LYNX MICROSCOPES

Biological Microscope, Vision

Please read the User Manual carefully before using it and follow all operating and safety instructions!

User manual

English

User Manual

EN

Biological Microscope, Vision

Preface

Users should read this Manual carefully, follow the instructions and procedures, and beware of all the cautions when using this instrument.

Service

If help is needed, you can always contact your dealer or Labbox via www.labbox.com (declare an incident). Please, provide the customer service representative with the following information:

- Serial number
- Description of the problem
- Your contact information

Warranty

This instrument is guaranteed to be free from defects in materials and workmanship under normal use and service, for a period of 24 months from the date of invoice. The warranty is extended only to the original purchaser. It shall not apply to any product or parts which have been damaged on account of improper installation, improper connections, misuse, accident or abnormal conditions of operation.

For claim under the warranty, please contact your supplier.

MONOCULAR HEAD MICROSCOPE

APPLICATION

This microscope is designed for research, instruction, and experiments in universities and technical secondary schools

SPECIFICATION

1. Eyepiece:

Type	Magnification	Vision field's diameter	
WF	10 x	15 mm	Selective Part
WF	10 x	20 mm	Selective Part
WF	16 x	11 mm	Selective Part

2. Single lens with disc diaphragm.
3. Coaxial coarse and fine focus (or coarse) adjustment, and rack & pinion with built in.
4. Objective:

Type	Magnification	N. A
Achromatic objective	4 x	37.5 mm
	10 x	7.35 mm
	40 x (S)	0.63 mm

5. Illumination:

Selective part	Incandescent lamp	220V/110V/20W
	Mirror	

ASSEMBLY INSTRUCTIONS

1. Remove microscope stand from Styrofoam packing and place it on a stable worktable. Remove all plastic bags and paper covering (these can be discarded).
2. Remove the head from the Styrofoam, remove packing materials and fit it onto the neck of the microscope stand, tightening the screw clamp as necessary to hold the head in place. The head is fully rotatable to any position desired.

3. Remove the plastic eyepiece tube covers from head and insert the WF10X Eyepiece(s).
4. Connect the cord to power supply and your microscope is ready for use.

OPERATION

1. Make sure the 4Xobjective lens is in position for use. This will make it easier to put your slide in place as well as to position the item you wish to look at. (You start at low magnification and work up.) Put a slide on the stage and clamp it carefully with the moveable spring clip.
2. Connect the power and turn on the switch.
3. Always begin with the 4X Objective. Turn the coarse focus knob until a clear image is obtained, then use the fine focus knob to enhance the observation of the specimen to its clearest image. When the desired view is obtained under the lowest power (4 X), rotate the nosepiece to the next higher magnification (10X). The nosepiece should "click" into position. Adjust the focusing knobs as needed to once again have a clear view of the specimen.
4. Turn the coarse adjustment (large) knob, observing the image of the specimen through the eyepiece. Use the fine adjustment (small) knob for more clarity.
5. The disc diaphragm below the stage can be rotated to control the amount of light directed through the condenser. Try experimenting with various settings to get the most effective view of your specimen.

MAINTENANCE

1. The microscope should be kept out of direct sunlight in a cool, dry place, free from dust, fumes and moisture. It should be stored in a case or covered with a hood to protect it from dust.
2. The microscope has been carefully tested and inspected. Since all lenses have been carefully aligned, they should not be disassembled. If any dust has settled on the lenses, blow it off with an air blower or wipe it off with a clean and soft camel hairbrush. In cleaning mechanical parts and applying non-corrosive lubricant, take special care not to touch the optical elements, especially the objective lenses.
3. When disassembling the microscope for storage, always put the covers on the nosepiece opening to prevent dust settling inside the lenses. Also keep the neck.

BINOCULAR HEAD MICROSCOPE

CONTENTS

1. Caution

1. Open the carton carefully with a knife or paper cutter. Find the “UP” sign and place the Styrofoam container on the side that makes the arrow upward. If the “UP” sign is missing, please open the Styrofoam container gently to prevent any accessory, i.e. objectives or eyepieces, from dropping and being damaged.

2. Do not dispose of the molded Styrofoam container. It should be retained if the microscope requires reshipment.

3. Keep the instrument out of direct sunlight, high temperature or humidity, and dusty environments. Ensure the microscope is located on a smooth, level and firm surface.

4. If any specimen solutions or other liquids splash onto the stage, objective or any other component, disconnect the power cord immediately and wipe up the spillage. Otherwise, the instrument may be damaged.

5. All electrical connectors (power cords) should be inserted into an electrical surge suppressor to prevent damage due to voltage fluctuations.

6. Confirm that the input voltage indicated on your microscope corresponds to your line voltage. The use of a different input voltage other than that as indicated will cause severe damage to the microscope.

