

INSPECTION SYSTEMS Series

INSTRUCTION MANUAL

	Model
	IS-02
	IS-03

Version: 1
Issued: 1.0.0



SUMMARY

- 1. Warning**
 - 2. Intended use**
 - 3. Package Contents**
 - 4. Overview**
 - 5. Assembly**
 - 6. Using the system**
 - 6.1 Using the base (IS-02)**
 - 6.2 Using the base (IS-03)**
 - 6.3 Using the camera (C-HAF)**
- Equipment disposal**

1. Warning

This microscope is a scientific precision instrument designed to last for many years with a minimum of maintenance. It is built to high optical and mechanical standards and to withstand daily use.

We remind you that this manual contains important information on safety and maintenance, and that it must therefore be made accessible to the instrument users.

We decline any responsibility deriving from incorrect instrument use uses that does not comply with this manual.

2. Intended use

For research and teaching use only. Not intended for any animal or human therapeutic or diagnostic use.

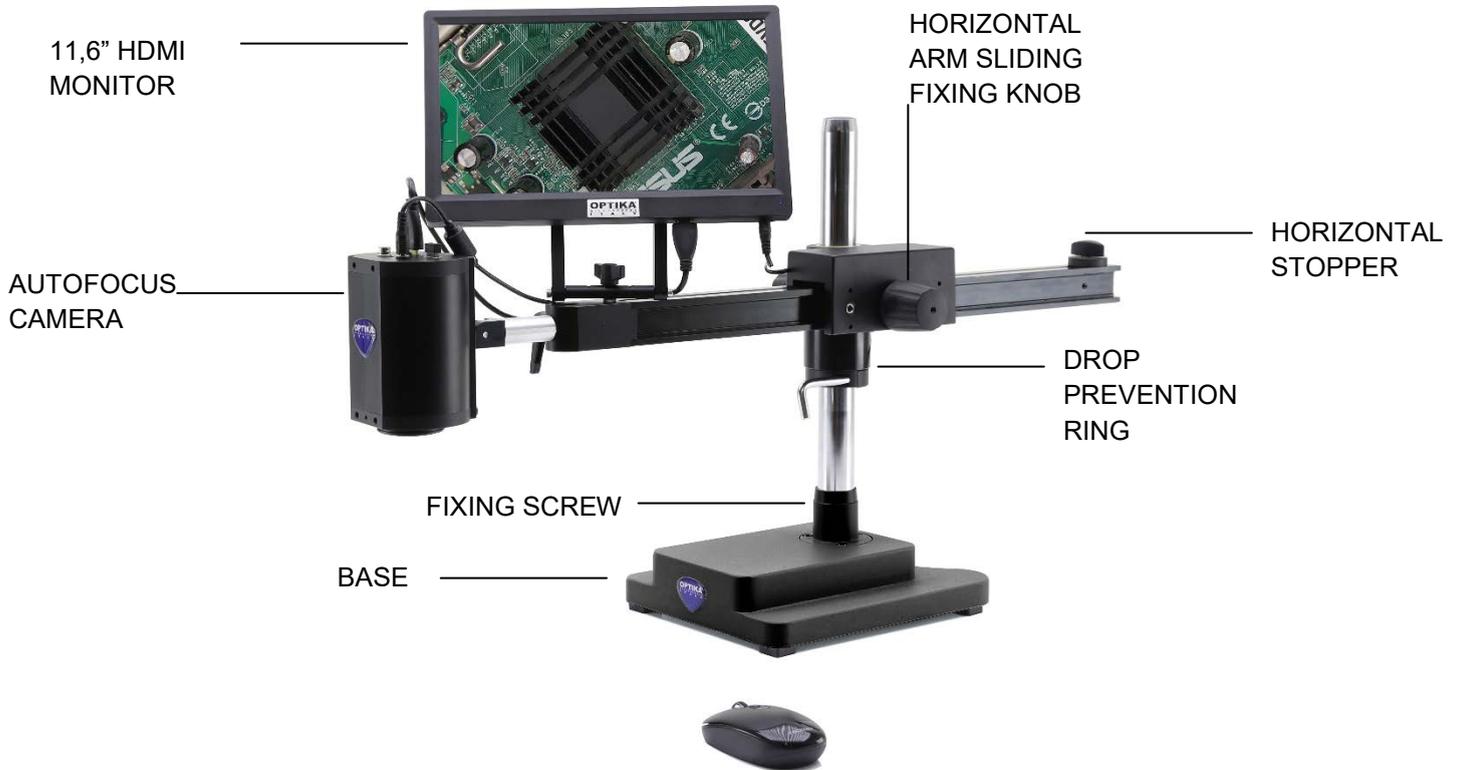
3. Package Contents

DESCRIPTION (IS-02)	QUANTITY
Base	1
Vertical pillar	1
Drop prevention ring	1
Horizontal sliding arm	1
Allen wrenches	2
Autofocus camera	1
HDMI 11,6" monitor	1
Mounting bracket	1
HDMI cable	1
SD card 16GB	1
Power supply	2
Wireless mouse	1

