iVideo-0325FA 3D Video Microscope

Instruction Manual

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Contents

1.Precautions

1.Do not touch the lens surface directly with your fingers to avoid contamination or scratches.

2.Do not disassemble the product or modify its internal structure, as this may cause malfunctions and affect usage.

3.Never use organic solvents for cleaning.

4.If the lens is dirty or damp, clean it with a mixture of industrial alcohol and ether (1:1 ratio) using a dry, lint-free cloth or professional lens tissue.

5.Do not use or store the instrument for a long time in environments with high temperature, high humidity, direct sunlight, near heat sources, dusty areas, or vibrating surfaces.Suitable Operating Temperature and Humidity Operating Humidity: 20%~80%Storage Temperature: 0℃~35℃.

6.To avoid potential electric shock hazards, disconnect the power supply before moving the instrument;

2.Instrument Structure and Components

1. HDMI 4K Camera
2. 0.5X CTV Connector Tube
3. 0.6 - 5.0X Continuous Zoom Eyepiece
4. 4-zone Light Source
5. 2D/3D Viewer
6. 330*300mm Base Plate
7. 32mm Round Column
8. Fine-tuning Focus
9. Light Source Switch Control Button
10. Light Source Intensity Control Button
11. 11.6-inch Screen

3.Microscope Parfocalization Method

1.Adjust the lens to the maximum magnification of 5.0X. Adjust the focusing knob of the bracket. Pay attention to adjusting the brightness of the light source and make the image clear.

2.Adjust the lens to the minimum magnification of 0.6X. At this point, the image is not clear. By adjusting the fine-tuning knob on the CTV interface, the image can be made clearer.

3.Repeat the operation twice or more times. The entire process of reaching the desired focus is complete. For each successive magnification rate, the image is clear.

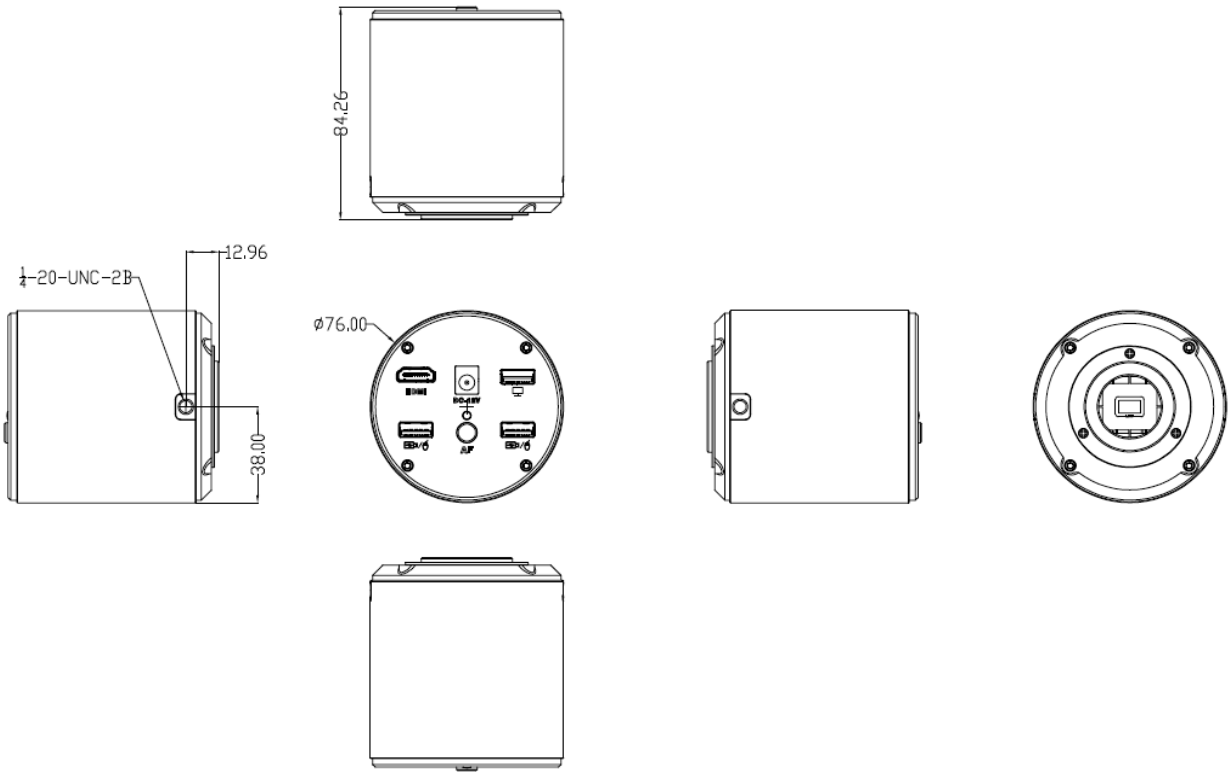
4.Next, you can proceed with either two-dimensional or three-dimensional observation. Simply manually move and rotate the three-dimensional viewer to switch between two-dimensional and three-dimensional views. In the three-dimensional mode, you can manually rotate 360 degrees for a comprehensive inspection.