2. Care and Maintenance

1. Do not attempt to disassemble any component including eyepieces, objectives or focusing assembly.

2. Keep the instrument clean; remove dirt and debris regularly. Accumulated dirt on metal surfaces should be cleaned with damp cloth. More persistent dirt should be removed using a mild soap solution. Do not use organic solvents for cleansing.

3. The outer surface of the optics should be inspected and cleaned periodically using an air stream from an air bulb. If dirt remains on the optical surface, use a soft cloth or cotton swab dampened with a lens cleaning solution (available at camera stores). All optical lenses should be swabbed using a circular motion. A small

amount of absorbent cotton wounds on the end of a tapered stick makes it a useful tool for cleaning recessed optical surfaces. Avoid using an excessive number of solvents as this may cause problems with optical coatings or cemented optics or the flowing solvent may pick up grease making cleaning more difficult. Oil immersion objectives should be cleaned immediately after use by removing the oil with lens tissue or a clean, soft cloth.

4. Observe the specimen with the 4X, 10X and 40X objectives in order, then observe the specimen with the 100X objective. Apply the immersion oil on the slide cover with the 100X objective. Do not let the immersion oil to contact with the dry objectives' lens (especially the 40X). Clean the dry objective lens using the camera cleaning kit if the immersion oil is on the dry objectives' lens. Clean the 100X objective lens first using the camera cleaning kit after observing the specimen with the 100X objective, then clean the specimen. More persistent dirt should be removed using a little bit of alcohol. Do not use organic solvents for cleansing.

5. Store the instrument in a cool, dry environment. Cover the microscope with the dust cover when not in use.

3. Components Ilustration

1 Eyepiece	9 Microscope Base	17 Brightness Intensity Dial
2 Diopter Adjusting Ring	10 Viewing Head	18 Condenser Lock Thumb
3 Eyepiece Tube	11 Microscope Body	Screw
4 Nosepiece	12 Focusing Rack Stop Screw	19 Condenser Control Knob
5 Objective	13 Coarse Focus Knob	20 Condenser
6 Slide Holder	14 Fine Focus Knob	21 Color Filter Holder
7 Mechanical Stage	15 X-Y Stage Moving Knobs	22 Iris Diaphragm Lever
8 Light Collector	16 Power Switch	

4. Installation

Fig. 1

4.1 Installation of the binocular viewing head

1) Loosen the head lock thumb screw (Fig. 1) on the top of the microscope body.

Note:

The thumb screw may not be pre-installed. Please find it in the same package as the microscope.

2) Remove the cap on the circular dovetail of the binocular viewing head.

3) Insert the binocular viewing head into the top of the microscope body; ensure that the dovetail is completely seated into the socket and tighten the thumb screw.

Caution:

Do not release the viewing head from your hand grip until you are sure the viewing head is installed securely.

4.2 Installation of the eyepieces

1) Remove the protective caps from the eyepiece tubes.

2) Insert the eyepieces into the eyepiece tubes.

4.3 Installation of the glass filter

1) Swing out the color filter holder under the condenser.

2) Place the filter into the holder as shown in Fig. 2, swing the holder in.

Fig. 2

4.4 Installation of the camera (optional, may not be included in your package)

Fig. 3

1) Take off the eyepiece from the eyepiece tube.

2) Insert the camera into the eyepiece tube and then connect the camera to a computer via USB2.0 cable. See Fig. 3.

3) The manual for the camera is on a CD (or mini CD). Refer to the manual to install the driver and software on to the computer.

4) The camera is optional and may have different color and shape from the one in the figure, depending on the model purchased.

4.5 Installation of the dry darkfield condenser (optional, may not included in your package)

See section 7 **(Dry Darkfield Condenser Installation & Operation Instruction)**

5. Operation

5.1 Adjusting illumination

1) Plug the power cord into the power socket on the microscope and connect it to the power outlet.

2) Turn on the power switch.

3) Rotate the brightness intensity dial to increase or decrease the brightness.

5.2 Placing specimen

1) Place the slide on the mechanical stage.

2) Use the slide holder to gently secure the slide.

3) Turn the X and Y stage moving knobs to position the specimen in the center of viewing field.

Caution:

Be sure not to allow an objective to touch a specimen slide when changing objectives.

5.3 Adjusting interpupillary distance

While observing with both eyes, hold the left and right eyepiece tubes and slide the

tubes in and out. The interpupillary distance is correct when the left and right fields of view converge completely into one image.

5.4 Adjusting eyepiece diopter

Fig. 4

1) Rotate the 10x objective into position.

2) Rotate the diopter ring on the right eyepiece tube until its numerical value is the same as your interpupillary distance, for example, 70 in the right figure (See Fig. 4).

3) Close your left eye and bring the specimen into focus following the focusing procedures in 3.5.

4) Close your right eye and bring the same specimen into clear sharp focus by adjusting the diopter ring on left eyepiece tube only. Do not use focus knobs at this step.

5) Since both sides are adjustable, you may also do the above in the opposite way, in other words, left eye first and right eye second.

