

*INSTRUCTIONAL MANUAL*

*FOR*

*LCD ZOOM MICROSCOPE*

- 8" LCD Screen
- 10.4" LCD Screen

## LCD Zoom Microscope Instruction Manual



Please read the Instruction Manual carefully before installation and keep it for future use.

## TABLE OF CONTENTS

<b>1. TABLE OF CONTENTS</b> .....	1
<b>2. SPECIFICATIONS</b> .....	2
2.1. Brief introduction .....	2
2.2. LCD monitor .....	2
2.3. Optics .....	2
2.4. Built-in LED ring light with adjustable brightness .....	2
2.5 Optical Data .....	2
<b>3. PACKING LIST</b> .....	3
<b>4. INSTALLATION</b> .....	3
<b>5. ADJUSTMENT AND OPERATING INSTRUCTIONS</b> .....	5
5.1. Adjustment of optic unit .....	5
5.2. Adjust and calibrate the position of laser pointer .....	6
5.3. Rotate 35° Angle View Attachment .....	6
5.4. Lighting Adjustment .....	6
5.5. Auto White Balance .....	6
5.6. Video Out .....	6
5.7. LCD Monitor Adjustment .....	7
<b>6. TROUBLE SHOOTING</b> .....	11
<b>7. SAFETY GUIDE</b> .....	11
<b>8. AFTER SERVICE</b> .....	12



# LCD ZOOM MICROSCOPE

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## 2. SPECIFICATIONS

### 2.1. Brief introduction

- ✧ Total Magnification: 3.3x~147x (8" LCD Monitor) or 3.2x-198x (10.4" LCD Monitor).
- ✧ Compact, light weight and low power consumption
- ✧ 16MS high definition color with the function of intelligent screen image setting
- ✧ High contrast and brightness
- ✧ Additional high video output supports the analysis and process of microscopy images. Image capture frame grabber and image processing software with Interface of Windows can be added to the system.
- ✧ Different stand and illumination are available.

### 2.2. LCD monitor

- ✧ LCD Screen size: 8 inches or 10.4 inches (optional per request)
- ✧ Optimal resolutions: 800 X 600 (8" LCD Monitor) and 1024 X 768 (10.4" LCD Monitor)
- ✧ Dot pitch: 0.297 mm
- ✧ Contrast: 300:1 (8" LCD Monitor), 350:1 (10.4" LCD Monitor)
- ✧ Viewing angle: about 150°
- ✧ Response time: ≤25ms
- ✧ Brightness: 250cd/m<sup>2</sup> (8" LCD Monitor), 300cd/m<sup>2</sup> (10.4" LCD Monitor)
- ✧ Video Output: BNC Connector/S-VIDEO Connector

### 2.3. Optics

- ✧ Total Magnifications: 3.3x-147x (8" LCD Monitor) or 3.2x-198x (10.4" LCD Monitor)
- ✧ Zoom Body: 0.7-4.5x, with detents.
- ✧ Zoom Ratio: 1:6.5
- ✧ Optional Objective Lens: 0.3x, 0.5x, 0.75x, 1x, 1.5x and 2x.
- ✧ 35° Angle View Attachment: 35 degree for 0.75x objective lens or 35 degree for 0.5x objective lens (optional per request)

### 2.4. Built-in LED ring light with adjustable brightness.

- ✧ Optional illumination is available.
- ✧ Laser Pointer: DC 5V
- ✧ Body Size: 76mm, suitable for the most microscope stands, boom stands and flexible arm stands.
- ✧ Power Supply: AC 85-265V, 50/60Hz
- ✧ LED Ring Light: DC 12V, 0.5mA

### 2.5. Optical Data

## LCD ZOOM MICROSCOPE

8" LCD Video Zoom Microscope ( 1/3" CCD/8"LCD Monitor/0.5x CCD Coupler)

Coupler	0.35x(Optional)		0.5x(Standard)		W. D. mm
	Auxiliary Lens	Mag.	FOV mm	Mag.	
0.3x	2.5x~16x	81~12.7	3.6x~22.9x	57.1~8.9	331
0.5x	4.2x~26.7x	48.8~7.6	5.9x~38.1x	34.3~5.3	198
0.75x	6.2x~40x	32.6~5	8.9x~57.1x	22.8~3.6	131
1.0x(Standard)	8.3x~53.3x	24.4~3.8	11.9x~76.2x	17.1~2.7	96
1.5x	12.5x~80x	16.3~2.5	17.8x~114.3x	11.4~1.8	63
2.0x	16.6x~106.7x	12.2~1.9	23.7x~152.4x	8.6~1.3	46