Special Note: For three-dimensional observation, first ensure the clarity of the image in the two-dimensional mode, then align the focus properly and switch to three-dimensional observation.

4.Camera Software Operating Instructions

The camera is a multifunctional, multi-interface camera with a built-in sliding platform that enables fully automatic focusing. It supports the functions of a regular HDMI interface camera (such as taking photos, recording videos, measuring, etc.), and also has the 4K USB3.0 camera function. It can meet the diverse needs of various fields.

1.1, Six Views



4.Camera Software Operating Instructions

2.Camera Function Description

2.1 Wiring and Installation

2.1.1Remove the dust cover and protective film from the bottom of the camera, and screw them into the corresponding interface.

2.1.2Insert the mouse into the USB2.0 interface. If you need to insert multiple USB interface devices, you can insert the USB device into the USB interface, and then insert the mouse and other storage devices onto the splitter.

2.1.3Connect the HDMI interface of the camera to the HDMI port of the display using an HDMI cable.

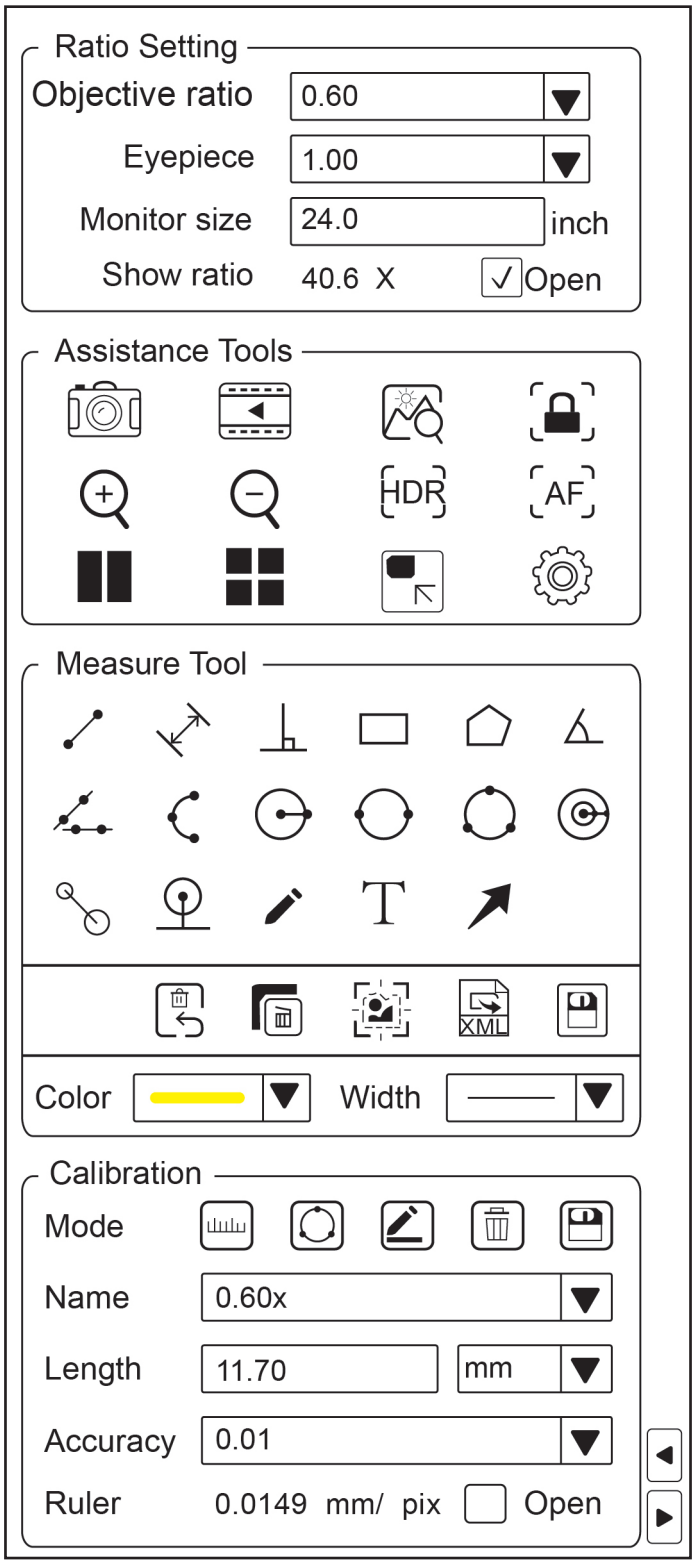
2.1.4Insert the DC-12V power connector into the power cord. After connecting the DC-12V power supply, the product will automatically turn on. The LED will first light up the red light, then the blue light. The camera will start running and wait for the display to show the picture.

2.1.5The USB3.0 interface is the UVC interface (connected to the computer via a USB cable)

4.Camera Software Operating Instructions

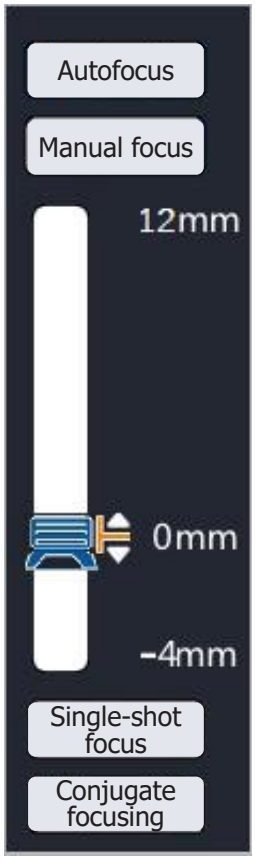
2.2Main Interface

After the user sees the screen, they directly move the mouse to the left side of the screen to pop up the main interface (as shown in the figure)



4.Camera Software Operating Instructions

Focus: Click the focus button to display 4 focus modes, as shown in the following picture:



The roller wheel enables zooming in and out to adjust the focusing range. The mouse can also be used to drag the frame to achieve focusing at the specified position.