5.5 Focusing

1) With the 10x objective in position, raise the mechanical stage using the coarse focus knob until the specimen is close to the objective.

Fig. 5

2) Turn the coarse focus knob until the specimen is in focus. Use the fine focus knob to obtain a sharp image. You may now switch to another magnification objective.

3) To get a good and focused image, you may need to combine the focus knob adjustment and interpupillary distance adjustment, along with eyepiece diopter adjustment stated in 3.3 and 3.4.

Tips:

To prevent your specimen slide from making contact with an objective, turn the 100X objective in position and adjust the focusing rack stop screw (Fig. 5) so that the 100X objective will not contact the specimen while the stage is adjusted to its highest position. Give the stage a tiny extra moving space to ensure the

objective can be focused every time.

5.6 Applying the immersion oil

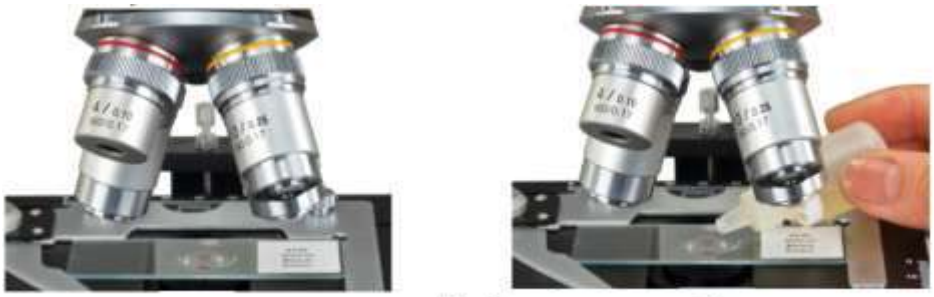
1) Rotate the objective nosepiece to seat the observing position between the 40X and 100X objectives as shown in Fig. 6 (a).

2) Place a drop of immersion oil on the slide cover as shown in Fig. 6 (b).

3) Rotate the objective nosepiece to seat the 100X objective to the observing position until you hear a “click” sound.

4) After observing the specimen, use the camera cleaning kit to clean the 100X objective lens gently and the specimen in time.

5) If it is hard to clean, you need a little bit alcohol to clean the 100X objective lens and the specimen.



(a) Fig. 6 (b)

Caution (important):

- When you use the 100X objective to observe the specimen, you have to finish observing the specimen with the 4X, 10X, 40X objectives.
- When you use the 100X objective to observe the specimen, you have to apply the immersion oil on the top of the slide cover.
- When you apply the immersion oil with the 100X objective, do not let the immersion oil to contact with the dry objective lenses (especially the 40x). If the immersion oil is on the dry objectives’ lens, please use the camera cleaning kit to clean the objectives lens in time. The oil will damage the dry objective lenses.
- After observing the specimen with the 100X objective, clean the 100X objective lens first.

5.7 Adjusting condenser

1) Turn the condenser focus knob to raise or lower the condenser.

2) Raise the condenser when using high power objectives and lower it when using

low power objectives.

Note:

- The centering of the condenser and the light axis of the objective are factory adjusted. Do not attempt re-adjustment.
- The highest position of the condenser has been factory adjusted. Do not attempt re-adjustment.

5.8 Adjusting iris aperture diaphragm

Swing the iris diaphragm lever (Fig. 7) left or right to adjust the aperture size.

Fig. 7

Note:

The iris diaphragm is designed to adjust the aperture size, not to adjust the brightness although the brightness will be changed when it's adjusted. When aperture is adjusted to smaller size, the contrast will be increased and the depth of field will be increased as well. Turn up the intensity of the light if the image is too dim.

5.9 Camera (optional, may not be included in your package)

1) Bring the microscope into focus by following the procedures in 3.5.

2) Install the camera by following the procedures in 2.4.

3) Open image observing software to examine.

4) You also can capture images or record live videos through the software, depending on the functions provided by the software.

Note:

Please refer to the manuals in the camera's CD for the details of installation and operation of the camera.

5.10 Dry Darkfield condensers observation (optional, may not be included in your package)

See section 9 **(Dry Darkfield Condenser Installation & Operation Instruction)**

6. Specifications

General	
Model	Vision binocular microscope
Total Magnification	40X, 100X, 400X, 1000X
Viewing Head	Binocular, inclined 45°, swiveling 360°
Interpupillary Distance	Sliding adjustment, 55mm ~ 75mm
Diopter Adjustment	On both eyepiece tubes
Eyepieces	1 pair of wild fields WF10X/18
Nosepiece	Revolving quadruple
Objectives	Achromatic DIN 4X/0.10 160/0.17 10X/0.25 160/0.17 40X/0.65 160/0.17(spring) 100X/1.25 160/0.17(spring, oil)
Condenser	Abbe, NA=1.25, w/ iris diaphragm Rack and pinion adjustment
Focus Mechanism	Coaxial coarse and fine focusing knobs on both sides with rack stop
Mechanical Stage	Double layer, dimension: 4-1/2" x 4-15/16" (115mm x 125mm) X-Y translational range: 2-13/16" x 1-3/16" (70 mm x 30 mm)
Illumination	Transmitted, LED, variable intensity
Cameras (optional)	Refer to the cameras' specifications
Dry Darkfield Condensers (optional)	Refer to the Dry Darkfield Condensers Installation & Operation Instruction
Power Supply	AC/DC adapter, 100V-240V (CE approved)
Dimension	23cm x 18cm x 33cm
Net weight	3.25 kg

