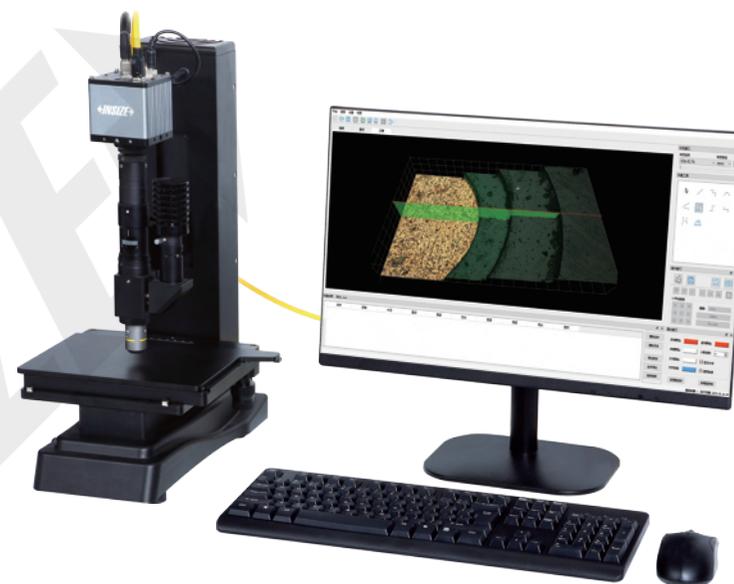




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**5323-D215
Ultra depth of field 3D
measuring microscope
OPERATION MANUAL**

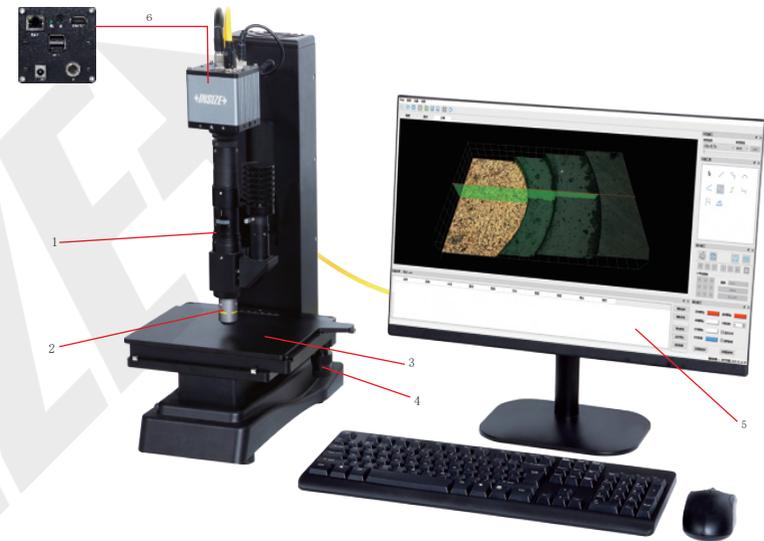


Attention

- ◆ To avoid danger or damage incurred to the lens, do not touch the lens or sensor directly with your fingers.
- ◆ To avoid failure or electric shock hazard and so on, do not disassemble or modify the internal structure of the device.
- ◆ Do not plug in or unplug the anything port when hands are wet.
- ◆ If the lens or sensor is dirty or damp, you should better use dry and non-linen fabric or professional lens tissue to wipe them. To avoid scratches on the surface, do not touch the lens with your fingers. Wipe the lens or sensor lightly.
- ◆ The products are not specifically designed for an outdoor use. Do not expose it to outdoor environment without any protection. Excessive temperature and humidity will damage the lens. Please avoid using the product under the following environment: high temperature or high humidity environment, places with direct sunlight, dirt or vibration and places near heat source.
- ◆ Please use and store in the following environment:
 Operating temperature: 0°C~ 40°C
 Storage temperature: -20°C~ 60°C
 Operating Humidity: 30~80%RH
 Storage Humidity: 10~60%RH
- ◆ If any foreign matter, water or liquid enter into the device by accident, disconnect the power cable immediately. Please send it to the maintenance center and do not use the hair dryer to dry it by yourself.
- ◆ To avoid electric shock by accident, please power off microscope before you move your computer or laptop.
- ◆ The cleanliness of the device lens will directly affect clarity degree of contents from the computer screen during preview. Problems like various circles or spots on the screen may mostly be incurred by dirt on the lens. When cleaning, please use professional lens tissue or other professional detergent to clear the dirt on the lens.

