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**5313-S407**  
**3D MANUAL ROTATION MICROSCOPE**  
**(WITH DISPLAY)**  
**OPERATION MANUAL**

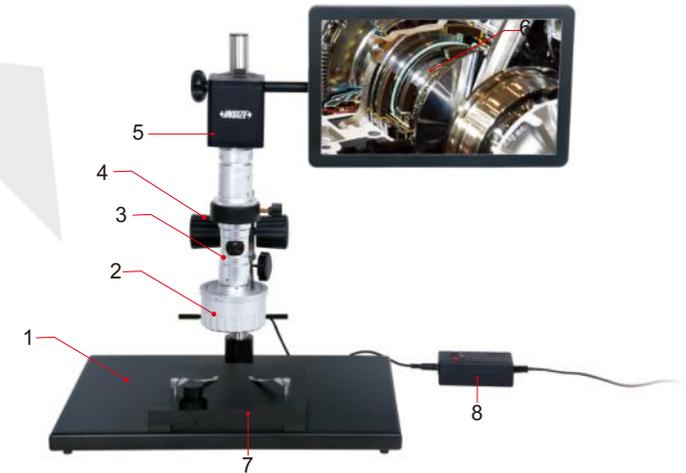


Attention

- ◆ 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.

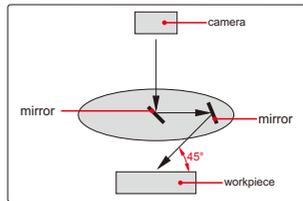
Structure

1 Name:

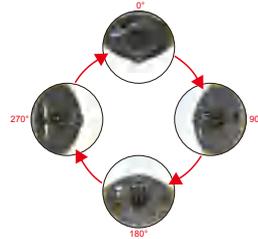


1. Stand;
2. 360° manual rotation lens with LED;
3. Zoom lens;
4. Focus knob;
5. Camare: 1/2.8" CMOS sensor, Pixel 2M;
6. High-definition screen: 13.3" LCD;
7. X-Y metal stage;
8. Illumination controller;

2 Introduction:



Schematic



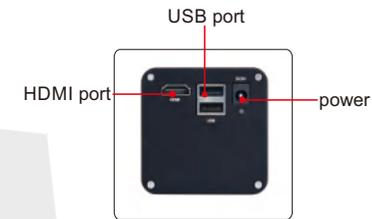
Effect

◆ The 5313-S407 3d manual rotating microscope, with advanced optical technology and precision mechanical and electronic technology, enables people to observe the micro world from a single front view to a three-dimensional all-around and multi-angle view, greatly improving the degree of detail of observation samples. Without tilting, real-time high-resolution dynamic images of various sides of the sample can be observed at 360 degrees in all directions and with great depth of field. It has a strong sense of depth and layer, can change the rotation speed of the lens, and can observe the positions that cannot be shown by traditional lenses, such as under the PCB patch components, inside the metal holes, side walls, etc.

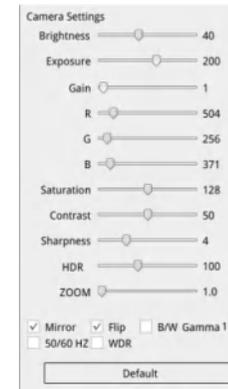
3 Instructions:

- ◆ Please use the camera according to the instructions.
- ◆ Place the inspected item on the X-Y metal stage, turn the magnification to a minimum of 18x, rotate the focusing handwheel to make the object under observation clearly image, and place its center at the center of the screen. Then turn the magnification to a maximum of 120x, rotate the focusing hand wheel to make the imaging clear. At this point, select the appropriate magnification according to the size of the object and rotate the continuously doubling lens, adjust the lighting brightness and lens, get a dynamic rotating 3d image with clear image, no center movement and strong stereoscopic feeling. LED lighting brightness can be controlled by illumination controller.

4 Camera:

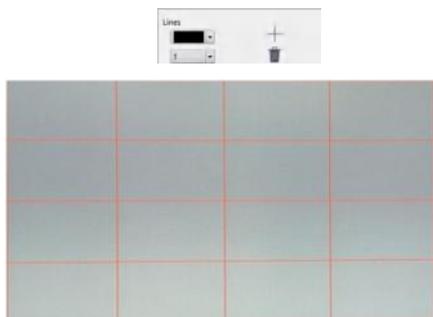


5 Software

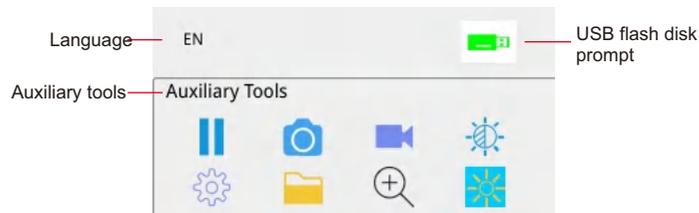


- ◆ Manually adjust the overall brightness of the camera preview screen. The brightness can be adjusted from 0 to 100, Reset the default value of 40.
- ◆ Exposure : 0-255 adjustable, reset the default value of 4.
- ◆ Gain: 1-50 adjustable, reset the default value of 1.
- ◆ Red gain, green gain and blue gain are affected by white balance. Click "white balance AWB" and the camera will enter Line the automatic white balance once and then automatically exit the automatic white balance mode.
- ◆ HDR (anti reflective ability): 0-255 adjustable, reset to the default value of 100.
- ◆ ZOOM: digital magnification can be adjusted, 1.0-6.0 adjustable. ainst screen flash.
- ◆ Mirror: The vertical direction of the video on the screen is opposite to the actual direction.

- ◆ Flip: The horizontal direction of the video on the screen is opposite to the actual direction.
- ◆ B/W: if checked, it is in black and white mode. The default mode is color mode.
- ◆ Gamma : 0-3 adjustable, reset the default value of 1.
- ◆ 50/60HZ: check to achieve the effect of anti flicker.
- ◆ WDR: In a very strong contrast, click WDR to see the bright and dark areas Objects. Note: When WDR is checked, the image frame rate will drop to 30 fps.
- ◆ Default: set all camera parameter settings to the default initial values.



- ◆ Click the Cross hair Color Setting Tool and Thickness Tool to set the cross hair color and thickness from the drop-down list. After setting, the cross hairs will take effect again, and the cross hairs previously drawn will not change.
- ◆ Right click the crosshair in the screen to open the crosshair adjustment bar.
- ◆ Enter or drag to adjust the position and angle of the crosshair, and select the color of the single line and Yes/No Displays the scale. Click "Center" to adjust the crosshair to the center of the screen. Click "Delete" can delete the cross hairs.



## Parameter

### 1 Specification:

Magnification	18X-120X
View field	2.4×1.5mm~16×9mm
Focus distance	20mm
Viewing angle	45°
Sensor	1/2.8" CMOS
Pixel	2M
Resolution	1920×1080
Frame	60fps
Output	HDMI
Power supply	power adapter
Dimension (LxWxH)	570×300×430mm
Weight	10kg

### 2 Standard delivery:

Main unit	1pc
X-Y metal stage	1pc
16G USB flash disk	1pc
White/black plate	1pc
Mouse	1pc
Power adapter	2pc

## 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