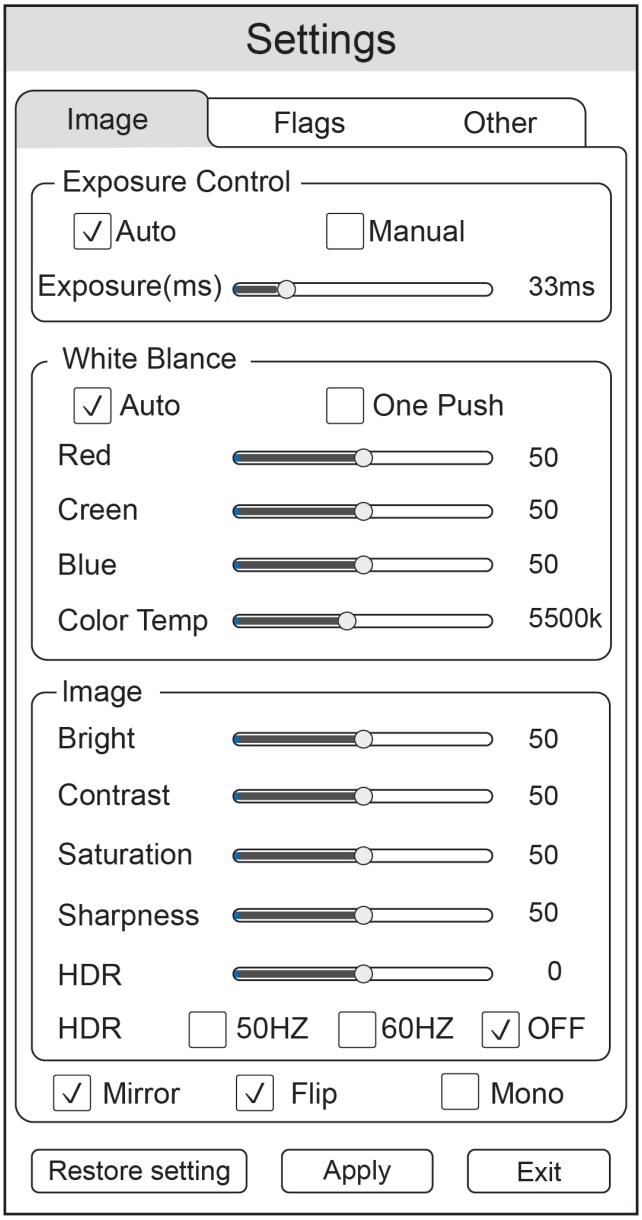
Comparison: This function compares images from external storage devices with real-time preview videos.

Quad-screen mode: When entering the 4-picture comparison mode, double-click on any one of the 1/4 preview frames with the mouse