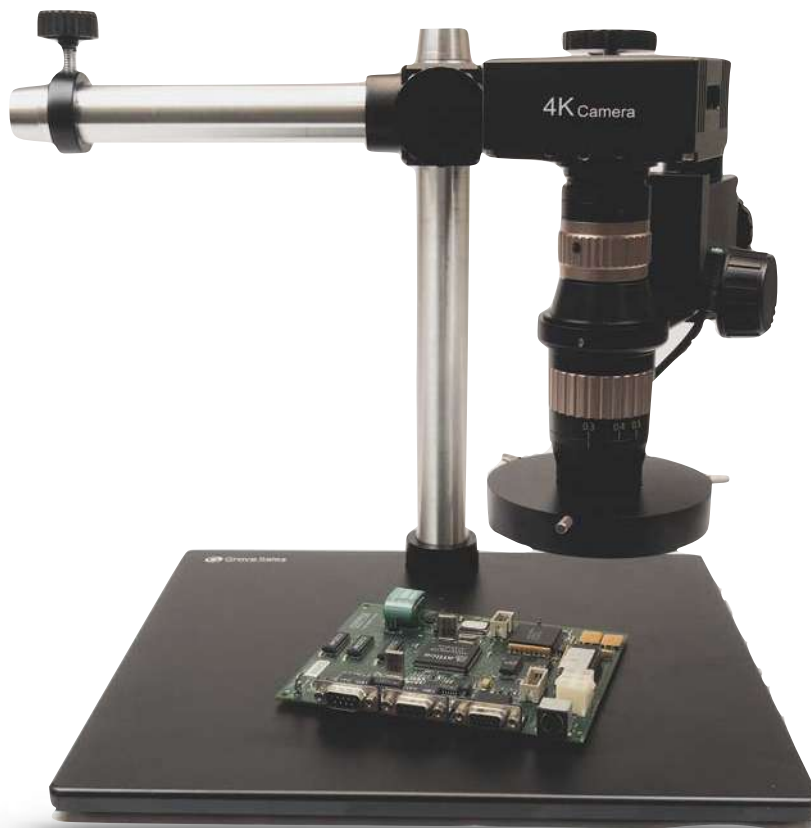# Focus4K Boom-arm Stand Instructions

Part

Part B

Part C

Part D

Part H

Part G

Part F

STEP 1

Undo Hex Screws (x3) from part B and locate on to part A

STEP 2

Attach Part A and Part B together using Hex screws (x3)

STEP 3

Slot Part C in to Part E as shown below

STEP 4

Attach Part F on to Part C

STEP 5

Slot Part H in to Part C and secure with Part G

STEP 6

Place Part C assembly on to Part B assembly

STEP 7

Unscrew bottom cap on Part H

STEP 8

Slide Part D on to Part H and reverse Step 7

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STEP 9

Secure Part D to Part H with Part G

STEP 10

Insert Lens in to Part D and secure with 3x Hex screws

STEP 11

Attach Focus4K camera to top of lens

STEP 12
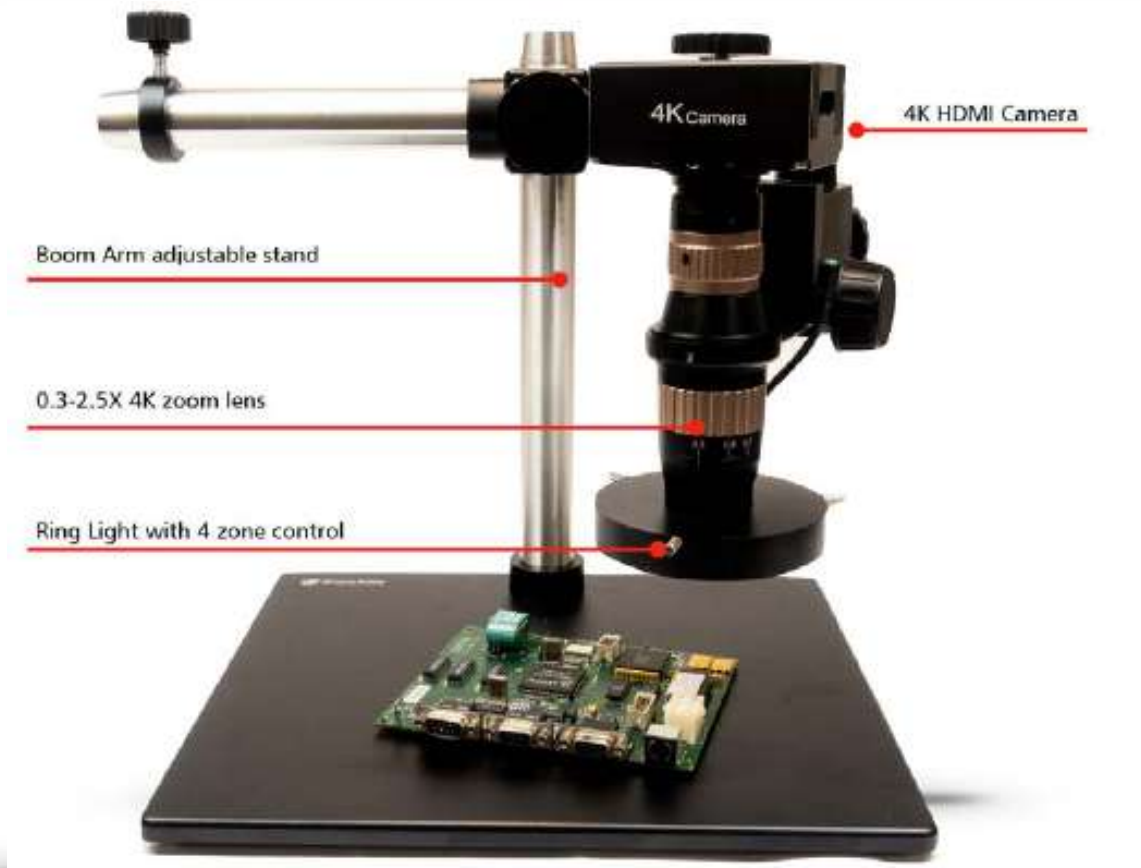
Attach LED Lamp via locating holes on lens

