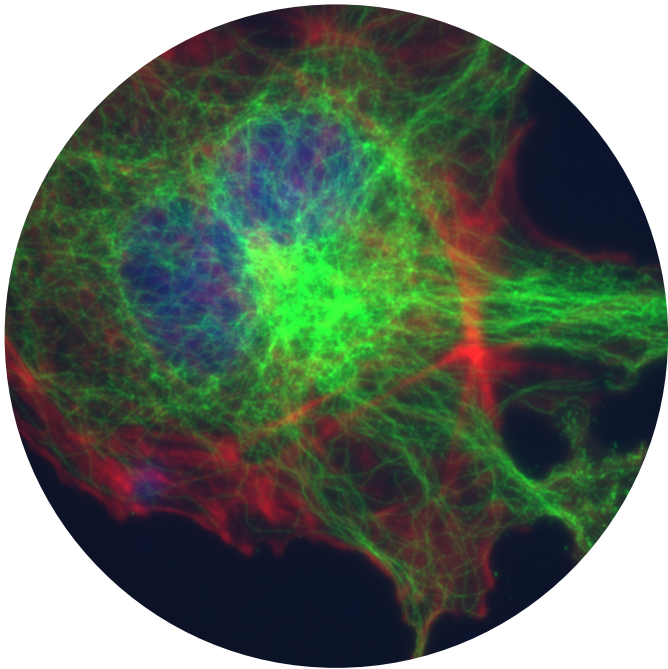




HDCAM6
4K High Definition Microscope Camera
8 Megapixel Image Capture
User's Manual



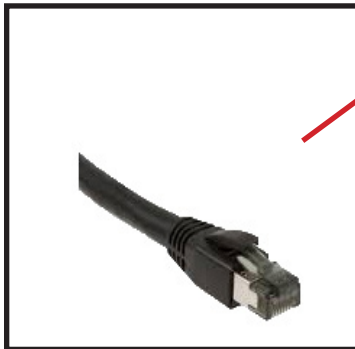
HDCAM6 Set up

- Attach the HDCAM6 to the C-Mount on the Microscope.

- Plug the USB mouse into the USB Mouse slot on the back of the camera.



- Plug one end of the HDMI cable into the HDMI slot on the camera and the other end into the HDMI slot on your 4K monitor.



- If using the GE Interface, plug one end of an ethernet cable into the GE input and the other end into your ethernet port.



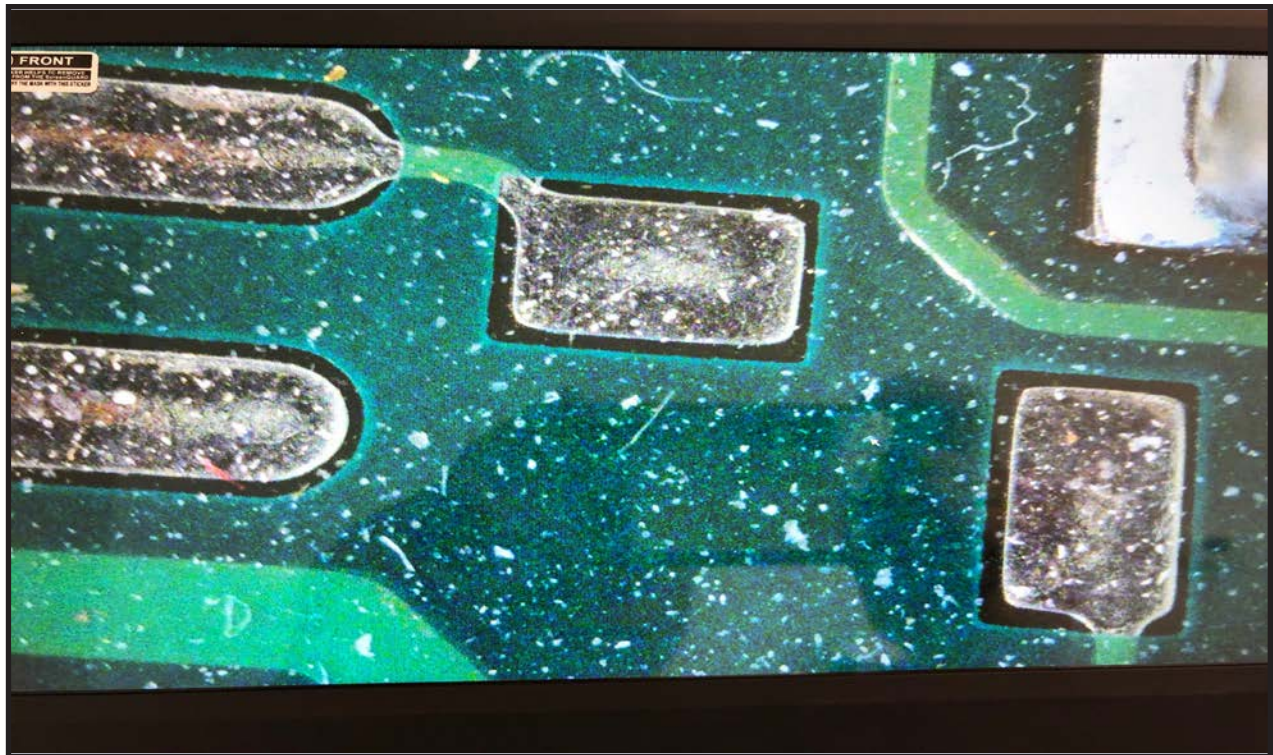
- Insert the SD card into the SD card slot.




- Plug the power adapter into the DC12V power adapter input on the camera.

