LANOPTIK
Technologies

Pixit Pro

Pixit Pro Software (Version 3.3)

User's Manual

Content

Chapter 1   Software Installation

1.1 Environmental Requirements for Software Installation

CPU type: i5 10th Generation or later version;
Memory capacity ≥ 16GB or more;
Hard drive capacity ≥ 512GB or more;
System: Genuine Microsoft Windows 10 (64 bit) or later version;
Graphics card: Core display or discrete graphics card.

Note: Some functions in the software require the computer with
Microsoft Word 2003 or later version (for output measurement results to Microsoft Word function)
Microsoft Excel 2003 or later version (for output measurement results to Microsoft Excel function)
Microsoft Outlook 2003 or later version (for sending pictures via email function)

1.2. Installation

Step 1. Activate the computer and insert the installation disk into the DVD. If there is no CD in the package, you can download a software installation file from our website: https://www.lanoptik.com/download

Step2. Double click the file"Pixit Pro for Windows Install" under the disk catalogue. When the following window pops up, please select the installation guide language and press the button   OK
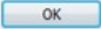
Note: The installation guide language is independent of the software interface language. If you need to change the software interface language, please refer to 2.8 - Software Settings.

Step 3. When the window"Welcome to use Pixit Pro Installation Guide" pops up, please click the button [Next >]