DESCRIPTION (IS-03)	QUANTITY
Arm	1
Desk clamp	1
Wall support	1
Spacer	1
Allen wrenches	4
Autofocus camera	1
HDMI 11,6" monitor	1
Mounting bracket	1
HDMI cable	1
SD card 16GB	1
Power supply	2
Wireless mouse	1

4. Overview

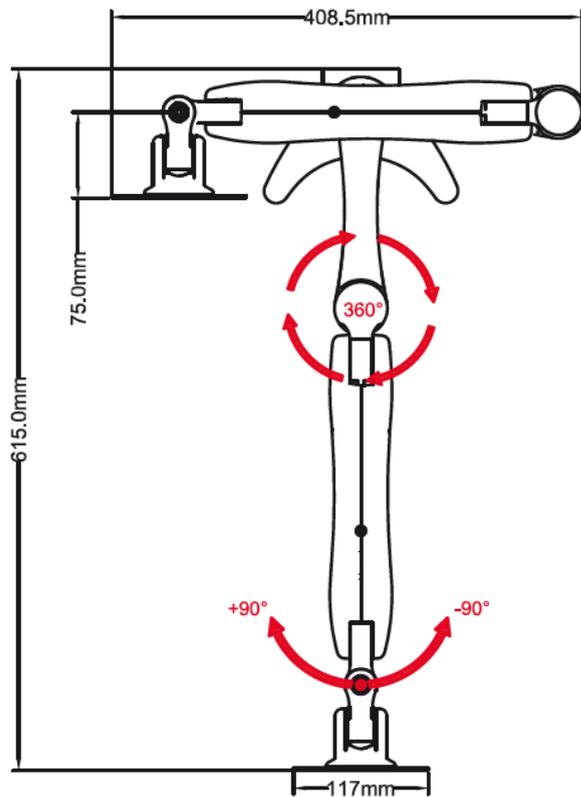
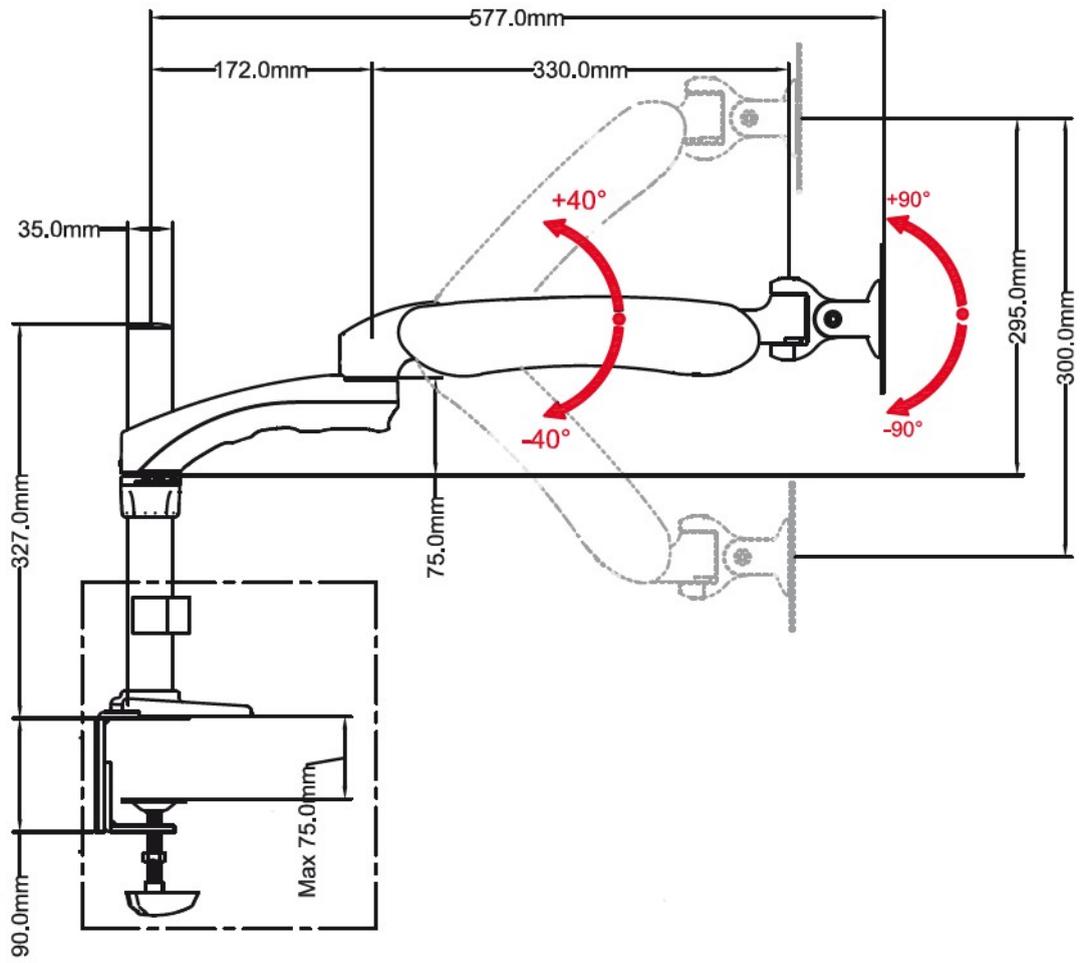
(IS-02)