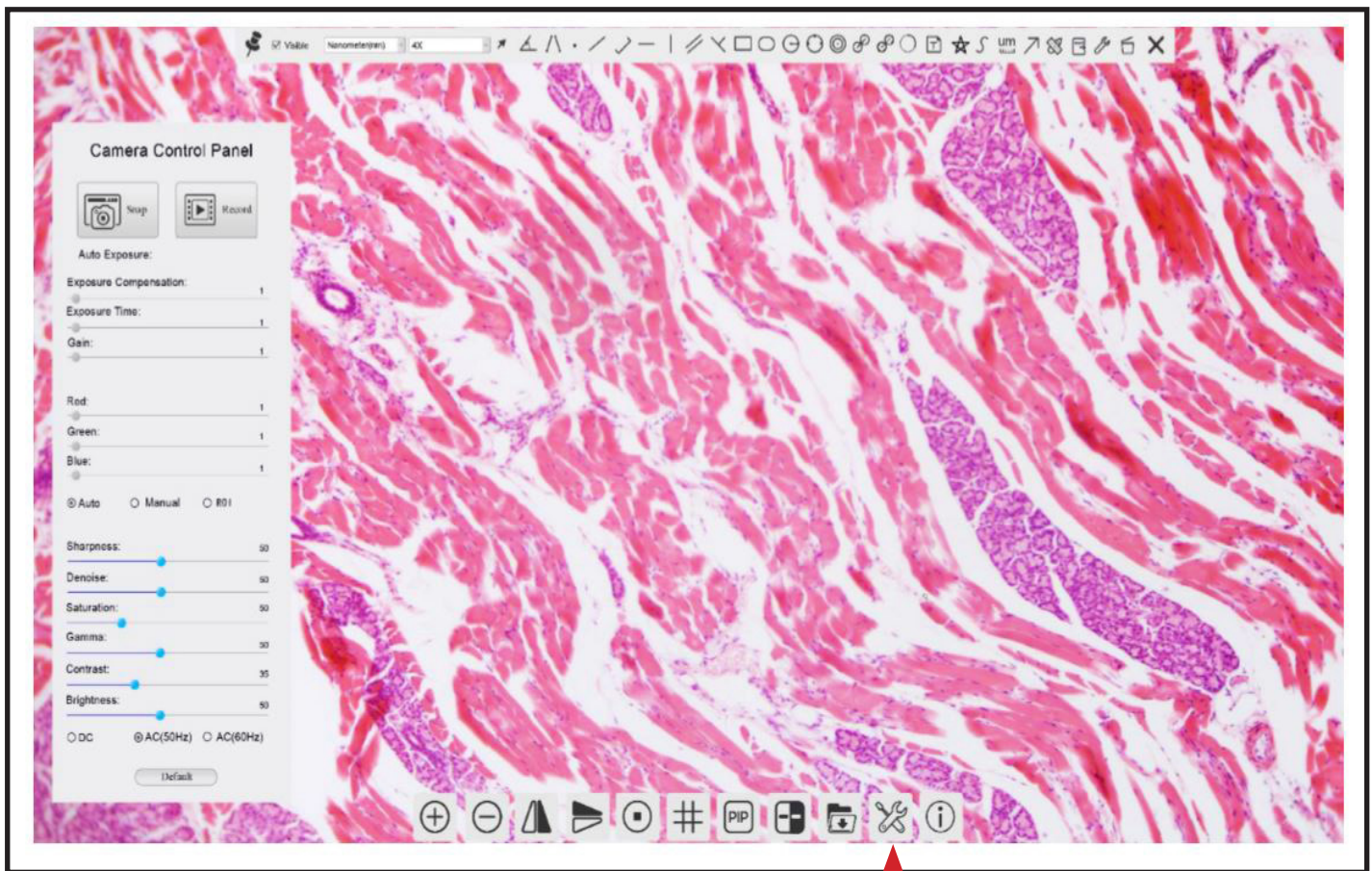
Getting Started

- Once the camera is properly set up with your 4K monitor and microscope, turn on the camera by pushing the ON/OFF button. A blue light will begin to blink. It is located to the top-right of the ON/OFF button. Once this light has stopped blinking and is fully illuminated, a live image of your stage/specimen will appear on the monitor.



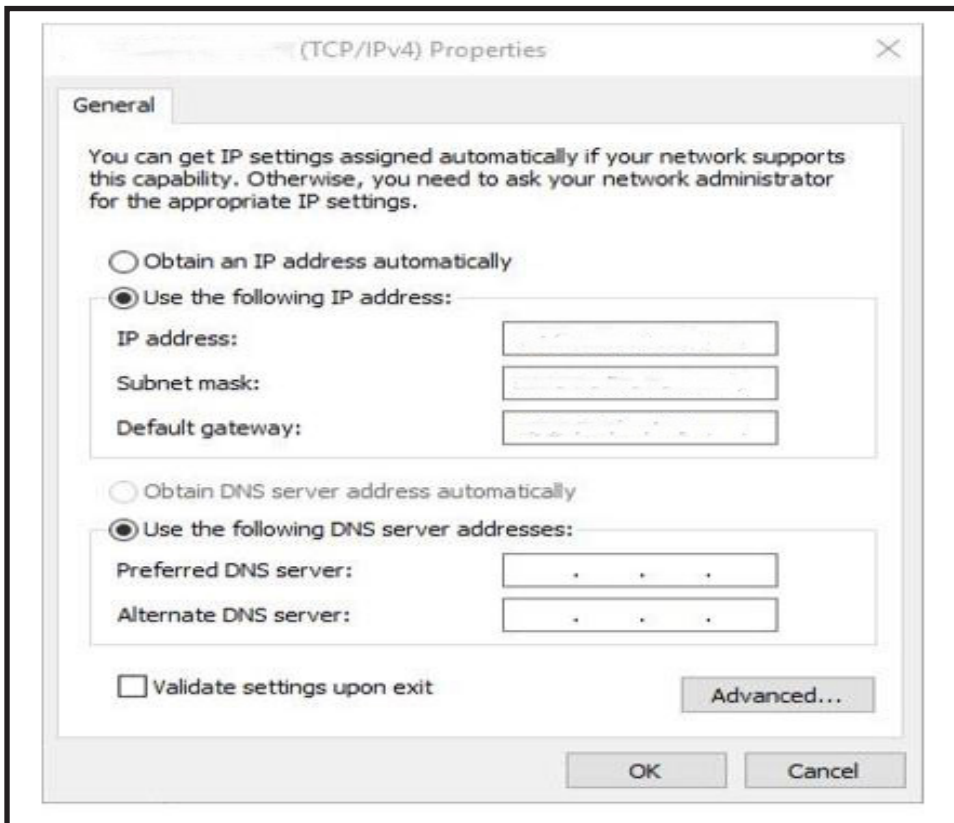
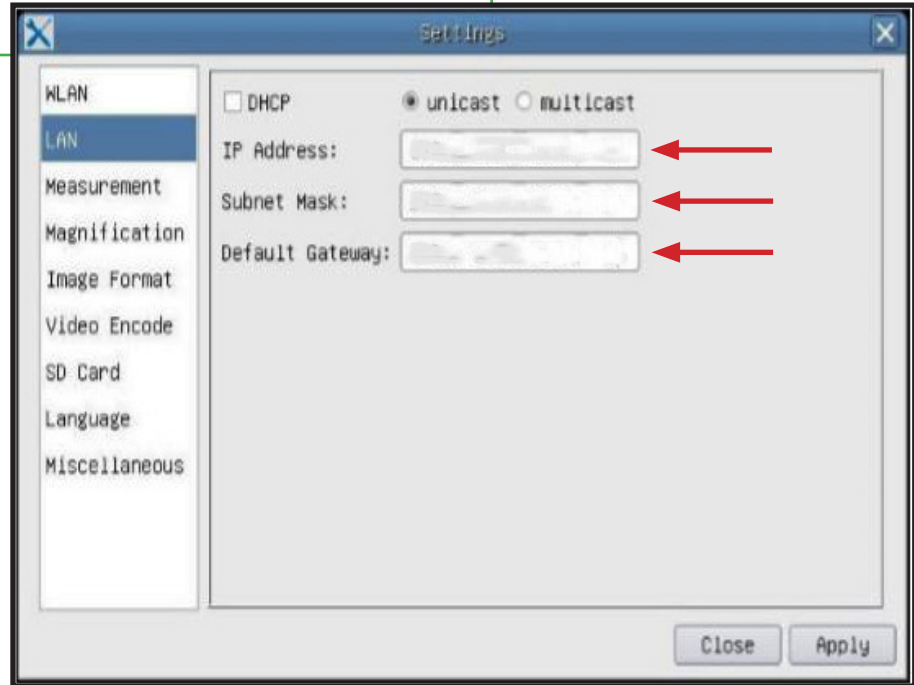
HDCAM6 Gigabit Ethernet Set Up