7. Optional Parts

(The optional parts may be included in some models or sold separately)

1) Dark field condensers

Picture	Model	Dark field condenser	Numerical Aperture	Objective	Mounting Size (diameter)
		Dry	0.7-0.9	-	37mm

2) Camera

Picture	Model	Resolution	Operating System	Software
	TECO-5A	2592x1944 (5.1MP)	MS Windows Mac OS 10.8 and up Linux (2.6 or above)	Included
	KOTI-3	2048X1536 (3.0MP)		
	KOTI-5	2592X1944 (5.1MP)		

8. Troubleshooting Guide

Problem	Cause	Solution
Lamp does not light when switched on	No electrical power	Check power cord connection
	LED or power unit dead	Contact seller for service
Darkness at the periphery	Revolving nosepiece not in click stop position	Revolve the nosepiece to click-stop position by swinging the objective correctly into the optical path
Uneven brightness in the field of view	The diffusion filter is not in the light path	Check the diffusion filter and make sure it's in the light path
Insufficient brightness	Diffusion filter used when using 100X objective	Swing out the diffusion filter when using 100X objective
Dirt or dust on the view	Dirt or dust on the lens eyepiece, condenser, objective, collector lens or specimen	Clean the lens with a camera cleaning kit
	Dirt or dust on the specimen	Clean the specimen
Poor image quality or not able to get focused image	No slide cover attached to the slide	Attach a 0.17mm slide cover
	Slide cover is too thick or thin	Use a slide cover of the appropriate thickness (0.17mm)
	Slide may be upside down (specimen at the bottom)	Turn slide over so the cover-glass faces up
	Diopter adjustment is not set properly	Readjust the diopter settings
	Immersion oil is on a dry objective (especially the 40X)	Check the objectives, clean if necessary
	No immersion oil used with 100X objective	Use immersion oil
	Air bubbles in immersion oil	Remove bubbles
	Specimen rises from stage surface	Secure the specimen in the slide holder
	Condenser aperture is closed or open too much	Open or close properly
	Condenser is positioned too low or too high	Move condenser upper or lower
	Lamp intensity is too high or low	Adjust the light intensity by rotating the intensity control dial
Image is black screen through camera (optional)	Not enough lighting or driver not installed properly	Check the camera manual
Image is totally white through camera (optional)	The light is too bright	Manually adjust the exposure in the software. See manual for details.

9. Dry Darkfield Condenser Installation & Operation Instruction

1) Mounting the dry darkfield condenser

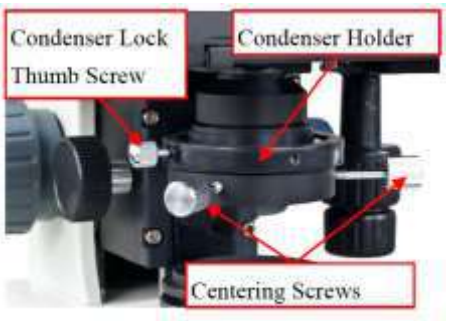
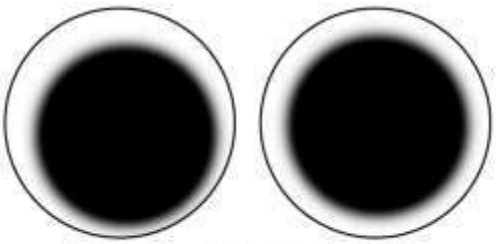


Fig.8

- Rotate the nosepiece and set the 4x objective in position.
- Loosen and raise the focusing rack stop screw to the highest position.
- Turn the coarse focus knob to raise the mechanical stage to the highest position without contacting the 4X objective.
- Turn the condenser control knob to raise the condenser to the highest position.
- Loosen the condenser lock thumb screw, pull down the condenser and take it off, insert the dry darkfield condenser in, and tighten the condenser lock thumb screw (See Fig. 8).
- Re-adjust the condenser height to its normal position.
- Re-adjust the mechanical stage height to its normal position.
- Lower the focusing rack stop screw back and use the bolt to lock it when needed.

Note: When raising the mechanical stage, do not make contact with the objective.

2) Centering the dry darkfield condenser


(a) Fig. 9 (b)

- Turn the 4X objective to the light path.
- Turn the condenser focus knob to lower the condenser till a dark spot showed in the viewing field as shown in Fig. 9 (a).
- Turn the condenser translational centering screws to move the dark spot to the center as shown in Fig. 9 (b).