STEP 13

Connect the HDMI cable from 4K monitor,USB Storage, USB mouse and 12v power adapter

Focus4K Optional Objective lens

The additional lenses grant the Focus4K zoom lens to be able to increase its working distance. They are available in 0.3x, 0.4x, 0.5x, 0.6x, 0.75x 1.5x, and 2.0x

Auxiliary Objective	Working distance	Magnification	FOV/mm
0.3X	270mm	0.09-0.75X	78.9*44.4-9.5*5.3
0.5X	160mm	0.15-1.25X	47.4*26.6-5.7*3.2
0.6X	130mm	0.18-1.5X	39.5*22.2-4.7*2.7
1.5X	50mm	0.45-3.75X	15.8*8.9-1.9*1.1
2.0X	39mm	0.6-5.0X	11.8*6.7-1.4*0.8

Basic equipment set up

1 - Connect Focus 4K Digital microscope to compatible* monitor via HDMI cable.
    *Compatible monitor is required to have a out put resolution of 3840*2160

2 - Connect the 12V/3A power supply to the Focus 4K Digital microscope.

3 - Connect the supplied USB Mouse and USB Memory stick to Focus 4K Digital microscope.
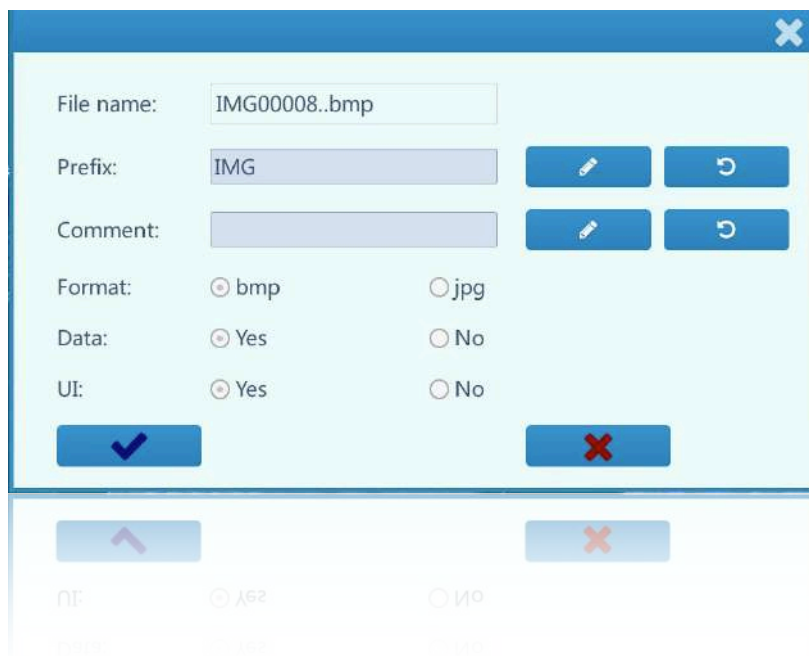
Software functions

Camera function menu

FILE

File - The file function is used to setting file parameters of the cameras file management system. Options for file name, Prefix, comments, image format and data to be saved.

Primitive import - The Primitive import function is used for importing silk screen graphics in to the FOCUS 4K Digital microscope.

Primitive Export - The Primitive export function is used to export silk screen graphics from the FOCUS 4K Digital microscope.

Create Excel - The Create Excel function is used to export drawing measurement data via USB memory stick in Excel compatible file format.

Camera

Systems - Options for setting the size of measurement data and text font (small, medium and large)

Camera setting - The camera settings function are used to fine tune the fundamentals of the camera. Brightness, contrast, colour, saturation, HDR sharpen, AE and AWB.

