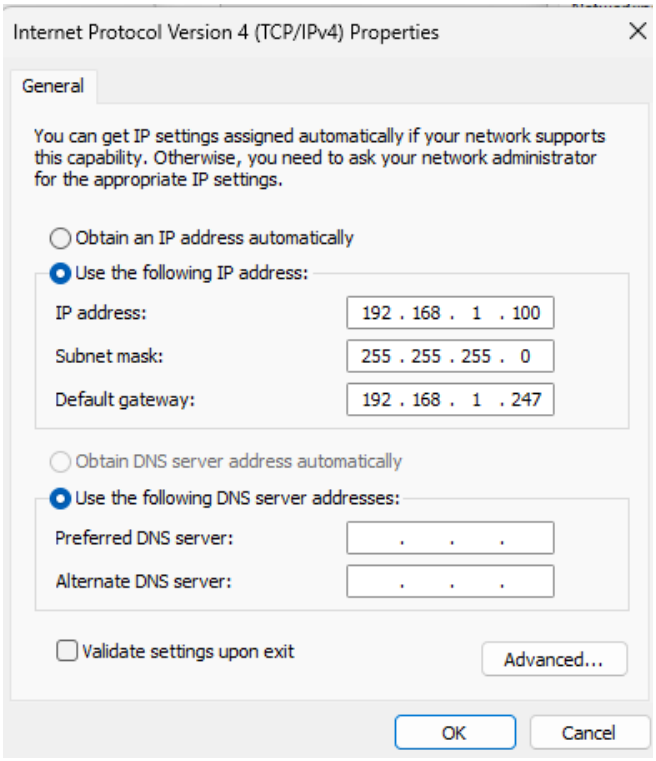

14. Select “Use the Following IP Address”.




15. In the IP Address fields, enter the first 3 fields exactly as they are in the microscope’s IP address: 192.168.1. The fourth field can be any number from 2 – 254 (“100” is used in this example), but do not use the same number as is used in the fourth field of the microscope.
16. The Subnet mask should automatically populate as 255.255.255.0. If it does not, please manually

enter these values in the fields.

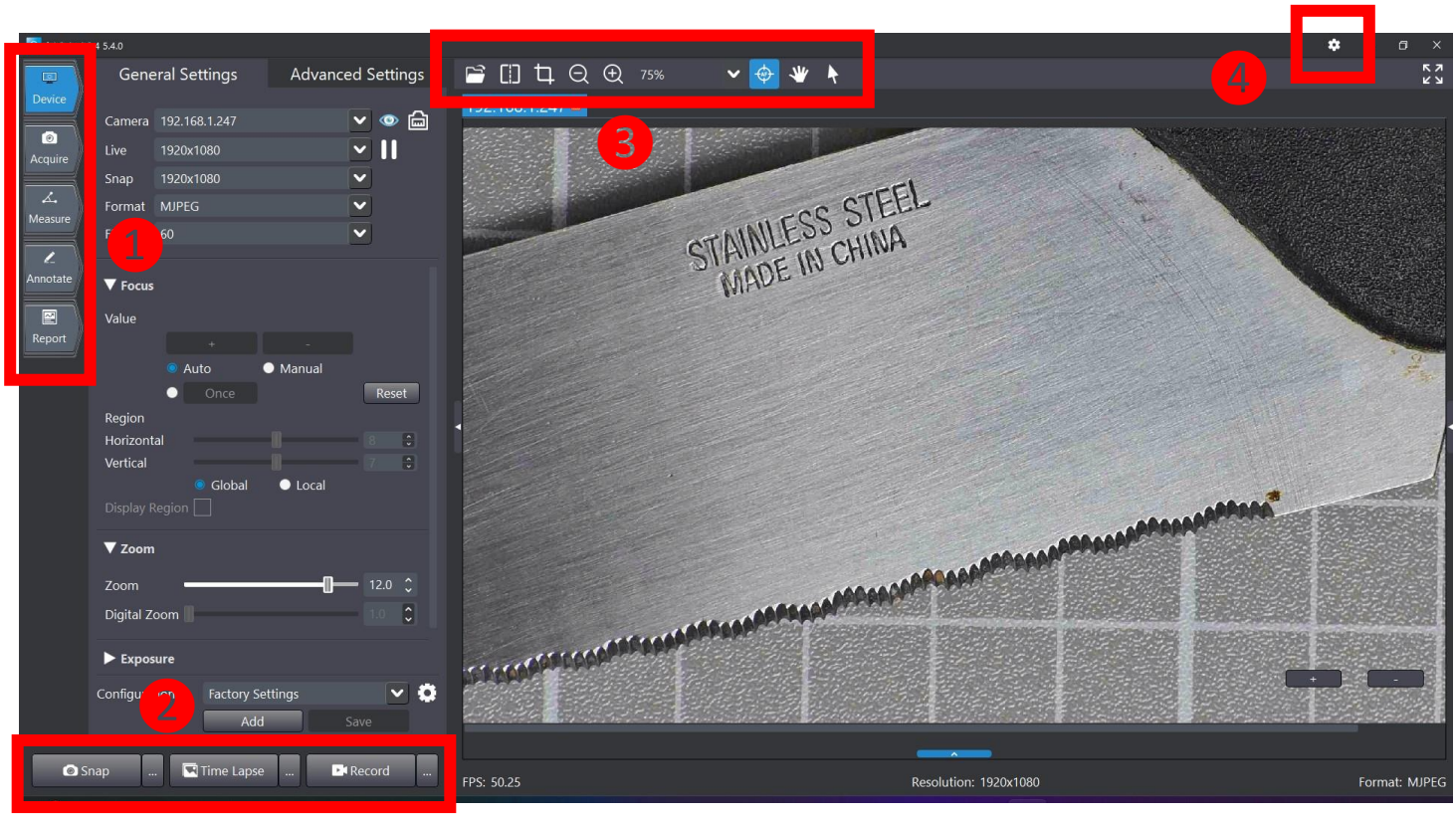
17. For Default gateway, enter the IP address for the microscope. Do not enter anything for Use the following DNS server address.
18. Click OK.




You should now see a live image from the microscope in the software on the PC.

Microscope control is now performed using the enVision PC software. The mouse connected to the enVision microscope may still be used for some functions of the built-in software of the microscope, but image capture requires the PC software. Using the PC software, the image file type, file name and storage location may be specified.

# Main Software Interface




1. Main Menu
2. Capture Bar
3. Quick Bar
4. Settings

# Main Menu


Device - Used for equipment related parameter adjustment operations (resolution, format, focus, zoom, exposure, white balance, etc.)

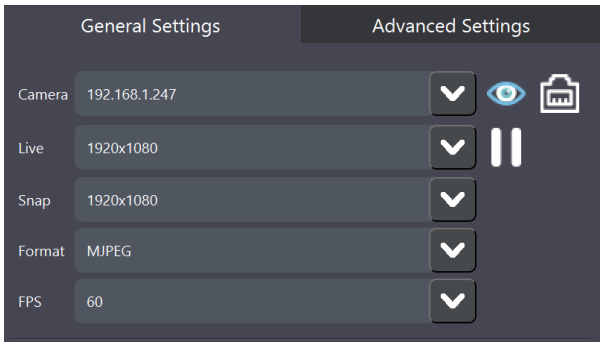
Acquire – Stitching, Extended Depth of Field, Color Compositing, Counting functions.

Measure - After calibration is completed, the software can measure the geometry of a target within its field of view as well as set relevant measurement attributes.

Annotate - Time Stamp Settings, Marking Tools, Text Tools, Auxiliary Tools.

Report - Divided into Excel table template and PDF file template for exporting reports.

# Device


## General Settings

Camera
When the camera is connected, select it by clicking the drop-down icon on the right side and opening the preview screen. The camera name is the IP address of the camera when it is inputted from LAN.

LIVE
Different resolutions can be selected for the live preview by the drop-down box on the right side.

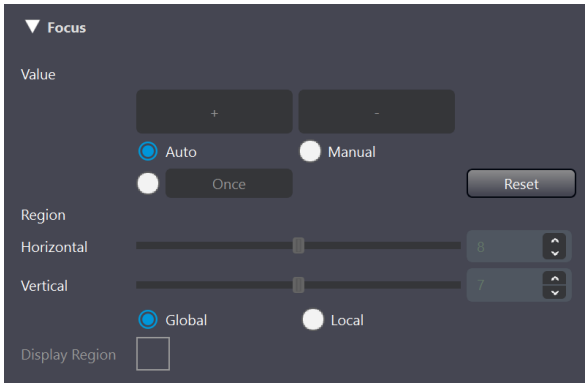
Snap
This drop down represents the resolution of the photo/video file. The resolution varies between camera models and can be selected using the drop-down box on the right.

Format
MJPEG (compressed image)

Freeze
When the button is clicked, the screen freezes the live image. You can take pictures and measurements with this toggled on. Continuous shooting and video recording are not available when actively frozen.

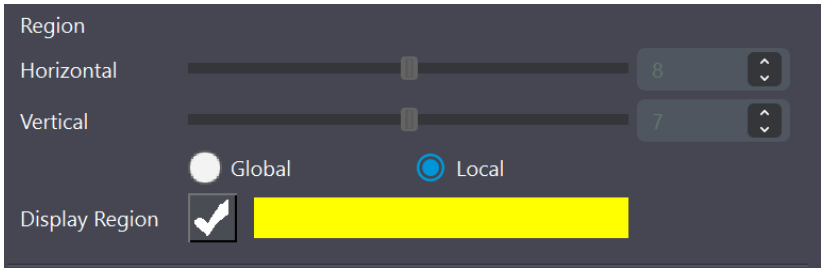
FPS
LAN port output can set the frame value.

**Focus**




Automatic mode will allow the preview window to automatically adjust focus to the 'Local' Region of Interest; or 'Global' for the entire field of view.

Manual mode allows you to control the camera focus through the software.

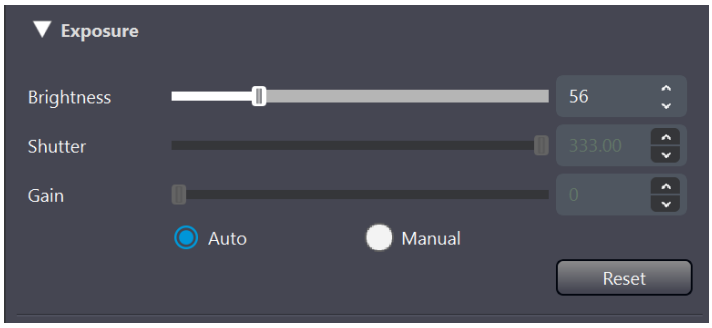



Custom color settings are available for the 'Local' area frame.

**Zoom**


Control the camera's optical magnification and digital zoom. On screen magnification controls are available on the screen in the lower right corner.

