

# DinoXcope

## User Manual



# Contents

- 1 System Requirements
- 1 Installation
- 2 Adding a time stamp to the live view
- 3 Capturing an image
- 4 Creating a real time movie
- 5 Creating a time-lapse movie
- 6 Drawing on an image
- 7 Making a measurement
- 10 Creating a calibrated measurement setting
- 12 Drawing or Measurements in the Live Video
- 12 Printing an image
- 12 Transparent Mode - overlaying an Image
- 13 Replace Picture Mode
- 14 Frequently Asked Questions
- 14 Legal Information

# System Requirements

## Minimum System Requirements

- Mac OS X 10.4 or later
- QuickTime 7.0 or later

## Installation

To install the DinoXcope software, double-click on the DinoXcope Installer icon located in the DinoXcope\_MacOSX mounted volume. The DinoXcope installer will display the current release notes and guide you through the installation process. The installer will install the DinoXcope application into the **Applications** folder on the boot volume and the Dino-Lite USB driver into the following location, / Library/QuickTime.



DinoXcope Installer.mpkg

After the DinoXcope application has been installed, plug the Dino-Lite digital microscope into an available USB port on your Macintosh computer. Then double-click on the DinoXcope icon that was installed on your Mac OS X **Desktop**.


## Adding a time stamp to the live view

To add a time stamp to the live view, select the **Time Stamp** menu item from the **Controls** menu in the main menu bar. The time stamp will be added to the live view in the lower left-hand corner. This position is fixed, to add a time stamp and move it to another position on the image, disable the live time stamp functionality and add a time stamp in the image measurement window.

To open an image in the measurement window, double-click on an image in the **Picture** scroll list or select an image in the **Picture** scroll list then select the **Open Selected Image...** menu item from the **Tools** menu in the main menu bar.

To remove or disable the time stamp functionality, select the **Time Stamp** menu item again from the **Controls** menu in the main menu bar.

## Capturing an image

Click the camera icon button  in the upper left-hand corner of the main application window. You can also capture an image by selecting the **Picture** menu item from the **Capture** menu in the main menu bar or pressing **Control-Option-C**

The captured image will be saved in the directory specified in the application **Preferences**. The filename of the captured image will be a unique time stamp with .png appended to the time stamp.

The format of the time stamp filename is


YYYYMMDD\_hhmmssfff.png

Where YYYY is the year, MM is the month, DD is the day, hh is the hour, mm is the minutes, and fff are the milliseconds.

Each captured image will be added to the **Picture** scroll list. In the **Picture** scroll list, the following actions are supported...

- double-clicking on a selected image thumbnail will open that image in the measurement window.
- pressing the **delete** key will delete the selected image.
- pressing the **option** key while clicking the mouse on a selected image will display a preview of the selected image in the live view area. Clicking in the scroll list will cancel this action and return the live view display.
- pressing the **control** key while clicking and dragging on a selected image allows the selected image to be dragged to another application or location on your system.

## Creating a real time movie

Click the real time movie icon button  in the upper left-hand corner of the main application window or select the **Video** menu item from the **Capture** menu in the main menu bar. This will open the real time movie window.

In the real time movie window, set the following fields...

- **Frame Rate** sets how often an image or a frame will be captured.
- **Enable recording time limit** sets how long the movie will record.

To start recording the movie, click the **Start Recording** button. The movie will stop recording once the time limit has been reached. The movie recording can be manually stopped by pressing the **Esc** key.

The recorded movie will be added to the **Video** scroll list. In the **Video** scroll list, double-clicking on a movie thumbnail will open that movie with the QuickTime Player.


The recorded movie is saved automatically using a unique time stamp filename. The **.mov** extension will be appended to the filename.

The format of the time stamp filename is  
YYYYMMDD\_hhmmssfff.mov

Where YYYY is the year, MM is the month, DD is the day, hh is the hour, mm is the minutes, and fff are the milliseconds.

The movie destination folder can be set in the application **Preferences**.

## Creating a time-lapse movie

Click the time-lapse movie icon button  in the upper left-hand corner of the main application window or select the **Time Lapse** menu item from the **Capture** menu in the main menu bar. This will open the time-lapse movie window.

In the time-lapse movie window, set the following fields...

- **Frame Capture Interval** sets how often an image or a frame will be captured.
- **Capture** sets how many frames or images will be added to the movie.
- **Playback Frame Rate** sets the speed of the movies when it is played.

To start recording the movie, click the **Start Recording** button. The movie will stop recording once the set number of frames have been captured. The movie recording can be stop earlier by pressing the **Esc** key.

