

# SCIENSCOPE

Smart Cam, CC-Smart-Cam, and Smart Cam Packages

Installation and Quick Start Operating Instructions

12/12/2013



*FRONT VIEW*



*BACK VIEW*



*TYPICAL PACKAGE*

# Installation



1.

- Assemble video coupler to the zoom body finger tight.
- Attach doughnut to either (zoom body or video coupler)

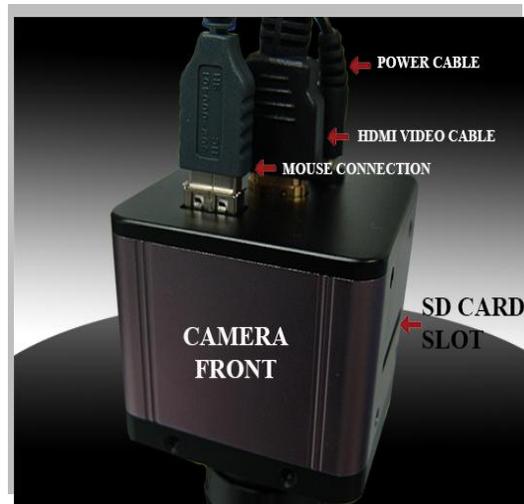


2.

- Attach smart camera to video coupler.
- ( \*Optional ) Attach large field view lens. ( for low accuracy measurement only )



- Insert micro zoom lens with the adapter ring into the E - arm.
- Rotate zoom Lens body so that the “Scienscope MZ7” label and zoom setting index mark face forward. Tighten clamp screw on E – arm.
- Loosen video coupler and orient camera So that the mouse connection faces front and the SD card slot icon is on the right. Tighten video coupler on zoom body.
- Attach adjustable ring light.





