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**5316-HM810
HORIZONTAL MICROSCOPE
(WITH DISPLAY)
OPERATION MANUAL**

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Attention

◆ The camera use only DC12V power supply;The display use only DC12V power supply.
  The input voltage of the contour illumination is AC 110-240V 50/60hz.

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

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

◆ This instrument is a kind of precision instrument, in the operation or transportation process should be handled lightly, avoid collision.

◆ Avoid direct sunlight exposure, high temperature, dust and vibration.

◆ There should be no dirt or finger marks on the lens surface to reduce the imaging clarity of the instrument.

◆ Clean the surface of optical parts gently with degreased gauze or cotton, such as finger printing and oil, apply 70% ethyl ether and 30% alcohol mixture wet degreased gauze or cotton gently wipe.

◆ As alcohol and ether are highly flammable solvents, they must be used carefully and must be kept away from open fires and places where electric arcs may occur, such as the opening and closing of electronic equipment.Also remember to use these chemicals in well-ventilated rooms.

◆ Do not use organic solvent to wipe other component surface, can use neutral cleaner to wipe.Do not attempt to disassemble the instrument to reduce accuracy.When not using the instrument, please cover it with a dust cover and store it in a dry, dust-free place.
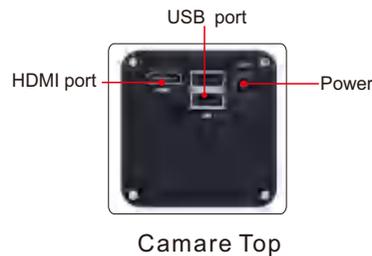
◆ The power supply network should be well grounded.
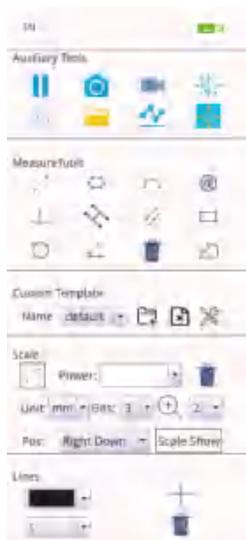
Structure

1 Name：

1. High−definition screen: 13.3" LCD;
2. Camare: 1/2" CMOS sensor, Pixel 2M;
3. 0.2X ~ 1.2X Zoom ;
4. LED ring light;
5. stage (up/down and left/right move);
6. contour illumination;
7. Mouse;
8. contour illumination switch;
9. focus adjustment;

② Camare:

USB port

HDMI port ———— ———— Power

Camare Top

③ Software:

- ◆ Click on the upper left corner of the menu to select the language mode, including simplified Chinese, English, traditional Chinese and Japanese.

- ◆ To use the photographing and recording functions, you need to confirm whether the USB stick is inserted.

- ◆ Take a picture: click the picture icon , and the icon will be displayed in the center of the picture. After about 3 seconds, the icon will disappear automatically, and the picture will be saved to the USB flash disk automatically.

Click the photo format drop-down box to select a photo format. There are two formats available:. jpg and. bpm.

- ◆ Video: click the recording icon , the interface prompts to start recording, and click OK to start Video.

- ◆ In the process of recording, the icon in the video is flashing in the lower right corner of the screen. Click the "Video" icon again, the interface prompts "Stop Video", and click "OK" to stop Video.

- ◆ Click the "Open Picture" icor and a picture selection interface will pop up.

- ◆ Click the "Freeze" icon to freeze the current image interface, and the image window is still to facilitate observation of the measured object; After freezing, the icon will change to frozen status. Click the icon to ▶ restore to the real-time display interface.

- ◆ After clicking the "white balance" icon , the camera will perform an automatic white balance of the image, and then automatically return to the manual white balance state.

- ◆ Click the "Auto Exposure" icon to automatically expose the camera. Click again to exit the auto exposure mode and enter the manual exposure mode. This function can also be set in the setting page.

- ◆ Measuring tools: measuring tools include various trace measurements, and appropriate calibration and units can be selected according to specific applications.

- ◆ Calibration: The plastic calibration ruler with accessories can calibrate the accuracy of the camera.

The calibration sheet shall be placed in the slot in front of the workbench, and then locked with nuts

Click the calibration tool drop-down to select straight line calibration, H-type calibration or circle calibration;

Drag the scale line to align with the scale line of the scale ruler, input the lens magnification value, the actual length between the scale lines, and select the unit to complete the calibration.
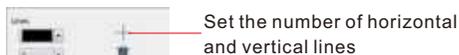
Delete calibration: click the drop-down calibration list, select the calibration group to delete, and click the delete icon to delete the calibration group.

◆Customized template: after drawing the elements in the image area, click the "New" icon 🗔, and the "Convert Elements to Templates" window pops up in the interface. Click "OK" to create a new template;

After entering the name in the name window, click the "Save" icon 🖫 to save the template.

Click the "Modify" icon ✂ to modify the template. Click the "Save" icon 🖫 again to save the modified template. Click the "Return" icon ↶ to not save the modified template.

◆Cross hairs tool: click the cross hairs tool and select "Cross hairs" to display the number of cross hairs set horizontally and vertically. After setting, select "Display" to display the cross hairs set in the image display area, and select "Delete" to not display the cross hairs.

Set the number of horizontal and vertical lines

Press and hold the right mouse button to drag the cross hairs

Click the crosshair tool and select "Cross tick mark", and the cross tick mark will be displayed in the image area.

Click the crosshair tool and select Hide. All crosshair or cross tick marks will be hidden in the image area.

Click the Cross hair Color Setting tool, and the cross hair color can be set from the drop-down box. After the color is set, the cross hair will take effect again, and the color of the cross hair previously drawn will not change.

Parametor

❶ Specification:

Magnification	10.5X-62.5X
View field	4.5×2.5mm~28×12.3mm
Focus distance	115mm
Measuring accuracy	±0.02mm
Sensor	1/2.8" CMOS
Pixel	2M
Resolution	1920×1080
Frame	1080P:60fps, 1080P:50fps
Output	HDMI
Power supply	110/220V,50/60Hz
Dimension (LxWxH)	500×200×200mm
Weight	7kg

❷ Standard delivery：

Main unit	1pc
1X camera adapter	1pc
1X auxiliary adapter	1pc
Plastic calibration rule	1pc
16G USB flash disk	1pc
Mouse	1pc
16G USB flash disk	1pc

Maintenance

Fault phenomeno	Reason	Solution
LED light and len are off	The power switch is not on	Turn on the power switch on the back
The low range image is white	Too much light	Reduce the light intensity