The recorded movie will be added to the **Video** scroll list. In the **Video** scroll list, double-clicking on a movie thumbnail will open that movie with the QuickTime Player.

The recorded movie is saved automatically using a unique time stamp filename. The **.mov** extension will be appended to the filename.

The format of the time stamp filename is  
YYYYMMDD\_hhmmssfff.mov

Where YYYY is the year, MM is the month, DD is the day, hh is the hour, mm is the minutes, and fff are the milliseconds.

The movie destination folder can be set in the application **Preferences**.

## Drawing on an image

Open an image in the measurement window by double-click on an image in the **Picture** scroll list or select an image in the **Picture** scroll list then select the **Open Selected Image...** menu item from the **Tools** menu in the main menu bar.

In the measurement window, select from the **Tools** popup menu **Freehand - Drawing, Line, Oval, or Rectangle**. Select the desired drawing line width from the pixels popup menu - 1, 2, 3, 4, or 5 pixels wide. The default is **3 Pixels** for images captured at 1280 x 960, and **1 Pixel** images captured at 640 x 480.

The previous drawing action or all of the drawing actions can be removed or deleted by selecting the appropriate action from the **Clear** popup menu.

The **Text** popup menu allows you to enter a time stamp, text label, and/or text comment.

Your changes to the image can be saved by clicking the **Save As...** button or emailed via Apple's Mail application by clicking the **Share...** button.

The colors for the drawing tools, time stamp, and text labels and comments can be change in the **Set Colors** window. The window can be open by selecting the **Set Colors...** menu item from the **Tools** menu in the main menu bar.



## Making a measurement

**Note:** The measurement, magnification, and calibration functionality is only available with certain Dino-Lite models.

Open an image in the measurement window by double-click on an image in the **Picture** scroll list or select an image in the **Picture** scroll list then select the **Open Selected Image...** menu item from the **Tools** menu in the main menu bar.

In the measurement window, select from the **Tools** popup menu **Line - Measurement, Continuous Line, 3-Point Angle, 4-Point Angle, Radius Circle, Diameter Circle, 3-Point Circle, Polygon,** or **Lasso**. Select the desired measurement line width from the pixels popup menu - 1, 2, 3, 4, or 5 pixels wide. The default is **3 Pixels** for images captured at 1280 x 960, and **1 Pixel** images captured at 640 x 480.

Before making a measurement, enter the **Magnification Level** the image was captured at. The magnification level can be read from the dial on the microscope.

Select the type of units for this measurement.

Select a previously created calibration from the **Calibration Settings** popup menu.

The adjusted magnification value shown in the bottom left corner of the measurement window represents the calibrated magnification setting.

**Line - Measurement:** click and drag the mouse across the desired area to be measured. Once you made the desired measurement, click on the measurement result text to move the text to a new location.

**Continuous Line:** click and drag the mouse across the desired area to be measured. Once you made the desired measurement, click on the measurement result text to move the text to a new location. Click and drag again to draw a connected line from the previous line. To end the measurement, press the **control** key and click the mouse.

**3-Point Angle:** click and drag the mouse to draw the first line of the angle, then click and drag again to draw the second line. The degree of the angle will be displayed while drawing the second line. After the second line is drawn, click on the measurement angle result text to move the text to a new location.

**4-Point Angle:** click and drag the mouse to draw the first line of the angle, then click and drag again to draw the second line. Where the first and second lines intersect or are projected to intersect by the dashed lines, this will represent the measured angle. After the second line is drawn, click on the measurement angle result text to move the text to a new location.

**Radius Circle:** click and drag the mouse to draw a circle showing the radius, circumference, and area of the drawn circle. Click on the measurement result text to move the text to a new location.

**Diameter Circle:** click and drag the mouse to draw a circle showing the diameter, circumference, and area of the drawn circle. Click on the measurement result text to move the text to a new location.

**3-Point Circle:** click to create the first circle point, then click again to create the second circle point, then click once again and drag the mouse for the third point. This will draw a circle showing the radius, circumference, and area of the drawn circle. Click on the measurement result text to move the text to a new location.

**Polygon:** click and drag the mouse along the desired area to begin the measurement, click and drag again to add another side to the polygon. To close the polygon, press the **control** key and click the mouse. Click on the measurement result text to move the text to a new location.

**Lasso:** click and drag the mouse along the the desired area, release the mouse button and the lasso path with automatically close the path by drawing a line to the beginning of the lasso path. Click on the measurement result text to move the text to a new location.

The previous measurement or all of the measurements can be removed or deleted by selecting the appropriate action from the **Clear** popup menu.

The **Text** popup menu allows you to enter a time stamp, text label, and/or text comment.