to achieve the image freezing function. Double-click again to release the freezing function.

Mouse click Set the button, enter the settings interface, as shown in the following picture:

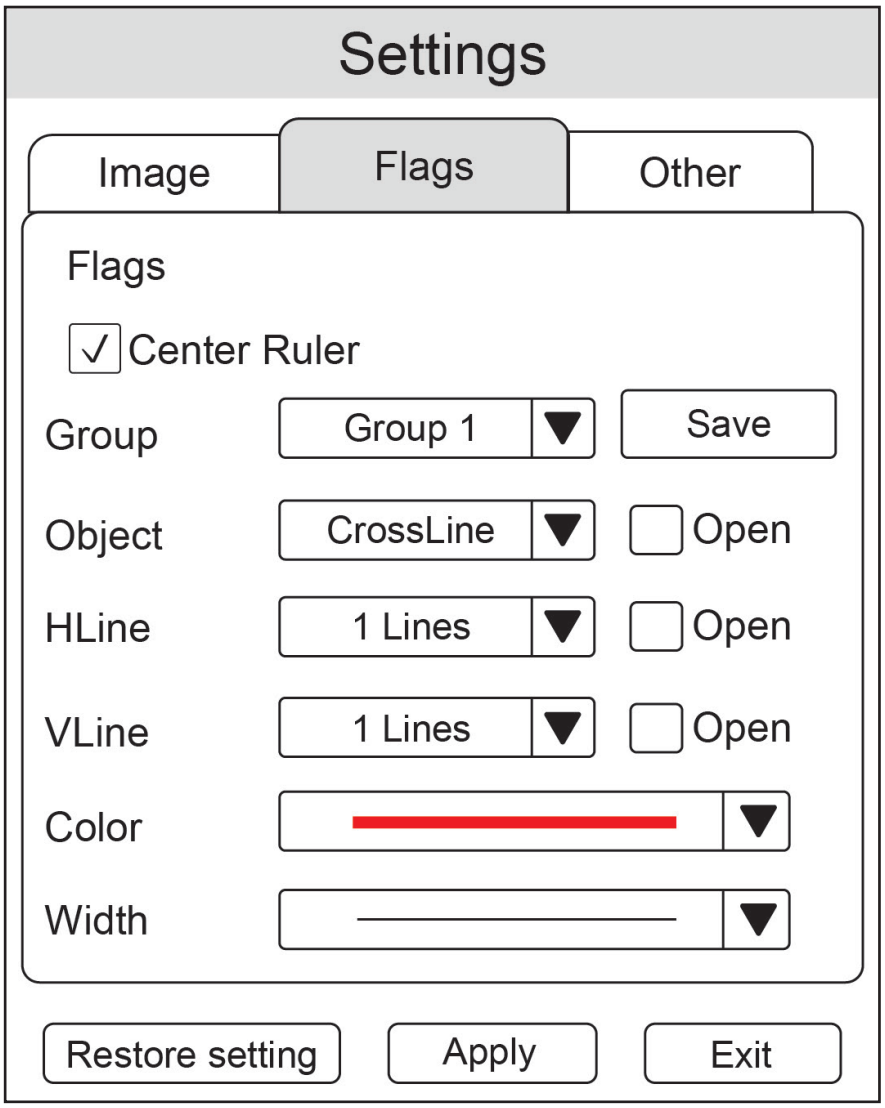
4.Camera Software Operating Instructions