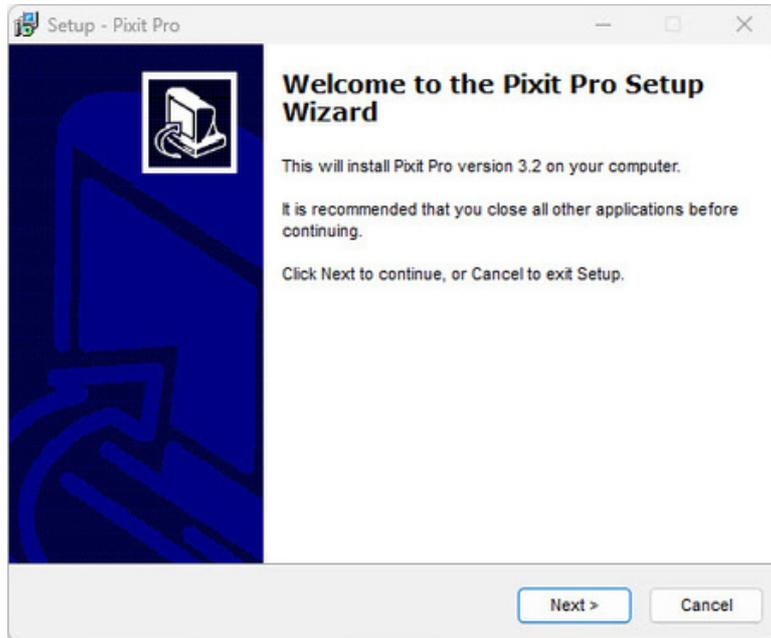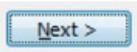
Step 4.When the window "Please select the target location"pops up, click "Browse" to choose the file path for installation (usually default),and then click " [Next >] " to continue.
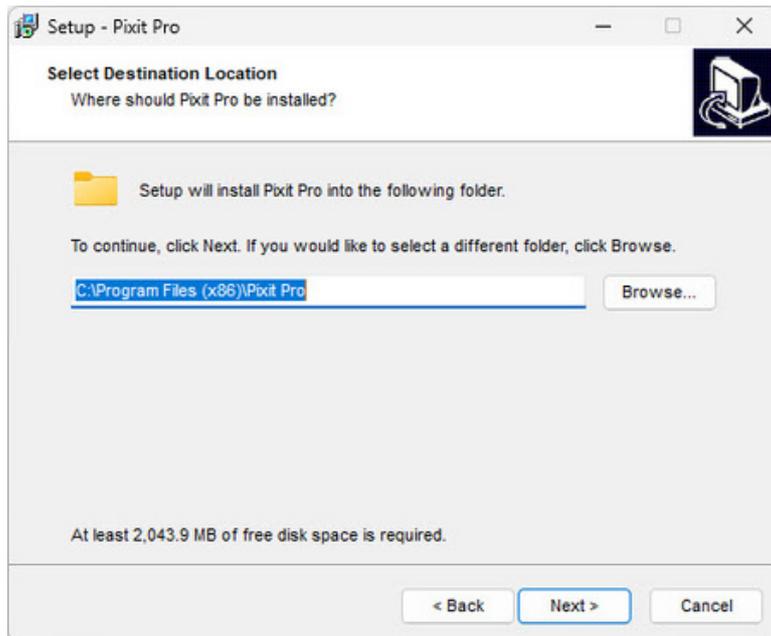
Step 5. When following window appears, select the shortcut you need, and then click the button [Next >]
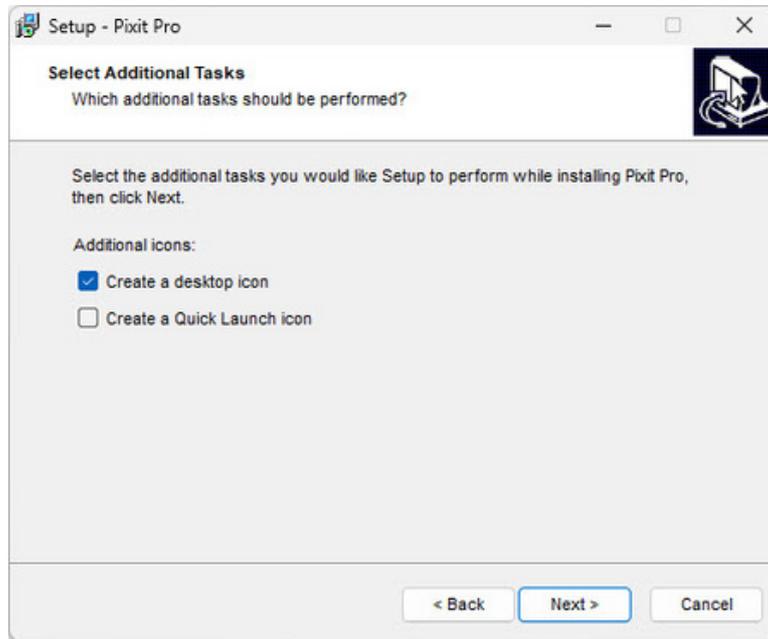
Step 6.Confirm information like "the target location"of software installation. After confirmation, please click the button [Install]
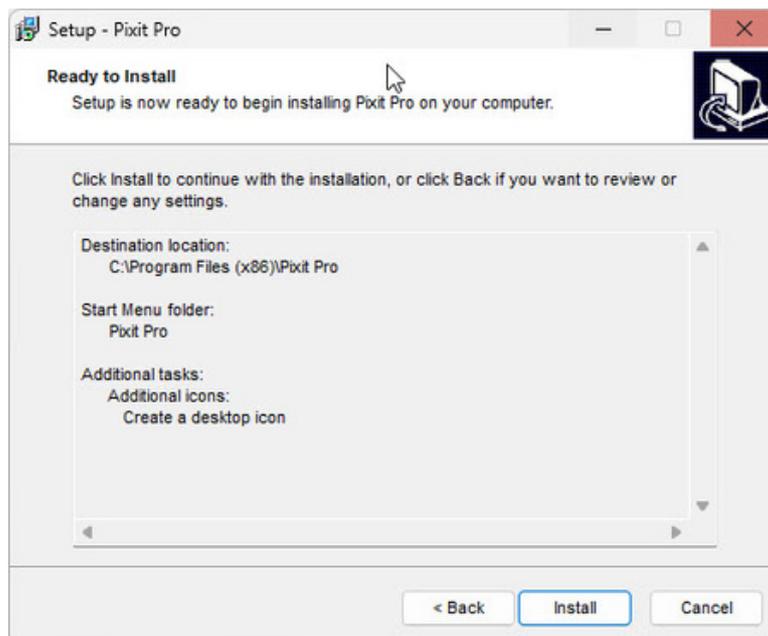
Step 7. An installation progress bar will appear during the software installation procedure. The software installation necessitates the registration of some runtime libraries, which might be intercepted by some antivirus software. If such interception pops up, please allow the procedure to continue.
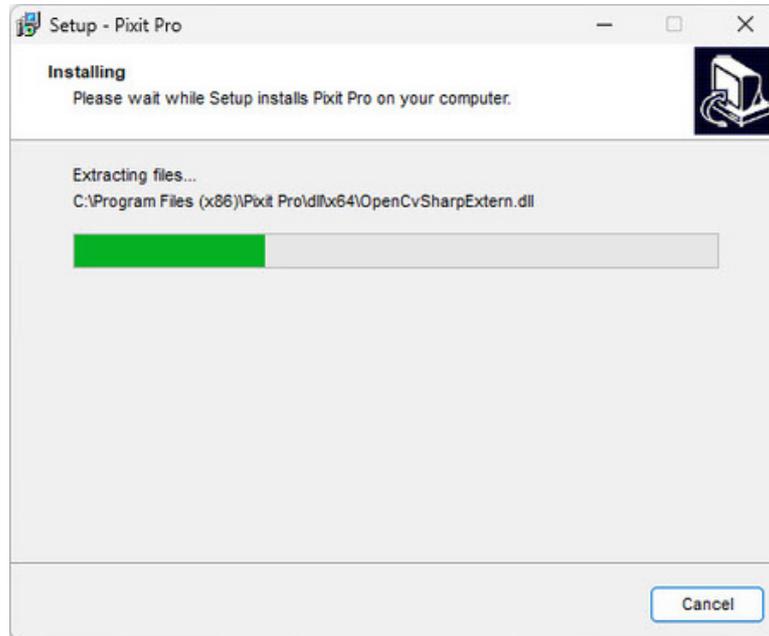
Step 8. An installation progress bar will appear during the software installation procedure. When the following window appears, the software has been installed successfully. Then click the button
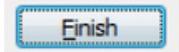
to complete the installation.After closing the window, check the icon on your desk. If you fail to find it, please find it from the path "Start"→"All programs".
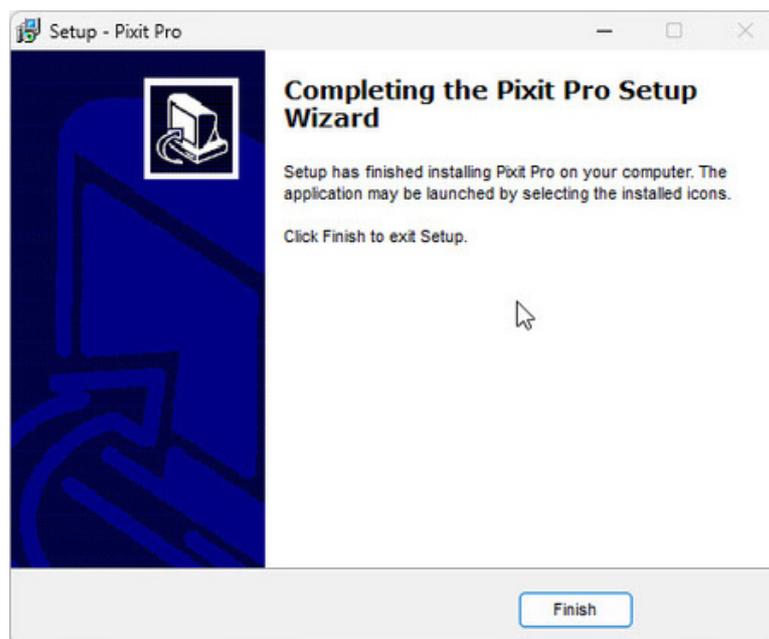
1.3 How to connect camera to Pixit Pro software

