16 Megapixel HDMI Microscope Camera

Instruction Manual

⚠ IMPORTANT ⚠

1. As the microscope camera is a precision instrument, always handle it with care, avoiding impact or abrupt movement during transporation. Do not shake the package.

2. Do not place the microscope camera in direct sunlight or in high heat. Keap it indoors in adry and clean place with temperateures between 32-100 degrees F (0-40 degrees C), and in maximum relative humidity of 85%.

3. Avoid touching the lenses on the camera to avoid oil and dirt from fingers or fingerprints getting onto your camera lens, which may obstruct your view.

4. Before turning the power on, make sure that the power supply voltage is consistent with the voltage of your microscope camera

5. Be sure that this instrument is not used adjacent to or stacked with other equipment (other than the components of this instrument or system) to avoid electromagnetic interference.

6. Electromagnetic interference may occur to this instrument when it is placed near equipment marked with the following symbol or other portable and mobile RF communications equipment such as cellular phones. If radio interference occurs, mitigation measures may be necessary, such asreorienting or relocating this instrument or shielding the location.

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1.   Getting Started

1.1 Check the packing list to ensure that you're received all items: -
  - 1x HD1080(A) Camera Body
  - 1x HDMI Cable
  - 1x Power Supply

👉 *NOTE*

The HD1080 series models do not include an adapter in the package. The camera is designed to fit on a male C-mount port (externally threaded, 25.4mm external diameter).

1.2. Remove the camera body from the box and remove the plastic protective covering the lens and sensor.

1.3 Mount your camera to your microscope. This may be different depending on what kind of mounting port your microscope has:
  - C-mount: Thread the camera body directly onto C-mount threads.
  - 23.2mm Inner Diameter: Adapter recommended (sold separately) or CPC/equivalent C-mount adapter

1.4 Connect the HDMI Cable to the back of the camera and to the monitor. Insert the micro SD Card (Use only Class 10 micro SD Card). Connect the given power supply to the power input socket of the camera at rear and power source.

1.5 LED Indicator at the rear of the camera will turn red when you switch on power source. Wait for 3-5 Seconds for camera to show image and indicator to turn orange.

2.   OPERATION

2.1 Once properly configured, turn on the microscope, open the trinocular port of your microscope, monitor, and camera using the appropriate on/off or I/O switches (the camera uses an on/off switch on the rear of the unit).

2.2 On screen, once all items are activated, an image as seen from the camera will appear on the monitor. It will likely be out of focus, and require refocusing on the microscope even if focused through the eyepieces prior to attaching the camera. This can be accomplished by refocusing the trinocular port if you have an adjustable port, or by adjusting the focus of the microscope manually.

👉 *NOTE*

Because the camera has a different focal length than the eyepieces, unless you have an adjustable trinocular port, you will likely not have eyepieces and the camera in focus at the same time. Focusing the camera is done while viewing the image on the screen, not by using the eyepieces.

If image is appearing dark or too bright after switching on the microscope light, press AE button on the rear of the camera or on remote. It is Auto Exposure button which adjust camera according to light source intensity.

2.3 If ready to capture an image or record a video, please ensure that an SD card with sufficient storage space is installed into the SD card slot, and you may click the capture button to capture a still image, or the record button to begin recording a video. To stop recording, simply click the button again, and the process will stop.

2.4 If unsatisfied with the image's color,brightness,contrast etc., you may need to make various adjustments to the image as found in the menu. Please see the following section for an explanation of all software functions.

3.   ON-CAMERA BUTTONS

3.1 | ON/OFF ❄ | - Long Press :-   Freeze (Pause the live image)
- Short Press :-   Switch ON / Switch OFF the camera

3.2 | MENU | - Short Press :-   Open the menu

3.3 | UP 🔍 | - Long Press :-   Digital Zoom In
- Short Press :-   Move Up when menu is open

3.4 | DOWN 🔍 | - Long Press :-   Digital Zoom Out
- Short Press :-   Move Down when menu is open

3.5 | OK 📷 🎥 | - Short Press :-   Video Recording
- Short Press :-   Enter when menu is open

3.6 | MODEL / AE | - Long Press :-   Auto-Exposure ON / OFF
- Short Press :-   Video and image files check

4   MAIN FUNCTIONS USAGE

4.1   **AWB** :- Auto White Balance function is used to adjust the colors according to light and exposure. It caliberates color to provide true accurate colors.

Camera has 2 options for white balance :-
Automatic :- It adjust the white balance automatically when scene changes.
One push :- In this you can perform white balance whenever it is required you can use this feature by pushing AWB in front of white wall.
If AWB ON is displayed by pressing AWB button on remote that means White Balance is set to Automatic.