Video Settings:



Under this menu, you can adjust the image parameters by dragging the corresponding progress bar. Manually adjusting the exposure time allows you to set the image brightness. When the light source is stable, you can click the one-button icon to perform a single image white balance calibration action (this function must be calibrated against a white standard). After calibration, the camera will no longer perform automatic white balance.

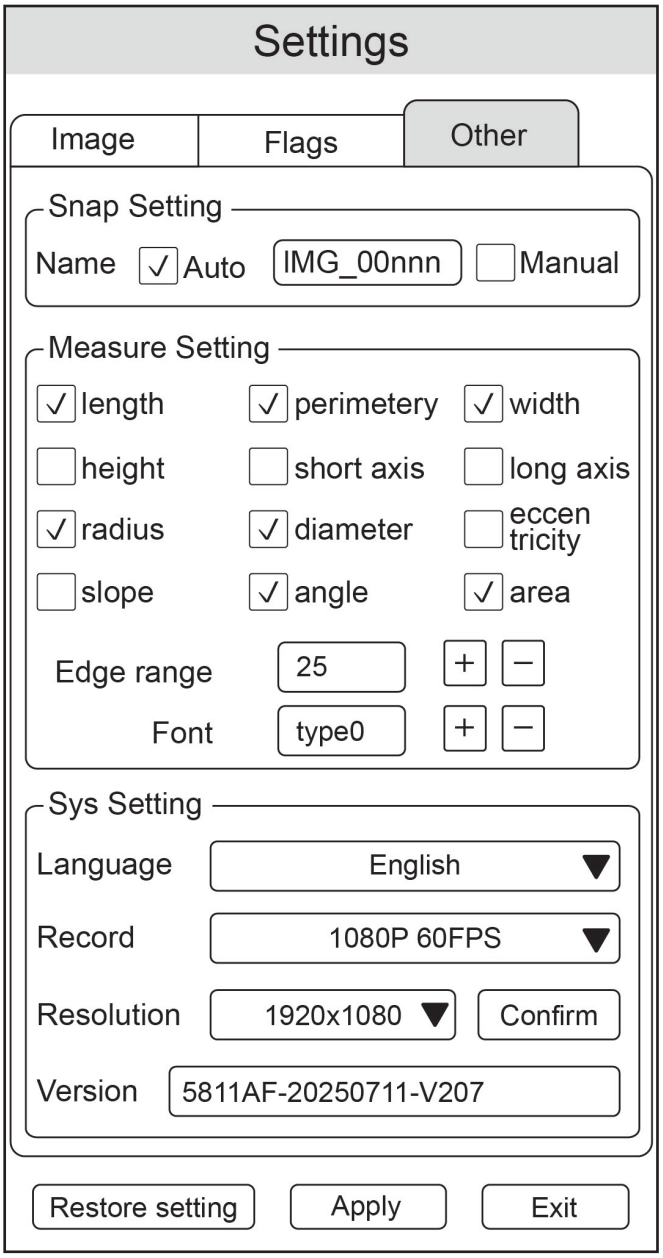
4.Camera Software Operating Instructions