The software supports connection to the camera via **USB**, **5G WiFi** and **Ethernet**.

1.3.1 Connection via USB:
Just connect the camera to USB port of PC. If it is a WiFi camera, please dial the hardware switch of WiFi camera to USB mode in advance.
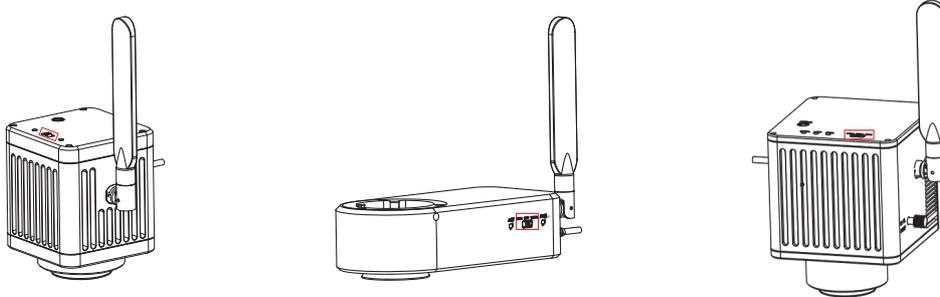
1.3.2 Connection via WiFi: only supports cameras with WiFi output.
Just connect the camera to USB port of PC. If it is a WiFi camera, please dial the hardware switch of WiFi camera to USB mode in advance.