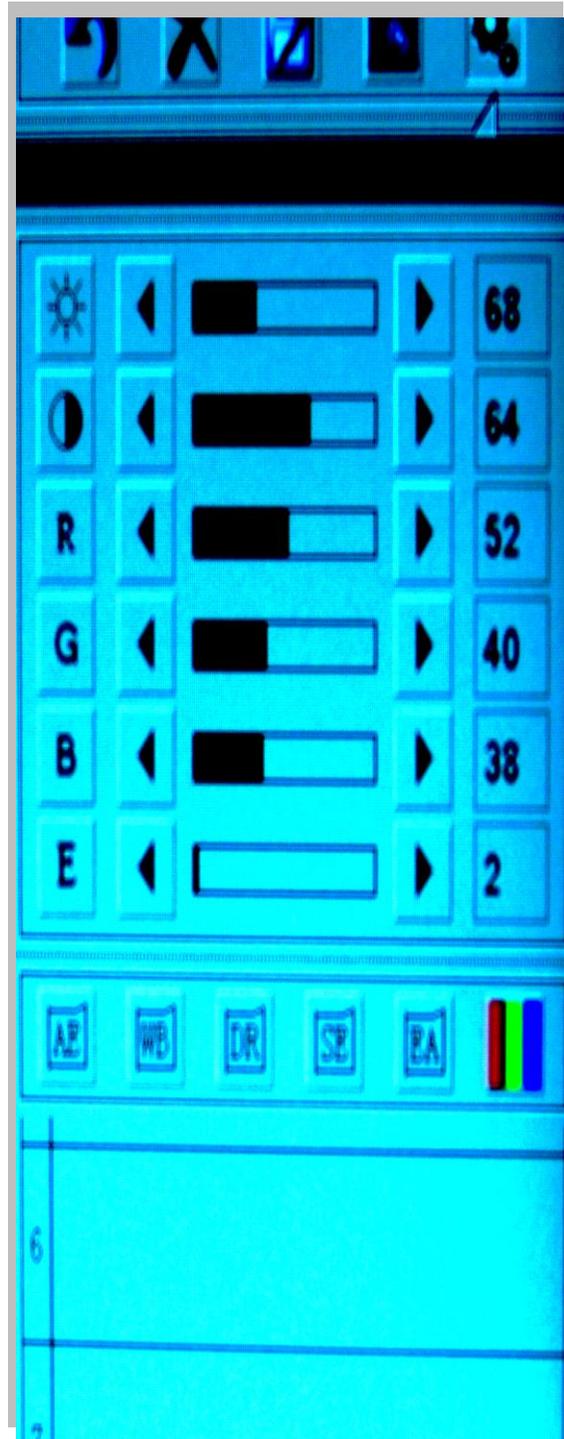
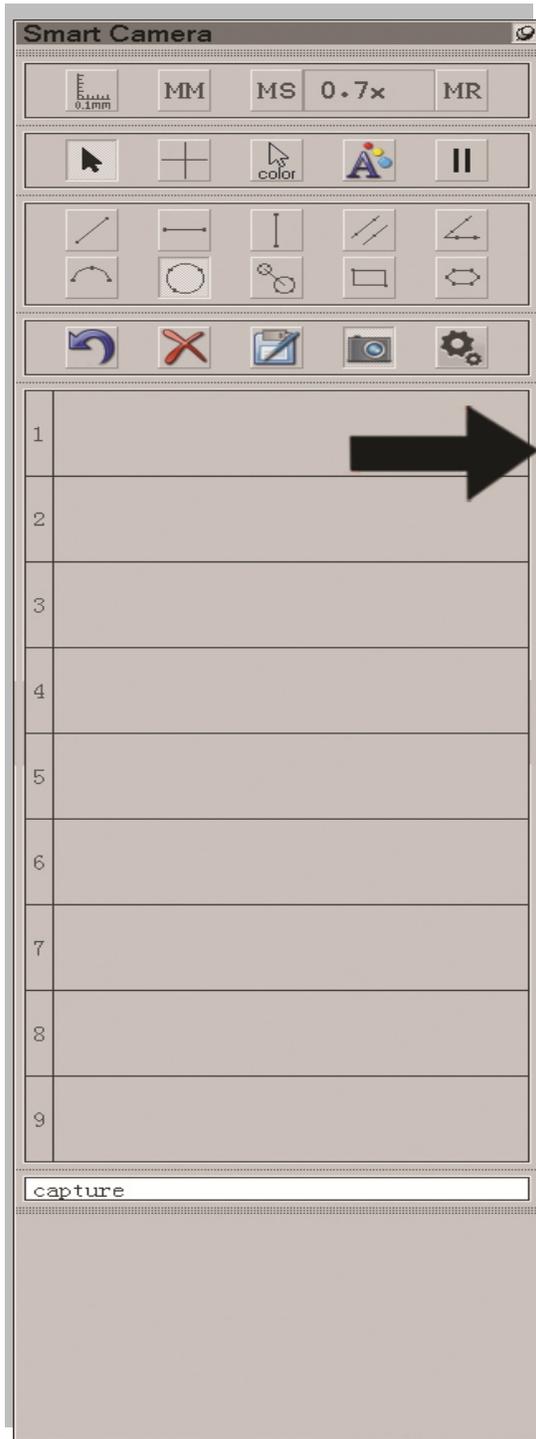
➤ Complete optical lens Assembly.

4.

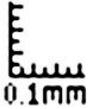
5. Parts and accessories may vary.
6. Unpack and set up Monitor.
7. Connect the provided power supply to the wall outlet.
8. Connect HDMI Cable to **CC - Smart - Camera**.
9. Plug in camera power supply.
10. Connect HDMI cable to monitor.
11. Connect ring light cable to light source output.
12. Unpack and connect usb mouse to **CC - Smart – Camera**.

# Operation

## Toolbar sidebar layout



## Icon Function Description



At the top left of the toolbar sidebar is the icon to enter calibration mode, and the calibration standard size selection, 0.1 mm and 1 mm. Left click for selection, repeat to cycle between the two. **The icon showing is active.** Then, proceed with the calibration -- See Image Calibration in a later section.

# MM

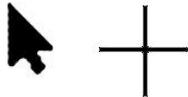
To the right is the unit selection, MM or Inch. Left click for selection, repeat to cycle between the two. **The icon showing is active.**

# MS

Further to the right, is the Memory Save Calibration File selection. Left click to activate after image calibration. Select one of the six windows, and use the key pad to enter a label. You may want to use the zoom lens detent number, click enter to complete. See Image Calibration in a later section.