Grid line settings

Click the square box in front of the center scale line with the mouse to activate the center scale line. Under the object column, you can enable or disable any one of the lines as needed, and also set the color (8 color options available) and line width (4 line width options available) for each line. In the mode options, you can save 8 sets of grid lines, which makes it convenient to quickly open the preset grid lines during the testing of different products without having to reconfigure repeatedly. After setting, click "Apply" to save the current settings; click the "Restore Factory Settings" button to restore to the factory settings.

4.Camera Software Operating Instructions



Other settings

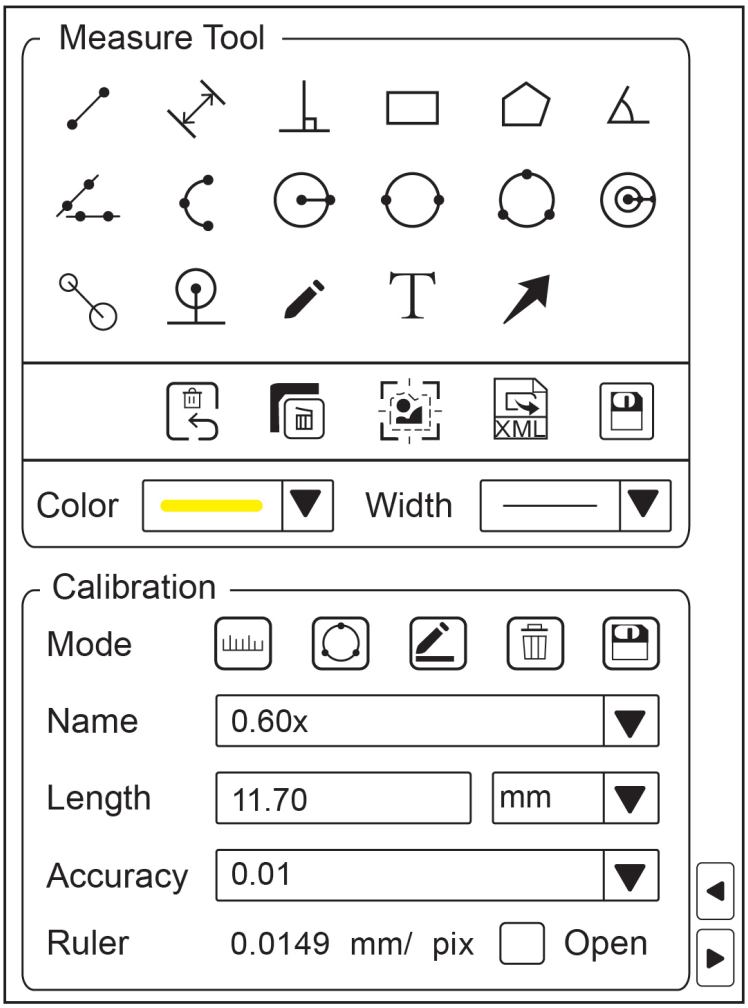
In this mode, you can manually or automatically name the filename of the photo; you can set the items to be measured (by simply checking the box in front of the measurement settings); and you can set the size of the search area and the measurement font according to your actual needs.

In this mode, you can set the resolution for video recording (4K 30FPS; 1080P 30FPS/; 1920*1080/3840*2160)

4.Camera Software Operating Instructions

Language: There are three options available: Simplified Chinese, Traditional Chinese and English.