1. Please Confirm that the computer supports the protocol WiFi IEEE 802.11ac.
2. If you are using a WiFi camera without built-in operating system, please switch the camera to WiFi working mode in advance.
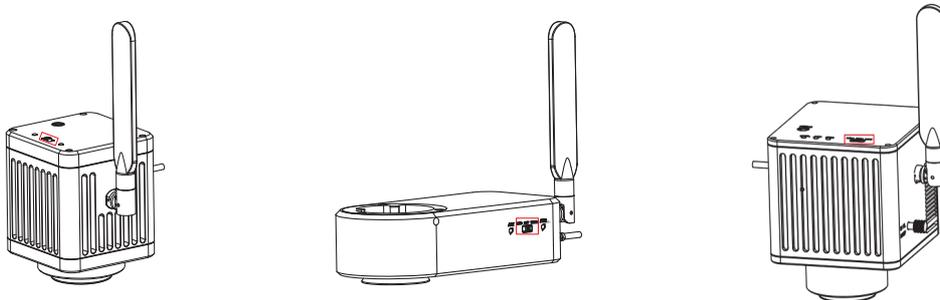
If you are using a WiFi camera with built-in operating system, you only need to turn on the power of camera.
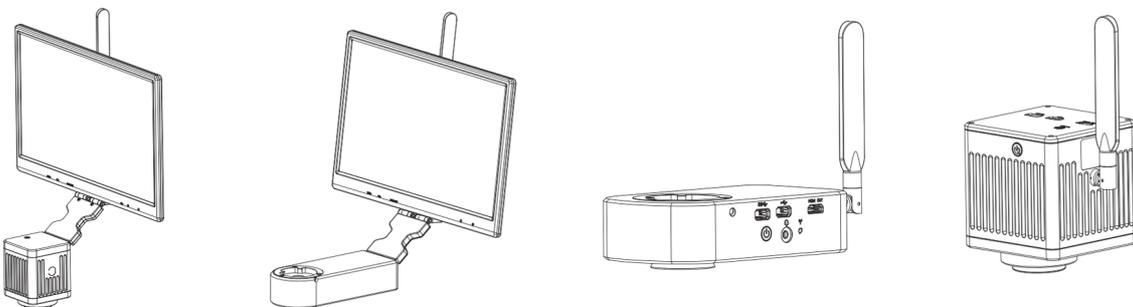
3. After the WiFi camera is started, search for the camera's WiFi name (SSID) WiFiCamera_5G_xxxxxx or WiFi5Camera_xxxxxx in the network connection (WLAN), the default connection password is 12345678. When the computer shows "Connected", it is successfully connected to the camera WiFi, then start the software to get real-time images.