**Exposure**

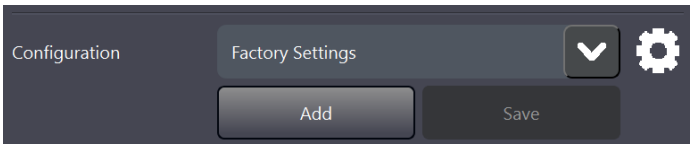



**Auto**: Control Brightness only.
**Manual**: Control Shutter and Gain settings.

**White Balance**


Image a solid white background and select the “Once” button to white balance the camera. Printer paper is an ideal white point of reference.

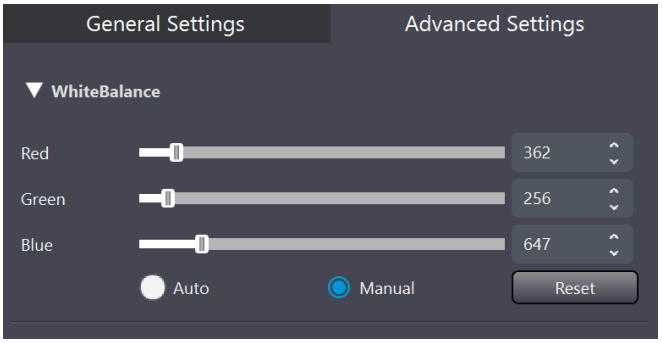
**Configuration**




Set your own custom configurations or default back to factory settings.

## Advanced Device Settings

**White Balance**



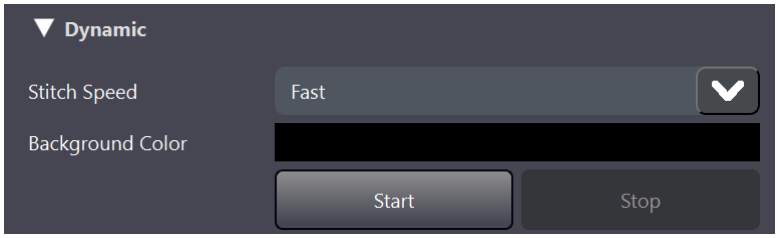

Control Red, Green, and Blue values for manual White Balancing.

**Function**


Users can manually adjust the screen parameters and other parts of the camera function settings.

[Reset] returns camera function settings to default settings according to your configuration.

# Acquire

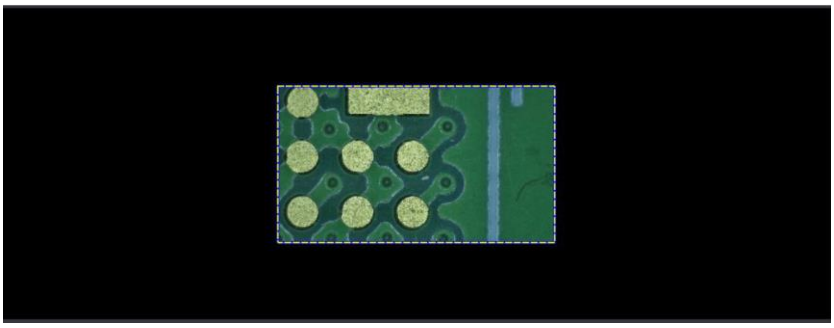

## Dynamic Stitching

Users can live stitch the image dynamically to be stitched into a large picture frame by frame. During this stitching process, the application will automatically align the current preview frame with the already stitched image.
-If the Dynamic option is greyed out, go to the Device tab. Pause, and then un-pause the image.

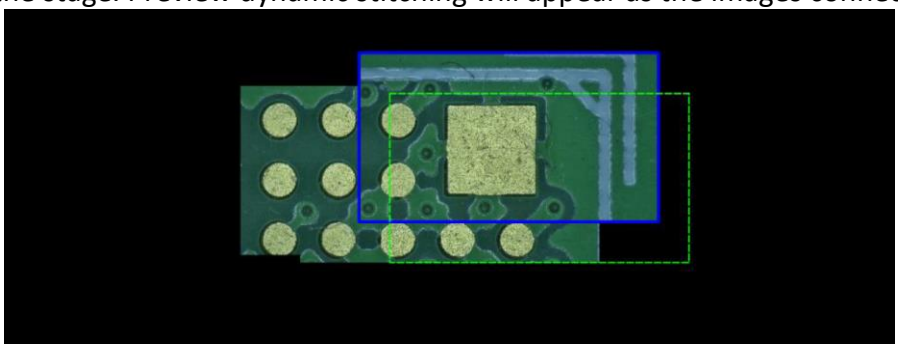
1. Select the desired stitching speed before starting: choose fast or high quality.

2. Click [Start] to splice the image. **The exposure mode will be forced to switch to manual from automatic. Adjust exposure before clicking Start.** X\Y-axis moving speed should be maintained at a constant speed. Quick movement will blur the image.

3. The following window will be displayed, the black area in the window is the background area and the white box is the live video.



4. Slowly move the stage. Preview dynamic stitching will appear as the images connect.



The area marked by the active rectangle shows the live video, the other areas are the stitching results.

When the rectangle is green, dynamic stitching works as expected and the user can move the sample continuously.

If the color of the rectangle turns red or yellow, the user should stop moving the sample. The sample can be moved slightly backwards to the point where the rectangle turns green. Once the rectangle is green again, the user can continue to move the sample for dynamic stitching.

The blue rectangle shows the position of the most recent field that was stitched.

5. Click on the [Stop] button to stop the dynamic stitching function after completing the stitching.

6. A new Tab window will be created after the stitching is completed, and users can click the Save button above to save the image.

## Static Stitching

Use static stitching to manually stitch together images that were previously acquired.

Static Stitching Key Terms:

**Available Images:** List of images that have been opened in the current program from the PC.

**Selected Images:** List of images that have been selected for stitching.

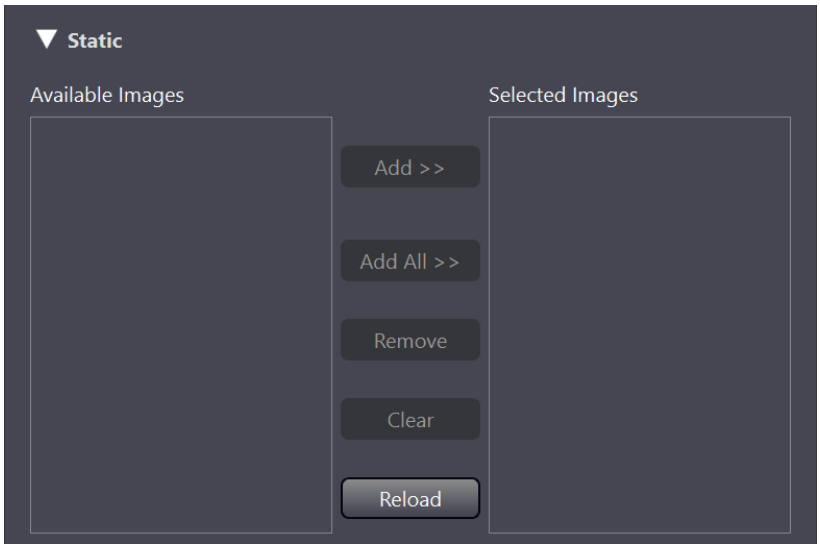
**Add:** Select the image to be spliced in the list of opened images and click to add it to the list of selected images.

**Add All:** Adds all the images in the list of opened images to the list of selected images.

**Remove:** Select the image to be deleted in the Selected Pictures list, click to remove.

**Clear:** Used to clear the selected image in the Selected Images list.

**Reload:** Used to load all opened images into the opened images column.




1. Use the PC software to open the pictures that need to be processed, the opened pictures can be viewed in the window tabs.

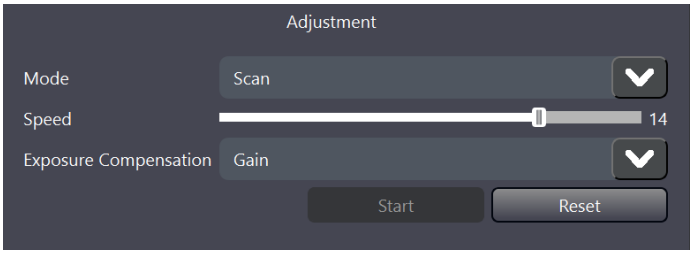
-Two adjacent images should overlap by 25% or more.

2. Clicking on Static will bring up the list of opened images on the left-hand side.

-You can select multiple pictures in the picture list on the right side and drag them to the "Opened Pictures" box by holding the left mouse button.

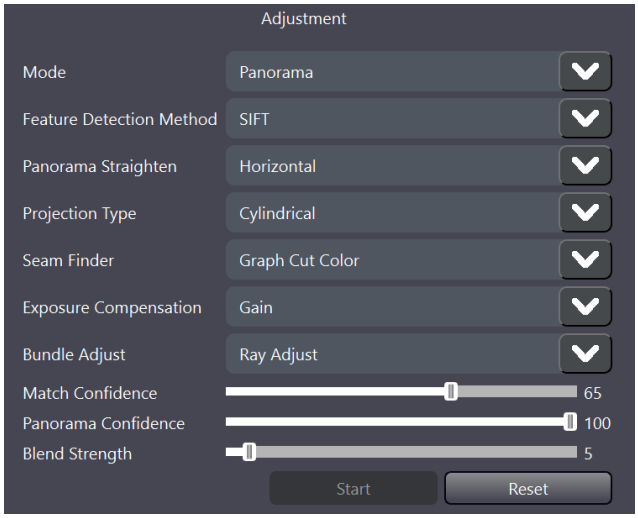
3. Users can use the continuous selection part (shift + left mouse button), discontinuous part (ctrl + left mouse button) in the list of opened pictures to select the desired picture by clicking on the middle.
4. After the parameters are adjusted, click Start. Wait for a success prompt and then view the picture.
5. The [Reset] button helps the user restore the parameters back to their default state.

**Mode: Scan**




**Speed**: (1-18) adjustable, default is 14
**Exposure Compensation**: None, Gain, Block Gain

**Mode: Panorama**




Adjustment Key Terms:

**Feature Detection Method:** Local feature matching by the number of extracted image points.
-ORB\SIFT method extracts fewer numbers and is recommended to be used in images with richer texture.
-AKAZE method extracts more numbers and can be widely used which makes this the default method.

**Panorama Straighten:** Can be Horizontal, Vertical, or None. The default is Horizontal.

**Projection type:** Used to adjust the way of mapping line segments projected from the same point. The image to be stitched can be selected from the following different projection types: Plane, Cylindrical, and Spherical. The default is Cylindrical.

**Segment Finding:** Segment finding methods, including None, Vernal Cut, Color Map Cut, Gradient Color Map Cut, Color Dynamic Programming, Gradient Color Dynamic Programming and many other segment finding methods, the default is Color Map Cut.

**Exposure Compensation:** Exposure Compensation includes None, Gain or Block Gain. The default is Gain.

**Bundle Adjustment:** Bundle Adjustment can be defined as the simultaneous definition of 3D coordinates

for geometry of the sample. Relative motion parameters and optical characteristics of the camera according to the optimality criterion involving the projection of the image correspond to all points. This includes ray adjustments or reprojection error adjustments. The default is ray adjustment.