3) Place the slide on the stage.

4) Raise the condenser all the way to the top and then lower it a little bit.

5) Follow the procedures in this manual to bring the sample on slide in focus and observe.

6) Move the condenser up or down slightly to get the best darkfield viewing.

Note:

- The dry darkfield condenser is used with dry objectives only.
- The dry darkfield condenser works with the 4X, 10X, 40X objectives.
- The dry darkfield condenser does not work with the 100X oil immersion objective.

IPS-SCREEN HEAD

CONTENTS

1. Overview

1.1 Features

◆ ARM efficient processor.

◆ Supports the snapping and video recording of microscope images.

◆ Calibration and measurement function.

◆ Stable and reliable upgrade function.

1.2 Application and Scope

For compound microscopes with a minimum.

1.3 Operating Environment

1. Ambient temperature: 0 ~ 60℃.
2. Relative humidity: 0% ~ 95%, no condensation.
3. Environment: no vibration, no dust, corrosive gas, flammable gas, oil fog, water vapor, water drop or salt, etc.
4. Atmospheric pressure: 70 ~ 106kPa.
5. Altitude: ≤5000M.
6. Power input 5V.

2. Parameters and Composition

1. Basic structure: Camera with 7-inch IPS display.
2. Installation: Mounting on the microscope.
3. Weight: ≤ 2.5kg.
4. Color: white, black.
5. Surface coating: spray paint.

2.1 Parameters

Parameter	Specification
Type of sensor	Color CMOS Image Sensor
Sensor size	1/2.8 Inch
Pixel size	2.9 μm (H) × 2.9 μm (V)
Resolution ratio	1920 X 1080
Exposure control	Auto / Manual
Power Frequency	DC / 50Hz / 60Hz

White balance control	Auto WB / Once WB / Manual
Cross-line	4 Sets
Calibration and measurement	Support Calibrating and line measuring
Snap	Button snap / timed snap
Video recording	Supported
Frame rate	30FPS@1920*1080
Image adjusting Parameters	Saturation / Hue / Brightness / Contrast / Monochrome /Flip vertical / Flip horizontal / FOV
FOV	20%-100%
Storage for snap and record	TF card
Language	English / Chinese
Firmware Software Update	Supported
Overall dimensions	182mm*125mm*85mm

2.2 Included Components

◆ 7-inch microscope display camera

◆ 5V/1A power adapter

2.3 Appearance

3. Operation Procedure

Before installing the camera, make sure that all equipment listed in 2.2 is included in the package.

3.1 Connect the power adapter to the camera

Insert the power adapter of 5V/1A into the power port behind the camera.

After power on, the red light will light up. Press the power button at this time, the indicator light will change from red to green and the camera will start up.

3.2 Use the back button to operate the interface

Use the back button to operate the camera functions and adjust the camera parameters. After modifying the parameters, exit the interface to save.

In the upper left corner of the screen, “Param. saved” appears. This is shown in Figure 3-1.

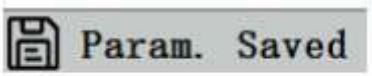


Figure 3-1

3.3 Snap

1. The snap button is on the right side of the camera, above the power button. Press it to capture the current image on the screen and store it in the SD card.
2. The screen shows “Take Successfully”, which means that the picture has been taken successfully. This is shown in Figure 3-2.

Figure 3-2

Warning: Disconnect the power supply if the equipment is not used for a long time.

4. Menu and Functions

After turning on the power and pressing the power button, wait for the screen to light up. At this point, press the MENU key to call out the menu. As shown in Figure 4-1. The position of the current cursor (that is, the position of the highlighted icon) is the white balance function.

Figure 4-1

Press ↑↓ for function selection, press → to enter the sub-menu interface of the corresponding functions, press MENU to hide the interface, and save all parameters that have been modified. The specific functions of this product are shown in Figure 4-2.