Chapter 2   Software Instructions

2.1 Software Operation Interface and Instruction

Shortcut toolbar

Function bars

Video/document preview window

Thumbnail display window
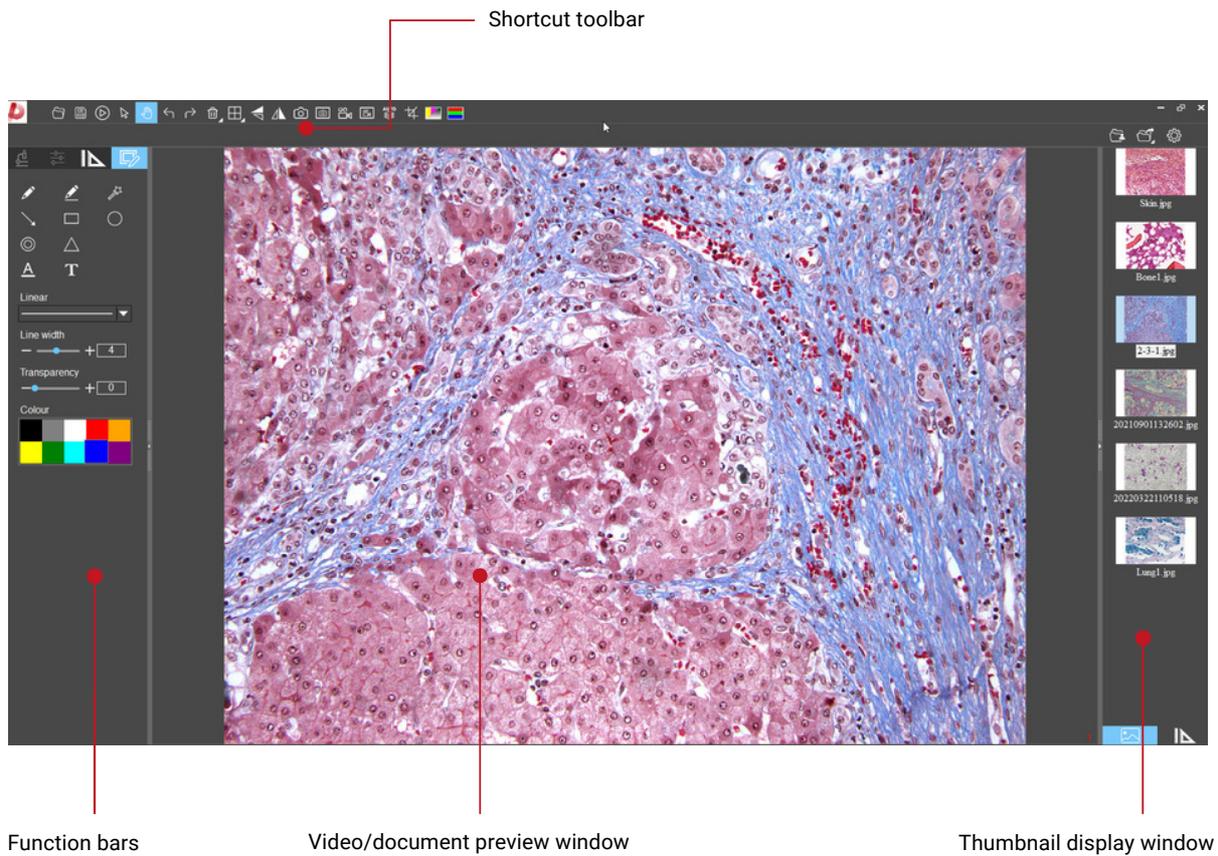
- Working mode
- Camera control
- Measuring tools
- Annotation tools

2.2 Shortcut Toolbar

2.2.1 Shortcut tools

	Open	Retrieve images from the local disk to the software.
	Save	After annotating and adding text, etc., click the "Save" button to save the current annotation, text, etc.
	Preview	If a static image is retrieved from the window, clicking this button will return to preview live image captured by the camera.
	Select object	Select "objects" such as annotations, text, measurements, etc. for the next step, such as moving, deleting, etc. Support single selection or select them by drawing a big box around them.
	Move	Use the mouse for drag a still image.
	Undo	Undoing the last operation on an "object".
	Redo	Redoing the last operation on an "object".
	Delete	Delete or erase the selected "object" with a single click.
	Compare with multiple windows	Options of Full screen / Home screen / Dual screen comparison / Four screen comparison.
	Flip	Flip the image on the selected window.
	Mirror	Mirror the image on the selected window.
	Snapshot	Snapshot the image on the selected window.
	Screen capture	Screen capture on the entire desktop.
	Record	Record on the currently selected screen.
	Screen record	Screen record on the entire desktop.
	Automatic EDF	Make camera to capture several frames of image at different focal lengths and automatically fuses them into one image to achieve extended depth of field.
	Crop	Equal scale cropping of images.
	Combine channels	Assign fluorescence channels to selected images.
	Combined color images	Composite overlay of selected color fluorescence images.

2.2.2 Automatic EDF function for high content images

Automatic EDF (Extended Depth of Field) function for high content images works with USB or WiFi connection. Break through the limitation of insufficient depth-of-field in high magnification objective lenses, and to adjust the focal length can obtain a greater depth of field, thus obtaining a sharper image than a real-time single-frame image, support taking one picture, two archives.
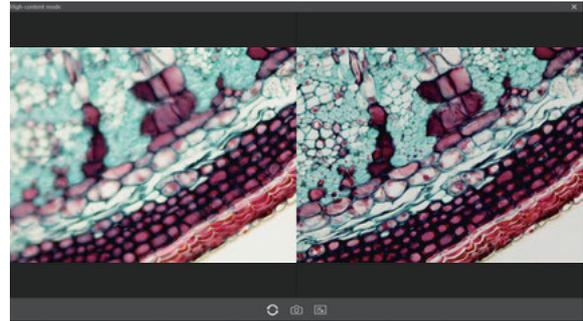

Operation steps:

1. Click " " button, a dual screen appears, the left screen is in line with the focal plane under the eyepiece, and the right screen is the result of high content fusion.
2. Adjust the microscope coarse/fine focus knob, the depth-of-field fusion in real time on the right screen. If you switch the field of view midway, you can click " " button to refresh.
3. Click " " button to automatically save two pictures on the left and right screen , close the current window to exit , click " " button to enter the file manager and export pictures.