**Matching confidence:** Matches two images to each other. The default value is 65 and the range is 1-100.

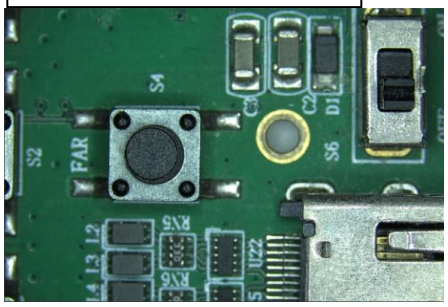
**Panorama confidence:** For splicing two pictures without overlapping parts. The higher the confidence, the stronger the ability to splice. The default value is 100 and the range is 1-100.

**Fusion Intensity:** Degree of blurring when the pictures are spliced and fused. The higher the intensity, the higher the overall blurring. The default value is 5 and the range is 0-100.

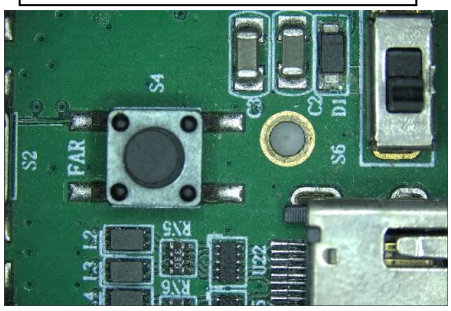
## EDF (Static)

The user can perform depth of field blending in the camera video window, where the user manually adjusts the image in the Z-axis direction.

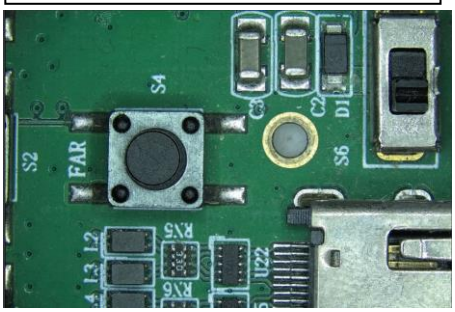
Top in Focus



Bottom in Focus



Whole Sample in Focus

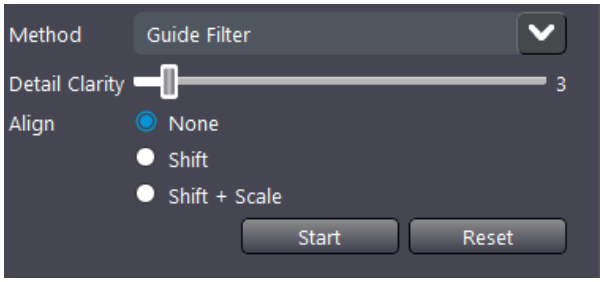


1. Focus a clear image of the top plane by adjusting the direction of the Z-axis.
2. Click [START] and slowly adjust the Z-axis direction to the bottom plane until it is clear.
3. During this time, you can observe the fusion through the newly created picture window.

   -There will be a delay in the processing of the Z-axis moving screen, so avoid movements that are too fast.
4. Click [End] to end Depth of Field Fusion. Image saving related settings are associated with the Snap - Set Parameters.

**Guide Filter Method:**

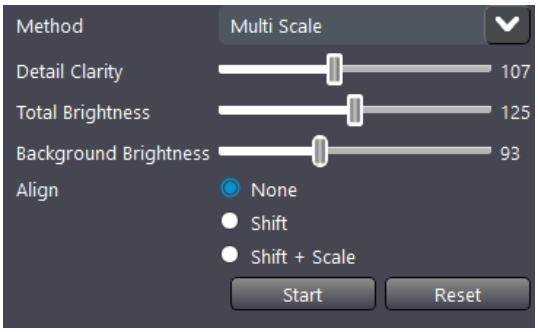
When selecting the Guided Filtering method, you can adjust the detail sharpness. It has a default value of 3 and a range of 2-17.




**Multi Scale Method:**

When selecting the Multi Scale method, you can adjust the detail Clarity, Total Brightness, Background Brightness can be adjusted when selecting the Detail Clarity. The default value is 107, with a range of 10-240.

-The Detail Clarity and Background Brightness settings will affect the overall brightness of the result, so it may be necessary to modify the Overall Brightness setting.




**Align**

**None**: Select when there is no displacement, scaling, or rotation between the images used for depth-of-field blending.

**Shift**: Select when there is displacement between the images used for depth-of-field fusion.

**Shift + Scale**: Select when there is displacement + scaling between the images used for depth-of-field blending.

## EDF (Dynamic)

Perform depth of field fusion in the preview window, where the user manually adjusts the image parameters in the Z-axis, then the camera automatically steps through the focus positions to generate the EDF image.

-If the Dynamic option is greyed out, go to the Device tab. Pause, and then un-pause the image.

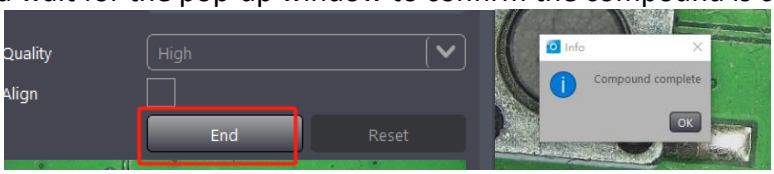
1. Focus a clear image of the starting plane by adjusting the start position slider or by manually entering your values.
2. Adjust the end position slider or manually enter a value to focus the image to the start position plane.
3. Click on the capture interval (range 1-99): starting focus value – ending focus value range. Choose

a capture waiting interval (range 50-9999).

-Smaller capture waiting intervals generate faster results. Larger waiting intervals yield higher image quality, albeit with longer processing times.

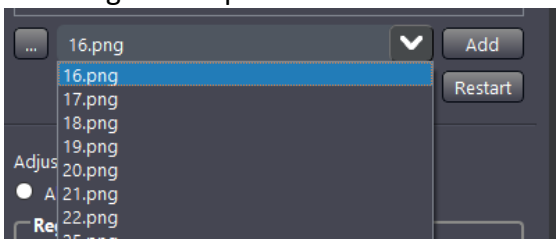
4. Observe the fusion through the newly created picture window.

5. Click [End] and wait for the pop-up window to confirm the compound is complete.

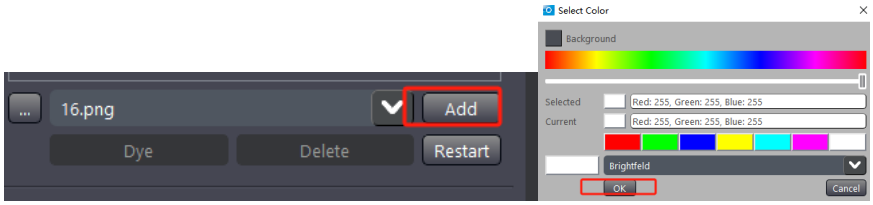



## Color Composite

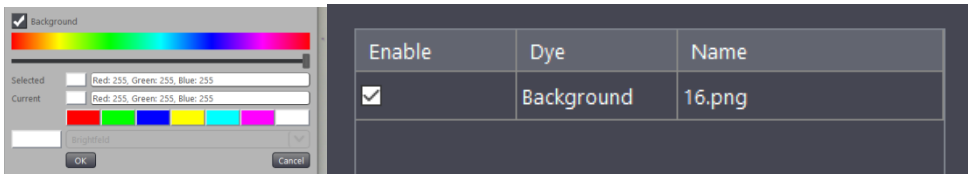
1. Open the image to be processed using the drop down in software.




2. Select the image and click Add. Choose the desired color in the pop-up menu page and click [OK] in the bottom left corner to confirm.

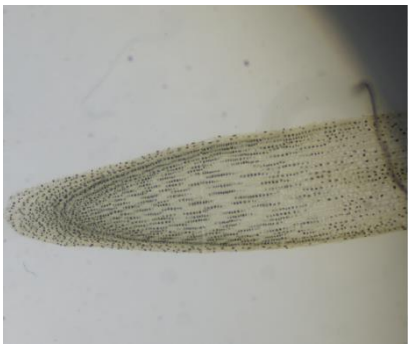


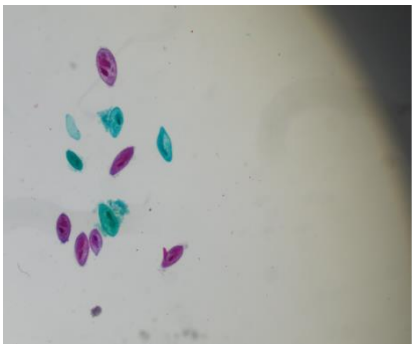

- If the first picture is used as a background image, check the box "Background Image" in the upper left corner of the menu.



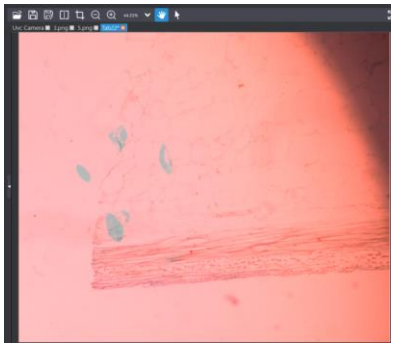

3. You can enable or disable the coloring of images. After selecting an image, click on a dye to re-color the selected image.

-Images that have been set as background cannot be colored.

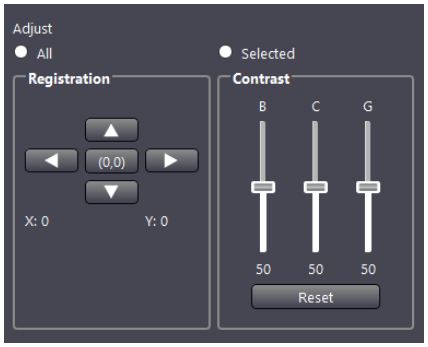




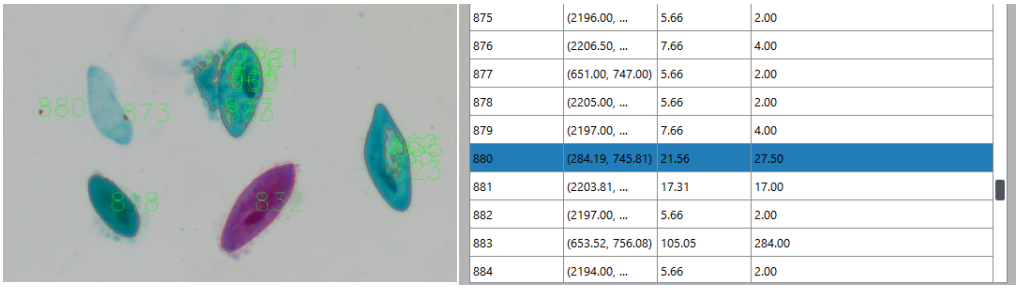
4. The new processed image is generated as a new Tab “Tabx*” and can be saved.