- Using the camera as your network camera, begin by connecting the camera to the computer using an ethernet cable. Input one end of the ethernet cable into the GE (Gigabit Ethernet) port on the back of the camera as shown on page 1.
- Turn the camera on as shown on page 2.
- Next, launch the camera software.
- Begin by clicking on the  button on the lower toolbar.



HDCAM6 Gigabit Ethernet Set Up

- A small settings window will appear.
- To configure the 4K camera IP start by inputting the IP Address, Subnet Mask and Default Gateway for the camera.

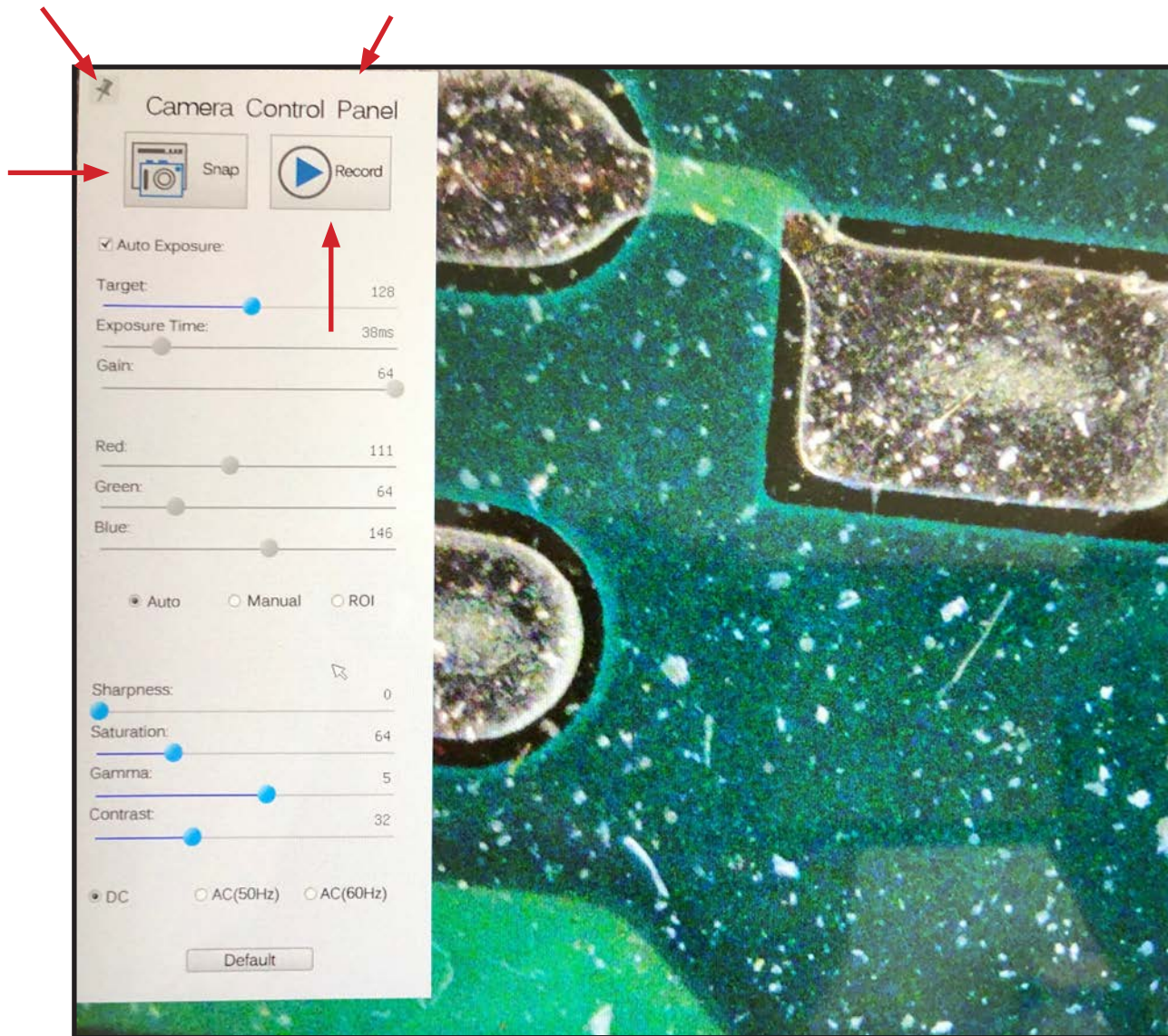


- To configure your computer's IP start by designating the Internet Protocol Version 4 (TCP/IPv4) settings page's IP address on the PC with similar configuration as shown to the left.

- After the camera and computer configurations are completed, the camera is ready to stream live video to anyone connected to the network.