2.2.3 Combine channels

Fluorescent channels can be assigned quickly.

|	Live image taking
	Preview window setting: double window to display original image and combine channels image separately, single window to display combine channels image only
	Zoom in
	Zoom out
	Adapts to screen size
	Import images

Fluorescence channels can be specified for imported images (as shown in the figure below).

Allows direct input of X, Y, and brightness values for fine adjustment.
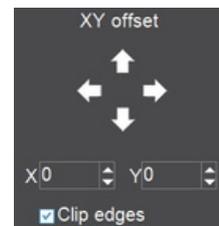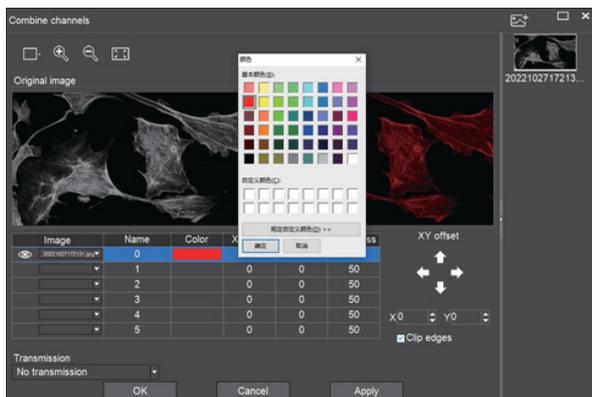
Note: Please import images with the same resolution, otherwise the image import will fail.

2.2.4 Combined color images

Color fluorescent images can be quickly combined.

📷	Live image taking
⬜	Preview window setting: double window to display original image and combine channels image separately, single window to display combine channels image only
🔍+	Zoom in
🔍-	Zoom out
⤢	Adapts to screen size
🖼+	Import images
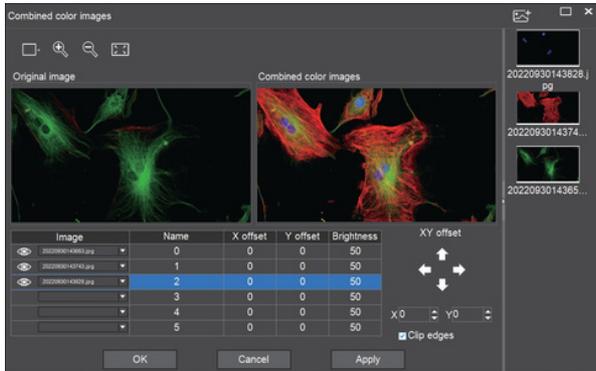
Note: Please import images with the same resolution, otherwise the image import will fail.

Allows direct input of X, Y, and brightness values for fine adjustment.

2.3 Working Mode Setting

Preview resolution:

Any of the resolutions in the drop-down list can be set for preview.
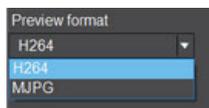

Preview format:

You can switch between MJPG and H264 preview formats.
The advantage of H264 format is that the image quality is more transparent, but it requires a higher computer configuration. The advantage of MJPG format is that it requires a lower computer configuration, but the picture quality is not as good as H264.

2.4 Camera Property Control

Adjust the corresponding image property parameters as needed to achieve the desired image effect.

Staining type		Users can select different exclusive types of stained pathology sections to obtain matching image effects and more accurate color reproduction. BF type 1: for bright-field, red or gold-based sections. BF type 2: for bright-field, cyan-dominated sections. FL type: for fluorescence observation.
Brightness		Manually drag the adjustment bar to adjust the image brightness.
Exposure		When checked, the camera will automatically expose according to the environment used. When unchecked, manual exposure can be performed through the adjustment bar, supporting direct input of values in the box.
White balance		Manual white balance adjustment can be made through the adjustment bar, supporting direct input of values in the box. Click on "R" will restore the default value of the R channel alone. Click on "B" will restore the default value of the B channel alone
Gain		Manually drag the adjustment bar to adjust the image gain. Support for entering values directly in the box. Click on "Gain" will restore the default value of gain alone.
Contrast		Manually drag the adjustment bar to adjust the image contrast. Support for entering values directly in the box. Click on "Contrast" will restore the default value of contrast alone
Hue		Manually drag the adjustment bar to adjust the image hue. Support for entering values directly in the box. Click on "Hue" will restore the default value of hue alone.
Saturation		Manually drag the adjustment bar to adjust the image saturation. Support for entering values directly in the box. Click on "Saturation" will restore the default value of saturation alone.
Sharpness		Manually drag the adjustment bar to adjust the image sharpness. Support for entering values directly in the box. Click on "Sharpness" will restore the default value of sharpness alone.
Gamma		Manually drag the adjustment bar to adjust the image gamma. Support for entering values directly in the box. Click on "Gamma" will restore the default value of gamma alone.
		Export image properties to local disk.
		Import image properties from local disk.
	Default	Restore all image property parameters to their default values.