5. Color adjustments and image alignment adjustments are available as needed.




## Count




| | | | |
|---|---|---|---|
| 875 | (2196.00, ... | 5.66 | 2.00 |
| 876 | (2206.50, ... | 7.66 | 4.00 |
| 877 | (651.00, 747.00) | 5.66 | 2.00 |
| 878 | (2205.00, ... | 5.66 | 2.00 |
| 879 | (2197.00, ... | 7.66 | 4.00 |
| 880 | (284.19, 745.81) | 21.56 | 27.50 |
| 881 | (2203.81, ... | 17.31 | 17.00 |
| 882 | (2197.00, ... | 5.66 | 2.00 |
| 883 | (653.52, 756.08) | 105.05 | 284.00 |
| 884 | (2194.00, ... | 5.66 | 2.00 |

The counting function helps the user to quickly distinguish the number of features in the image automatically.

1. Open all the images that need to be counted for the operation, and then click [Reload Image].
2. Adjust the counting parameters.
3. Click [Start] to perform the counting operation.
4. Click [Stop], then view the data in Results.
5. The new processed picture is generated as a new Tab called “Tabx*”. Save the image as desired.

Counting Key Terms:

**Reload Images**: Reloads all opened images into the library for counting operations.

**Reset**: Resets all parameters to their default state.

**Start/Stop**: Start/Stop the counting operation.

**Result**: View the result data.

Counting Method:

**Watershed:** Segmentation method based on topological theory of mathematical morphology. The basic idea is to consider the image as a geodesic topological landscape. The grey value of the pixel at each point in the image represents the elevation of the point. Each local minima and its area of influence is called a catchment basin, and the boundary of the catchment basin forms a watershed.

The concept and formation of watersheds can be illustrated by simulating the immersion process. On the surface of each LV, a small hole is pierced and the whole model is slowly immersed into the water. As the immersion deepens, the domain of influence of each LV is slowly extended outwards, and a dam is constructed at the confluence of the two catchment basins, i.e., the watershed is formed.

The Watershed Algorithm is more suitable for images where the target object has a single background or where the target object differs greatly from the background. Images with complex backgrounds are less suitable.

**OTSU Method**: The OTSU maximum inter-class variance method is an adaptive threshold determination method. It divides the image into two parts, the background, and the target, according to the grey scale characteristics of the image. The larger the inter-class variance between the background and the target, the larger the difference between the two parts that make up the image. When part of the target is misclassified as the background or part of the background is misclassified as the target, both result in the difference between the two parts becoming smaller. Therefore, the segmentation that maximizes the inter-class variance implies that the probability of misclassification is minimized.

**Dark OTSU:** Segmentation of a dark object from a bright background using the OTSU algorithm.

**Bright OTSU:** Refers to the use of the OTSU algorithm to segment bright objects from dark backgrounds.

Approximation：

1. **None**: Draw the boundary directly according to the actual contour of the segmented object.
2. **Circle**: Fits the actual contour of the segmented object with a circle and marks the segmented object with a circle, the user can get the radius of the fitted circle for each segmented object in the counting result with this option.
3. **Ellipse**: Fits the actual contour of the segmented object with an ellipse and marks the segmented object with an ellipse. When the user selects this fitting method, the parameters of the ellipse's long and short axes will be output in the counting result.

Outline:

Style:

1. **Outline**: Marks segmented objects with contour lines in user-definable colors.
2. **Filled**: Fills split objects with custom colors.
3. **None**: No contouring of segmented objects.

Color: Custom colors for marking outline styles.

Label:

Method:

1. **True:** Select [yes] to mark with the selected color.
2. **False:** No labelling of segmented objects.
3. **Color:** Customize the color used to represent the label. When selecting an iso in the method, the color selection is disabled. The program automatically marks the pixels according to the iso color of the current pixel.

Type：

1. **Index**: Numbers used to label the segmented objects
2. **Area**: The segmented object is labelled with the area of the contour envelope of the segmented object.
3. **Perimeter**: The segmented object is labelled with the length of the contour envelope of the segmented object.

Area:

**Minimum**: Determines the lower limit of the area of the object to be divided, i.e., objects smaller than the lower limit are not divided and counted.

**Maximum**: Determines the upper limit of the area of the object to be divided, i.e., objects larger than the upper limit will not be divided and counted.

Perimeter:

**Minimum**: Determines the lower limit of the perimeter of the object to be segmented, i.e., objects smaller than the lower limit are not segmented and counted.

**Maximum**: Determines the upper limit of the perimeter of the object to be segmented, i.e. objects larger than the upper limit is not segmented and counted.

# Measure


## Object Pattern (AI Edge)

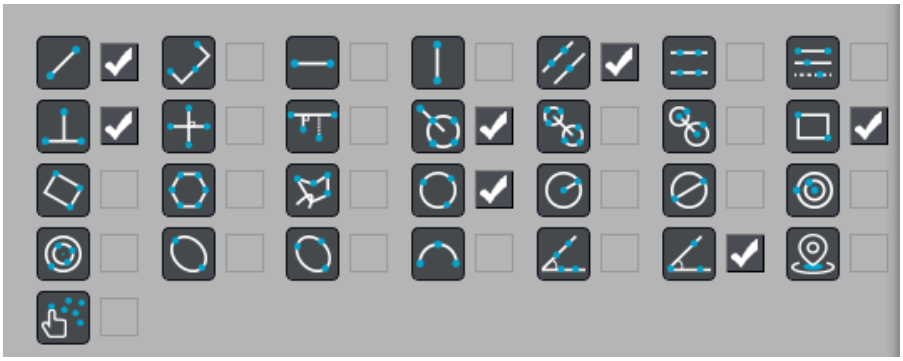
1. **Point:** Automatic detecting where the software can find the nearest edge points (straight line segment graphics) within its range. The higher the range value, the lower the accuracy of the recognizable range.


2. **Shape:** Automatic detecting where the software can find the edge of the graphics (curve graphics effect).

-Increase the efficiency and accuracy of the measurement and plotting. The larger the range value, the larger the recognizable edges.

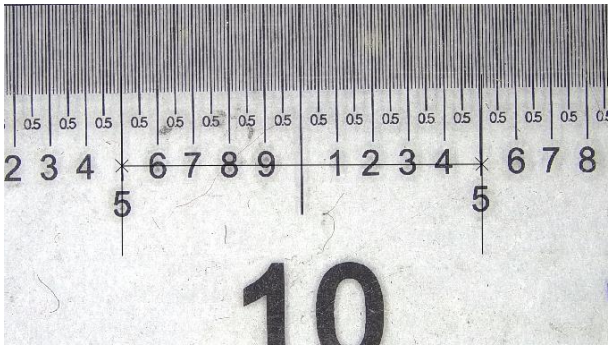
## Common Tools

You can customize your commonly used tools in the settings for quick access.

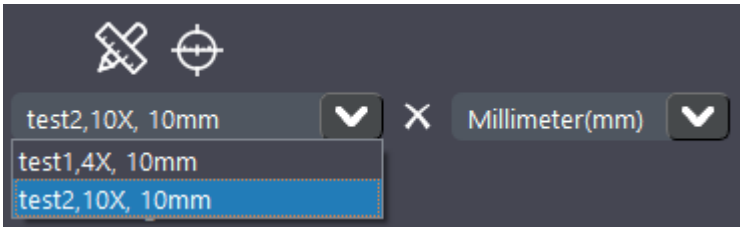


## Calibration Tool

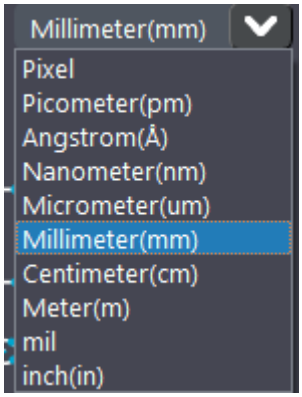
1. Select straight line calibration or circle calibration on the screen. The measured data is closely related to the calibrated values. (Linear calibration is used as an example.)
2. Place a calibrated ruler within the camera's field of view and adjust the image to be clear and unobstructed.
3. Once the calibration icon is clicked, find the desired calibration scale range (e.g. 10mm) in the video preview window.



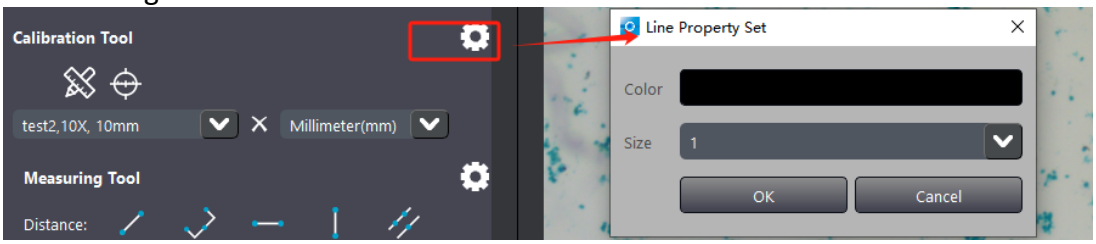

4. Fill in the calibration menu bar to match the scale you are viewing.
   -Different magnifications and working distances need to be re-calibrated, otherwise it will affect the accuracy of measurement data.