(IS-03)



(IS-03)



(C-HAF)



5. Assembly (IS-02)

1. Screw the pillar on the base (Fig. 1)
2. Tighten the screw to lock the pillar (Fig. 2)
3. Insert the drop preventing ring. (Fig. 3)
4. Insert the horizontal arm and lock it with the locking knob (Fig. 4 & 5)



5. Connect the camera to camera holder. Using the provided screws attach the plate of the camera holder to the back side of the camera (Fig. 6)



6. Insert the back part of the camera holder (black round part) ① (Fig. 7) in the hole at the end of the horizontal arm and tighten the knob ②. (Fig. 8).



Fig. 7

7. Install the HDMI monitor using the provided bracket and the provided screws.
8. Insert the provided screw into the monitor bracket, then screw it into the threaded hole of the horizontal arm. (Fig. 8)



Fig. 8

9. Connect HDMI cable from camera to monitor, insert SD card into the camera slot, connect USB mouse then plug the power supplies (camera and monitor). (Fig. 9)



Fig. 9

10. Press the "ON/OFF" button on the camera to turn on the camera. LED will turn from red to blue (Fig. 10)



Fig. 10

5. Assembly (IS-03)

1. Mount the camera on to the arm, using the provided screws and allen wrench. (Fig. 11)



2. Install the HDMI monitor on to the arm using the provided screws and allen wrench. (Fig. 12)



3. Connect HDMI cable from camera to monitor, insert SD card into the camera slot, connect USB mouse then plug the power supplies (camera and monitor). (Fig. 13)



4. Press the "ON/OFF" button ① on the camera to turn on the camera. LED ② will turn from red to blue. (Fig. 14)



Desk installation

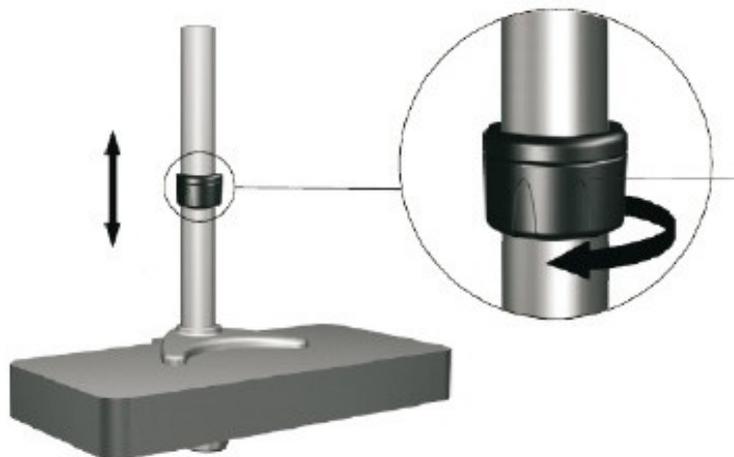
1. Adjust the height of the Desk Clamp ② to suit desktop surface. (Fig. 15)



2. Attach the desk clamp ② on to the edge of the desk in the desired position and with the clamp opening facing towards the edge of desktop. Tighten by hand to ensure that the desk clamp fully clamps to the desktop surface and is secure.



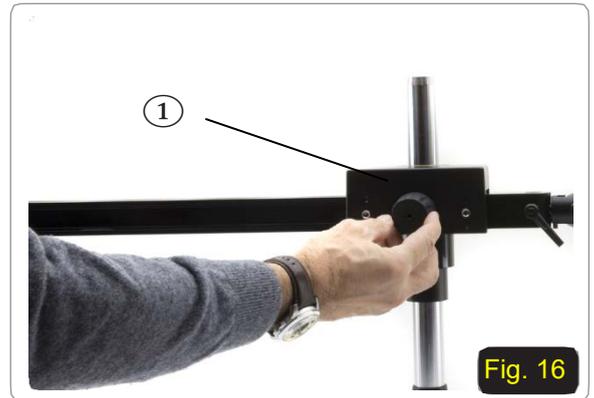
3. To position the collar at your desired height, you will need to loosen the collar as shown. Tighten by hand until the collar is firmly in place.



6.1 Using the base (IS-02)

Moving the horizontal arm (Fig. 16).

Unlock the knob on the left side of the horizontal arm ①.