10.4" LCD Video Zoom Microscope ( 1/3" CCD/10.4" LCD Monitor/0.5x CCD Coupler ) :

Coupler	0.35x (Optional)		0.5x (Standard)		W. D. mm
	Auxiliary Lens	Mag.	FOV mm	Mag.	
0.3x	3.2x~20.8x	81~12.7	4.6x~29.7x	57.1~8.9	331
0.5x	5.4x~34.7x	48.8~7.6	7.7x~49.5x	34.3~5.3	198
0.75x	8.1x~52x	32.6~5	11.6x~74.3x	22.8~3.6	131
1.0x (Standard)	10.8x~69.3x	24.4~3.8	15.4x~99.1x	17.1~2.7	96
1.5x	16.2x~104x	16.3~2.5	23.1x~148.6x	11.4~1.8	63
2.0x	21.6x~138.7x	12.2~1.9	30.8x~198.1x	8.6~1.3	46

Note: The working distance is 52.5mm for 0.75x objective lens with 35° Angle View Attachment. 0.35X CCD Coupler and 1/2" CCD for optional.

### 3. PACKING LIST

8" or 10.4" LCD Video Zoom Microscope Body-----1 unit  
 1.0x objective Lens -----1 unit  
 Laser pointer -----1 unit  
 Power Supply -----1 line  
 Instruction Manual-----1 book  
 Warranty Registration Card -----1 piece  
 Stand (optional per request)



### 4. INSTALLATION

- 4.1. Open the package and take out the components carefully. Please contact the manufacturer or local dealers for any missing part.
- 4.2.1. Place the stand on a strong and even table.
- 4.2.2. Lift out LCD Microscope carefully, and place the scope body into the arm holder (dia.: 76mm)

## LCD ZOOM MICROSCOPE

of the stand and lock it with screws.

4.2.3. Install 35° Angle View Attachment before inspecting as shown below. (The objective lens is inside) If you don't order 35° Angle View Attachment or don't use 35° Angle View Attachment, you need to use the objective lens.

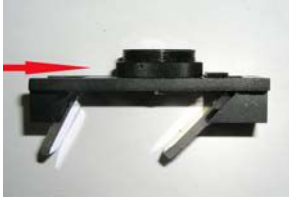


Figure 4-1

The Installation of 3D

Figure 4-1 and Figure 4-2. Hold the round rotating part of 3D attachment by hand, shown in Figure 4-1.



Figure 4-2

Rotate to the head of the microscope body.



Figure 4-3

Never put the microscope body with view angle attachment into the scope holder. Before taking out the scope body from the scope holder, take off the view angle attachment first, as shown in Figure 4-3

The installation of objective lens is shown in Figure 4-4,



Figure 4-4

Rotate 1x objective lens to the head of microscope body.

4.2.4. Install Laser pointer and tighten the locking screw with the socket marked "Laser" on the Microscope body as shown in Figure 4-5 and 4-6.

# LCD ZOOM MICROSCOPE



Figure 4-5



Figure 4-6

4.2.5. As shown in Figure 4-7, connect the power supply.



Figure 4-7

Connect one side of the power supply with 110v 60Hz power, and the other side with the socket marked "power" on the microscope body.

\*\* The power adapter supplies power, not the stand, for microscope body. Please connect it correctly.

## 5. ADJUSTMENT AND OPERATING INSTRUCTIONS

### 5.1. Adjustment of optic unit

5.1.1. Turn on the Main Power on the Microscope Body first as shown in Figure 5-1, and turn on the LCD Screen Power as shown in Figure 5-2.

5.1.2. Turn on the light and press the button to adjust the brightness till the appropriate lighting is as shown in Figure 5-2.

5.1.3. Zoom out the lens at 0.7x position as shown in Figure 5-3.

5.1.4. Adjust the knob on the post to get the image in focus.



Figure 5-1



Figure 5-2



Figure 5-3

## LCD ZOOM MICROSCOPE

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5.1.5. Zoom in the lens at 4.5x position and make the image in focus. After that, the image will be always in focus while zooming.

5.2. Adjust and calibrate the position of laser pointer

5.2.1. Calibration of Laser point: Pressing Laser pointer button as shown and adjust the position of laser pointer stand to be in the center of LCD, and then lock it.

5.2.2. Move the object to be inspected to the laser point and then turn off laser pointer.

5.3. Rotate 35° Angle View Attachment to view the object to be inspected as shown in Figure 5-4.



Figure 5-4

On the plan view position

On the 35° Angle View Attachment position

Push or pull to change the view angle attachment position.