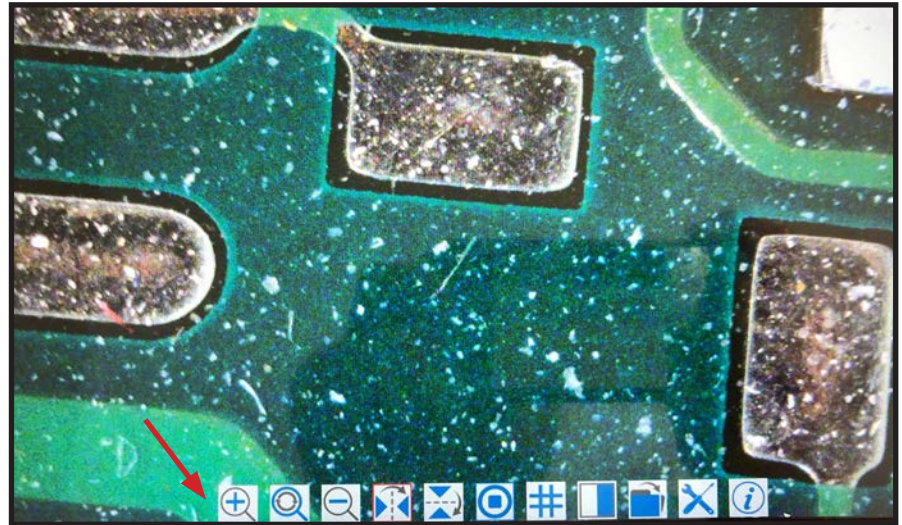
Camera Control Panel

- Hover the mouse cursor on the left hand side of the monitor.
- A control panel will appear.
- Here you can enhance the appearance of your image by adjusting the settings.
- To capture an image click the Snap button. The image will be saved directly to the SD card.
- To begin recording a live image, click the Record button. To stop the recording, click the Record button again.
- This tool bar can be pinned by clicking on the thumb tack.

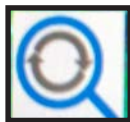


Working with the Tool Bars

- Hover the mouse cursor in the lower center portion of the monitor.
- A tool bar will appear with additional options.



- Zoom In- Select this button to zoom in on the image.



- Reset Zoom- Select this button to reset the zoom on the image back to the default zoom setting.



- Zoom Out- Select this button to zoom out on the image.



- Horizontal Flip- Select this button to horizontally flip the image.

Working with the Tool Bars



- Vertical Flip- Select this button to vertically flip the image.

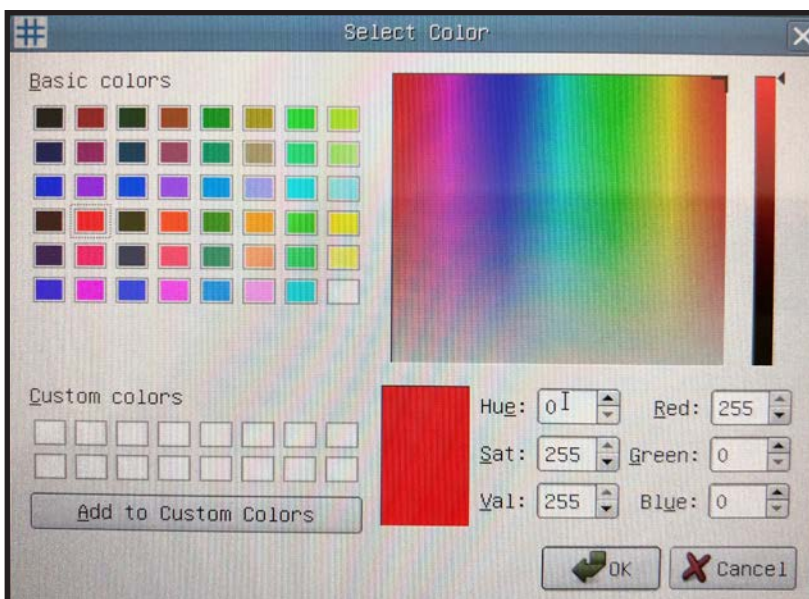
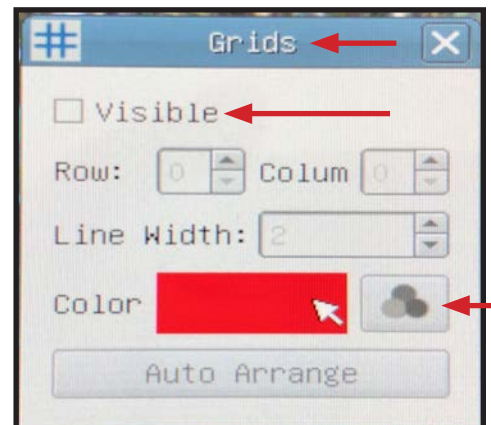


- Freeze / Resume- Select this button to freeze or resume.



- Grids- Select this button to create a grip overlay on your live image.

- A grid box will appear with options to select the number of rows and columns.
- There is also an option to change the color of the grid lines. By selecting the "Color" button. A "Select Color" box will display allowing the grid color to be customized.
- To remove the grid overlay, uncheck the "Visible" box.



Working with the Tool Bars



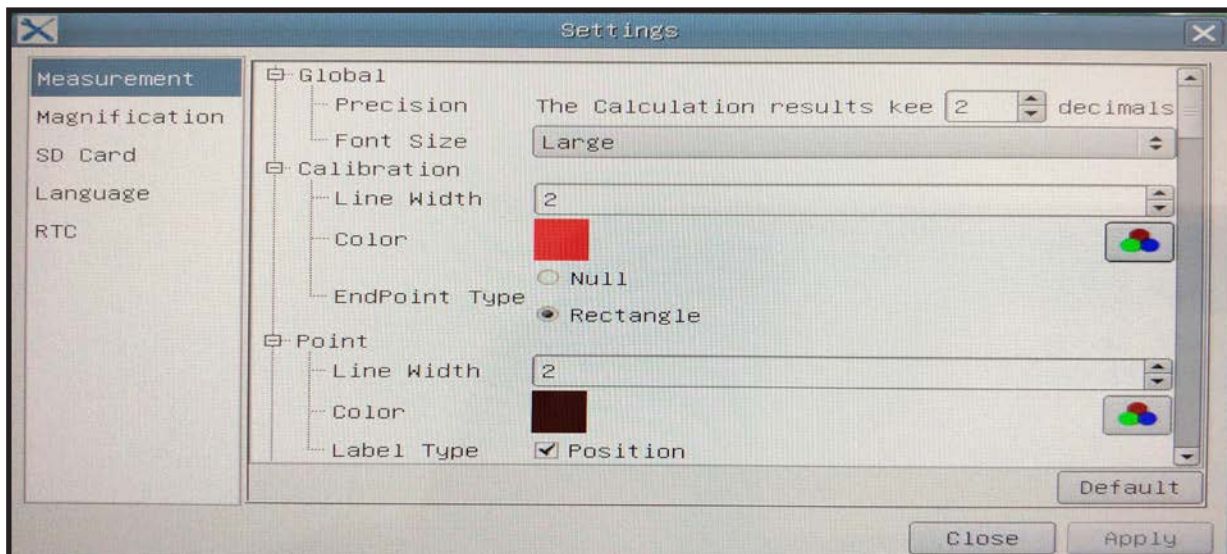
- Compare image- will split the monitor allowing for a side by side comparison of a chosen captured image and the live image.



- Browser- Allows access to the captured images saved to the SD card.