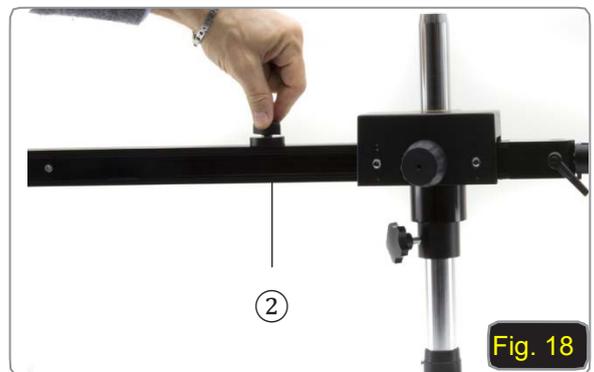
The arm can be extended or shortened according to specific needs. (Fig. 17)



Setting the horizontal stopper (Fig. 18)

Unlock the fixing knob of the stopper ② and move it in a position suitable to user's needs.

Lock the fixing knob to set the movement limit



Swivel the camera (Fig. 19-20)

Unlock the fixing knob ③ and rotate the camera to the desired swivel angle (left or right), then fix the knob again.





Tilting the camera (Fig. 21)
Slightly loosen the locking screw and tilt the camera to the desired angle, then lock the screw again.



Rotating the horizontal arm (Fig. 22)
Loosen the horizontal arm fixing knob ④ and rotate the microscope.

► **NOTE:** 180° rotation of the camera with respect to the base could cause a rollover of the entire system.



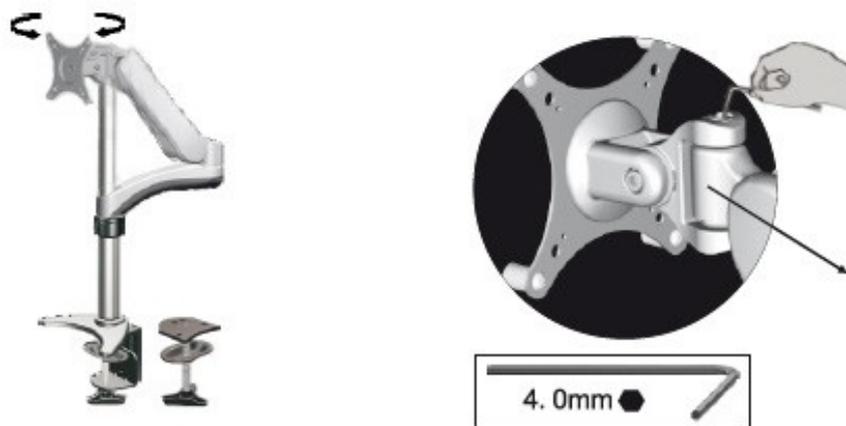
6.2 Using the base (IS-03)

Adjusting the Mount Bracket Resistance

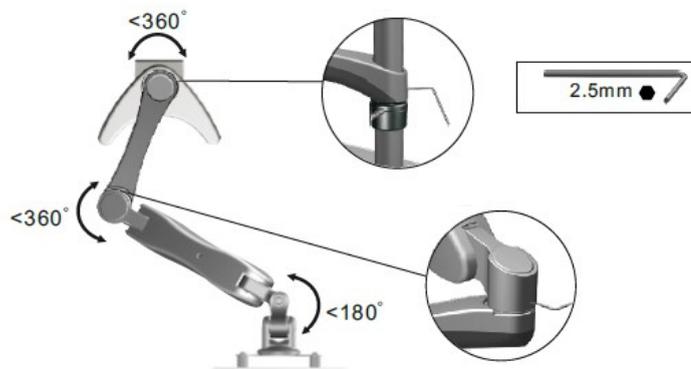
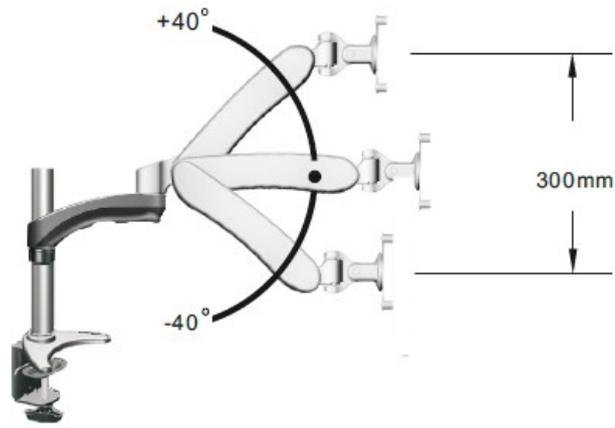
1. Product is brilliantly engineered to control the resistance in the Tilter Mount Bracket to suit swing side to side of 90 degree and tilt forward and backward of 90 degree. It is possible to control the amount of resistance in the Tilter Mount Bracket.
2. If the Tilter Mount Bracket tends to automatically fall, it may be required to adjust the Tilter Mount Bracket joint to suit your microscope tilt position of forward and backward of 90 degree. This can be done by using Hex Allen Wrench 6mm to increase the resistant of the Tilter Mount Bracket in order to secure tilt position, adjust the M5x15mm Tension Hex Socket Cap Screw located around the Tilter Mount Bracket Joint using 6mm Hex Allen Wrench. (See Figure 5).