Structure

① name



- 1. 0.7X-5X step-zoom lens with built-in coaxial light;
- 2. Objective;
- 3. Stage;
- 4. Stage moving; knob
- 5. Computer (optional);
- 6. Camera;

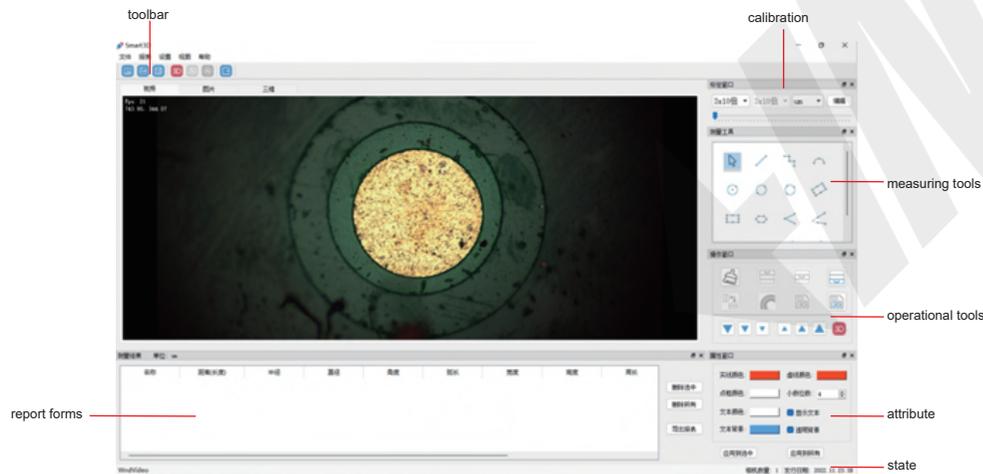
2 Camera:



Camera top

- ◆ The microscope has the function of taking pictures, The workpiece that is used for observation can be captured in real time. Pictures will be saved in the USB flash disk. You can reading the USB flash disk by computer.
- ◆ Camera can transmit the video signal for screen by the HDMI port and HDMI cable. The display is in real time.
- ◆ Microscope can be connected the controller by mouse.
- ◆ Power port connecting a power adapter.
- ◆ Send photos and measurement data via ethernet(TCP/IP)
- ◆ Name photos and measurement data files with serial number of workpieces read by scanner.
- ◆ The I/O interface is used to connect the camera and the electric motor.

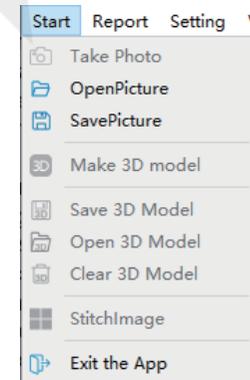
3 Software :



Menu Introduction

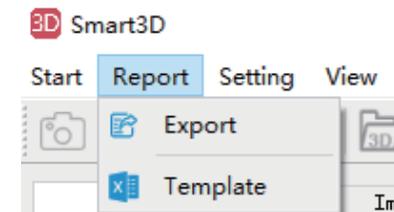
1.1 document

- ① Video screenshot: Save real-time dynamic image screenshots.
- ② Open the original image: Open the image in the USB drive for viewing;
- ③ Save original image: After 3D generation, save the 3D original image;
- ④ Save as: Select and save the format of the 3D image according to personal needs;
- ⑤ Generate 3D model: Enter 3D super depth mode for 3D modeling;
- ⑥ Exit: Exit the PC operating program.



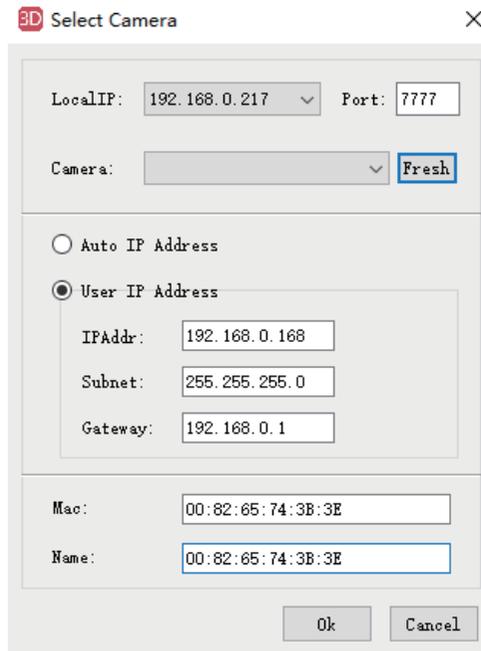
1.2 Reporting

Data such as measurements of the product are exported to a USB memory stick, generated in EXC format, and edited for storage and other subsequent operations.