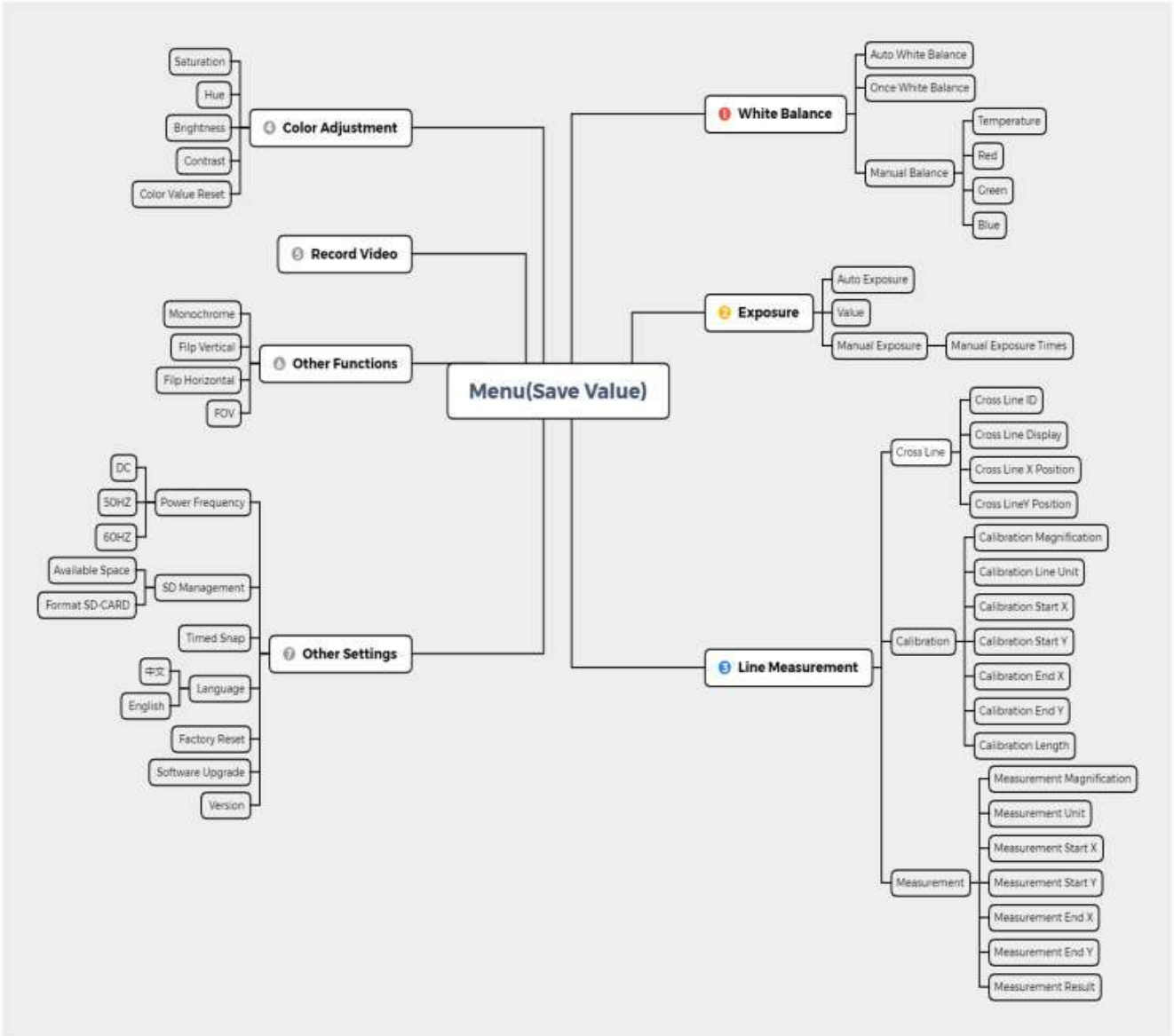


Figure 4-2. Function block diagram of camera

5. Operating Instructions

5.1 White Balance

After entering the white balance menu, the default option is “Auto White Balance”, as

Figure 5-1

Figure 5-2

shown in Figure 5-1.

When the effect of automatic white balance is not ideal due to the difference of color temperature between different light sources, manual white balance is used to adjust the parameters of color temperature, R, G and B respectively. This is shown in Figure 5-2.

5.2 Exposure

After entering the exposure menu, the default option is “Auto exposure”, as shown in Figure 5-3. Under automatic exposure, you can adjust the target “value” to adjust the degree of exposure. In manual exposure, you can also adjust the exposure by adjusting the value of exposure “time”. As shown in Figure 5-4.

Figure 5-3

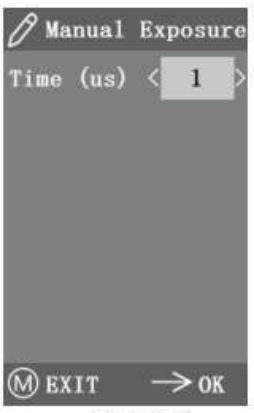


Figure 5-4

5.3 Line Measurement

This menu includes Cross Line, Calibration, and Measurement as shown in Figure 5-5.

Figure 5-5

5.3.1 Cross Line

Four groups of crosslines are provided in red, blue, green and white colors. You can choose according to your requirements.

Enter the Cross Line menu, as shown in Figure 5-6. “ID” refers to the number of each group of crosslines. “Display” adjusts whether the reticle is displayed. “X Position” and “Y Position” adjust the position of the center point of the reticle.

You can select and press the “Turn off All Crosslines” to close all crosslines.

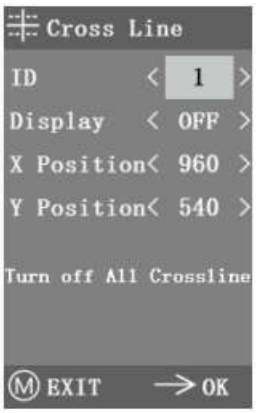


Figure 5-6

5.3.2 Calibration

There are default calibration values for this product. However, due to the different objective standards of the microscope, the calibration value may have errors, so it is suggested to recalibrate. The following is the calibration process.