5.3.1 Push the reflector attachment to change the view in plan view or angle view.



Figure 5-5

5.4. Lighting Adjustment: Keep pressing the light button till appropriate lighting.

5.5. Auto White Balance: One-press of W.B. key

5.6. Video Out:

5.6.1 The video out connector is for connecting with the other video monitor when needed. Or you can connect with the computer with a frame grabber when needed.



## LCD ZOOM MICROSCOPE



Show microscope's video signal on computer through signal transfer by video out connecter and video card.

5.6.2 Note: Remove the BNC socket as shown in the figure.



Figure 5-6

Press the top end of socket and push the back end of it to remove the socket.

### 5.7. LCD Monitor Adjustment

#### 5.7.1. Specifications

Model Name	8" Monitor	10.4" Monitor
Display size	800 × 600	1024 × 768
Pixel pitch	0.213	0.253
Viewing angle	170/170 (H/V)	
Horizontal	30-61KHz	
Vertical	60-75Hz	
Display color	16,777,216 colors	
Maximum mode	1024X 768@75Hz	
Sync. video signal	H/V Separate, TTL, P or N.0.7Vp-p@75ohm	
Color system	PAL/NTSC4.43/NTSC3.58/SECAM	
Sound system	BG/DK/I/M	
Video input	1.0Vp-p@75ohm	
Audio input	500mVrms	
Power input	DC 12V	
Power consumption	9W	11W
Power saving	<1.0w	
Operating Temperature	10 °C-40 °C (50°F -104°F)	
Operating Humidity	10%-80%	
Storage Temperature	-25°C-45°C (-13°F -113°F)	
Storage Humidity	5%-95%	
Audio Input	3.5Ø Stereo Jack, 0.5Vrms (-9dB)	

## LCD ZOOM MICROSCOPE

Headphone Output	Max. 10mW Output (3.5Ø Stereo Jack, 32Ω)
Frequency response	RF:80hz-15khz (at-3db)
	A / V:80hz-20khz (at-3db)

### 5.7.2. Viewing the Display mode

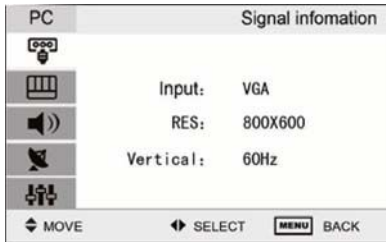
Press the "Menu" button.

Display the On Screen Display menu.

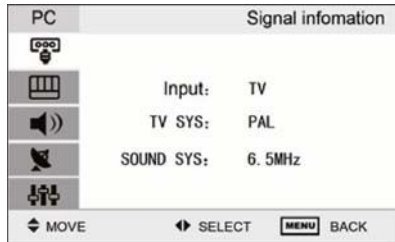
The signal information should be displayed on the screen.

You may see different information on different signal mode.

VGA mode:



TV mode:



Press the "Menu" button to exit the OSD menu.

### 5.7.3. Setup Picture

You can select the type of picture which best corresponds to your viewing requirements.

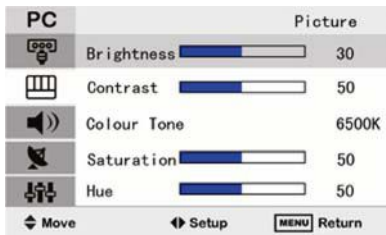
Press the "Menu" button, display the OSD main menu.

Press the "CH+" or "CH-" button, select the option.

Press the "VOL+" or "VOL-" button, adjust the option.













For example, adjust the brightness:

Press the "CH+" or "CH-" button, select the brightness button:



## LCD ZOOM MICROSCOPE

Press the "VOL+" or "VOL-" button, adjust the brightness

PC	Picture
 Brightness	 30
 Contrast	 50
 Colour Tone	6500K
 Saturation	 50
 Hue	 50
 Move	 Setup  Return

### 5.7.4. System setting

You can choose the language that you need.

TV	Channel
 Language	English
 Blue	ON
 Auto power down	OFF
 Auto adjust	↔
 Reset	↔
 MOVE	 SELECT  BACK

When there is no TV signal, you can open the Blue Background.

TV	Channel
 Language	English
 Blue	ON
 Auto power down	OFF
 Auto adjust	↔
 Reset	↔
 MOVE	 SELECT  BACK

You can choose 15 to 20 minutes Auto Power Down time.

## LCD ZOOM MICROSCOPE

TV	Channel
 Language	English
 Blue	ON
 Auto power down	OFF
 Auto adjust	↔
 Reset	↔
 MOVE  SELECT  MENU BACK	

On PC mode, you can use the Auto adjust to do adjusting automatically.