☞ **NOTE :** *It is recommended to keep the AWB to automatic always.*

4.2   AE :- Auto Exposure is used to optimize the brightness of the camera according to the light intensity of surrounding or microscope.

Camera has 2 options for auto exposure :-
Automatic :- It adjust the exposure automatically when light intensity change.
One push :- In this you can set exposure to particular light intensity and it will not change automatically.
If AE ON is displayed by pressing AE button on camera or remote that means Exposure is set to Automatic.

☞ **NOTE :** *It is recommended to keep the AE to automatic always.*

☞ **NOTE :** *When using Remote Control for adjustment, when menu is opened " RIGHT " Button act as ENTER / OK Button and " MENU " Button act as RETURN / BACK Button.*

5   ON-REMOTE BUTTONS

Icon	Function	Icon	Function	Icon	Function
⊕	Zoom in	▲	Up	⊖	Zoom out
◀	Left	MUNU	NENU / RETURN / EXIT	▶	Right / ENTER / OK
Mirror	Mirror	▼	Down	AE	AE ON/OFF
Flip	Flip	+	Center cross	AWB	AWB ON/OFF
Mono	Mono	❄	Frozen	▶ǁ	Play/pause
Photograph	Photograph	Record	Record	PAlayback	PAlayback

NOTE : *When using Remote Control for adjustment, when menu is opened " RIGHT " Button act as ENTER / OK Button and " MENU " Button act as RETURN / BACK Button.*

5   MAINTANENCE & PRECAUTIONS

5.1   All glass surfaces must be kept clean. Fine dust on the optical surface should be blown off using a can of compressed air or gently wiped off with a soft lens paper tissue (kimwipe)/optical cleaning cloth and optical cleaner (such as Sparkle brand optical cleaner).

5.2   Carefully wipe off oil or fingerprints on the lens surfaces using tissue moistened with a small amount of lens cleaner (we recommend Sparkle brand optical cleaner).

5.3   Do not use Sparkle to clean other elements of the camera (such as the body or the stage). Use a neutral detergent on any plastic or painted surfaces.

5.4   Do not assemble or disassemble the microscope camera's electrical components yourself without advisement from one of our technicians. Doing so will void your warranty, unless under advisement in writing (email) by one of our technicians to do so.

5.5   After use, cover the microscope camera with a dust cover or bag to prevent dust from settling on the optical elements, or store in a storage container.

5.6   Keep your ESC camera in a dry, clean location in order to prevent rust or other damage.

6   TECHNICAL SPECIFICATIONS

Sensor: SONY HD CMOS
Sensor Size: 1/2.3 inch
Pixel Size: 2.2µm
Preview Resolution: 1920 x 1080
Still Capture Resolution: 4608 x 3456
Video Capture Resolution: 1920 x 1080
Video Framerate: 30fps SD Card, 30fps USB, 30fps HDMI
Recording Media: SD Card (4G)
Exposure Time: 1/1000 - 10s
Exposure Modes: Automatic, Manual
Settings: Gain, Gamma, Saturation, Contrast
White Balance: Automatic,Manual
Interfaces: USB 2.0, HDMI
Software: AMCAP
Compatible Operating Systems: Win XP/7/8/10 (32/64bit)
Optical Port: Standard C-mount (aluminum)
Power Supply: DC 12V 2A
Operational Temperatures: 0 - 60°C
Storage Temperature: -20 - 70°C
Humidity Tolerance: 45% - 85%
Dimensions: 52 mm x 52 mm x 56 mm
Weight: 550 Grams

ESC

7   TROUBLESHOOT

Problem	Possible Reason	Remedy
Device does not work	Power Cable not connected.	Connect power cable.
Image not recording	Micro SD Card not insert	Insert SD Card
	Micro SD Card not supported or full	Format SD Card & Make sure SD Card is working properly
Image is too bright / too dark	Exposure is not set correctly	Press AE on the camera or on remote.
		Keep Exposure to Auto Keep Auto Exp. ON
	Brightness is incorrect	Change Bright. in menu
Image is not in focus through the camera while focused through eye-piece of microscope	The microscope is not properly focused	The camera and eyepieces typically have different focal lengths, so, to get both in focus, an adjustable trinocular port is necessary. If no adjustable trinocular port is present, adjust the microscope's focus while looking at the screen. If present, adjust the trinocular port until the camera is in focus while the eyepieces are focused, or as close as possible.
Incorrect color	White Balance Incorrect	Perform white balance
	Color Setting wrong	Adjust monitor or camera color setting.