Brightness - Adjusts the brightness of the image.
Contrast - Adjusts the contrast of the image.
**Red/Blue/Green -** Adjusts the colour components of the image.
Saturation - Adjusts the colour saturation of the image.
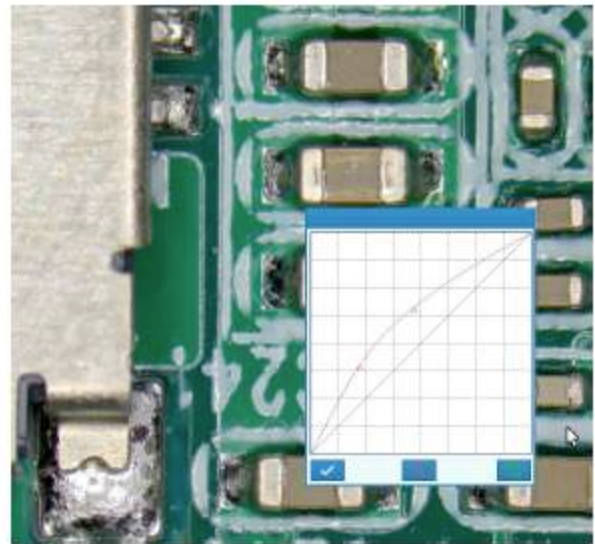**HDR -** Adjusts the colour gammer of the image.
Sharpen - Adjusts the Sharpness of the image digitally.

Customize HDR

The function of this option is to adjust the brightness of the image via gammer with more control as to suppress strong light and glare. See example below.
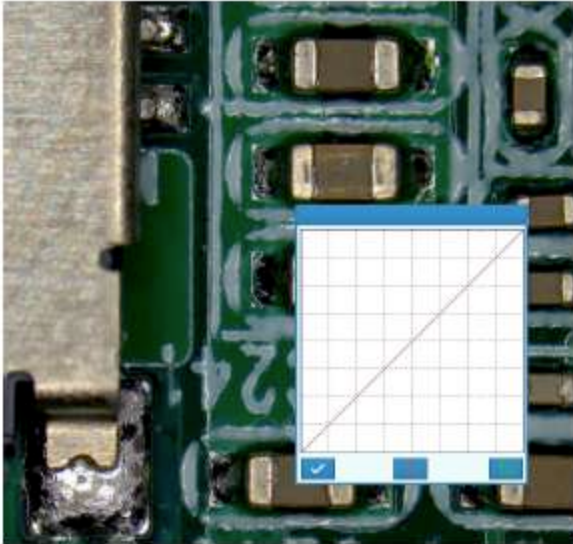
Custom HDR default parameters

Custom HDR adjusted parameters

Factory reset - The factory reset button is used to completely reset the digital microscope back to the standard out of the box settings.

Browse

The Browse tab allows the viewing and deletion of saved images that are on the cameras external USB memory stick

Camera icon

This is the photo acquisition icon, When clicked the Focus 4K will automatically take a 4K snapshot of what is being displayed on the screen and save the image to the external USB Memory stick.
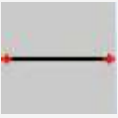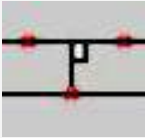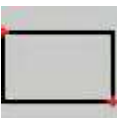
"M" icon

This icon is for the manual point tracking mode. In this mode the software on the Focus 4K will sample the the current position and make corresponding measurement calculation.

"A" icon

This icon enables the automatic point fetching mode. In this mode the software of the Focus 4K will correct the point fetching position of the the mouse through calculation with in a certain range, the corrected data will be measured and calculated accordingly.
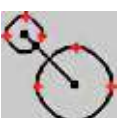
Measurement functions

	Mark point		Angle measurement
	Measurement of horizontal line segment		Measurement of distance of horizontal and parallel lines
	Measurements of vertical line segments		Measurements of the distance between vertical parallel lines
	Measurements of any angle line segment		Measurement of the distance between parallel lines at any angle
	Measurement of rectangles		Measurement for polygon shapes Software will automatically complete drawing
	Then sector measure adopts the method of 3 point calibration		The measurements of circle adopts the method of 3 point circle determination
	Center distance measurment		Measurement of concentric circles
	Text mark		

Calibrating the FOCUS4K

Step 1 : Place the calibration board (DC3-002R) under the lens of the FOCUS4K

Step 2 : Turn the magnification ring to 2.5x, Adjust the hight of the FOCUS4K so the image is displayed clearly.

Step 3 : Turn the magnification ring to 0.3x and adjust the CCD fine tune ring until picture is clear

Step 4 : Adjust the LED light rings brightness till the calibration board is adequately lit

Step 5 : Select "Circle Auto" on the calibrate entity box and default on calibration template. (Custom is used when a non standard calibration tool is used)

Step 6 : On the calibration board select an appropriate size circle and click the drop down menu under "default" to match the size for example "2.54mm"

Step 7 : Click on the "+" icon at the lower right of the box. Click the edge of the chosen circle for example "2.54mm" then 2 other points around the circle. To increase accuracy enable edge tracking mode by clicking the "A" icon on the Icon bar.

Step 8 : Input a name for the calibration ie " 2.54mm at 0.3x "

Step 9 : Calibration finished

Note : To delete calibration data select the profile you wish to delete and press the "-" button on the lower right corner

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