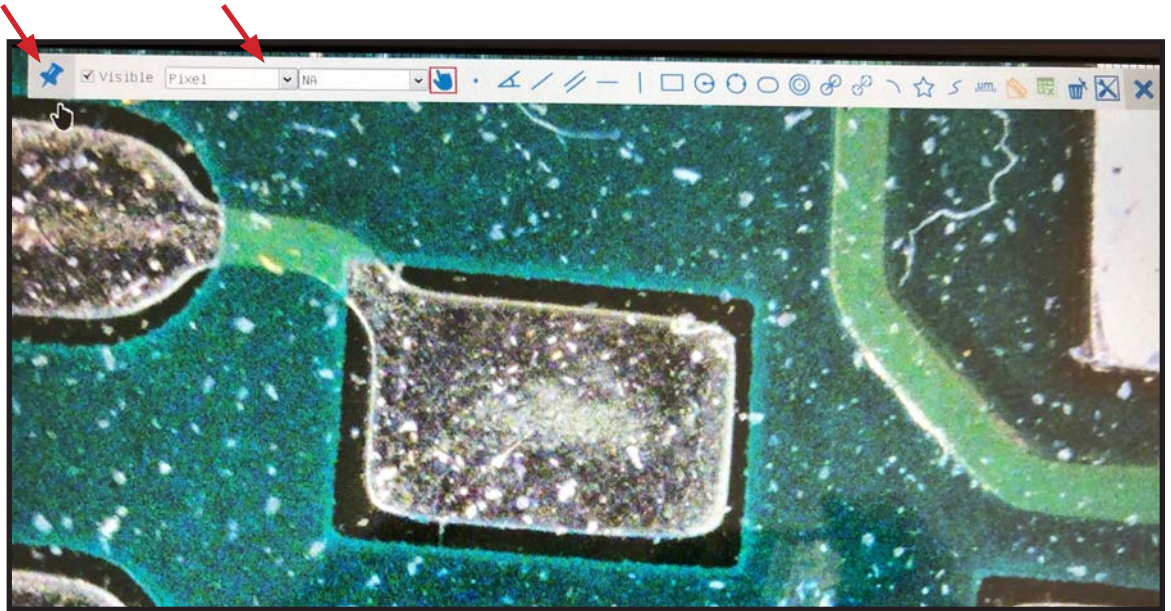
- Settings- Access camera and feature settings to customize preferences.



- Info- Advises the software version.

Working with the Tool Bars

- Hover the mouse cursor in the upper center portion of the monitor.
- A tool bar will appear with additional options.
- The tool bar can be pinned by clicking on the thumb tack.

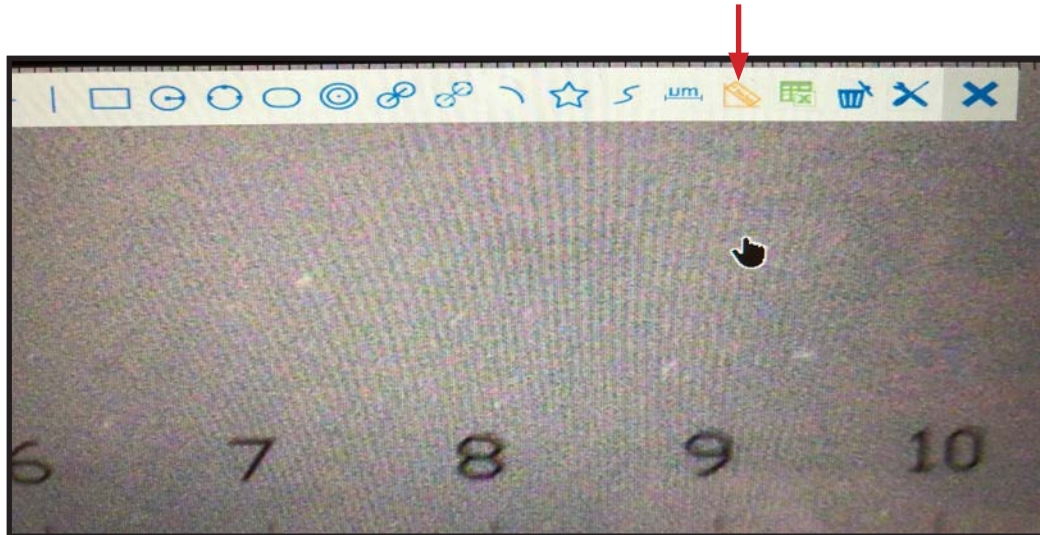


- Select the drop down arrow to select the unit of measure.

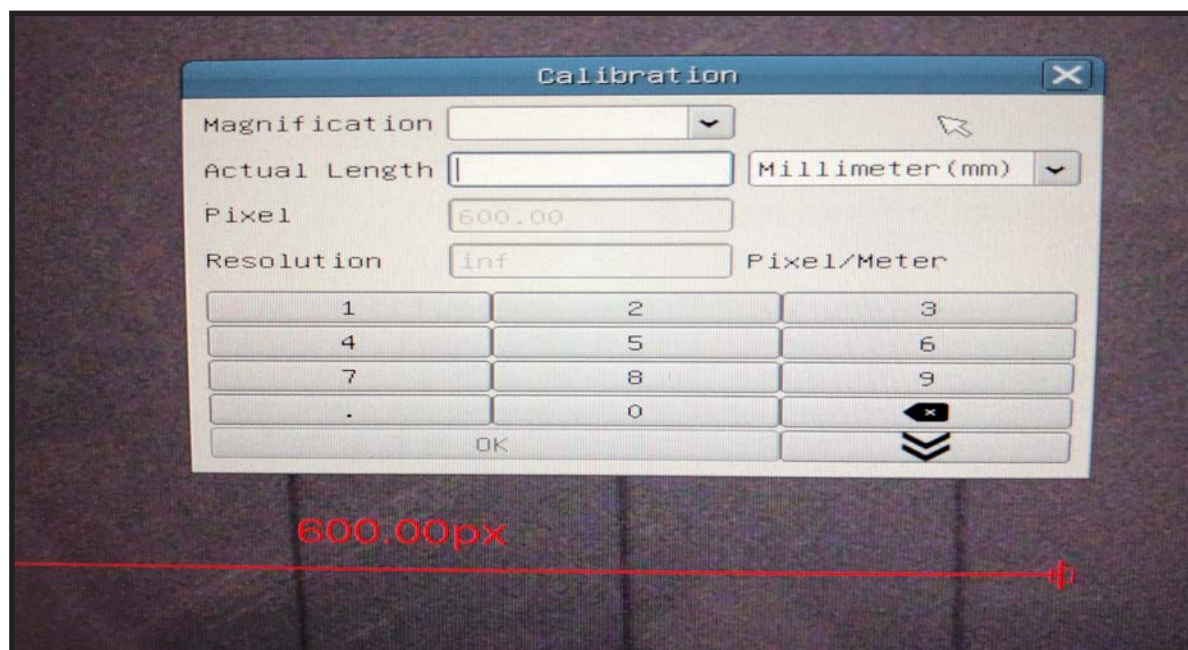
- This tool bar offers many options for different measurement methods.
- The microscope and camera must first be calibrated for accurate measurements.