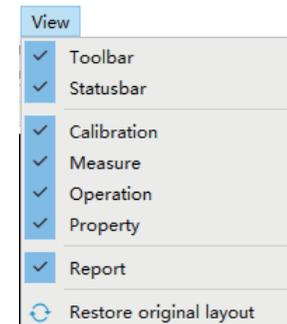
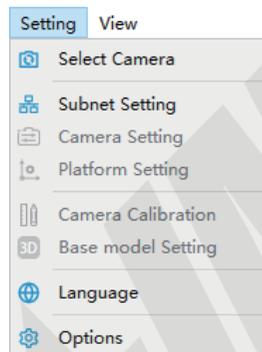
1.3 Setting

- ① Camera selection: select the camera connected with PC, see Fig. below for details.
 - ② Network segment setting: select the network segment of PC.
 - ③ Camera settings: set the parameters of the camera, white balance, exposure, contrast and other parameters
- Note: Because the PC and camera transmission takes time, so adjust the camera setup parameters can not be too fast! It needs to be done slowly to give a certain response time
- ④ Camera calibration: according to the different lenses and objective lenses need to be calibrated in advance of the camera settings, detailed calibration instructions see calibration instructions
 - ⑤ switch language: existing Simplified Chinese, Traditional Chinese, English can be selected
 - ⑥ Configuration options: debugging window for debugging.



1.4 Camera calibration:

- (1) select the calibration method: according to the style of the calibration board, select the two-point line segment calibration or three-point circle for calibration
- (2) monitor selection: the size of the basic monitor to select the size of the monitor, the default 21-inch
- (3) Calibration name: the fundamental magnification and objective lens to calibrate the magnification of the named
- 4) Calibration size: calibrate according to the actual size of the calibration board.
- 5) Correction value: If there is a difference between the product and the actual calibration, you can add the correction.



1.5 Settings:

- ① Toolbar: tools under submenu are displayed and hidden.
- ② Status bar: Display of the number of connected cameras and version model.
- ③ Calibration bar: calibration window, you can select the magnification directly.
- ④ Measurement bar: where the measurement tool is located, you can select the tool for measurement.
- ⑤ Operation Bar: Operation window, you can select the display position for 3D main image.
- (6) Attribute column: Setting parameters such as line width and blue colour of the measuring tool.
- (7) Report column: the display position of the measurement result.

3D modelling

2.1 Perform 3D modelling

In the toolbar or action bar, select the  icon to enter 3D modelling mode, as shown in Figure



1. First of all, by adjusting the height, so that the object to be measured imaging clear, clear after selecting the  reset button , zero point reset.

2. After resetting, select Move Up or Move Down to move to the clear position of the other digit and continue to move a little beyond the clear position. After moving in place, perform up or down point positioning.



(T is the marking point for upward movement, B is the marking point for downward movement)

3. And the second step to carry out the reverse operation, such as the first upward movement, then the second reverse downward movement, and vice versa. The same over the clear position, for another point of positioning.

4. Select the number of samples, it is recommended that the greater the depth of field of the product, the greater the number of samples, with more samples, the running time will grow. After selecting the number of samples, the sampling spacing will be automatically calculated according to the spacing without manual selection.

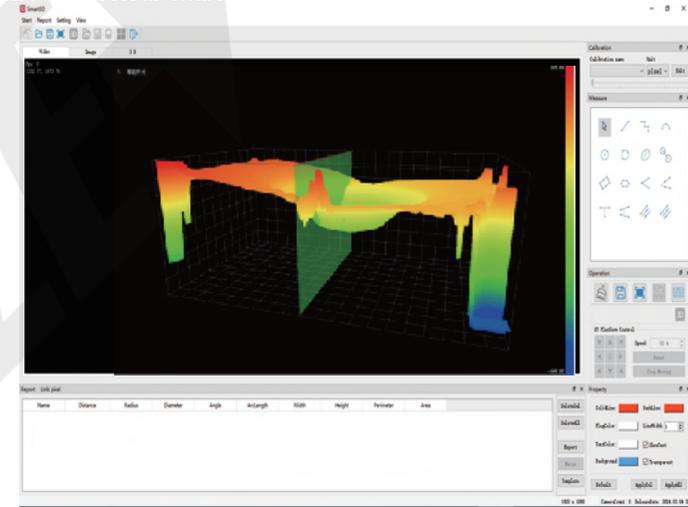
5. Sampling direction setting, set from top to bottom or bottom to top. The default is from top to bottom.

6. Filtering method, filtering impurities on the edge of the product to eliminate interference, default bilateral filtering.

7. Process display and running process, the monitor shows the image, you can choose the depth of field composite picture and real-time dynamic video, the default depth of field composite picture.

8. Select Start.

2.2 False colour chart



Based on the distribution of colours, a pseudo-colour map is generated, which allows you to know the product colour distribution and whether the material is uniform or not.

Parameter

- 1 Technical parameters:
Measurement accuracy

Plane Measurement Accuracy	±5µm
Profile Measurement Accuracy*	±10µm

*The number of photos taken during 3D compositing should not be less than 150 in order to achieve this accuracy.

- 2 standard configuration

Hosts	1pc
Mouse	1pc
1X Objective Lens	1pc
Calibration disc	1pc
Combination lock	2pcs
Power adapter	1pc
HDMI Cable	1pc