5. The drop-down allows you to select different units of measurement.

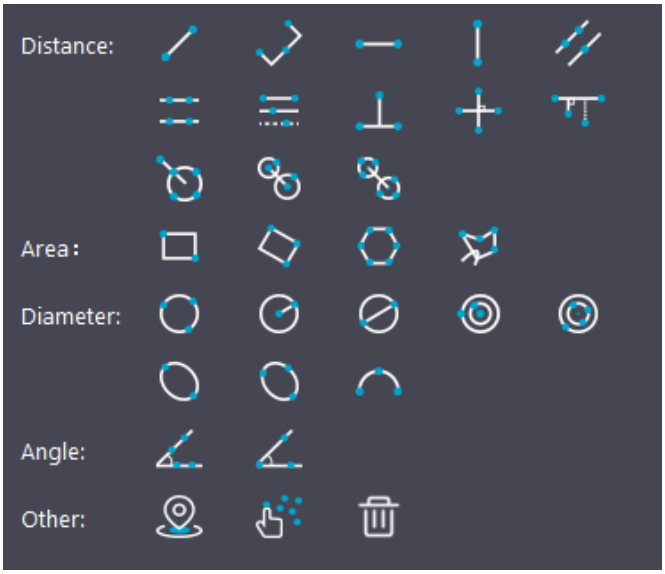


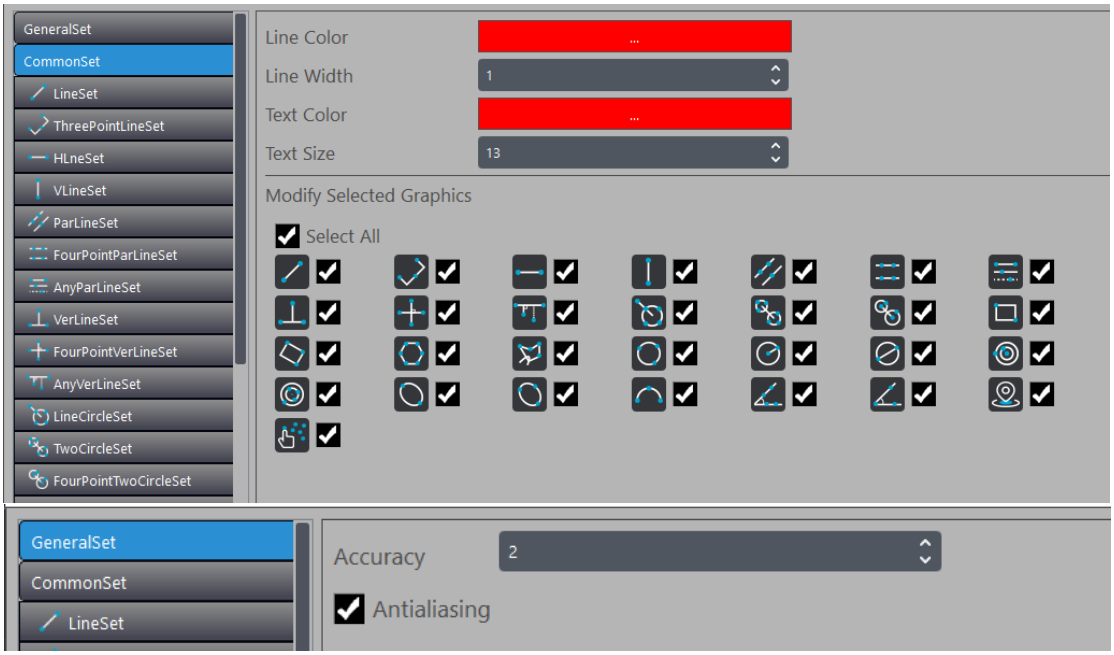

6. Click on Settings to customize the color and size of the calibration tool.




## Measuring Tools

Select from the full list of tools you need to measure with. Specific tools can be removed in settings.



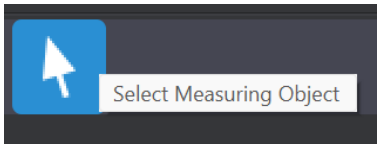


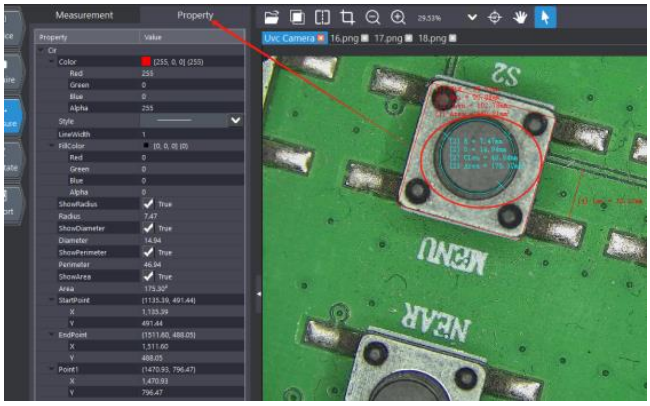

## Exporting Data

Click on the Export button to export the data to your computer in csv format.
Click on the Export Template button to export the data as a template.
Click on the Import Templates button to import templates into the software for use.

## Property

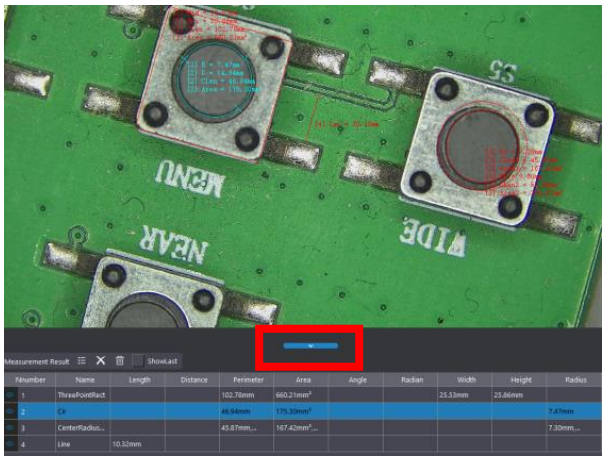
Click on any measurement drawn using the Select Measuring Object cursor. The software will automatically switch to the corresponding column of that measurement. Adjust and customize the current parameters as needed.





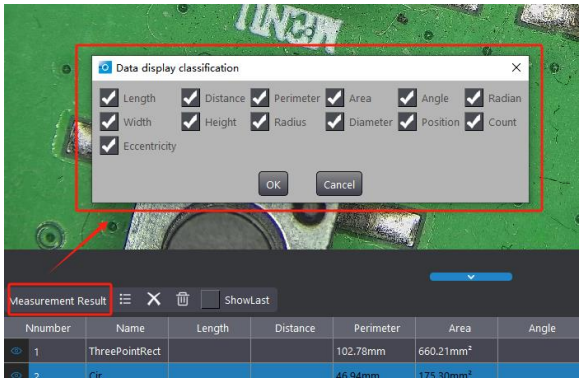

## Data Sheet

Available with the expandable icon located at the bottom of the screen.



### *Measurement results*

Can be customized to display desired values.

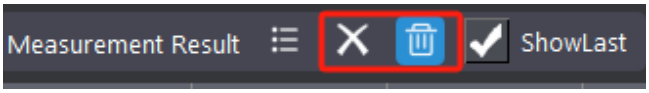


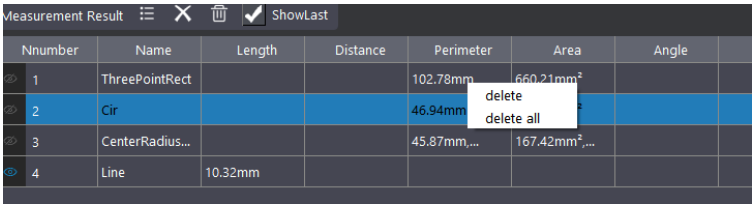

### *Show Last*

Toggle the user's last measurement in the preview window. The rest of the metadata will be hidden automatically.

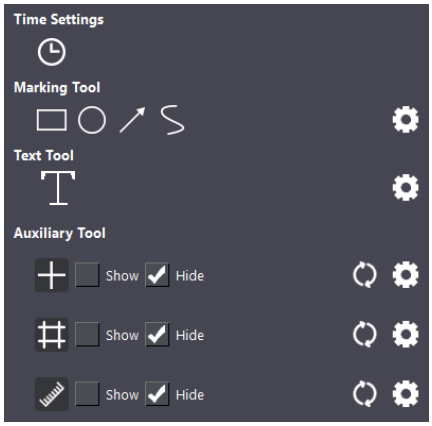
### *Delete & Clear*

Select a measurement in the list and right click to delete it individually or entirely.



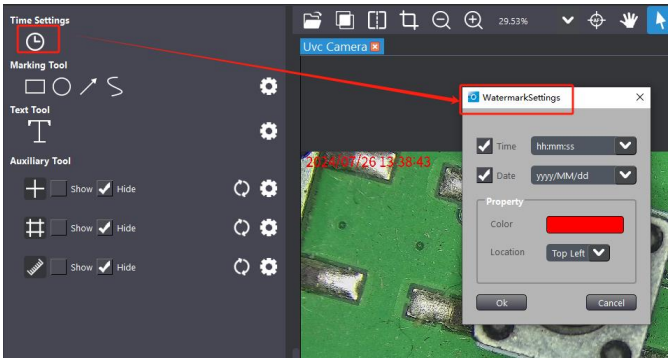




# Annotate


## Time Settings

The user can edit the watermark effect displayed on the screen and in the photos. Toggle the time or date to display the watermark on the screen. Scroll down to adjust the format, color, and position of the watermark.

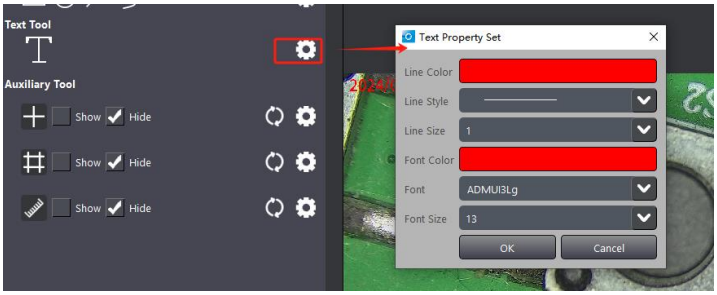



## Marking Tool

Mark images by selecting rectangles, circles, arrows, or free-form line segments.
Click on the Settings button to set the properties of the marking tool (color, style, size).


## Text Tool

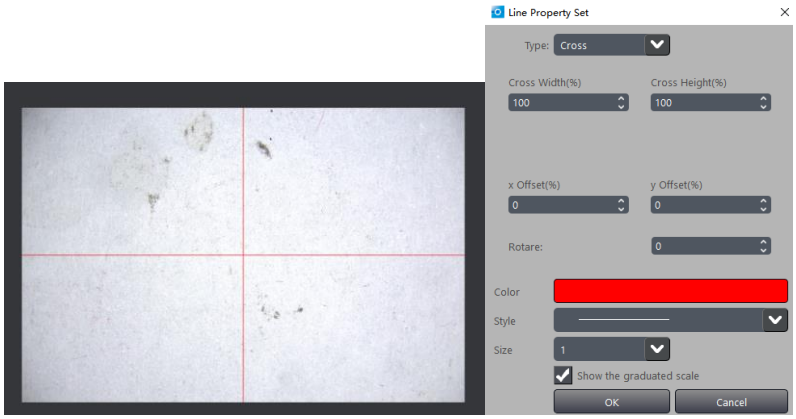
By clicking on the "Text" icon, you can annotate measured content. The left mouse button allows you to drag the arrows and annotations to change their position. Click on the drop-down icons to select text and arrow properties.




## Auxiliary Tool

### *Crosshairs*

Crosshairs are horizontal and vertical lines centered in the middle of the screen.
Click  to select the color, type, and size of the crosshairs.
Click  to restore the crosshairs to the center position.
The user can show/hide the crosshair tool.

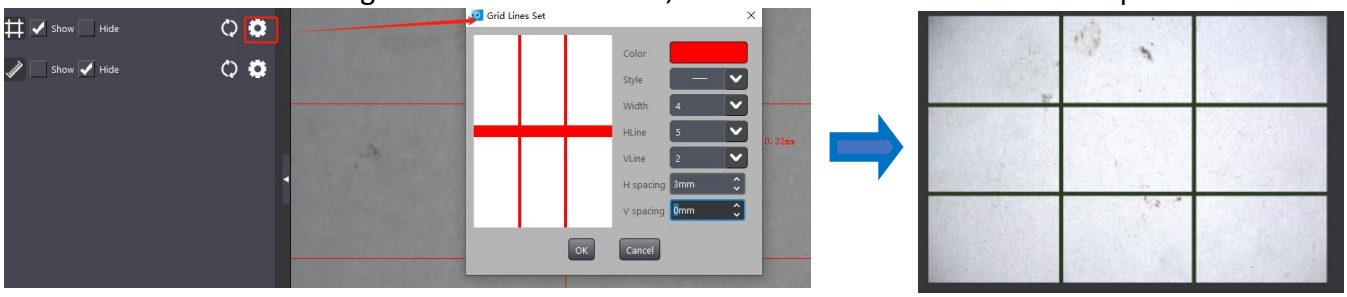



## *Grid Lines*

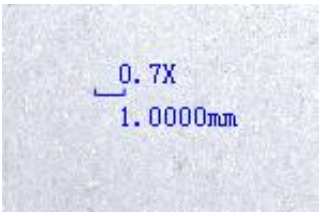
Grid Lines divide the screen evenly according to the number of cells inputted.