Version: You can view the current version information. Introduction to Measuring Tools:



: Line: After clicking the button with the mouse, click at any point on the interface to determine the starting point. The second click will determine the distance between the starting point and the ending point, and measure the length of the line.

: Line spacing: After clicking the button with the mouse, click any point on the interface to determine the starting point. Click again to determine the straight line, and then click a third time to determine the position of the parallel line. Measure the distance between the two parallel lines.

: Vertical line: After clicking the button with the mouse, click any point on the interface to determine the starting point. Click again to determine the straight line, and then click a third time to determine the distance perpendicular to the straight line. Measure the length of the vertical line.

: Rectangle: After clicking the button with the mouse, click at any point on the interface to determine the corner position. The second click will determine the perimeter of the rectangle. Then measure the length, width, perimeter and area of the rectangle.

: Polygon: After clicking the button with the mouse, click on any point on the interface to determine one corner. Each click adds one more corner. The last click must coincide with the first click's point. Measure the perimeter and area occupied by the polygon.

: Function: After clicking the button with the mouse, click any point on the interface to determine the starting point. Click again to determine the straight line. Click a third time to determine the straight line between the second point and the current point. Measure the angle between the two straight lines.

: Function: After clicking the button with the mouse, click any point on the interface to determine the starting point of the line. Click again to determine the second line, then click a third time to determine the starting point of the second line, and finally click a fourth time to measure the angle between the two lines.

: Arc: After clicking the button with the mouse, click any point on the interface to determine the starting point. The second click determines the straight line, and the third click determines the line with the second point. The arc's radius, length, angle, and diameter are measured based on the three points.

: Draw a circle by radius: After clicking the button with the mouse, click any point on the interface to determine the center of the circle. Then click again to determine the distance from the center to the point, and the measurement will display the radius,

diameter, circumference and area of the circle.

 : Draw a circle by diameter: After clicking the button with the mouse, click any point on the interface to determine a point on the circumference of the circle. Then click again to determine the circle. The measurement will display the radius, diameter, circumference and area of the circle.

 : Draw a circle with three points: After clicking the button with the mouse, randomly click three points on the interface. The radius, diameter, circumference and area of the circle will be measured and displayed.

 : Round margin: After clicking the button with the mouse, click any point on the interface to determine the center of the circle. The second click determines the first circle, and the third click determines the second circle. The measurement result is the distance between the two circles.

 : Center distance: After clicking the button with the mouse, click any point on the interface to determine the center of the first circle. The second click confirms the first circle, the third click confirms the center of the second circle, and the fourth click confirms the second circle. The measurement will display the distance between the centers of the two circles.

 : Point-to-Circle Distance: After clicking the button with the mouse, click any point on the interface to determine the center of the circle. The second click determines the circle, and the third click determines the distance between the line and the center of the circle. The measurement will display as the distance from the point to the center of the circle.

 : Arbitrary Line: After clicking the button with the mouse, click at any point on the interface to determine the starting point. The path that the mouse passes through represents the length. Click again to determine the ending point, and the length of the drawn line will be measured.

4.Camera Software Operating Instructions

T : When the mouse clicks the button, a selection box is displayed for character annotation.

: Feature point: After clicking the button with the mouse, click any point on the interface to determine the starting point. The second click will confirm the direction and position of the arrow.

: Click this button with the mouse to undo the previous operation.

: Clear: After clicking this button with the mouse, all items on the screen will be deleted.

: Edge detection: Automatic edge finding, ensuring measurement accuracy.

: Export: Click this button and the file will be saved to the storage space.

: Screenshot: After clicking this button with the mouse, the current interface will be captured and saved to the storage space.

颜色 : Color: Click this button to select the color of the lines. There are a total of 8 color options available.

线宽 : Line Width: Click this button to select the thickness of the line. There are 4 different sizes to choose from.