Calibrating and Measuring

- Place a stage micrometer on the specimen stage and bring it into focus. Hover over the top tool bar and select the calibration icon.

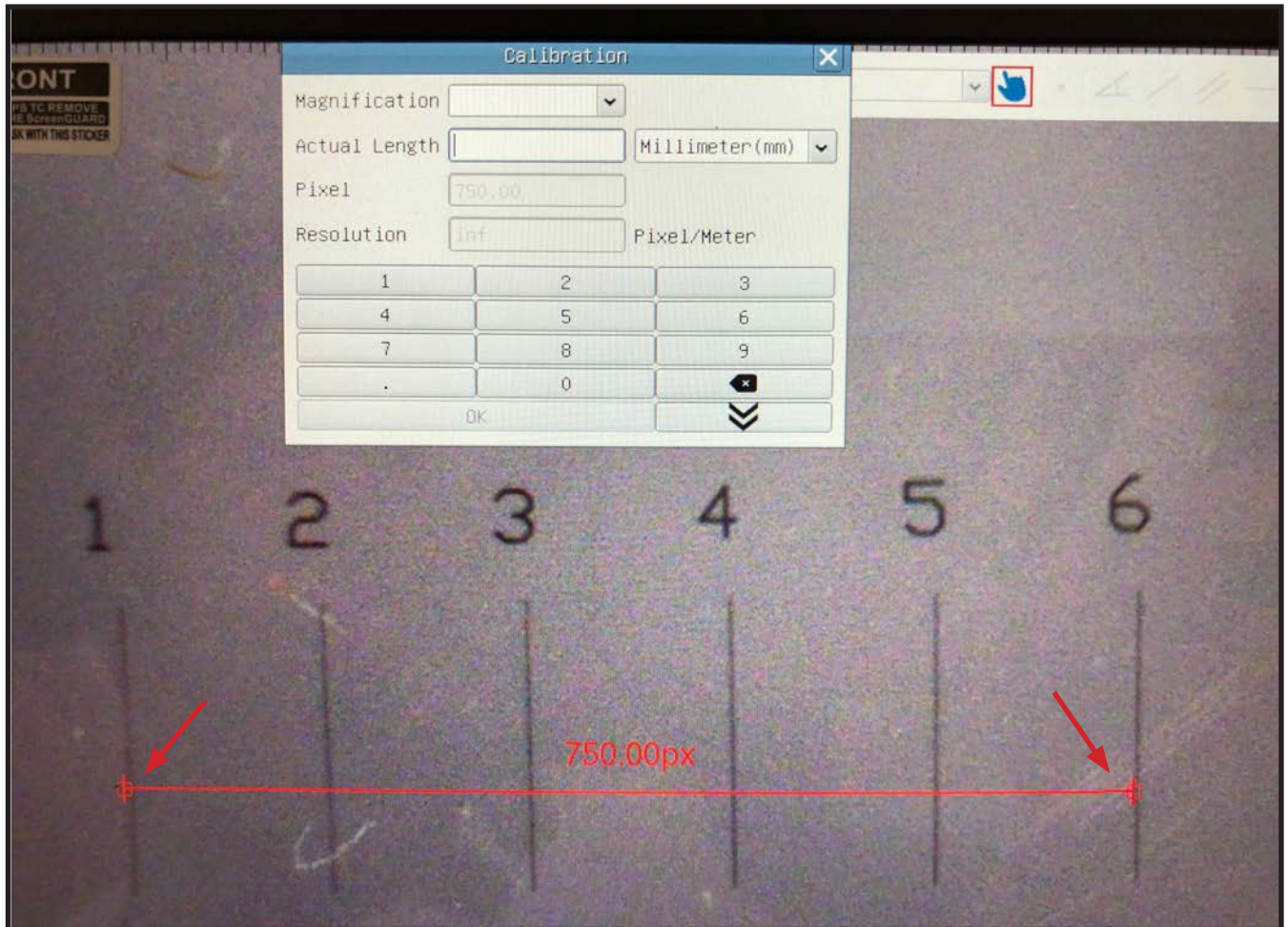


- A calibration box and a measurement line will appear.