Staining type

BF ◉ ■ ■   BF ○ ■   ○ FL

Subject brightness
— ● — + 120

☑ Exposure
— ● — + 1.55 ms

Gain
— ● — + 0

☑ White balance

R
— ● — + 99

B
— ● — + 130

Contrast
— ● — + 105

Hue
— ● — + 0

Saturation
— ● — + 128

Sharpness
— ● — + 128

Gamma
— ● — + 132

Default

☑ Save Settings

2.5 Measuring Tools

Calibration function and measurement tools are available for dynamic or static image in the preview window.
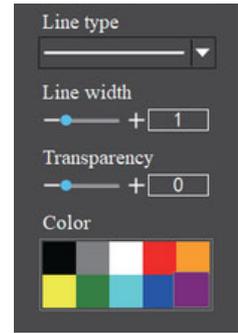
2.5.1 Calibration

Step 1: Please place the micrometer under the microscope, the example below uses a micrometer with 1DV= 0.01mm.

Step 2: Click on " ⊬⊬⊬⊬ " to bring up the calibration table.
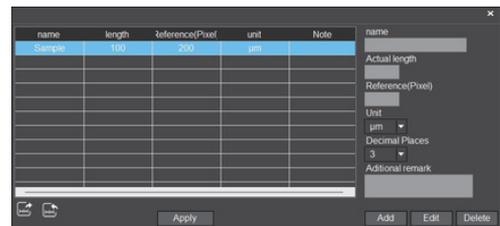
Step 3: When using the mouse to draw a straight line on the micrometer image and setting the scale length, selecting a longer scale length will give more accurate results. For example, selecting 10 small scale lengths will give you more accuracy than selecting only 1 scale length. After releasing the mouse, the image value of the line drawn with the mouse will be automatically updated in the "Benchmark" of the calibration table.
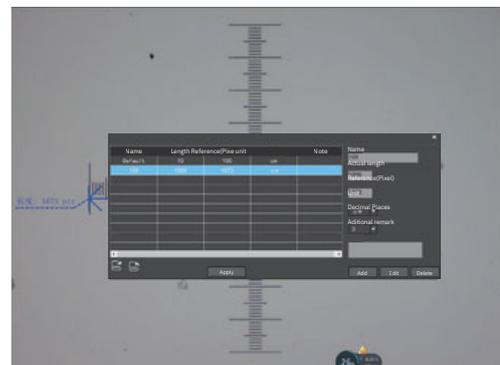
Step 4: Enter a name in the calibration table, such as 10X. In the calibration table, enter the actual length that just drawn on the micrometer, for example, the sample figure is drawn 100 DV, that is, 1mm, or 1000µm, then enter the "actual length" box to fill in the specified 1000, "unit" select "µm". Then click "Add" to add this calibration value to the calibration table to be used. Add the calibration value for other objectives of different magnifications in this way.
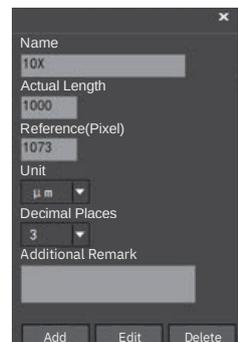
Notes:
①"Add": The information in the right box will be added to the list on the left.
②"Edit": The calibration value selected in the left list will be modified.
③"Delete": The calibration value selected in the left list will be deleted.
④"Apply": The calibration value selected in the left list will be called.