Calibration

Before the measurement, it is necessary to perform image calibration based on the current microscope magnification and image preview resolution to ensure the accuracy is reliable.

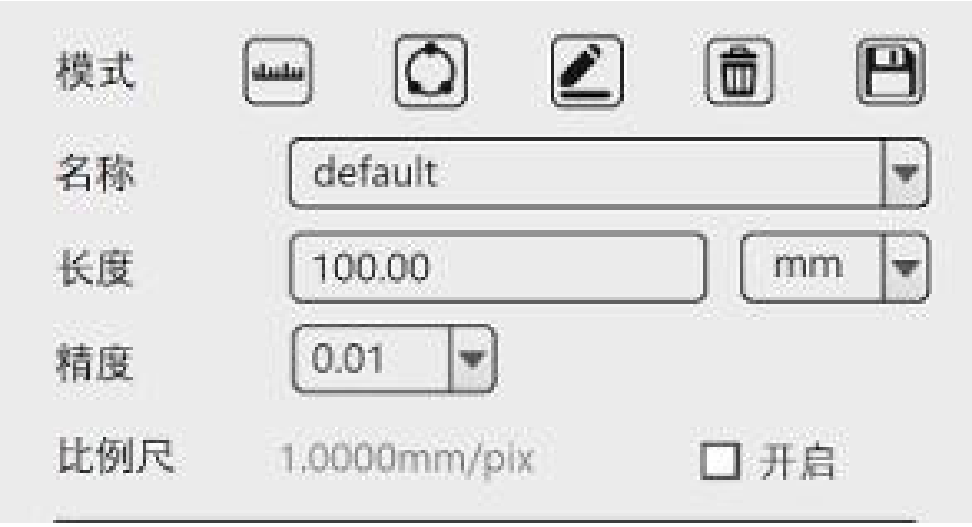
Note: Each multiple needs to be calibrated separately before measurement.

Place the micrometer on the stage and adjust the image. It is recommended to use a micrometer with each small division being 10 μm, a total of 100 divisions, and a total length of 1000 μm.

Note: The micrometer is not included in the standard configuration and needs to be

purchased separately.

2.3.1Select the line or circle button for the measurement interface: Enter the new calibration editing screen, as shown in the following figure:



Click the mouse once to confirm the starting point, and click again to confirm the marking is complete.

2.3.2After selection, enter the preview window and draw lines or circles at the corresponding scale. Fill in the designated names, lengths, units, etc. according to the actual size of the scale. Finally, confirm to complete the calibration.

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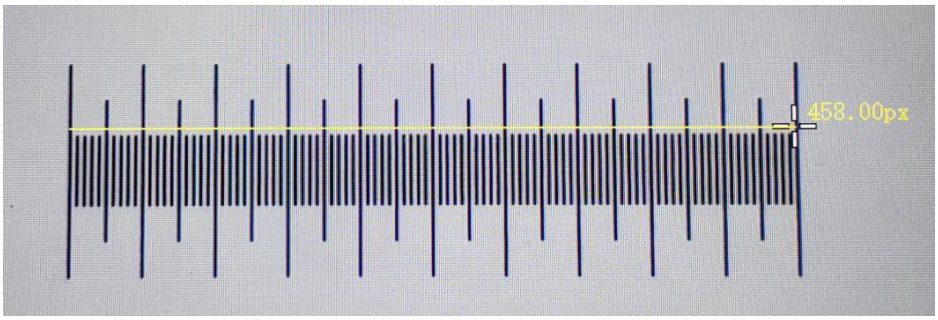
The figure below shows the calibration line selected during the observation with a 4X objective lens. Click on a point with the mouse to confirm the starting point, move to the designated position and click again to confirm the end. Fill in the actual size of the scale at the corresponding position based on the actual length (note that the units of the scale should be consistent).



2.3.3Click  This will save the current calibration.

2.3.4Click  It enables the editing of the current calibration.

2.3.4 Click  You can delete the current calibration.

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