Optronic MicroXplore 5mp LCD Digital Microscope 51856 Instruction Manual

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Welcome to a new world of adventure. Your new MicroXplore LCD microscope is capable of capturing detailed, high resolution, full-color images and movies of the microscopic world, both with your eyes and with the included CMOS chip and LCD screen. Examine details at high powers of 40x-640x with the included eyepieces, or 24x-960x with the LCD screen. View subjects on screen using the 3.5” Color LCD TFT display. Capture images and movies using the built in 5 MegaPixel CMOS camera. Store images and movies to the SD card slot. Transfer images and movies using the included USB cable or via SD card slot (SD Card included). Also features a mechanical XY stage, 6 position filter wheel, top and bottom illuminators, carry case and accessories. Please read this instruction manual before attempting to use the microscope.

Figure 1. The MicroXplore 5mp LCD Microscope

Contents

Included Items

- Microscope
- Case
- 10x WF eyepiece
- 16x WF eyepiece
- USB cable
- SD card
- 5 prepared slides
- 5 blank slides
- Tweezers
- Hatchery container
- Sea salt
- Yeast
- Gum
- Brine shrimp eggs
- AC adapter (not shown)

Setup

1. For LCD use, plug the AC adapter into the DC jack at the base of the microscope, and into a 110v wall outlet.
2. For visual use with the eyepieces, either plug in the AC adapter, or insert 2x AA batteries in the underside of the base. Note, the LCD screen requires the AC adapter to be used, but the illumination lights can be used with either AC or battery power.
3. Eyepieces are inserted using the sleeve that is installed in the eyepiece barrel in the top opening of the microscope **(Figure 2).** If using the LCD screen, loosen the eyepiece setscrew and remove the sleeve, then install the LCD head, making sure to fully seat the nozzle as well as the DC power jack.
4. Press the Power button on the LCD head to turn the LCD screen on **(Figure 3).**
5. Pick an illumination wheel on either side of the base to turn on depending on what you wish to view. Slides and other targets that need light to come through from behind will use the bottom illuminator, and thick opaque objects that need light cast onto them from above will use the top illuminator. Turn the brightness all the way up to full for now.

X/Y Mechanical Stage

The 5mp LCD Microscope features a mechanical stage that is used to accurately position specimens on screen **(Figure 4).**

1. Place one of the included prepared slides onto the X/Y stage by using the clamp lever to hold slide firmly in place **(Figure 4).**
2. Use the X and Y movement knobs to position object into view on screen.

Illumination
The 5mp features both an upper and a lower Illuminator for microscopy. The latter is normally used for viewing prepared slides (transmitted light).

The illuminators are selectable via the rotary illumination wheels **(Figure 5).** Brightness can be adjusted via rotary brightness wheels. The upper illuminator is designed for use with the lower power objective (4X). The higher power objectives will block light from the upper illuminator. Therefore, generally solid objects at 4X will use the top illuminator.

