

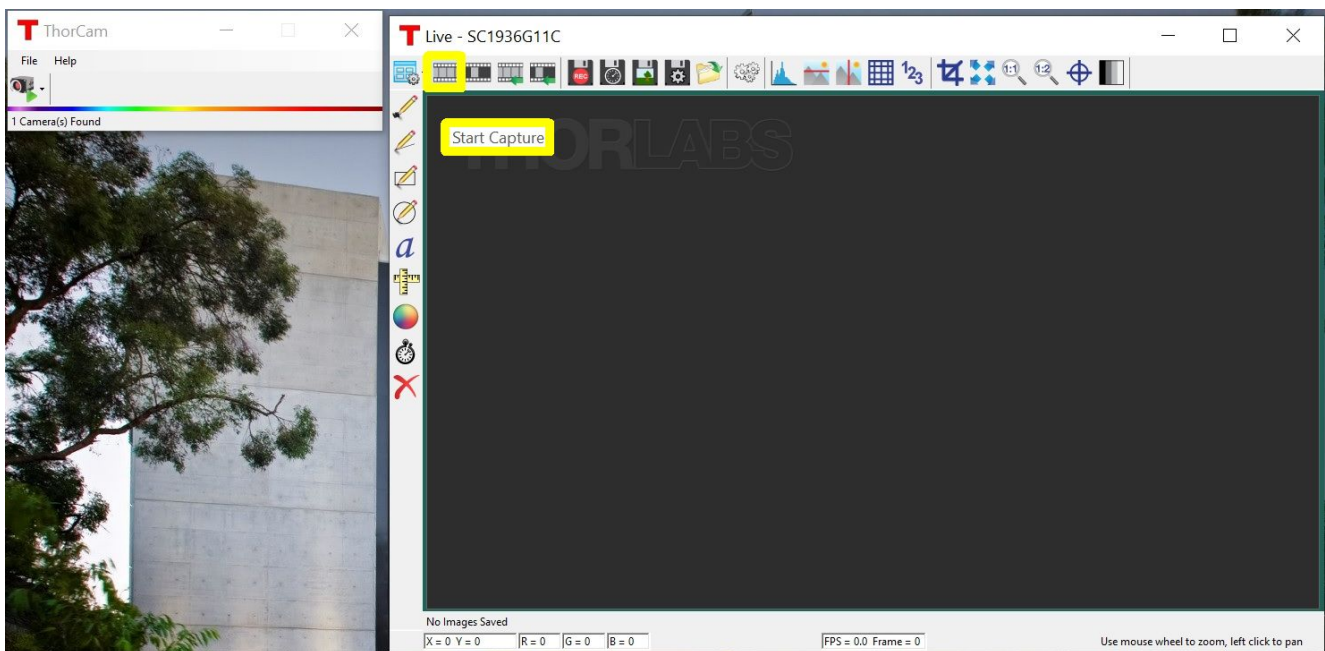
# Thorlabs Camera Guide




## Getting Started

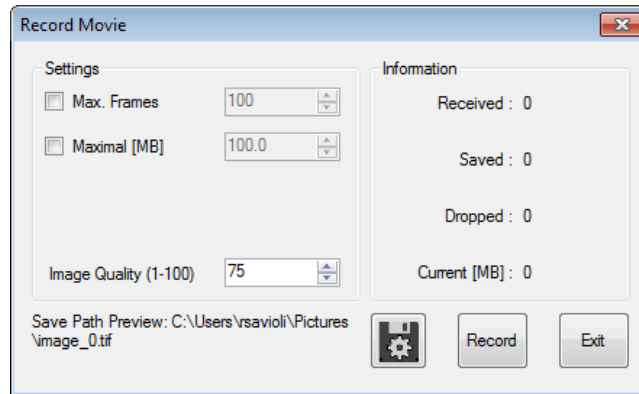
1. Connect the eyepiece adapter appropriate for your microscope brand to the end of the Thorlabs Camera. Remove one of the ocular lenses and insert the camera in its place
2. Connect the USB3.0 cable into the back of the camera and then into the supplied laptop
3. Switch on the laptop and log in to QBI Microscopy account
4. Launch the ThorCam Software and select the camera from the dropdown menu