3. To increase or decrease the resistance of the Pivot Joint to suit microscope swing side to side, adjust the Tension Hex Cap Screw located on front side of the Articulating Arm to secure the position.
4. To increase the resistance, tighten the M5x15mm Tension Hex Cap Screw using Allen Wrench 4mm in a clockwise direction. To decrease the resistance, loosen the M5x15mm Tension Hex Cap Screw using Allen Wrench 4mm supplied in an anti-clockwise direction.



5. This equipment can be lift up and down as shown. If this product tends to automatically move to side, it may be required tension adjustment on the Articulating Arm to suit your microscope arm swing to side position. This can be done by using Hex Allen Wrench 2.5mm supplied.

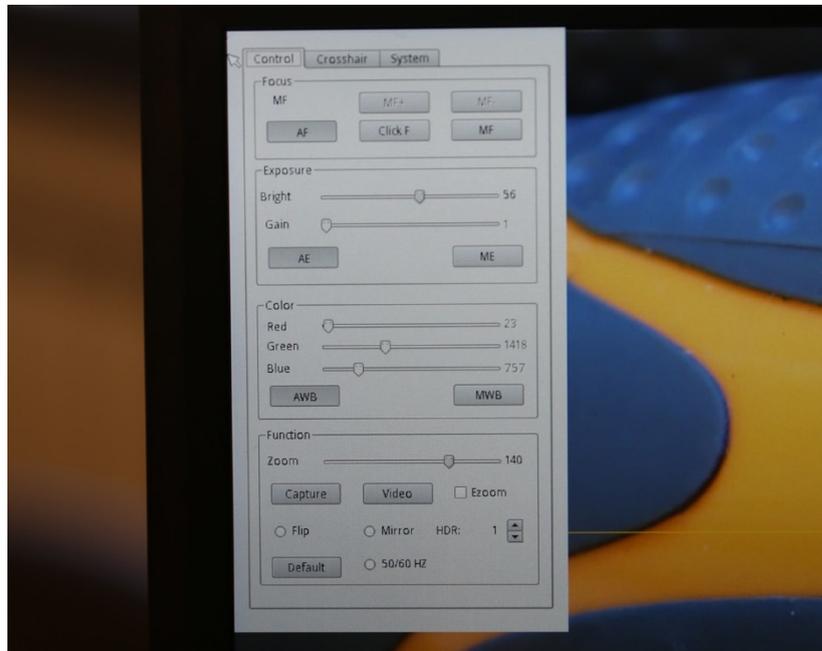


6.3 Using the camera (C-HAF)

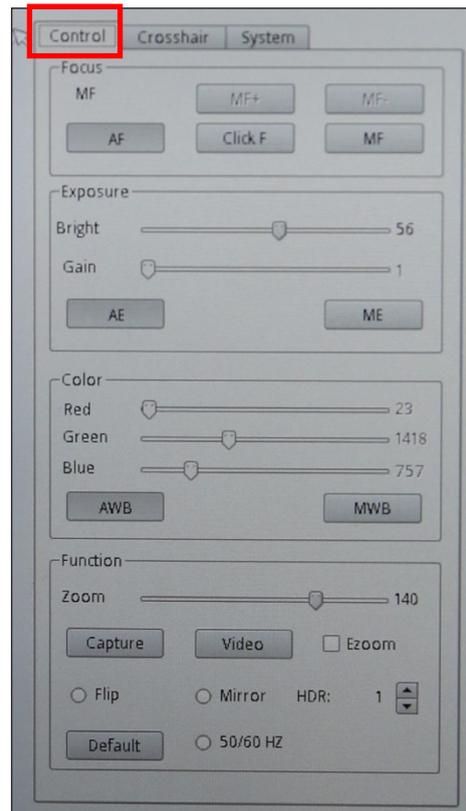


Camera is supplied with an “on screen” menu, which is activated when the mouse cursor is positioned in the upper left corner of the monitor r.

Moving the cursor to a different area the menu disappears.



1. "Control" Menu



The "Control" panel is divided into different sections related to the various camera controls.

1.1 "Focus" section controls the focusing of the camera.
It is possible to work either in autofocus (AF) or manual focus (MF).



Clicking on "AF" camera will work in autofocus mode.

It will be sufficient to position the subject to be observed in front of the camera lens and the focus will be obtained in less than 1 second.

The autofocus will be independent of the optical or digital zoom value of the camera: the camera must have enough contrast in the sample to be observed.

In the case of objects with low contrast, it is possible that the camera cannot get the focus. In this case we recommend using manual focus.

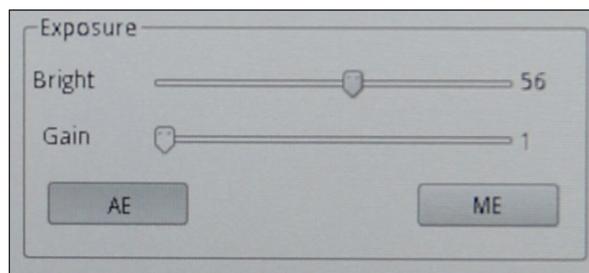


Clicking on “**MF**” camera will work in manual focus mode. Activation of the MF button automatically activate the keys “**MF+**” e “**MF-**”, with which you can act on focusing the camera without having to act on the mechanical support, simply by using the mouse.

