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5317-AF110
FLEXIBLE ARM DIGITAL AUTO FOCUS
MICROSCOPE
(WITH DISPLAY)
OPERATION MANUAL

V1

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Attention

◆ The camera use only DC12V power supply;
   The display use only DC12V power supply.

◆ Before connecting power supply, please connect mouse to the camera.

◆ Under AF mode, the program will automatically adjust the focus to provide a clear image; Switching to "Click F" mode, it will lock the focus after the system performed auto focus on the required image; Even if the image is blurry, with focus being locked, it will not trigger auto focus again; When "MF" (Manual Focus) is set, the MF can be adjusted.

◆ If auto focus cannot operate under special circumstances (e.g. Smooth reflect surface). Move the focus frame to objects with details, change to "Click F" mode to perform one-off auto focus operation, or switch to "MF" mode for manual focus operation.

◆ When pressing "Capture" button to capture an image, the ⧗ icon will appear on screen and automatically saved to USB flash disk in JPG format.

◆ When pressing "Video" button to start recording, ·Rec will appear at the lower right hand corner of the camera screen. By pressing "Video" button again, video recording will be stopped and automatically saved to USB flash disk with H.264 format.

◆ After completing the capture/video recording operation, wait for a moment before removing the USB flash disk.

◆ When saving the image/video, the folder and files will be named according to date and time respectively.

◆ When correcting the lens back focus is required, select FBL (relocate sensor to back focus position), then adjust Mechanical Back Focus to obtain a clear image.

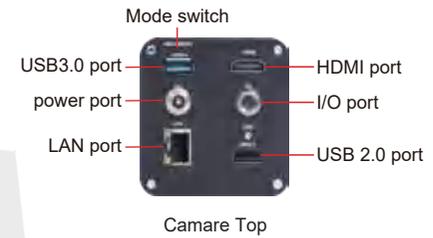◆ The hydraulic base can only be used after magnetic suction, otherwise the microscope cannot be fixed properly.

Structure

1 Name:

5317-AF110

1. High-definition screen: 13.3" LCD;
2. Camare: 1/2'' CMOS sensor, Pixel 2M;
3. Fine focus knob;
4. LED;
5. Zoom lens: 0.75X-5X;
6. Mouse;
7. Desktop clamp;

2 Camare:

Mode switch
USB3.0 port — — HDMI port
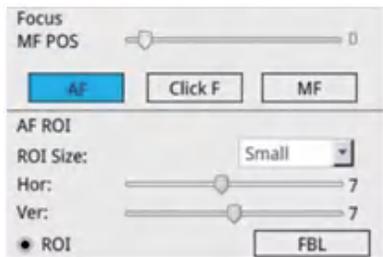power port — — I/O port
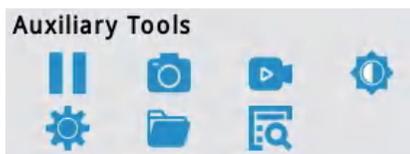LAN port — — USB 2.0 port

Camare Top

3 Software:

◆ U Disk Tips: When a U disk is inserted in the camera, the icon will light up and the photo and recording functions will work properly. The icon turns gray when the U disk is not connected.

◆ Click on the upper right corner of the menu to switch the language mode, available in simplified Chinese and English.

◆ Focus: There are AF, click F and MF.

◆ Focus Position: After clicking the manual focus, the mouse drags the "MF POS" to control the focus position, so that the image is clearly focused. After clicking one-click focus, the phase opportunity will automatically focus once, change the distance, and after these operations, the camera will no longer automatical-ly focus. After clicking on the autofocus, the phase enters the autofocus mode, change the distance, the multiplier of these operations after the camera can still autofocus itself.

◆ AF ROI: When the focus box is not checked, the camera defaults to global focus, which focuses the image in the entire screen. When checking the focus box, the camera can freely select the focus area, and the mouse can click or drag the "horizontal" and "vertical" pull strips to change the focus area. The focus area size has two "large" and "small" modes. Double-click on the focus box to set the focus color.Click the motor center, the camera defaults to the middle focus position, the focus value of 0.

◆ Auxiliary Tools

◆ Freeze： Click the "freeze" ❙❙ icon to freeze the current image interface, and the image window is static and unchanged to observe the measured object; after freezing, the icon becomes a frozen state ▷ , and click the icon again ▷ to return to the real-time display interface.

◆ Snap: Click the "Snap" 📷 icon. When the naming method in the photo setting is manual, enter the picture name to save. Click OK; then enter the picture name automatically; then the "Catch In" icon is displayed in the center of the picture. The icon disappears to indicate the completion of the picture. Pictures will be saved in jpg or bmp format to the camera's external storage-picture folder.