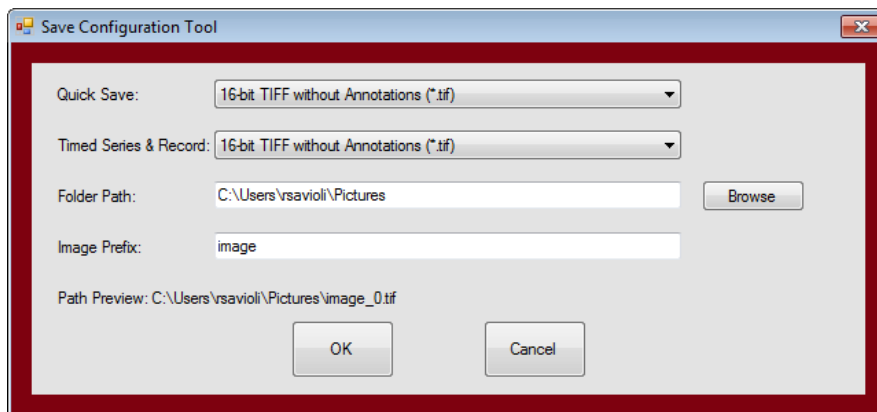
## Using the software



1. Start Capture  
 Commences capture according to capture settings. Clicking again stops capture.
2. Snapshot  
 Takes a single-frame capture
3. Start/Stop Record  
 Commences recording of capture to a Motion JPEG AVI (in 24-bit RGB mode) or multipage TIFF file (in 10-bit Monochrome mode). The recording dialog box (for both AVI and TIFF) gives you the option of limiting the recording size by setting the maximum number of frames or the maximum file size in MB.



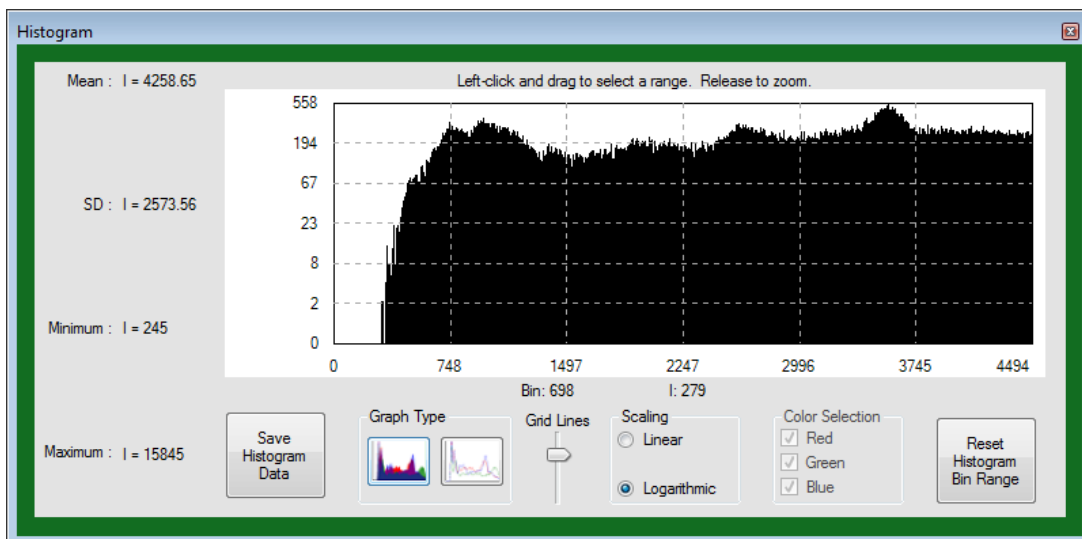
The file type, format, location, and name of the stored image can be viewed or changed in the Save Configuration dialog box.



#### 4. Histogram



Displays the histogram of the captured image values. If an analysis ROI is defined, the histogram uses that ROI.