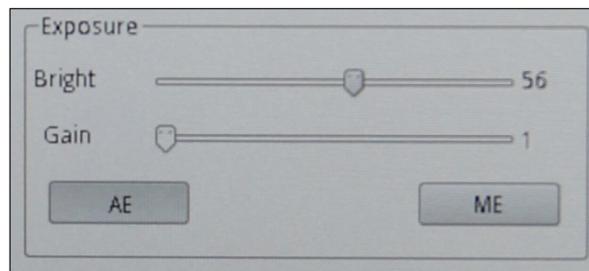


Clicking on “**Click F**” the camera is taught which is the optimal focus for the sample that is being observed. From now on, any movement that will be made on the sample or any change in zoom will have to be compensated again with a new focus. If you work in “**AF**” mode, this operation will not be necessary.

1.2 “**Exposure**” section controls the exposure time and the brightness of the camera.



The camera can work in automatic exposure. By activating the “**AE**” function, the camera works completely automatically. In this case it is not possible to act on the parameters of the camera, therefore in situations of insufficient lighting it is possible that the camera cannot provide optimal image quality.



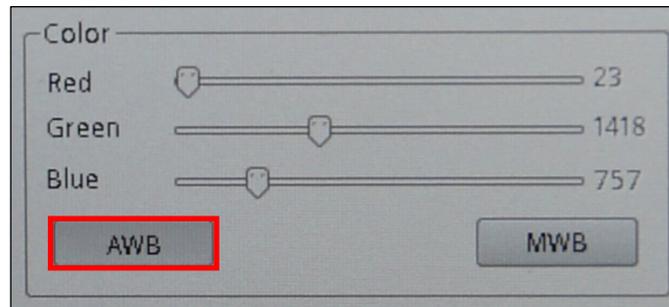
By activating the “**ME**” the camera works manually. It is therefore necessary to act on the camera parameters to adapt the exposure time to the lighting condition of the sample.

Moving the slider relative to “**Bright**” increases or decreases the exposure time of the camera. Depending on the amount of light that is used to illuminate the sample under examination, you will have to move to the right (increase) or to the left (decrease) the cursor to get a perfectly lit image avoiding under or overexposure.

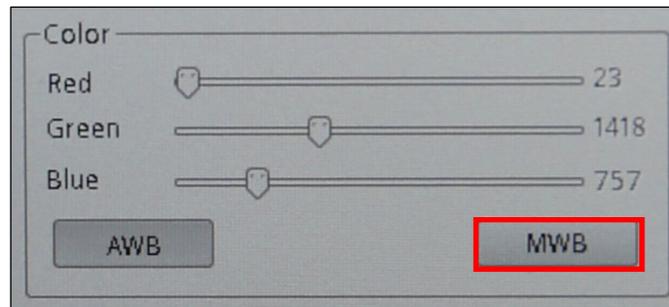
The cursor relative to the “**Gain**” commands the so-called “gain” of the camera. The gain is a function that allows you to increase the sensitivity of the camera for shooting in low light. This obviously increases the background noise.

1.3 **“Color”** section controls the color rendering of the camera.

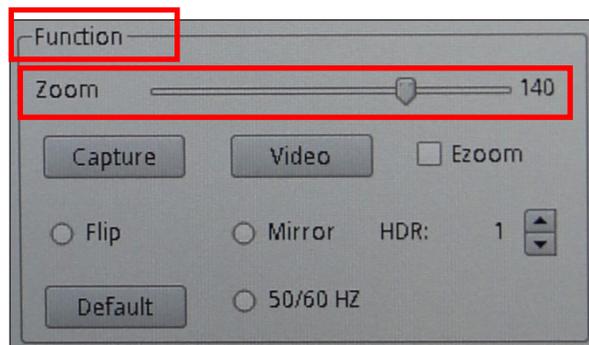
Activating the **“AWB”** function uses automatic white balance. Place a blank sheet of paper in front of the camera sensor and click **“AWB”**. The camera adjusts the colors output from the camera to the color temperature of the scene being shot.



Activating the **“MWB”** function uses manual white balance. In this case it is necessary to move the sliders related to Red, Green and Blue to obtain a faithful reproduction of what is being observed.



1.4 **“Function”** section controls the image display on the monitor.

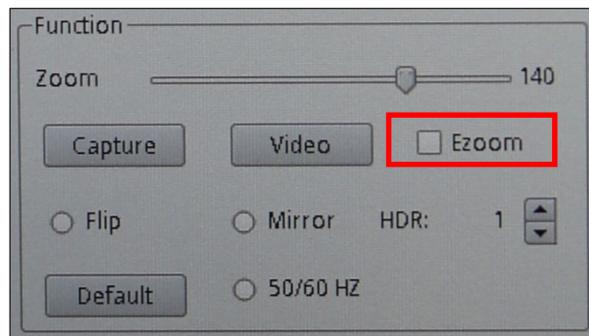


The “**Zoom**” cursor allows to vary the magnification of the projection to the monitor of the framed object.