# MR

On the far right, is the Memory Recall for the Image Calibration. Left click to pull down the file selection. Left click on the file to match the zoom magnification of the lens.



Next below on the left, are two cursor selections: Arrow Head or Cross Hair. Again, select by left click.



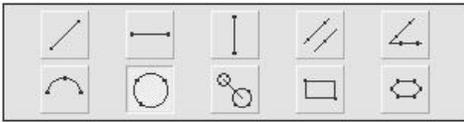
Next to the right is the Cursor color selection. Left click to cycle through the options.



And, next to that on the right is the color selections of the measured feature outline and feature size annotation on the screen. Left click to cycle through the options.



Next, on the far right, is icon for freeze frame or live image. Left click to cycle through freeze or live.



Next below, is the selection of the feature type to be measured. Left click to select, wait a few seconds to process.



select.

Next below, is the blue icon to delete the last measurement. Left click to



Next to the right, left clicking on the big 'X' will delete all results.



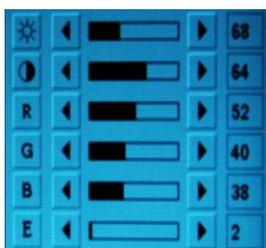
To the right again, left click on the clip board and pen to down load the measured results to the SD card.



Next to that, on the right, left click to capture an image to the SD card.



On the far right, the gear icon opens the settings window.



- Exposure
- Contrast
- Color balance: Red, Green, Blue.
- Edge Indication sensitivity: a lower number is less sensitive.

- In the next row below:



- AE is Auto Exposure. Left click to auto set the exposure.
- WB is White Balance. Left click to auto set the white balance.
- DR is Dynamic range. Left click to cycle through the 4 selections.
- SE is Sharpness Exposure. Left click to cycle through the 4 selections.
- EA/EM is Edge Detection Mode. Left click to cycle through Auto or Manual.  
**Click to select the mode option which is *showing*. The one showing is not the active mode.**
- The last icon on the right is Color or Black and White Selection. **Click to select the mode option which is *showing*. The one showing is not the active mode.**

- The 9 spaces below are for the measured results.

1
2
3
4
5
6
7
8
9

capture

- Immediately below the measured results, is a definition window. It will indicate when an SD memory card is inserted and describe the icon that is being highlighted by the cursor.



- On the bottom of the Tool Side bar, is a magnifying window. It enlarges the area around the cursor.

### To Measure

- The system initializes in Metric units. If you wish to use Inch units, left click on Unit Icon to select Inch. Wait a few seconds after changing units for the system to process.
- Set the lens at your desired magnification.
- Click on MR and choose the corresponding magnification calibration file, by a left click.
- Choose the feature type to measure, line, thickness, circle, angel, etc, and left click on it.
- Select Edge Detection Mode. Go to Settings and the EA/EM icon. Left click to switch between Auto or Manual. Left clicking will select the mode which is showing. The one showing is not the active mode.
- Measure the feature by placing the cross hair on (in manual mode) or near (in auto mode) the desired points and left clicking. Follow the points of the feature type diagram. Use those exact points: 2 for a line, 3 for thickness and circle, and 4 for an angel, etc. For an angel, click 2 points from the apex out on both legs.
- The measured result will appear on the feature image near where the first point was taken and in the results file.
- Note: Up to nine results will show on the results file before they start to roll over.
- Results may be captured on the image feature by capturing the image or by downloading the results file with the note book and pen icon.

### To Calibrate

- Calibrate using metric standards only, with 0.1 mm or 1.0 mm circular standard only. When finished, the camera will be calibrated for both metric and English units.
- Place the selected standard under the lens and select the desired magnification. Center the image.
- Left click on the standard size selected, 0.1 mm or 1.0 mm.
- Hint: **Do not click on it unless you want to calibrate. Once you have clicked on it, the existing calibration is erased and you must do another.**
- Left click on the edge of the standard in 3 equally spaced places.
- To save the calibration for future use at the same lens magnification, left click on MS and select in the pull down window where you want to store the calibration. Enter the address label for the calibration with the key pad and click enter. Hint: you may want to use the zoom lens detent number for the calibration address.