



### Introduction

The MiniVID USB is our best-selling camera for microscopy. It can be mounted to nearly any brand or type of microscope, either into the eye-tube of a binocular microscope, or thread-mounted onto any trinocular C-mount.

- Small and Portable
- Fits Into Any Standard Eyetube or C-mount Trinoc
- Includes Software

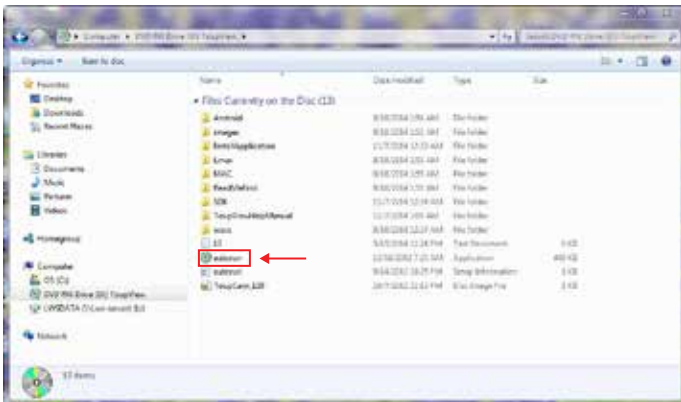
## Unpacking and Setup

The MiniVID USB comes delivered in a box with the following parts. If any parts are missing, please contact your distributor or LW Scientific.

- 1-MiniVID Camera (for use on C-mount trinocular)
- 1-Optical Eyetube Adapter (for use in 23mm eyetube)
- 1-CD with driver and software
- 1-USB Cable

## Software Installation

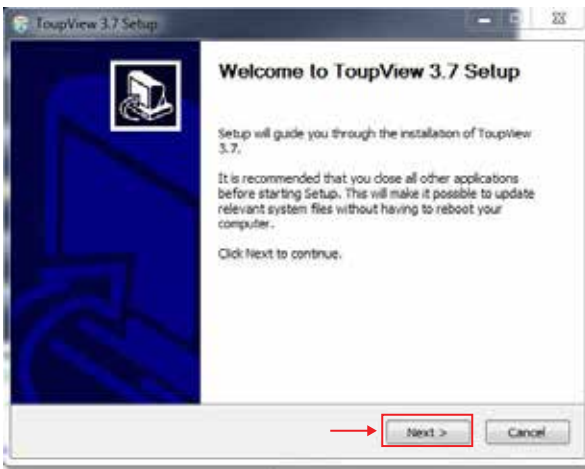
- 1 Insert CD into CD-ROM drive. Go to "My Computer" and view the files on the CD:



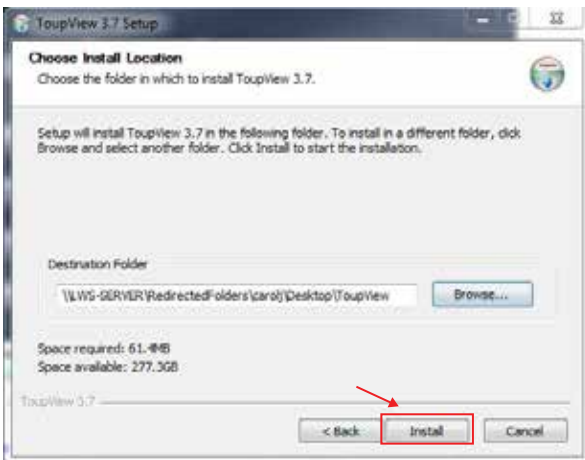
- 2 Click "autorun" and the following screen will appear:



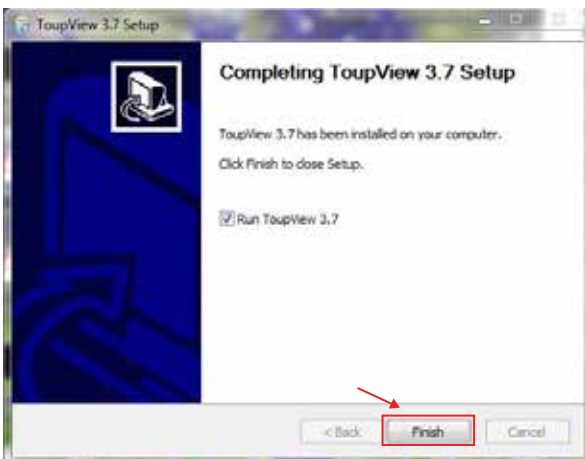
- 3 Next, click "Install Application." Follow the prompts in the Setup Wizard.



- 4 Select the location in which you want the software installed. Click "Install."



- 5 When installation is completed, the following window will appear. Click "Finish."



- 6 Once completed, the Installer will create a shortcut icon on your desktop.
- 7 Not required, but for easy image organization, create a new folder named "MiniVID Images" on your desktop next to your ToupView icon. As images are saved, they will be easy to find in the image folder on the desktop. Otherwise, images can be saved into any folder or client file on the computer or network.
- 8 Select "Toupview" icon.
- 9 Connect the camera to the computer using the included USB cable. Your computer should bring up a window which reads, "Device driver software installed successfully."



- 10 The software is now loaded, and the camera is ready to use.

## Operation

- 1 **C-mount Trinocular installation:** The MiniVID can be thread-mounted onto any trinocular microscope with a C-mount threading on top. Once mounted, the microscope should have an up/down height adjustment on the trinocular pipe to allow the camera to be "par-focal" with the view through the binocular. Check your microscope manual for this adjustment.