Figure 2. Included items

Figure 3. The LCD screen, with power and navigation buttons shown

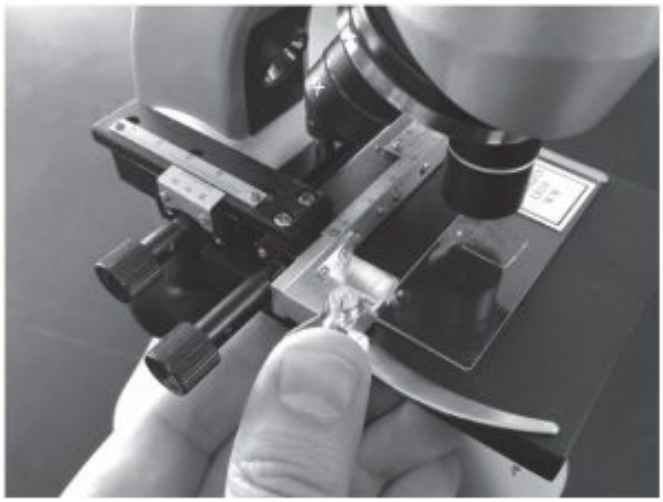

Figure 4. X/Y Mechanical Stage with slide being inserted

Figure 5. Focus knob, illumination wheel, and bottom illuminator shown

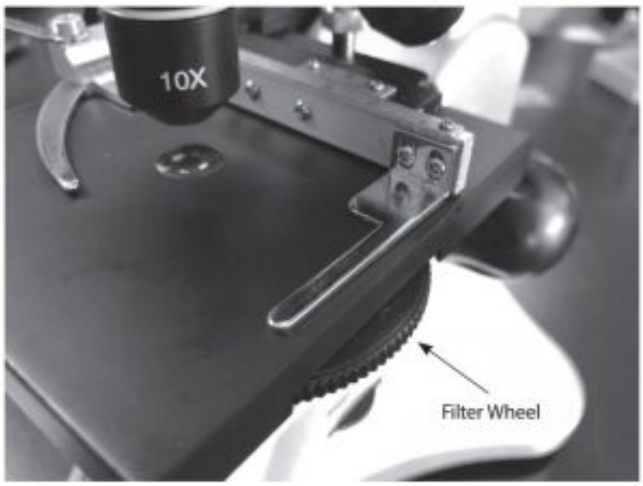

Figure 6. The Filter wheel is beneath the stage – Rotate the edge of the wheel to change filters

Figure 7. Objective lenses. 10x objective shown in position to view through

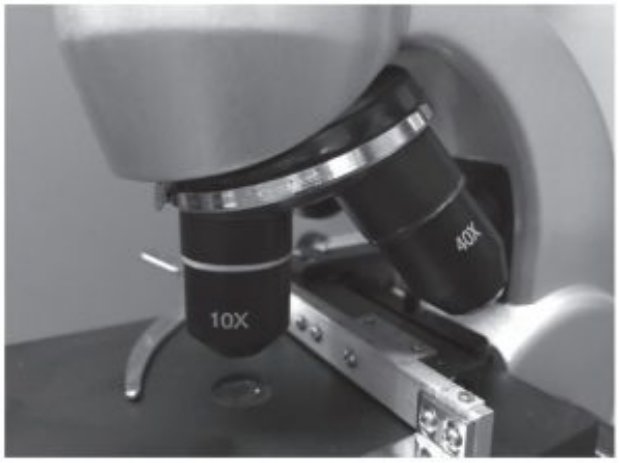

Figure 8. Camera Mode active as shown by a picture of a camera in the top left corner

Transparent objects such as slides will use the bottom illuminator (transmitted light) at all powers of magnification.

Filter Wheel
The 5mp features a manual six position color filter wheel **(Figure 6).** Choose from five colored filters (or clear). The filters can aid to increase contrast and detail of various specimens.

Objective Lenses
The microscope features three manually selectable objective lenses of 4X, 10X and 40X **(Figure 7).** Different magnifications can be accomplished by selecting between one of the three objective lenses. Select the desired objective lens by rotating the objective head until the lens is directly above the specimen and the lens clicks into place.

Magnification is determined by multiplying the objective lens by the eyepiece magnification. So for example, the 10x objective coupled with the WF10x eyepiece yields 100x total magnification. When using the LCD screen, the CMOS chips acts like a 6x eyepiece, so the magnification range with the LCD is 24x – 240x, and coupled with the digital 4x zoom, can achieve a maximum of 960x: (40x * 6x) * 4x digital zoom.

Initially select the lowest 4x objective lens. This lowest magnification setting will produce the widest field of view and display the brightest image. Viewing with the lowest magnification will aid in the positioning of the specimen prior to viewing at higher magnifications and also help to ensure that the objective lenses are not positioned too near the slide to prevent accidental breaking of slide if the objectives come into contact with slide when focusing. Care must be taken when both handling glass slides and the position of the objective lenses relative to the slide when focusing or changing objective lenses.

Camera

The microscope features a 5mp camera that can be used to capture high resolution images or movies to the SD-Card. Pressing the UP and DOWN buttons while watching a specimen will adjust the digital zoom factor. The slider starts at W on the left (for wide field or no digital zoom applied), and progresses to the right to T (telephoto, or full 4x digital zoom). Experiment with the top and bottom illuminators, brightness dial, color filter wheel and the camera exposure in order to fully control the illumination of specimen.

Viewing Images and Movies

Any picture or video you've taken can be viewed on the LCD screen. Pressing the Mode button will cycle through Camera, Video, and SD card mode. When SD card mode is active, the series of images/video present on the SD card will be shown on the screen. Use the navigation buttons to select image files to view. Press the OK button to view in Full Screen mode. Select the MENU button to bring up a drop down menu where you can protect the files by selecting "Lock" or "Unlock". Using the right button will bring you to a menu where you can delete files. When

viewing a video in the SD card mode, pressing the Snap button will start and stop the video playback.
The AV jack, located below the bottom edge of the LCD screen, next to the USB and SD card slot, can be used to transmit images to a separate monitor. You'll need a mini-AV to RCA Video cable (sold separately and available at most electronic stores) in order to display the live image on another device.