◆ Video: The video recording function is only available if the U disk is inserted. Click the "Video" 🎥 icon, enter the file name you want to save, click OK, and then start the recording. During the video recording, the red dot icon in the video is flashing in the lower right corner of the video 🎥 icon again, the interface prompt "video save", and then stop the recording automatically.
Note: Video and video is automatically saved in the "Video" folder of the U disk,The Format is the"mp4".The maximum size of a single video recording is about 4G, and it automatically stops the video recording beyond 4G.

◆ Automatic White Balance (AWB): After clicking the "AWB" ❊ icon, the camera will automatically white balance the picture, and then automatically return to manual white balance. This feature can also be set up in the Settings page.

◆ Open: When the U disk is not inserted, click the "Open" icon to 📁 pop up the camera's own storage interface. You can store a small number of photo images.After inserting the U disk, you can open the video file, and only support the video playback in mp4 format.Pictures are saved in external U Disk-Im-age-within the Manual/AUTO folder; Video is saved in the external U Disk-Video-Manual / AUTO folder (Manual is the manually named file storage path, and AUTO is the automatically named file storage path).After opening the picture, click the left and right page turning tool to browse the upper and lower pictures; click the black back arrow to exit the browsing interface.Double-click the video file to open the video with the return and pause/play function button.
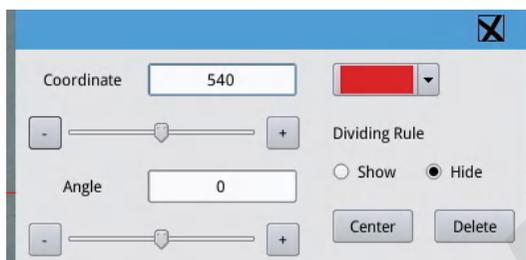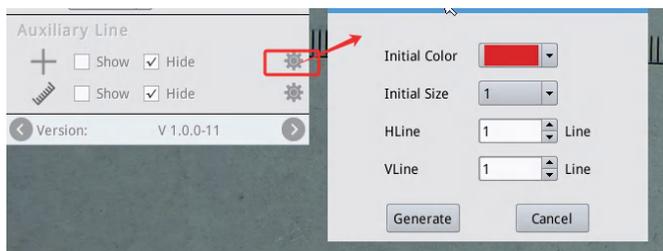
◆ Dynamic and static Compare (original "Comparison picture") function: right-click on the picture to select the dynamic and static contrast picture interface can pop up. The left side of the screen is the real-time video interface, and the right side is the selected picture. The real-time video streaming picture on the left and the static picture on the right can be clicked and dragged for convenient comparison.

◆ Data: Click the icon ▨ to enter the data display interface:
  1. Data pages can display up to eight data types, including: distance, perimeter, area, angle, radian, width, height, and radius. Data types can be changed in the main menu/settings/ edit.
  2. The measured element name cannot be customized. The default naming rule is: L starts with line segment distance class, R begins with circular class; and A starts with angle class.
  3. Click the Export data button in the lower left corner to export it.
    File data in csv format. Data units displayed in the bottom menu-Unit synchronization in the calibration menu area.A button option to close the page is located at the bottom of the page. The left and right arrow icon in the bottom right corner moves the page toward left /right. A long mouse press can also drag the data list to change the position. A data list can record up to 100 sets of data.

◆ Automatic Exposure(AE)：Click "AE" [AE] icon camera will be automatic exposure, click again to exit the automatic exposure into the manual exposure mode.This feature can also be set up in the Settings page.

◆ MeasureTools: Click on any measurement tool to enter the measurement mode, you can make a straight line and other ways of measurement.（In the measurement mode, the current focus will be locked. By default, manual focus, and other focus modes cannot be switched. You need to click the blue triangle icon in the upper right corner of the display interface to exit the measurement mode）
  Click the "Automatic edge finding" △ icon, and select the icon to turn blue △ . When measuring the picture, realize automatic edge search.
  Click the "Delete all" 🗑 icon to delete all the added lines.
  Click on the "Text" T icon to annotate the measurements, and the right-mouse button long press can drag the arrows and the annotation content to change their position.

◆ Custom Template： The custom module will have an automatically generated default template name "default". The default template does not support the deletion modification. After drawing the element in the image area, click the "New" 🗀 icon, and the window of "whether to convert the element to a template" will pop up in the interface, and click "OK" to establish a new template. A new interface then appears, naming the template in the Name column; and several icon options:
  Save As, Save the Element, and Cancel.
  Click the Delete 🖹 icon to delete the template; click the Modify the ✂ icon to modify the template.
  Click the Save 🖫 or Save As 🖫 icon to save the modified template, and click the "Return to the "to do not save the modified template.

◆ Scale： Click "New CIrules" ⬈ there are "H Calibrate" and "Circle Calibrate" calibration two optional. Drag the marking line to the fixed scale marking line alignment, input the lens multiplier value (name), the actual length between the marking lines, select the unit, and complete the calibration once. Each calibration set of data is displayed in the multiplier list.
  Delete calibration: click the drop-down calibration list, select the calibration group to delete, and click the Delete icon to delete the group calibration.