Click  to adjust the color, style, width, and number of horizontal and vertical grid lines. You can preview the split effect in the pop-up window.

Click with the mouse to drag the line on the screen, click  to restore to their initial position.

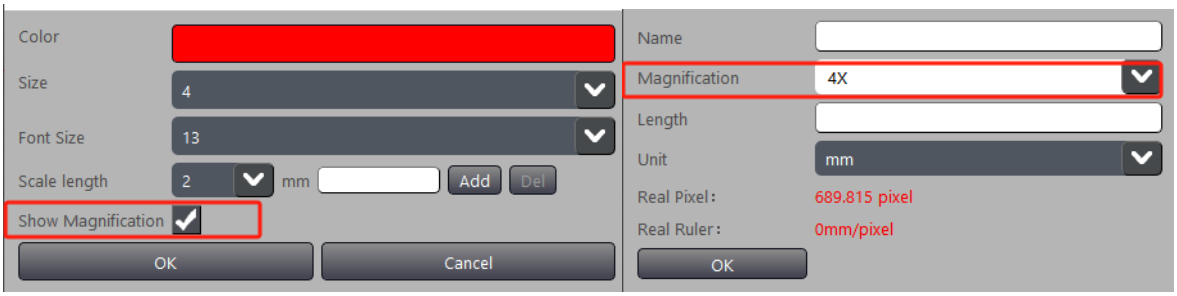



## *Architect's scale*



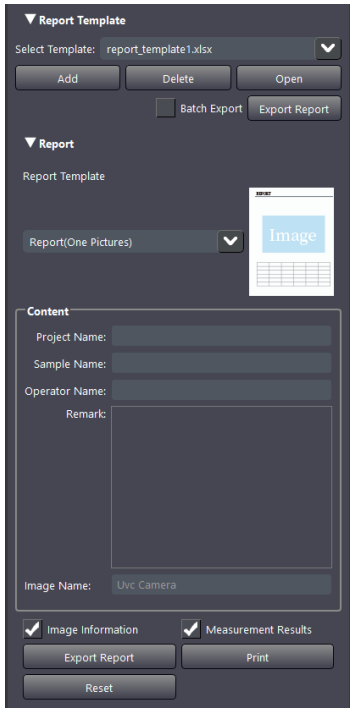

This scale is often used to indicate the actual size of the video or image dimensions. The number in the upper part of the scale depends on the magnification as recorded in the calibration data.

The number in the lower part of the scale can be modified via the Setup menu. This displayed magnification corresponds to the magnification set by the user during calibration.



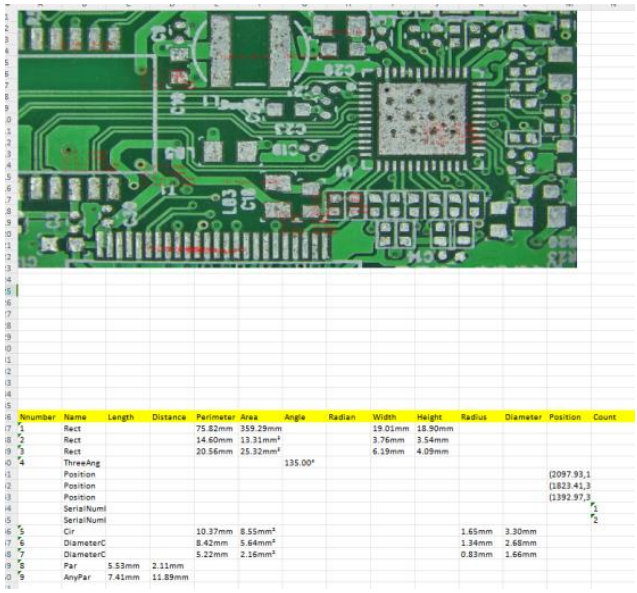

-This information is saved in the metadata of the captured image.

# Report


## Reporting Templates

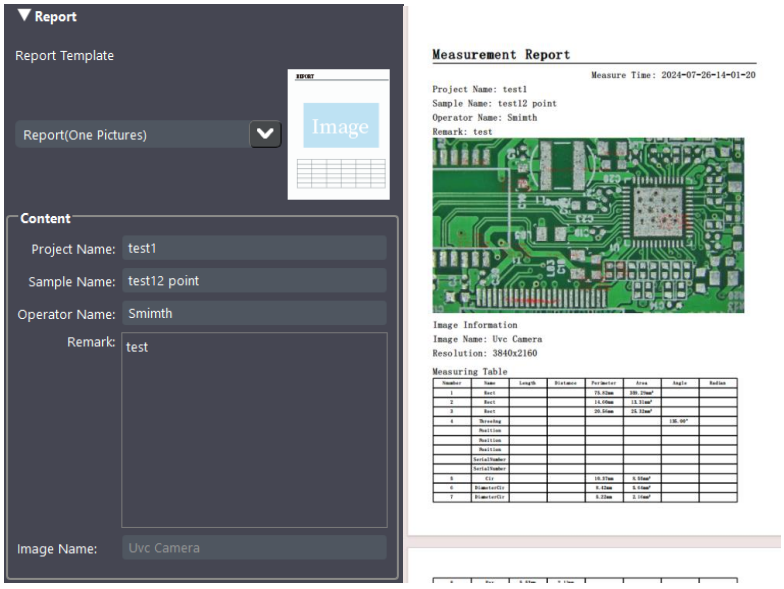
- **Select Template**: Select the desired report template.
- **Add**: Add a new template to the software
- **Delete**: Delete a template
- **Open:** View the currently selected template
- **Batch Export: Check Batch Export to select multiple opened images and export multiple reports.**
- **Export Report**: Export the report of the currently selected images to a table in .xlsx format.



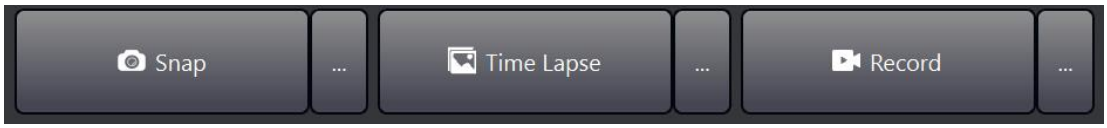
| Nnumber | Name | Length | Distance | Perimeter | Area | Angle | Radian | Width | Height | Radius | Diameter | Position | Count |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Rect | | | 75.82mm | 359.29mm | | | 19.01mm | 18.90mm | | | | |
| 2 | Rect | | | 14.60mm | 13.31mm² | | | 3.76mm | 3.54mm | | | | |
| 3 | Rect | | | 20.56mm | 25.32mm² | | | 6.19mm | 4.09mm | | | | |
| 4 | ThreeAng | | | | | 135.00° | | | | | | | |
| | Position | | | | | | | | | | | (2097.93,1 | |
| | Position | | | | | | | | | | | (1823.41,3 | |
| | Position | | | | | | | | | | | (1392.97,3 | |
| | SerialNumi | | | | | | | | | | | | 1 |
| | SerialNumi | | | | | | | | | | | | 2 |
| 5 | Cir | | | 10.37mm | 8.55mm² | | | | | 1.65mm | 3.30mm | | |
| 6 | DiameterC | | | 8.42mm | 5.64mm² | | | | | 1.34mm | 2.68mm | | |
| 7 | DiameterC | | | 5.22mm | 2.16mm² | | | | | 0.83mm | 1.66mm | | |
| 8 | Par | 5.53mm | 2.11mm | | | | | | | | | | |
| 9 | AnyPar | 7.41mm | 11.89mm | | | | | | | | | | |

## Report

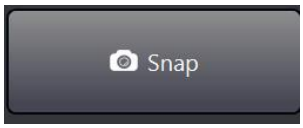
Export the completed metadata as a PDF file to your desired storage location.



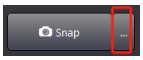
# Capture Bar




## Snap




Click [Snap] to capture an image of the current view.

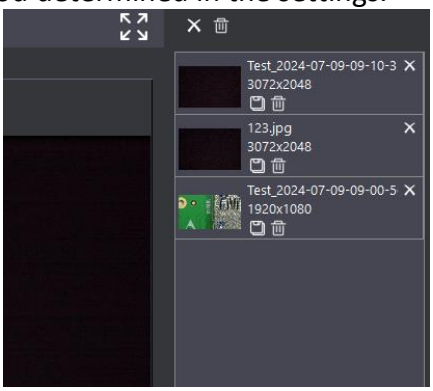
Click  to adjust settings for image capture.

### Save Path

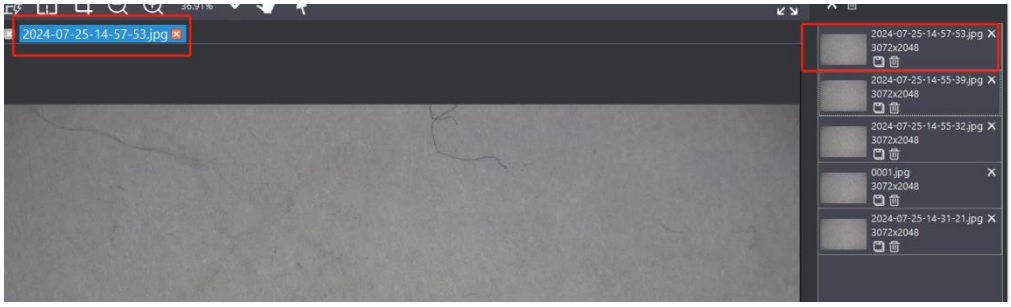
Users can customize the saving path for images. Click [...] and browse to the folder/path you want to save the images. The default path is C:/Users/ZML/Pictures/SLView


### Auto-save Images

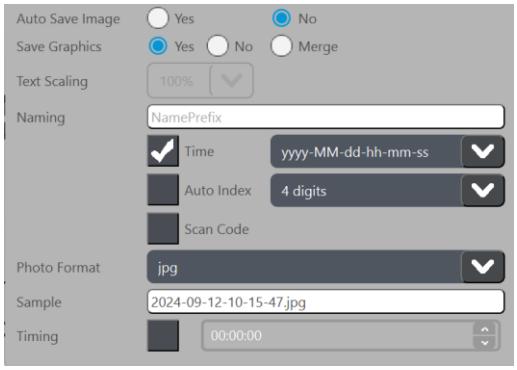
If Auto-save is toggled "Yes", the image will be saved to the existing path without creating a new image window. The image information will be displayed in the image preview list on the right side. The naming of images is related to the naming method determined in the settings.




If Auto-save is toggled "No", taking an image will open a temporary file window. Users can customize the name and format in the Save File pop-up window after clicking the Save button.