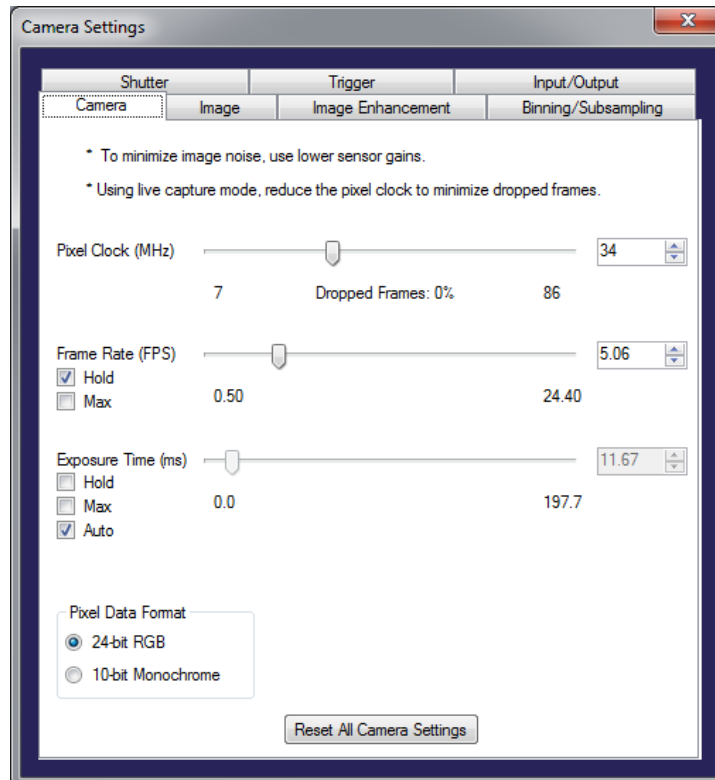


#### 5. Display Settings



The Min Intensity and Max Intensity controls set the contrast of the image. The Auto-Scale sets the Min Intensity and Max Intensity according to the image data captured at the time the button is clicked. Continuous Auto-scale performs Auto-scale on each frame as they are rendered.

# Camera Settings



## Camera Settings (Camera tab)

### Pixel Clock

- Determines the speed at which the sensor pixels are read out.
- We recommend not setting the pixel clock any higher than necessary to achieve the desired frame rate.
- To find a pixel clock that meets your imaging needs, start capturing images by pressing the Start Capture button. Then, adjust the pixel clock while observing the percentage of dropped frames shown beneath the Pixel Clock slider

### Frame Rate

- The possible range of settings for the frame rate depends on the currently selected pixel clock. You can select a lower frame rate without changing the pixel clock. To set a higher frame rate, however, the pixel clock might need to be increased.

### Exposure Time

- The exposure time depends on the currently selected frame rate and is preset to its reciprocal value. A shorter exposure time can be set without changing the frame rate. A longer exposure time will reduce frame rate.
- Note: The increments for setting the exposure time depend on the sensor's current settings (pixel clock, frame rate). The exposure time values are rounded down to the nearest valid value, if required. For this reason, the actual exposure time can deviate slightly from the exposure time you have selected.

## Camera Settings (Image tab)

### Gain

- To increase image brightness, the signal can be amplified by an analog gain before the digitizing process. The results of analog signal processing are usually better than the results of digital post-processing.
- Note: Signal gain will also result in a noise gain. High gain settings are therefore not recommended.

### Offset

- This sets the black level for the camera. The black level is the signal level acquired when there is no light falling on the sensor.

## WORKING WITH GENERAL MICROSCOPES



**Ergonomics: Use of mouse and keyboard / viewing computer screen** – Prolonged use of the microscope and microscope computer without breaks can increase the risk of muscular strain.



**Eye strain and fatigue** – Viewing samples through microscope eye piece or computer monitor over lengthy periods of time can result in eyestrain and headaches.



**Exposure to sharps** – Exposure to razor blades, scalpels, forceps, cover slips, glass slides could result in cuts or puncture wounds to hands or other areas of the body. Any microscope slide shards or glass debris must be disposed of in the appropriate sharps disposable bin in accordance with PC2 regulations.



**Exposure to intense fluorescent light** – Xenon or mercury light sources are attached to this microscope and are the source of intense and potentially dangerous light. Under no circumstances should any optical elements be removed from the microscope light path or fail-safe switches be circumvented. Do not attempt to adjust the light path, or illumination modules in any way. Avoid direct exposure to the light.

## Scope

This procedure details the method for using the general microscopes.

## Safety Considerations

### Personal Protective Equipment (PPE):

Laboratory coat, latex gloves and closed in shoes should be worn to prevent injury.

### Ergonomics and Risk Exposure:

Appropriate ergonomics, including adjustment of the seat, computer screen and microscope oculars should be undertaken to reduce risk of strain injuries.

### Emergency Procedures:

#### First aid may be required for:

**Exposure to sharps** – Contact the nearest first aid officer from the list that is beside all first aid kits and on safety notice board.

**Exposure to intense fluorescent and laser light** – Seek immediate medical assistance if you have been exposed to intense direct light or laser light.

All incidents must be reported to the OH&S Manager and on UQs online incident reporting system.

Contacts: Security x53333 or OH&S Manager Ross Dixon 0401 673 654