◆ Scale bar function:Select the scale unit, precision, location, and display.(The units and accuracy here are common for calibration, measurement, scale, and data list)

◆ Crosshair： When you use it for the first time, first click on the Setup buttonon the righ to generate a set number of horizontal or vertical lines according to the actualneed.
Right-click and double-click on the auxiliary line in any direction to set the properties of the auxiliary line.

◆ Logo: You can set the required logo in the identifier bar, and import the picture requirements: the name must be set to "logo"; the size should be less than 1MB; and the format is. PNG; Import method: insert the U disk of the logo picture into the camera USB interface, and the left mouse button can double-click on the identification bar to complete the import. (The identification menu bar is closed by default. If you need to open, open in the Setting menu-interface Editinterface Main interface layout)

② Detailed Explanation For Setting

◆ Brightness:Manually adjust the overall brightness of the camera preview picture, brightness adjustable range: 0-100, reset the default value of 40. (Note: The brightness value is only adjustable in the automatic exposure mode)

◆ Exposure & Gain： Exposure value: 0-333 is adjustable.
Gain: the value of 0-50 is adjustable. (Note: Exposure value and gain are only adjustable in non-automatic exposure mode)

◆ Red / Green / Blue Gain:
Red gain, green gain, blue gain, and white balance influence, click on the "white balance AWB" phase opportunity to have an automatic white balance and then automatically exit the automatic white balance mode.
Red gain: 0-4095 adjustable
Green gain: 0-4095 Adjustable
Blue gain: 0-4095 Adjustable

◆ Saturation / Contrast / Sharpness
Saturation: 0-255 adjustable, reset the default value of 128
Contrast: 0-100 adjustable, reset the default value of 50
Sharpness: 0-15 adjustable, reset the default value of 4

◆ HDR:
HDR (The ability to eliminate the reflection): 0-255 Adjustable, reset the default value of 100

◆ White Balance / Automatic Exposure:
Click "AWB" to take an automatic white balance and then automatically exit the automatic white balance mode. Click "AE" to enter the automatic exposure mode. At this time, the exposure value and gain cannot be modified, so you need to exit the automatic exposure mode before making numerical adjustment. Both features are also available in the main menu interface.

◆ Other Settings: Click▮
  Mirror: The video on the screen is located in the opposite vertical direction;
  Flip: The horizontal direction of the video on the screen is opposite to the actual direction;
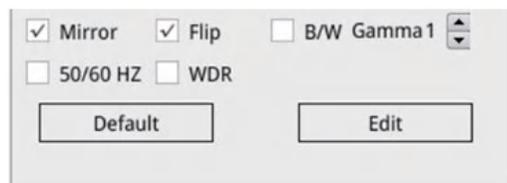 Black and white mode: checked for black and white mode, the default is color mode.
  Gamma value: 0-3 adjustable, reset the default value of 1.
  CAC:Eliminate the color spots that appear at the intersection of the high light and low light parts.
  50 / 60HZ: Check to achieve the anti-screen flash effect.
  WDR: When turned on, both the particularly bright parts and the particularly dark parts of the scene can be seen particularly clearly at the same time.

◆ Edit：
  Data List: Adjust the data types listed by the main menu in the Data function in the secondary column. Click to select any two data types, and click the exchange icon to exchange the data list display sequence.
  Main interface layout: Adjust the type of function displayed in the main menu Click to select any two menu module types, and switch the module bar in the main menu interface.
  Data list and interface layout of each item data type and menu module before the fork check box indicates the display and hide of the item data type/menu module.

Parameter

❶ Specification:

Magnification	20X~123X
Sensor	1/2.8"CMOS
Pixel	2M
Resolution	1920x1080
Frame	60fps
Output port	HDMI
Power supply	Power adapte
Dimension(Height)	600mm
Weight	8 .5kg

Magnification、Focus and view field

Auxiliary Objective	Specification	相机接口	
		0.5X(included)	1X(optional)
1X (included)	Magnification	20~123X	40~246X
	Focus	48~84mm	48~84mm
	View field	13×7~2.2×1mm	6.5×3.5~1.1×0.5mm
2X (optional)	Magnification	40~246X	80~492X
	Focus	24~42mm	24~42mm
	View field	6.5×3.5~1.1×0.5mm	3.3×1.8~0.6×0.3mm

❷ Standard delivery:

Main unit	1 pc
0.5X camera adapter	1 pc
1X auxiliary objective	1 pc
Calibration plate	1 pc
16G USB flash disk	1 pc
White/black plate	1 pc
Mouse	1 pc
HDMI cable	1 pc
Power adapter	2 pcs