Your changes to the image can be saved by clicking the **Save As...** button or emailed via Apple's Mail application by clicking the **Share...** button.

The colors for the measurement tools, time stamp, and text labels and comments can be change in the **Set Colors** window. The window can be open by selecting the **Set Colors...** menu item from the **Tools** menu in the main menu bar.

# Creating a calibrated measurement setting

**Note:** The calibration functionality is only available with certain Dino-Lite models.

To open the **Calibration Manager**, select the **Open Calibration Manager...** menu item from the Calibration Settings popup menu in the image measurement window.

To add a new calibration setting, click on the **Add** tab in the **Calibration Manager** window and follow the steps outlined in the **Add** tab.

**Step 1.** The opened measurement image file listed here under step 1 will be used as the calibration reference image, or you can focus the microscope on a known measurement length and then click the **Capture Image** button. If you clicked the **Capture Image** button, a picture will be captured from the microscope and be opened in a new measurement window. This newly captured image will be used as the calibration reference image.

**Note:** The **Capture Image** button will be disabled if there is no microscope connected to the computer.

**Step 2.** Enter the magnification setting that was used when the calibration reference image was captured. The magnification setting can be read from the magnification dial on the microscope.

**Step 3.** In the calibration reference image measurement window, click and drag the mouse to draw a line to measure a known length. Enter the known length value into the **Length** text field located in the **Calibration Manager** window. The measurement unit is selected from the popup menu in the image measurement window.

**Step 4.** Enter in the **Title** text field a meaningful title name for this calibration setting, e.g. **Low Mag 640 MM** which might stand for Low Magnification at 640x480 resolution using millimeters.

**Step 5.** Click the **Add Calibration** button. The calibration for this setting is now complete.

The new calibration setting will now appear in all opened image measurement windows under the calibration settings popup menu.

**Note:** If any of the steps are omitted, a warning dialog indicating which step has been missed should appear when the **Add Calibration** button is clicked.

**Note:** The calibration process is started once the calibration manager is opened. The calibration process is completed by clicking the **Add Calibration** button in step 5. The calibration process can be cancelled by either...

- closing the Calibration Manager window.
- selecting a calibration setting or measurement mode from their respective popup menus in the opened measurement window.

To delete an existing calibration setting, click the **Delete** tab in the **Calibration Manager** window. Select the calibration setting from the popup menu you want to delete, then click the **Delete Calibration** button. To delete all the calibration settings, click the **Delete All** button.

## Drawing or Measurements in the Live Video

The functionality of drawing or making a measurement on a live image is similar to the functionality available in a measurement window. To enable this functionality select the **Live Measurement...** menu item from the **Tools** menu in the main menu bar.

In the **Live Measurement** mode, you cannot create a calibrated measurement setting, this is only available in a measurement window. But you can select and use an existing calibration setting in the **Live Measurement** mode.

**Note:** The measurement, magnification, and calibration functionality is only available with certain Dino-Lite models.

## Printing an Image

There are two ways to print a previously captured imaged.

1. Open an existing image in a measurement window and select the **Print...** menu item from the **File** menu in the main menu bar.
2. Right-click on an image in the **Picture** clips tab in the main DinoXcope window and select **Print...** from the contextual menu.

## Transparent Mode - overlaying an Image

**Note:** **Transparent Mode** is only available when a microscope is connected to your computer.

**Transparent Mode** allows you to overlay a picture from the current picture album onto the image from the live view of the microscope.

To use, find an image in the picture thumbnail list you want to overlay or compare to the image from the live view. Right-click on the thumbnail and select **Transparent Mode**. This will overlay the picture from the thumbnail on top of the live view image.

You can change the overlay picture opacity by using the scroll wheel on your mouse, scrolling with your trackpad, or using the shift key with the up/down arrows on the keyboard.

To close the overlay or exit this mode, click the **X** in the upper right corner of the image.

## Replace Picture Mode

**Note:** **Replace Picture Mode** is only available when a microscope is connected to your computer.

**Replace Picture Mode** allows you to select a previously captured picture via a thumbnail and replace the selected picture each time you capture a new picture.

To exit this mode, click the **X** in the upper right corner of the live view or right-click on a thumbnail and select **Cancel Replace Picture Mode**.

## Frequently Asked Questions

### **Why isn't the screen completely used in full screen mode?**

The microscope aspect ratio, the ratio between the width and the height of the image, is maintained in full screen mode. There will be black borders on each side of the image if the aspect ratio of your screen does not match the aspect ratio of your microscope.

### **How do you exit the full screen mode?**

Press the **Esc** key.

## Legal Information

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