1. Calibration requires a micrometer. Put the micrometer on the object platform and adjust the microscope so that the micrometer scale is clearly displayed on the screen. In order to facilitate calibration, it is suggested to rotate the camera

so that the micrometer is placed horizontally in the screen without being blocked by the menu.

2. After entering the Calibration menu, it is shown in Figure 5-7.

Figure 5-7

3. Adjust the positions of the starting and ending points of calibration to make the calibration line coincide with the micrometer scale and try to select the length containing most possible multiple scales, so as to make the measurement more accurate.

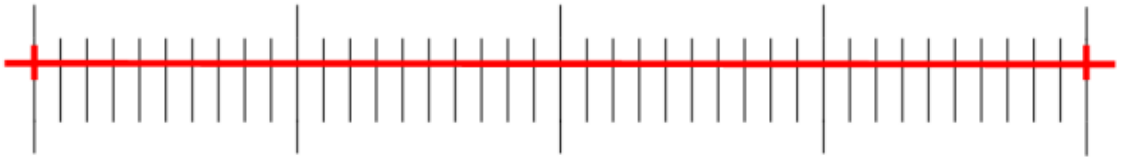


Figure 5-8

4. The minimum range of the selected micrometer is 0.01 mm (10 micron). Figure 5-8 shows the image under a ten× objective lens. At this time, the "magnification" is set to "10X", the "unit" is marked as "μm", and the "length" is set to "40".
5. After adjusting the parameters, exit the calibration interface, and the calibration is completed.

5.3.3 Measurement

The image needs to be calibrated before it can be measured. And the calibration ruler of different magnification is different, so it needs to be calibrated separately under different objective lenses.

Enter the Measurement menu. Select the measurement magnification, adjust the starting and ending point, and the measurement length is displayed at the bottom in real time, as shown in Figure 5-9.

Changes in the field of vision did not affect the measurements.

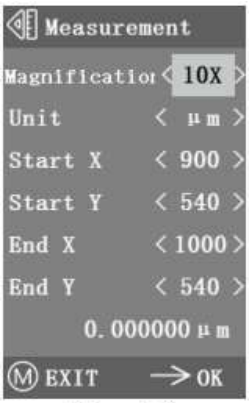


Figure 5-9

5.4 Color Adjustment

After entering the color adjustment menu, as shown in Figure 5-10, Saturation, Hue, Brightness, and Contrast can be adjusted to make the picture reach the required level. In order to facilitate the color adjustment, the “Color Value Reset” option is added in the menu. When selected and pressed, all the color values in the menu will be restored to the default value.

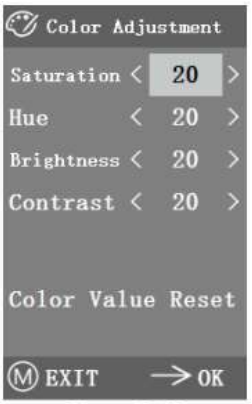


Figure 5-10

5.5 Record Video

Before recording the video, you should check whether to insert an SD-CARD with a FAT32 file system and free space. You cannot take a photo during the recording process. The recording time is shown in Figure 5-11.

Figure 5-10

5.6 Other Functions

The menu includes functions of Monochrome, Flip vertical, Flip horizontal, and FOV. The numerical option can be adjusted by ← → key, and the switch options can be opened and closed by ↔ key. After the adjustment is completed and the main menu is closed, the function states will be saved. The function states will be retained when the next boot is started. As shown in Figure 5-12.

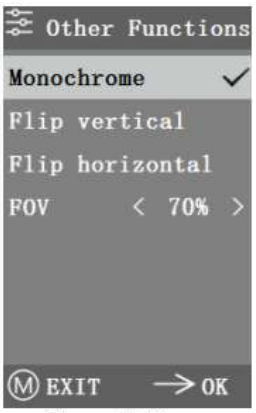


Figure 5-11

5.6.1 Monochrome

The function produces visual images in varying tones of a single color (such as gray).

5.6.2 Flip

This function is divided into vertical flipping and horizontal flipping.

5.6.3 Field of View

This function can adjust the range of observation field. Use the ← → key in the menu to adjust the size. When the menu is not displayed, press ↑ ↓ key to adjust, and 70% similar signs will appear in the upper left corner.

5.7 Other Settings

This menu contains Power Frequency, SD Management, Timed Snap, Language, factory Reset, Software Upgrade, Version. As shown in Figure 5-13.

Figure 5-12

5.7.1 Power Frequency

CMOS detectors have a rolling curtain effect that causes flicker problems, which can be resolved by capturing a line of pixels as an integer (n) time the flicker period. Among them, 60Hz in North America and 50Hz in Europe. As shown in Figure 5-14.