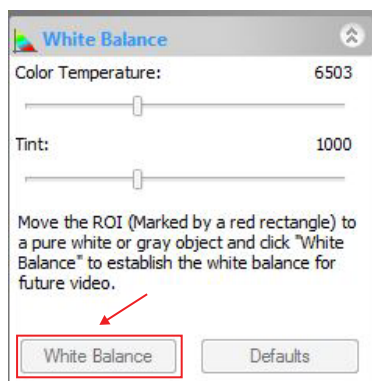
- 2 **Eyepiece Installation:** Remove an eyepiece from the microscope, and insert the MiniVID into the eyepiece using the Optical Eyetube Adapter. A 30mm or 30.5mm eyetube adapter sleeve may be needed for larger eyetubes - contact LW Scientific if needed. If your microscope uses a halogen bulb, using a blue filter on your microscope may improve color.



- 3 Plug the USB cable into the camera and into a USB port on the computer.
- 4 Start the ToupView software.
- 5 To begin capturing images, click on device (**USB 2.0:** UCMOS 05100KPA or **USB 3.0:** E3ISPM06300KPA)



- At this point, the screen should be showing a live image from the microscope. If not, look at the microscope head and check if there is a pull knob that directs light up to the trinocular head.
- Capture and Resolution:** Use the drop-down boxes to select your resolution. Using maximum resolution will slow down the capture rate but will produce larger images, while smaller resolution will allow faster motion while viewing specimens. See image under Step 5.
- White Balance:** Remove any specimens from the microscope stage and turn on the light so the MiniVID is viewing an empty illuminated field. Then go to White Balance and click the "White Balance" button.



- Most other settings are set to "auto" or to the best setting. Settings for Frame Speed Level or Flip Horizontal/Vertical can be adjusted if needed.

Capture the image or several images by click on the "Snap" button. Capture videos by clicking on the Record button once to begin records and then a second time to end recording.



- Tabs for the captured images will appear across the top of the live view window. You can then rename and save these to the appropriate folder on your computer. The images will appear behind the live view screen. Click on the first tab, labeled "Video" and then the camera number, to return to the live view screen.

#### Optional Live Video Screen:

If a full-screen image is desired, select the "View" on the bar across the top of the window, and when the drop down menu appears, select the "Full Screen" option.

## General Precautions and Maintenance

Treat your MiniVID as you would any high-quality electronic device. Handle it with care, and do not expose it to moisture or extreme temperatures.

Do not touch the chip inside the camera. If you see spots on the screen, there is likely dust on the chip. This can be cleaned by blowing canned air into the camera.

Please do not attempt to open camera case. There are no user serviceable parts inside.

**USB Conflicts:** When there are a number of devices installed at the same time, unexpected errors can arise. The cause can be insufficient USB bandwidth or too much combined current being drawn by USB devices. To test these conditions you should uninstall and unplug as many other USB devices as possible.

**Image Viewing Problems:** If you see only a black screen, ensure that the trinocular port is opened on the microscope. Point the camera towards a window to confirm that the camera is functioning – light should appear on the screen (though it will not focus when not installed on a microscope).

**Computer Does Not Recognize Device:** Make sure you have plugged into a USB port. Always try to use the same port each time; otherwise the computer will see the camera as a new device when plugged into a new port. If this happens, just follow the wizard again and the camera will work on the new port as well.

**Slow Frame Rate or Frozen Screen:** Select smaller resolution settings. Depending on the age of the computer, the video driver may not support the maximum resolution and speed performance capable by the MiniVID camera.

**NOTE:** Ensure the MiniVID 3.0 is plugged into a USB 3.0 port. If the MiniVID 3.0 is plugged into a 2.0 port, it will not reach optimal speeds.

## USB Version Specifications

**Models:** MVC-U5MP-EMTN, MVC-U5MP-USB3, and MVC-U6MP-USB3

**Chip Identification: USB 2.0:** UCMOS 05100KPA or **USB 3.0:** E3ISPM06300KPA

### Hardware Configuration:

|                     |  |
|---------------------|--|
| Sensor Model        | APTINA MT9P001   |
| Scan Mode           | Progressive  |
| Max. Resolution     | USB 3.0: 3072 x 2048<br>USB 2.0: 2592 x 1944   |
| Sensor Size         | USB 3.0: 1/1.8" (8.92mm)<br>USB 2.0: 1/2.5" (5.70mm(H) x 4.28mm(V), Diagonal 7.13mm)   |
| Pixel Size          | USB 3.0: 2.4um x 2.4um<br>USB 2.0: 2.2um x 2.2um   |
| Frame Size and Rate | USB 3.0: 30fps @ 3072 x 2048, 38fps @ 1536 x 1024<br>USB 2.0: 5fps @2592 x 1944, 18fps @1280 x 960, 60fps @640 x 480<br>(Multiple Speed Level) |
| Binning             | 1 x 1, 2 x 2, 4 x 4  |
| Exposure            | USB 3.0: 0.1ms-15s<br>USB 2.0: .21-2000ms  |
| White Balance       | One Push ROI White Balance/ Manual Temp-Tint Adjustment  |
| Capture/Control API | DirectShow, Twain  |
| Capture Mode        | Still Picture and Video  |

### Software Environment

|                  |  |
|------------------|--|
| Operating System | Microsoft Windows XP / Vista / 7 / 8 / 10 (32 & 64 bit) / Mac OS |
| PC Requirements  | CPU: Equal to Intel Core2 2.8GHz or Higher                       |
| Memory           | 2GB or More  |

### Operating Environment

|                       |                       |
|-----------------------|-----------------------|
| Operating Temperature | -30~70°C              |
| Storage Temperature   | -40~125°C             |
| Operating Humidity    | 30~80%RH              |
| Storage Humidity      | 10~60%RH              |
| Power Supply          | USB Port <5V 500mA DC |