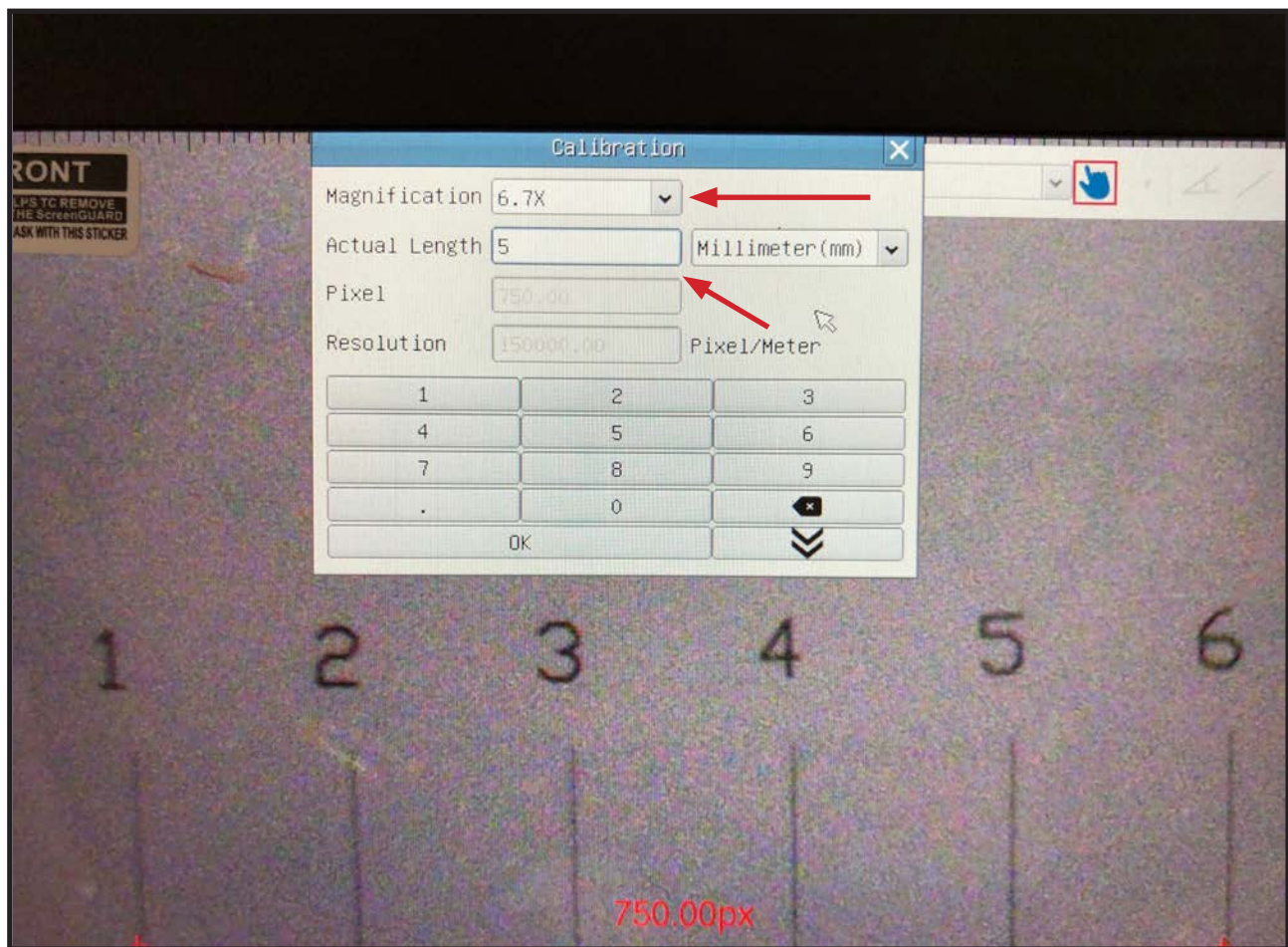
Calibrating and Measuring

- Use the mouse cursor to place the left side of the measurement line on the leading edge of the stage micrometer. In this case it is the 1 mm line.
- Then move the right side of the measurement line to the inside edge of the furthest visible line. In this case it is the 6 mm line.



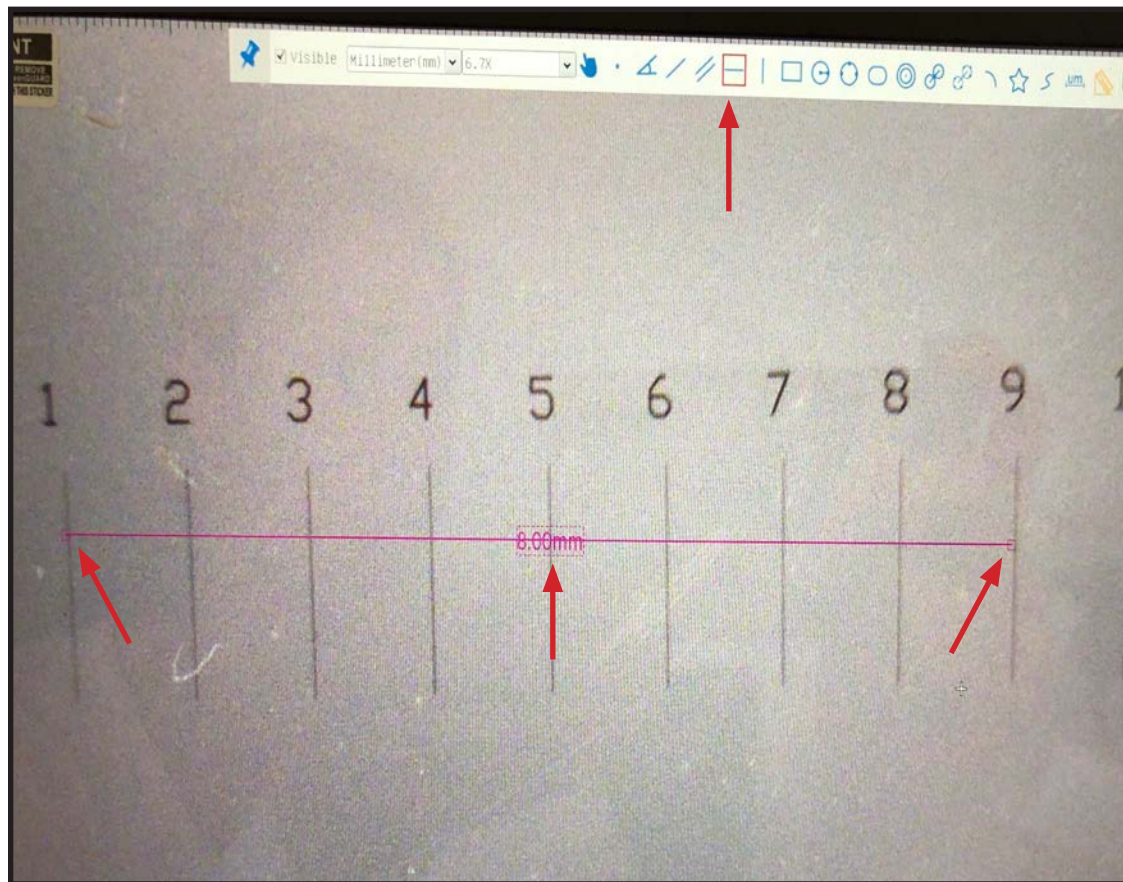
Calibrating and Measuring

- Input the total magnification by using the drop down box or the mouse to select the magnification with the numbers provided in the keypad.
- In this example the total magnification is 6.7x (10x eyepieces with .67x detent on the stereo microscope)
- Next input the actual length which appears above the measurement line. In this example it is 5 mm.
- Click OK and the calibration is complete.



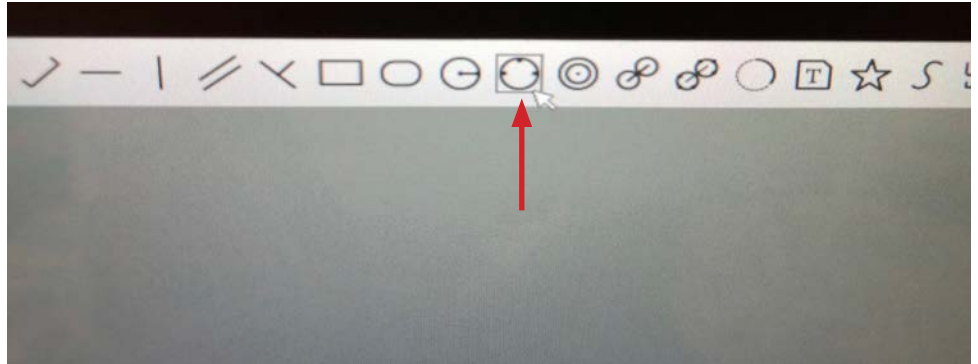
Calibrating and Measuring

- Test the calibration by selecting the horizontal line option from the top tool bar.
- Using the cross-hair cursor that appears, click on the leading edge of the stage micrometer line.
- Then move the measurement line to the inside edge of a stage micrometer line.
- The measurement of the line will appear in the unit of measurement that was initially selected when the calibration was performed.
- With the calibration set up and tested, the system is ready to perform measurements using the various methods found on the tool bar.