1. DC (DC): For DC (DC) light source, there is no light fluctuation, so there is no need to compensate the flashing light source.
2. AC (50Hz): radio AC (50Hz) to eliminate the dark strip of the lamp curtain caused by the 50Hz fluorescent lamp.
3. AC (60Hz): radio AC (60Hz) to eliminate the dark strip of the lamp curtain caused by 60Hz fluorescent lamp.

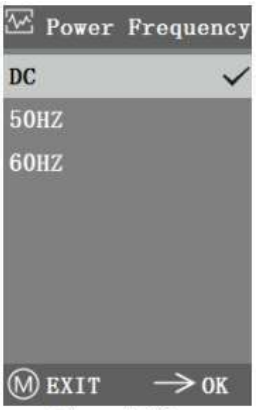


Figure 5-13

5.7.2 SD Management

After inserting the SD card, the remaining space and total space of the SD card can be seen in “Available Space”, as shown in Figure 5-15.

If “0.00 Gb / 0.00 Gb” as shown in Figure 5-16, the SD card was not successfully mounted, please try to reinsert.

Enter “Format SD-CARD” to format, as shown in Picture 5-17. Please back up important files on your computer before formatting SD-CARD.

Figure 5-14

Figure 5-15

Figure 5-16

5.7.3 Timed Snap

“Hours, minutes and seconds” refers to the time interval of timed snap, and “counts” refers to the number of timed snaps. After setting the parameters, move the cursor to “Timed Snap Start” and press → to start timed snap. At this point, the number jumps below. This is the number of photos that have been successfully taken so far. As shown in Figure 5-18.

If the available space of SD card is insufficient during the process of timed snap, it will exit.

Figure 5-17

5.7.4 Language

The current version can switch between Chinese and English. As shown in Figure 5-19.

Figure 5-18

5.7.5 Factory Reset

Press → key to reset the menu settings to factory settings. This is shown in Figure 5-20.

Figure 5-19

5.7.6 Software Upgrade

After the system upgrade, the menu parameters will be restored to the factory settings, so you need to record the parameters before the update, so as to restore after the upgrade.

5.7.6.1 The System is Upgraded Normally

When the system upgrade files are published, the upgrade files can be put into the SD card and the system upgrade can be carried out in this page. Where, the need to upgrade the file name corresponds to the match, for example:

main_app_v1.0.bin, rootfs_uclibc_64k_v1.0.jffs2

Select “Yes” to upgrade, and the following message will appear:
“UPGRADING...” While the system was being upgraded, as shown in Figure 5-21.

WARNING: Please wait patiently for 2–3 minutes, during which time do not operate the device and keep power connected.

If “FILES ERROR” or “NO FILE” occurs, please check whether the upgrade file is missing and the version number is corresponding. After checking, please upgrade the system again.

Figure 5-20

5.7.6.2 System Upgrade Failed

When a system upgrade fails, it goes into the tiny system, which is used for emergency updates.

1. After entering the tiny system, “Upgrade Failed. Please try again according to the instructions.” will be displayed on the screen.
2. Insert SD card with upgrade files, then the screen shows “Files detected, Press Menu to Upgrade.”
3. When you press the Menu key Ⓜ, the screen shows “Upgrading... Please do not power off.” When the upgrade is completed, the system will be automatically restarted to complete the upgrade.
4. If the screen shows “The version is illegal, please check the file.” that means the upgrade file is missing or the version number does not match, please check the version number of the file and update it again.

5.7.7 Version

You can view the version information of this product, as shown in Figure 5-22.

Figure 5-212

6. Failure Analysis and Troubleshooting

1. When pressing the snap button, recording videos, taking photos at a fixed time, or entering the SD card management menu, “NO SD-CARD” will be displayed, as shown in Figure 6-1. Please insert the SD card with file system FAT32 into the SD card slot on the right side of the camera and then carry out corresponding operations.

Figure 6-1

2. When pressing the snap button, recording videos, and taking photos at a fixed time, “insufficient available space” will be displayed, as shown in Figure 6-2. Please sort out the SD Card space on the computer before inserting the camera for use.

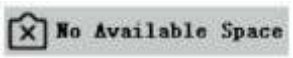


Figure 6-2

3. The camera screen image appears wavy pattern phenomenon, open “Other Settings” – “Power Frequency”, select the appropriate power frequency.
4. The image is blurry and out of focus. Please change the objective lens or microscope to observe again.
5. If an unknown problem occurs and cannot be solved by yourself, please press the power button for 10s to restart. If it can be successfully reproduced after restart, please contact the manufacturer to solve.

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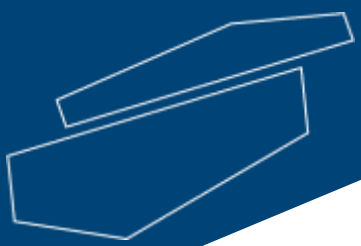

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