## Save Graphics

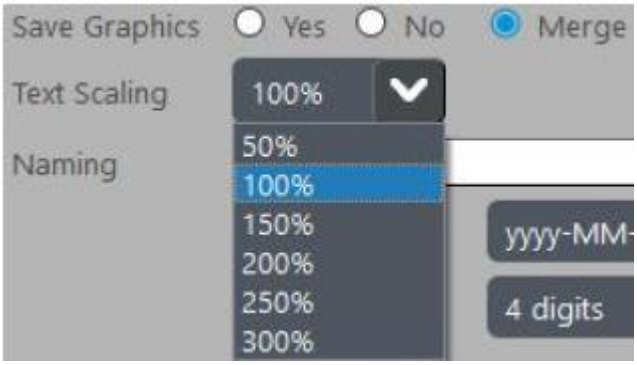



**Yes:** Saves the graphical content (e.g., measurements, shapes, annotations, etc.) and the image together. When the image is opened again, the graphics can continue to be modified.

**No:** Will not save the metadata when the image is captured and saved.

**Merge:** Saves the drawn metadata and the image.
-With Merge, the drawn metadata (e.g., graphics) cannot be modified again. The text, however, can be scaled during fusion.

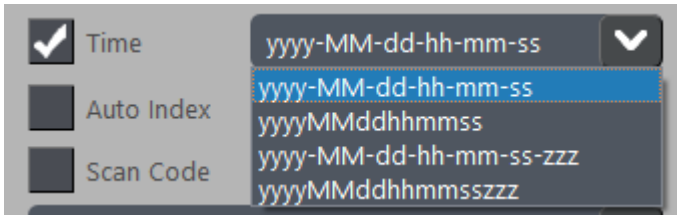
## Text Scaling




Text scaling is only available to adjust the size ratio of text when Merge is selected. Below are examples of 200% and 300%.

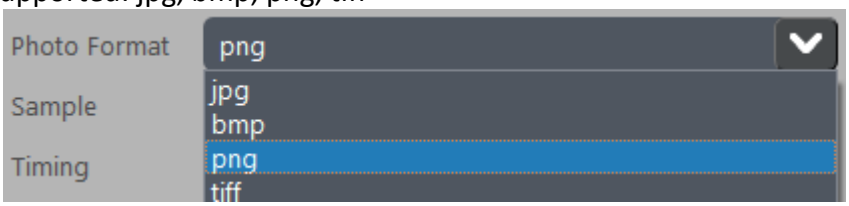
## Naming

There are 4 different time formats to choose from:



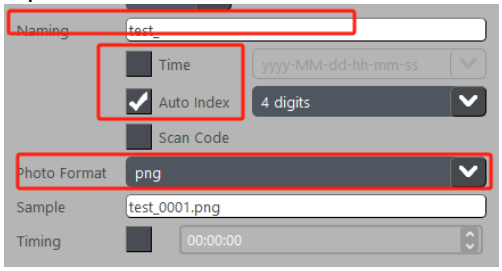

## Photo Format

4 image formats are supported: jpg, bmp, png, tiff

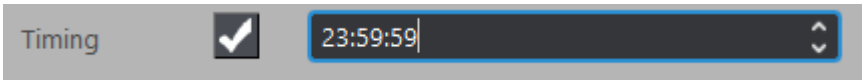



## Sample

In auto-naming mode, names can be previewed based on the criteria selected.

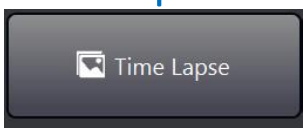



## Timing




When toggled on, an image will be captured automatically whenever set by the user.

# Time Lapse

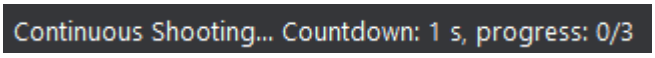



After clicking Continuous Shooting, the software will take images according to the set number and interval. The images will be automatically saved to the save path designated in Snap setting.

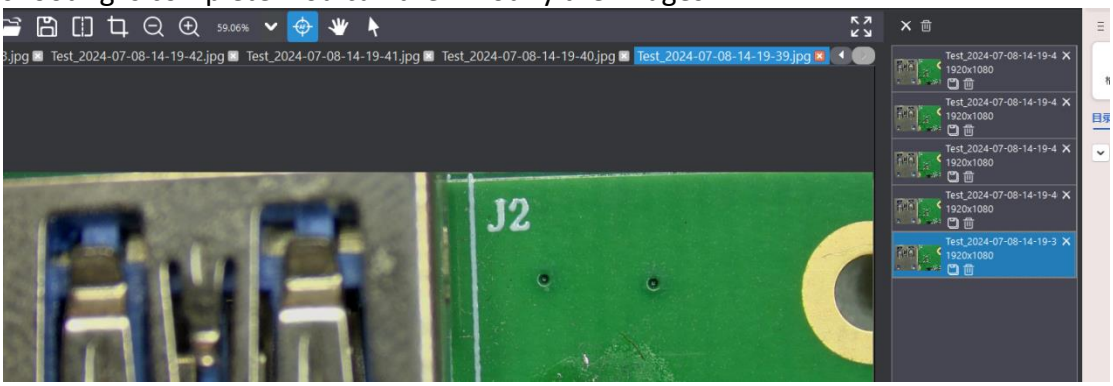
-The maximum Number of consecutive images and Intervals (in seconds) between images can be set from 1 to 9999999999.

## Timing

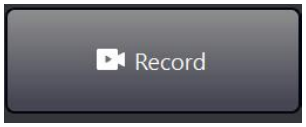
The timer function allows you to take a time-lapse image sequence up to 23 hours, 59 minutes and 59 seconds in the future.

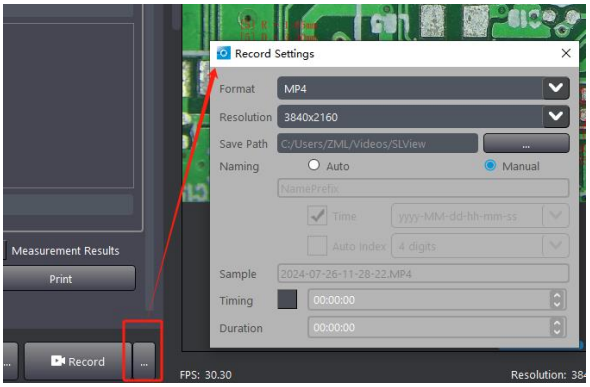

Thumbnails of all images will be displayed in the image bar on the right side of the interface after the continuous shooting is complete. You can then modify the images.




# Record




After clicking Record, the software starts recording video. When recording is active, a red dot flashes in the lower right corner of the screen. Click Record again to stop recording. You can set the recording parameters in the menu page:

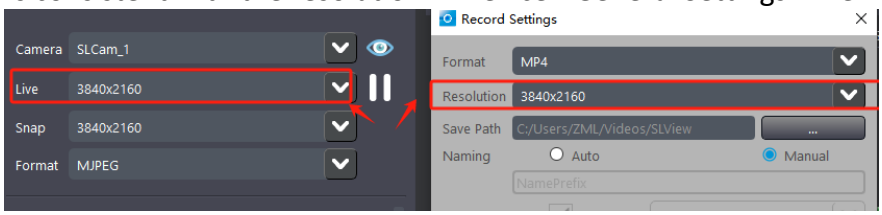



## Format

Video files are only available for saving in .MP4 format.


## Resolution

The video resolution is consistent with the resolution in Device - General Settings - Preview.




## Save Path

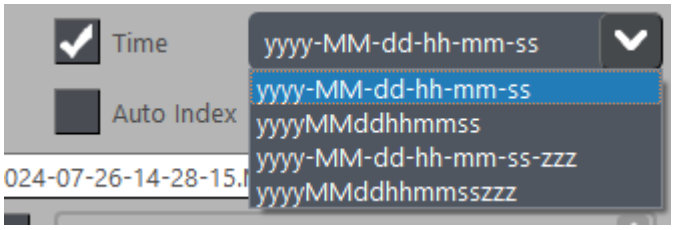
User-defined path to save and view video files.


## Naming

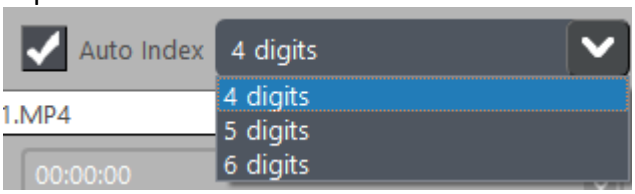
Users can set up three naming methods for video files:

- Automatic naming by time and date (prefixes can be added)
- Automatic number naming (prefixes can be added)
- Manual naming

The Time format has four options.

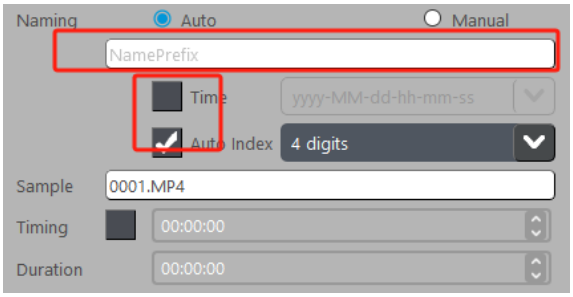


The Automatic Index has three options.




## Sample

Users can view a sample of the naming method under the auto-naming options.




## Timing

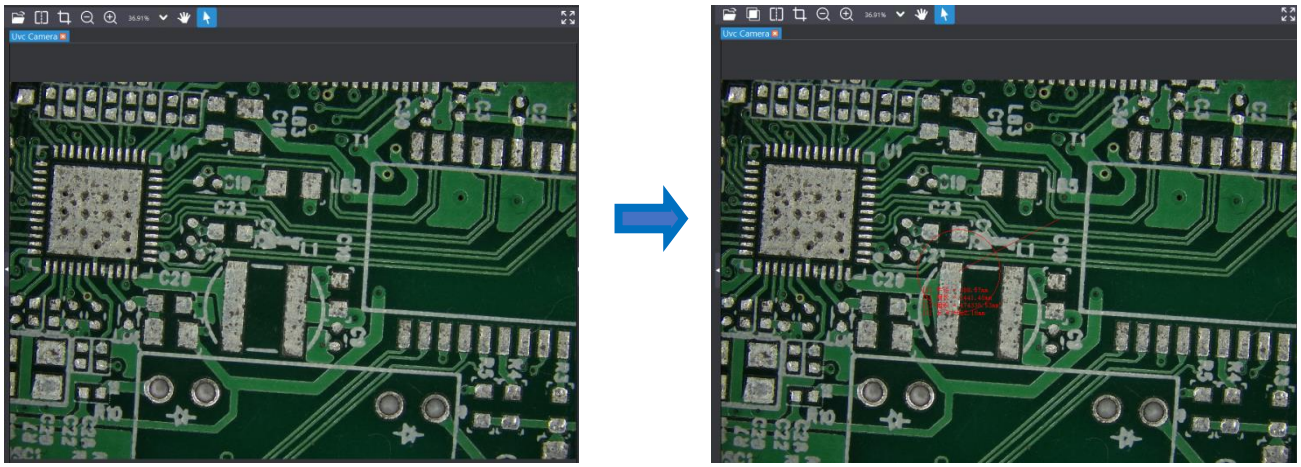
Customize a delayed recording time. The timer function allows you to start a video up to 23 hours, 59 minutes and 59 seconds in the future.