2.5.2 Select measurement tools

1. Select the calibration value according to the actual objective used in the calibration table and click on "Apply".

2. select the measurement tools as follows:
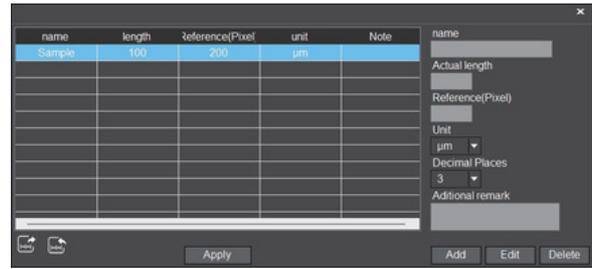
	Linear distance measurement		Concentric circle measurement
	Circular measurement		Concentric radius circle center distance drawing circle measurement
	Rectangle measurement		Ring measurement
	Three-point angle measurement		Manual count
	Parallel line spacing measurement		Font
	Center distance measurement of double parallel lines		Scale mark
	Polyline measurement		Scale bar
	Polygon measurement		Line type
	Arc measurement		
	Three-point vertical line measurement		
	Four-point angle measurement		line width
	Ellipse measurement		Transparency
	Circle radius measurement		Colour
	Three point drawing circle measurement		

The results of each measurement will be displayed on the right side of the software. The user can export the measurement results.

Click the export tool in the upper right display bar to export data and images to PDF, Word, Excel, printer and mail (Outlook only). Export to PDF, printer and mail functions are only available for still images.

Select Export to Word, as shown below: Enter file name, select path, and click "Save".

2.6 Drawing Tools
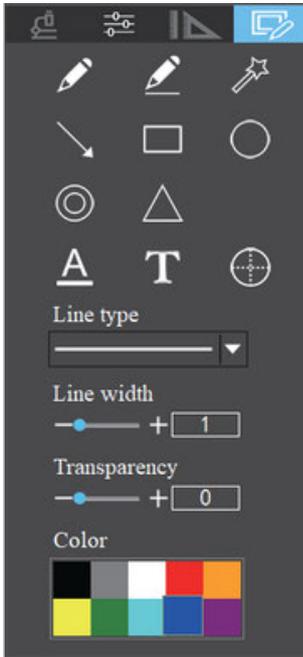
		Pencil
		Straight line
		Highlighter
		Single arrow straight line
		Rectangle
		Oval
		Isosceles triangle
		Concentric circles
		Font
		Insert text
		Line type
		Line width
		Transparency
		Colour

2.7 Thumbnail Toolbar

Right-clicking on a thumbnail will display the action menu as shown in the right figure.

Open: Open the image in the software default way.
Open directory: Open the directory where the selected image is located.
Copy: Copy the currently selected image.
Paste: Paste the image that has been copied. (Note: Paste can only be done within the thumbnail toolbar).
**Delete:** Permanently delete the selected image and the source file.
One-click deletion: Permanently delete all thumbnails and the source files.
Rename: Rename the selected image.
Refresh: Refresh the current image thumbnail area.
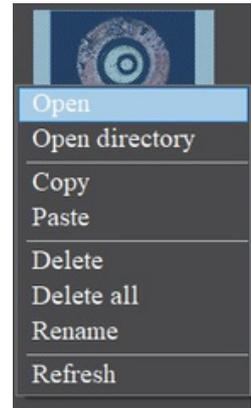
2.8 Software Settings
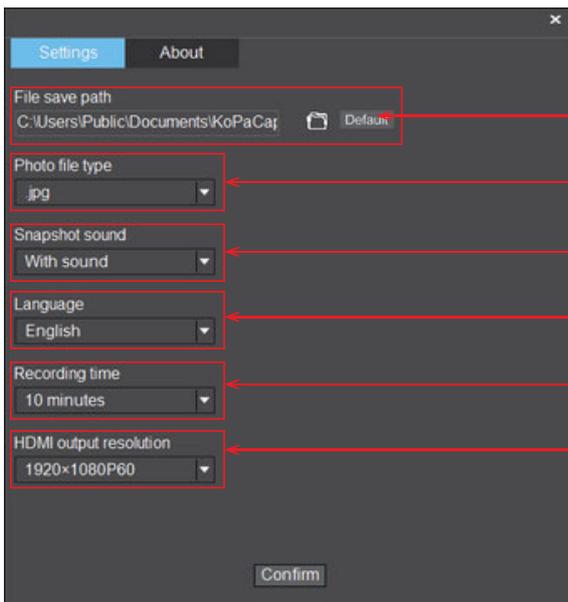
Support access / modify / restore default file save path.

Support modifying image saving format: JPG, BMP, TIFF, PNG.

Support modifying the camera sound as off or on.

Support for modifying software interface language.

Support modifying the default maximum single recording time.

Support for modifying the image resolution of an external HDMI display. (This function is only valid for cameras with HDMI output).

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