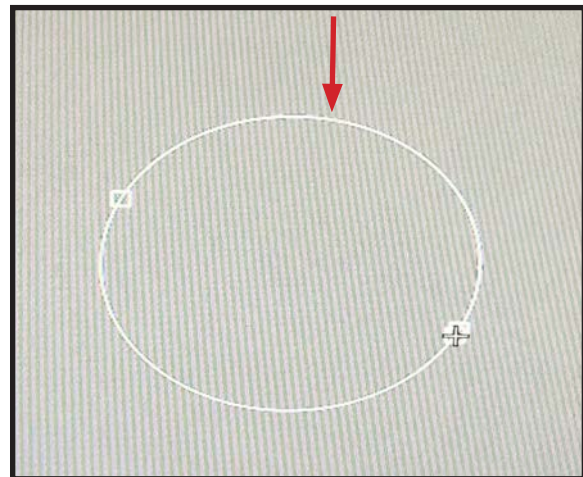
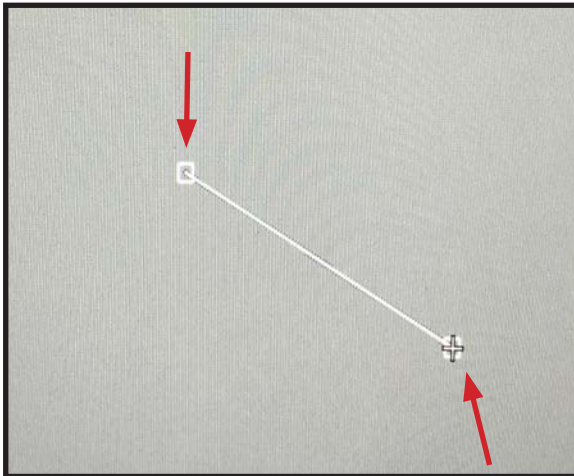


Measuring with Three Point Circle

- To use the three point circle measuring feature, click the three point circle measuring icon on the tool bar along the top of the monitor. A cross-hair will appear as your cursor.

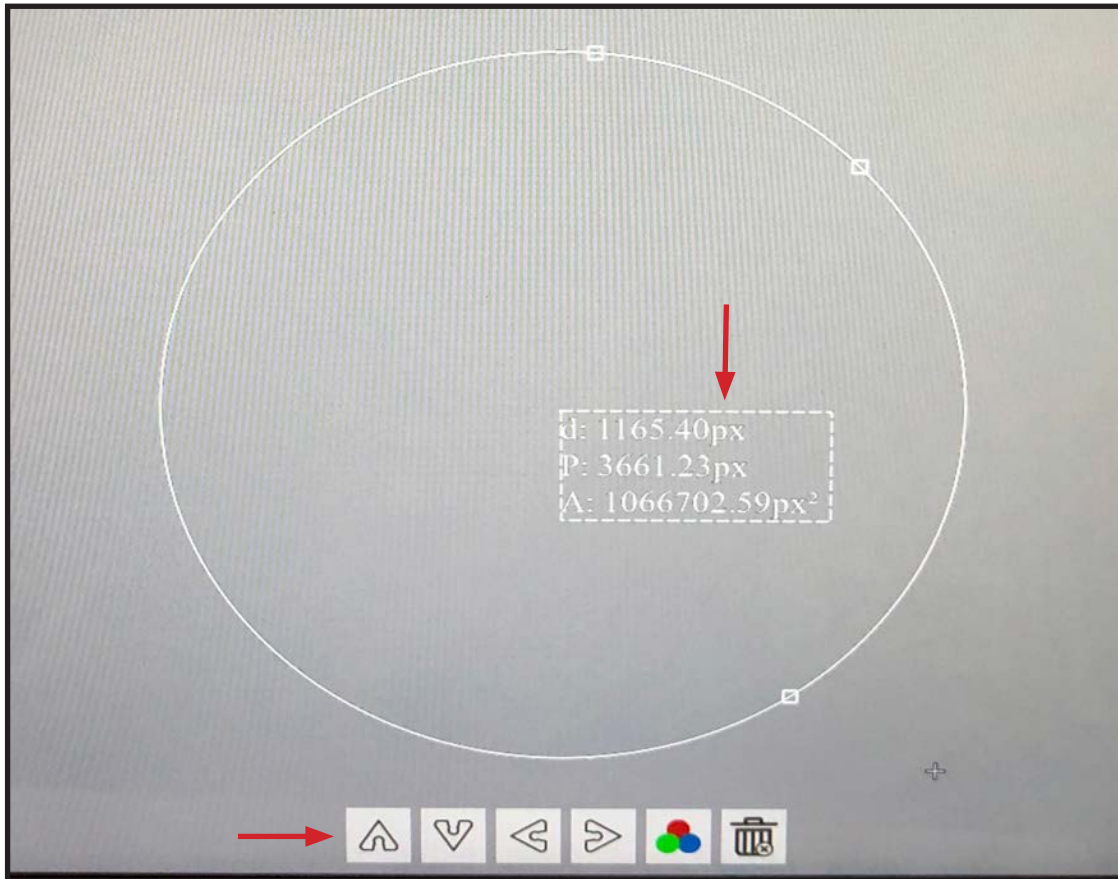


- Begin your measurement by clicking on the point you want your circle to begin. A line will appear.
- Drag your cursor to the next point and click anchoring your second measurement point.
- A circle will appear once the second point has been anchored.



Measuring with Three Point Circle

- Move the cursor and click to anchor the third and final measurement point.
- A three point circle will be shown.
- The measurements of the circle will appear in a text box in the center of the circle.



- Use the tool bar below the circle to move the circle up, down, left or right.
- The line color of the circle can be changed by selecting the icon with colored circles.
- Select the trash can icon to delete the circle.

Quick Trouble Shooting Guide

Problem	Solution
No live image displayed	Beam splitter is not in the proper setting. Check the beam splitter setting.
Live image is dark	Adjust the illumination on the microscope. Use the white balance option on the control panel.
Live image is upside down or backwards	Use the Rotate and Flip features on the tool bar.
Dust or dirt is visible in the live image.	Clean the sample Clean the objective Clean the eyepieces Clean the C-mount Clean the lens on the camera