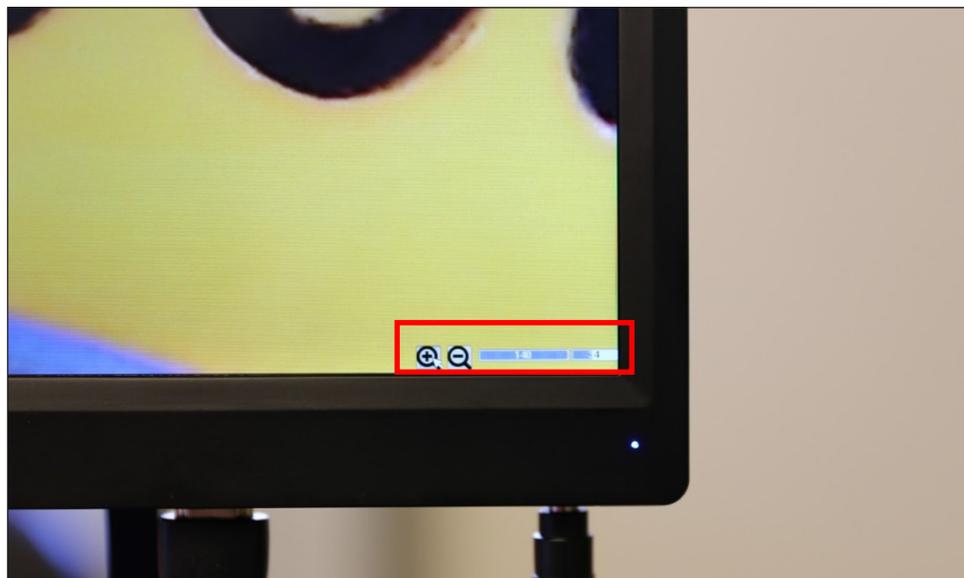
It is possible to change the zoom factor (optical zoom) from 1x to 14x both by acting on the cursor in the “Control” panel or by acting on the zoom bar located at the bottom right of the monitor.



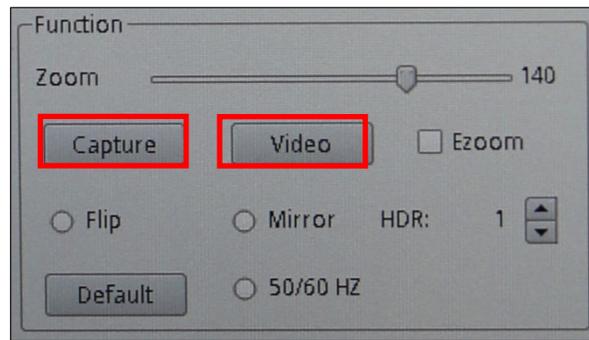
The camera also allows you to use an electronic zoom (from 1x to 6x), activating the “**Ezoom**” selector.



The variation of the electronic zoom factor will occur only and exclusively acting on the buttons at the bottom right of the monitor.



It is possible to capture single images or videos simply by clicking on the “**Capture**” button for single images or on “**Video**” for movie sequences of desired length.



The “**Flip**” function flips the framed image vertically, while the “**Mirror**” function horizontally flips it. This is useful for making what is observed in the camera consistent with the real object.



The “**HDR**” function (High Dynamic Range) optimizes the image quality in the case of subjects with very clear framed areas together with very dark areas. Often in these conditions the camera favors or clear areas (omitting the dark areas making them black) or dark areas (with a consequent overexposure of the light areas, making them almost white).



An “**HDR**” setting of 0 indicates that the camera will acquire a single image and store it. Increasing the number (max 3) the camera acquires 3 images at different exposures (usually one underexposed, one with optimal exposure and one overexposed), combines them to optimize the different zones with different lighting and creates a single image at exposure “virtually correct”.

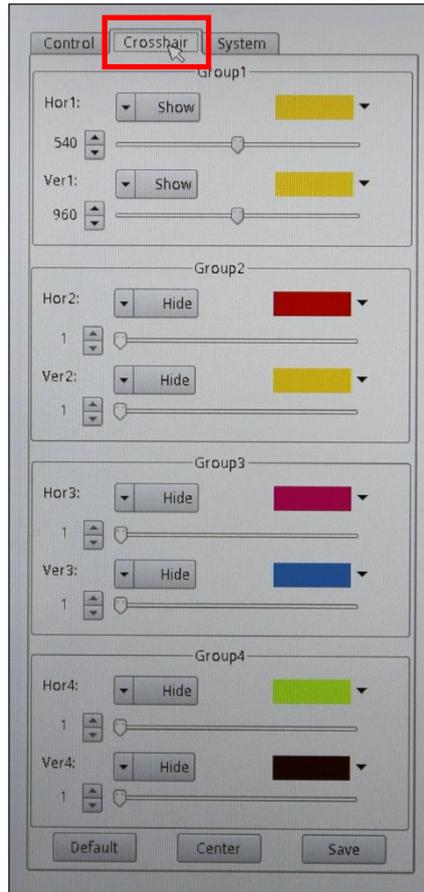
The “50 / 60Hz” function is used to eliminate flickering of the image due to the power supply frequency.