## Duration

Set the length of the video; the maximum length of the video file can be set to 23 hours, 59 minutes and 59 seconds.


# Quick Bar

When metadata is drawn in the preview screen, the Fusion Meta button  is added to the toolbar.



After clicking the Fusion Meta button, the software can fuse the newly drawn data in the pictures. Users can save the newly fused image, however the data cannot be modified.

## Save & Quick Save:

Save and Quick Save buttons are displayed when the Fusion Meta image is not saved.

-When working with temporary images, the symbol “*” will appear in the window file name.

**Save button**: A pop-up window will appear with user-definable file names and image formats.
**Quick Save button**: When clicked, the image will be saved to the default file path with the naming structure from the image settings. It will be displayed in the list of images on the right-hand side.

-Save & Quick Save functions will both save metadata. The current image file is overwritten without changing the image name or format.
-The metadata in the image can be modified using PC software from this method.

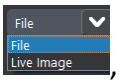
## Open Image

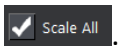
Click the Open Image button  to open an image that was previously taken. A thumbnail of the selected image appears in the image bar on the right and allows you to carry out measurements on the opened image. After finishing the measurement, you can click the Save button again to save the image with the measurement.

## Comparison View

Click on the Compare View button  to compare two previously captured images, or a captured image

with the current preview image.

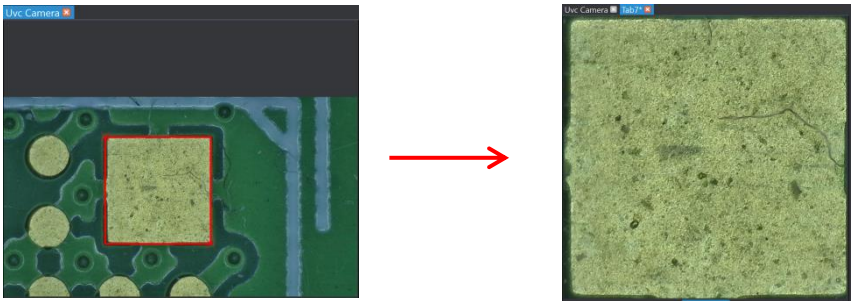
Select a file or preview image to display the image in the interface 

, or you can drag and drop the image from the right image bar into the comparison view module. Use the mouse wheel to zoom in and out of the image and click the left mouse button to drag and drop the image. The current zoom ratio is displayed in real time at the bottom of the screen 

. Click the center button  to zoom the image to the current screen size. When synchronous zoom is ticked, both images will be zoomed in or out at the same time; when synchronous zoom is cancelled, you can zoom one image alone.

## Crop

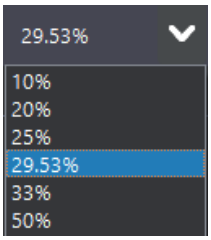
Click on the crop button  to crop portions of your current screen. The crop will automatically enter the picture view interface.




## Zoom In/Out

Click on the Zoom In  and Zoom Out  buttons to zoom in and out of the current screen.
-This function is only an electronic zoom in on the screen).

Click on the drop-down icon  to directly select the current screen magnification.




## Focus

### Traceability Mode

Click the Trace Mode button  to enter Trace Mode. You can now drag and drop the image using the mouse.

## Measurement Object Mode

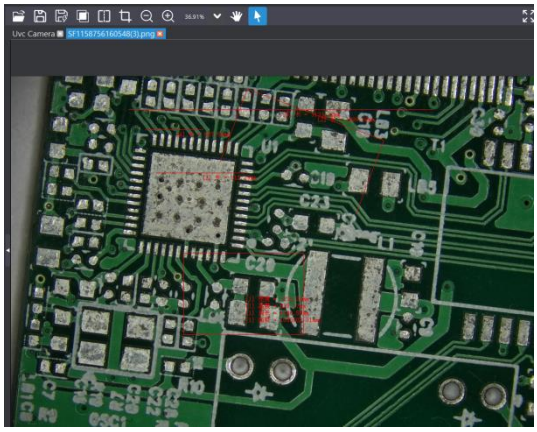
After using a measurement tool, the software automatically selects the measurement object. You can use the mouse to select the current drawing object and other measurement functions. You can also enter the Select Measurement Object mode by clicking on the Measurement Object Mode button in other modes.

## AF Mode

AF mode is automatically entered when focusing. 

## Full Screen Mode

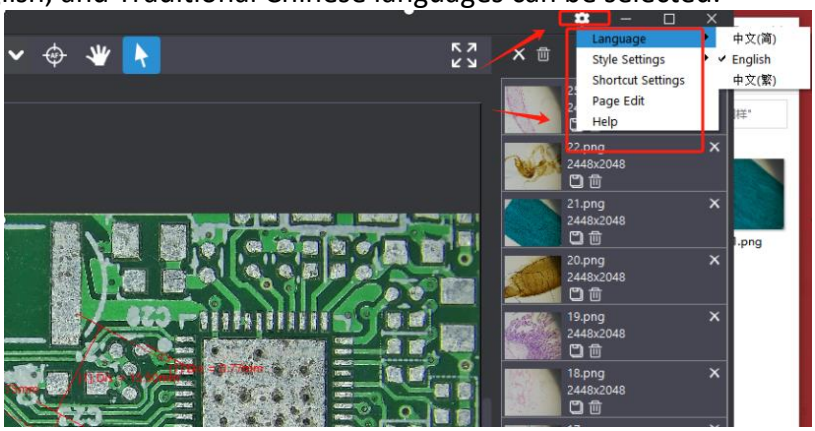
Click the full screen button  to display the current image view in full screen. Press esc to exit the full screen interface.



# Settings

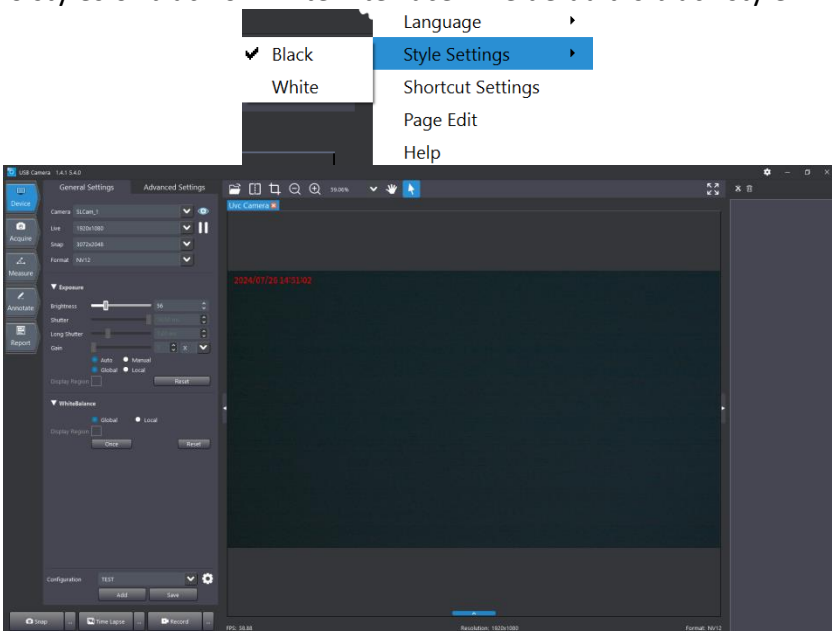
## Language

Simplified Chinese, English, and Traditional Chinese languages can be selected.



# Style Settings

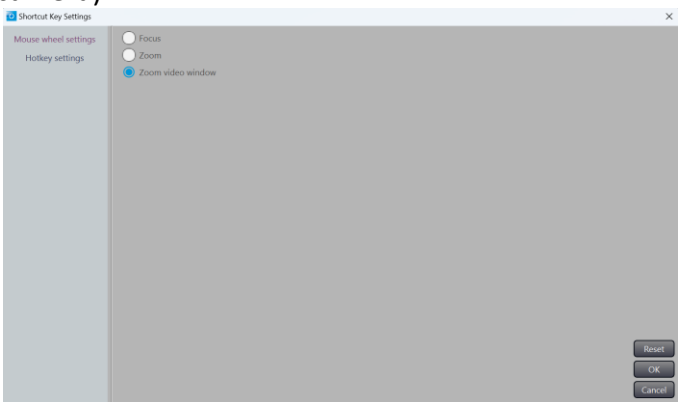
Customize between two styles of black or white interface. The default is black style.




# Shortcut Setting

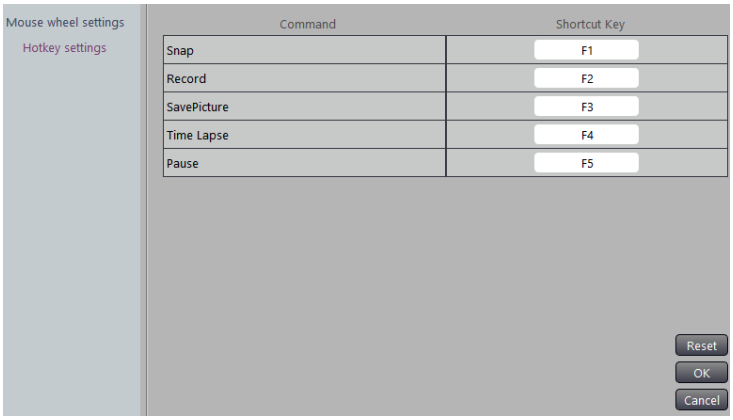
## Mouse Wheel Settings

You can choose the operation of your mouse wheel.  Choose Focus or Zoom (Zoom Video Window is not available with an autofocus camera).



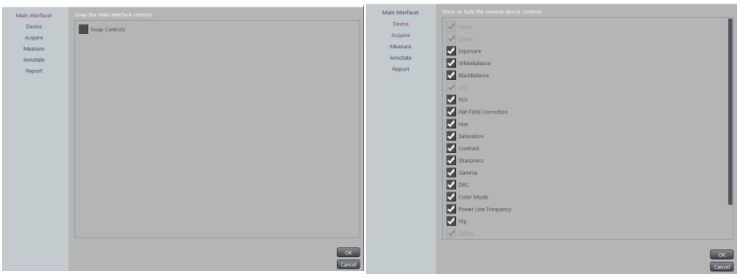

# Hotkey Settings

You can assign actions to function keys on your keyboard.




## Page Editor

-Customize the page modules as desired (page layout, function module hiding, etc.).



-Main interface exchange controls settings may need a software reset to take effect

## Help

Click the Help button to open this software manual.

# Contact Information

If the enVision system does not function as expected and/or if the system malfunctions, contact UNITRON Customer Care.

Before you call, please have the following information so that Customer Care can provide you with the highest level of service:

1. Customer Account Number
2. Model Type
3. Serial # located on the back or top of the enVision system

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