TV	Channel
 Language	English
 Blue	ON
 Auto power down	OFF
 Auto adjust	↔
 Reset	↔
 MOVE  SELECT  MENU BACK	

Use the “reset”. You can replace all settings with the factory default values.

TV	Channel
 Language	English
 Blue	ON
 Auto power down	OFF
 Auto adjust	↔
 Reset	↔
 MOVE  SELECT  MENU BACK	

### 5.7.5. Display Mode

#### Display Mode

Resolution	H Frequency	V-Frequency (KHz)	Pixel Rate (MHz)	Standard Type	Remark
720x400	31.46	70	28.32	VESA Standard	DOS
	31.46	60	25.17	Industry Standard	
640x480	37.86	72	31.50	VESA Standard	VGA
	37.50	75	31.50	VESA Standard	
	37.88	60	40.00	VESA Guidelines	
800x600	48.08	72	50.00	VESA Standard	SVGA

## LCD ZOOM MICROSCOPE

Symptom	Item checked
No image	Check whether the power cord of monitor/PC is disconnected, or whether monitor is off by pressing key ON/OFF.
No input signal	Check whether VGA cable is properly connected or the PV is powered on.
Go beyond synchronization range	Do not support display mode of input signal; please refer to "Display mode".
Image is not in the center of screen	Use "automatic adjustment" function or adjust horizontal and vertical position manually.
Image is too bright or dark	Select appropriate "color temperature", use "automatic color adjustment" or adjust "RGB" manually; please refer to "screen menu system".
Jamming lines appear while closing Windows	Use "automatic adjustment" function or adjust "phase" and "clock" manually; please refer to "screen menu system".
Fail to adjust RGB setting	Check whether "color temperature" is under "USER" mode; only when "color temperature" setting" is under "USER" mode, you can adjust" RGB".
Fail to adjust acutance	Check whether the resolution is 1024x768; if so, there is no need to adjust acutance.
	46.88      75      49.50      VESA Standard
	48.36      60      65.00      VESA Guidelines
1024x768	56.48      70      75.00      VESA Standard      XGA
	60.02      75      78.75      VESA Standard

### 6. TROUBLE SHOOTING

Please check the following troubleshooting methods before asking for repair. If you need any help, please contact our local distributor.

### 7. SAFETY GUIDE

Important precautions!

Hazardous! High voltage!



The equipment has a high voltage device. Please don't open the unit to avoid electric shock. Qualified serviceman is required for repair.

Improper operation may cause electric shock or fire. To prevent the danger, please follow the instructions while installing, using or cleaning the equipment. To ensure your safety and extend service life of the equipment, please read the following precautions carefully before operation.

- ✧ Please read and understand the instructions before using the equipment;
- ✧ Please properly keep the instruction manual for future use;
- ✧ Strictly follow cautions described in the equipment and operational instructions;
- ✧ Follow all instructions while operating the equipment;
- ✧ Don't use additional device not recommended by manufacturer; improper use of additional

## LCD ZOOM MICROSCOPE

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device may cause accident;

- ◇ Please use the power adaptor provided with the monitor. Check whether local power complies with the required voltage on this unit before connecting AC power cord to voltage socket. If you don't know the power type, please contact your distributor;
- ◇ Don't press against or enwind power cord with any article; the damaged power cord may cause electric shock or fire;
- ◇ Don't try to repair the equipment by yourself because the equipment has a high voltage device and other vulnerable parts, so any improper repair may cause damage to the unit or monitor. Be sure to ask qualified serviceman for maintenance;
- ◇ Don't touch any control part not mentioned in the operational instructions; improper adjustment on any unmentioned control part may damage the equipment and add repairing work for serviceman;
- ◇ In case of replacing accessory, confirm with serviceman that the new accessory is the one specified by manufacturer or its function is equal to the old one; improper use of accessory may cause fire, electric shock or damage to the monitor;
- ◇ Mount the monitor with the installing method recommended by manufacturer;
- ◇ Unplug the equipment while cleaning it; clean the monitor with slightly wet cloth and don't use any liquid or spraying cleaner;
- ◇ Unplug power supply if the equipment is not used for a long time;
- ◇ Don't put the equipment on unstable handcart, rack, tripod or table;
- ◇ The LCD is made of sensitized material so don't hit the LCD with any article; if the equipment falls off from higher position or suffers hit, the LCD may go into pieces; stop using the monitor immediately;
- ◇ Don't expose the equipment to sunlight or place it near any heat source.
- ◇ The interval between turning on and turning off the equipment shall not be less than 2 seconds.

### 8. AFTER SERVICE

If there is any failure of your product when using, please contact the distributor immediately.

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