The “Default” key resets all the settings made and restores the factory settings.



2. "Crosshair" Menu

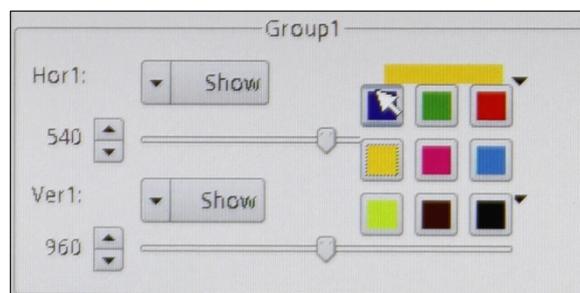


Up to 4 sets of horizontal or vertical rows can be superimposed on the monitor.

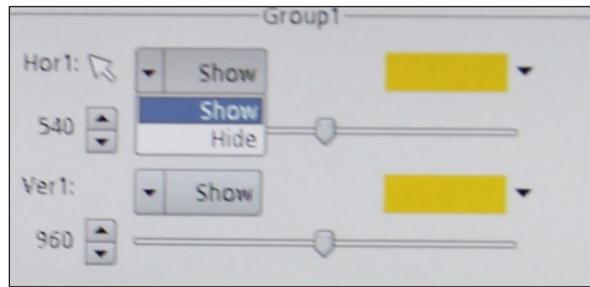
These lines can be placed anywhere on the monitor by simply dragging the cursor relative to the desired line.

The lines can be projected with different colors in order to be easily visible on the monitor, depending on the color of the sample in question.

Clicking with the mouse on the color palette of the desired row opens the context menu, with which you select the color of choice.



The lines, once traced, can be visible or hidden. Clicking on the “**Show / Hide**” button opens the context menu with which you can view a “**Show**” row or hide it “**Hide**”. The lines, if hidden, will not be deleted from memory but simply will not be visible.

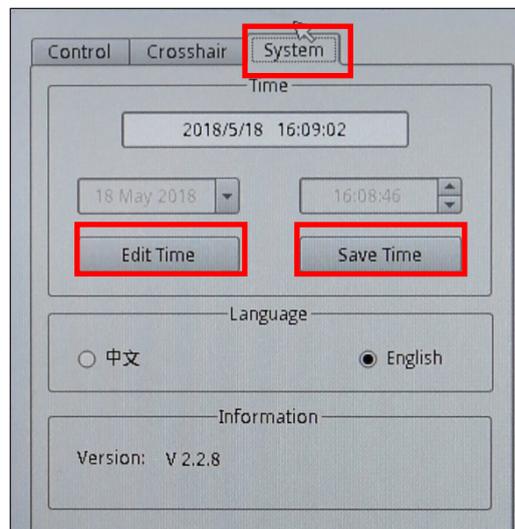


The “**Default**” key resets all the settings made and restores the factory settings.

The “**Center**” button places the lines exactly in the center of the monitor (possibly overlapping the different lines drawn).

The “**Save**” button saves the settings of the placed rows.

3. “**System**” Menu



With this menu, the system information of the camera is changed.

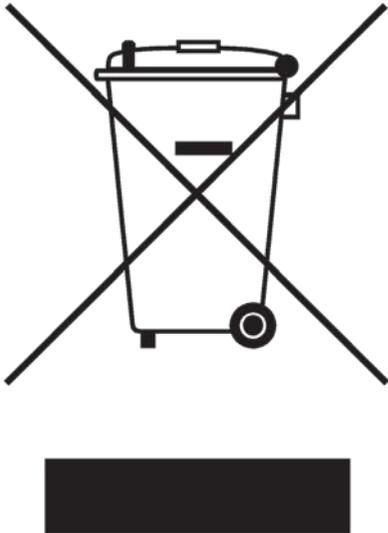
The “**Edit Time**” button changes the current date and time, while the “**Save Time**” button saves the settings made just recently.

It is possible to change the menu **Language** from English to Chinese.

The “**Information**” field displays the current version of the software.

Equipment disposal

Art.13 Dlsg 25 July 2005 N°151. "According to directives 2002/95/EC, 2002/96/EC and 2003/108/EC relating to the reduction in the use of hazardous substances in electrical and electronic equipment and waste disposal."



The basket symbol on equipment or on its box indicates that the product at the end of its useful life should be collected separately from other waste.

The separate collection of this equipment at the end of its lifetime is organized and managed by the producer. The user will have to contact the manufacturer and follow the rules that he adopted for end-of-life equipment collection.

The collection of the equipment for recycling, treatment and environmentally compatible disposal, helps to prevent possible adverse effects on the environment and health and promotes reuse and/or recycling of materials of the equipment.

Improper disposal of the product involves the application of administrative penalties as provided by the laws in force.