Capturing Images

1. Press the Mode button a few times until the microscope is in Camera mode, indicated by a small picture of a camera in the top left corner **(Figure 8).**
2. Press the SNAP button to take a single image, which will save to the SD card.

Camera mode settings
Pressing the Menu button while in Camera Mode will bring up adjustable settings for the camera. Cycle through the settings with the left and right buttons, choose the desired setting with the up/down buttons and click OK to set. Scenes adjust through various presets, and use standard photography scene names for the different presets. The MP menu allows for different resolutions to be set for the camera. Anti-Shake helps minimize vibrations present in video, and finally the Setup menu allows for adjustment of many functions including exposure, white balance, sharpness, and quality of the saved images. This is where you can also adjust the auto power-off setting.
Capturing Video

1. Press the Mode button a few times until the microscope is in Video mode, indicated by a small picture of a video camera in the top left corner.
2. Press the SNAP button to start a video, which will be saved to the SD card when the SNAP button is pressed again to end the video recording. Elapsed time will be shown on the top of the screen during a recording.

Video mode settings
Pressing the Menu button while in Video Mode will bring up adjustable settings for the camera. Cycle through the settings with the left and right buttons, and choose the desired settings with the up/down buttons. Click OK to choose any desired setting. White balance can be adjusted with various presets, and the MP menu allows choice of resolution. Please note that video resolutions are smaller than the full camera still image resolution selections.

Memory
An SD-Card icon will be displayed on screen if an SD Card is recognized in the SD slot. When present, images and movies will be played back and recorded from the SD Card. Always power down your Microscope before inserting or removing an SD Card.

Transferring Images and Movies
Images and movies can be transferred and shared via the included USB cable or via the SD Card. Place the USB cable into the spare USB port on the computer and into the mini USB port, located on the bottom edge of the LCD screen near the SD Card slot **(Figure 3).** The microscope will be recognized as external memory. Images and movies can then be easily transferred and shared to other devices.

Troubleshooting

If you do not get an image (or a good image) to view on your LCD screen, here are a few things to double check:

1. Make sure the AC Adapter is plugged in to an AC power source and attached to the microscope securely and correctly.
2. Make sure you have the illuminator turned on with maximum brightness adjustment (this is the normal position).

3. Make sure the objective lens you have chosen is set correctly and it has clicked into the right position.
4. Make sure that the filter wheel is set correctly at a click position so that the illuminated light comes up properly – the normal position for most usage is with the clear hole.
5. Make sure the specimen slide is correctly fitted into the clamp on the mechanical stage and properly centered. If the stage is wobbly or is erratic in movement, make sure all screws on the top and side of the stage are tight.

Create Your Own Slides
Use a dropper to place a drop of pond water onto a blank slide and use the microscope to view any organisms existing in the water.

Adding a cover slip on top of liquid will allow for much thinner viewing surface.

Use of Gum solution will make a permanent slide. The Gum will stick the Cover slips to the slide. Dyes can be used on specimens to bring out more detail much like the included prepared slides. This subject matter goes beyond this manual and further study would be required.

Salt Water Prawns (Brine Shrimp)

Hatching
First, pour one pint of fresh water into a container and let stand for approximately 30 hours. Pour half of the sea salt into the container and stir until all the salt has dissolved. This will create the saline solution that will be used to grow the brine shrimp. Pour an additional pint of fresh water into a second container and let stand for approximately 30 hours. This will create spare water for adding to the hatchery when the salt water evaporates.

Next place some of the salt solution into the hatchery using a dropper. Then carefully place some of the eggs into hatchery water. Place in a lit area away from direct sunlight at preferred temperature of 75-77 degrees F. The shrimp will begin to hatch in 2-3 days. If any water evaporates during this time, replace with water from the second container.

Feeding
Feed your shrimp every other day using small pinch of dry powdered yeast (included). Overfeeding will darken the water and it will stagnate. If stagnation occurs remove shrimps and place into fresh salt water solution.

One-Year Limited Warranty

This product is warranted against defects in materials or workmanship for a period of one year from the date of purchase. This warranty is for the benefit of the original retail purchaser only. During this warranty period Optronic Technologies will repair or replace, at Optronic's option, any warranted instrument that proves to be defective, provided it is returned postage paid. Proof of purchase (such as a copy of the original receipt) is required. This warranty is only valid in the country of purchase.

This warranty does not apply if, in Optronic's judgment, the instrument has been abused, mishandled, or modified, nor does it apply to normal wear and tear. This warranty gives you specific legal rights. It is not intended to remove or restrict your other legal rights under applicable local consumer law; your state or national statutory consumer rights governing the sale of consumer goods remain fully applicable.

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Documents / Resources

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