

INFINITY ANALYZE Software Quick Start Guide - v4.0.2

Thank you for purchasing a Lumenera INFINITY camera, which includes two complete software packages - **INFINITY CAPTURE** and **INFINITY ANALYZE**.

INFINITY CAPTURE is an intuitive user interface that contains all of the basic features needed to control the camera and capture images. **INFINITY ANALYZE** expands on the functionality of **INFINITY CAPTURE**, adding complete image analysis functions such as measurement, annotation, tiling, archiving and advanced image processing.

This guide will help you get started using **INFINITY ANALYZE**. For instructions on how to install your INFINITY camera and software please refer to the INFINITY Camera and Software Installation Guide.

1) Control Panel:

Global White Balance

Remove the sample from the light path and click on the *White Balance* icon. This produces a global white balance.

Area White Balance

With the sample in the light path click on the *Area WB* icon. The cursor is transformed into a dropper. Click on a white area of the sample. This produces an area white balance.

Capture

To capture an image select the *Capture* icon in the *Capture Control* section, or double click on the live image. In order to produce a preview, ensure that the *Preview Captured Image* box, located under the *Capture Options* section, is checked.

Field Group

The field group and imaging control menus can be toggled by clicking on the *Imaging Control* icon at the top of the control panel. The field group is a thumbnail work space that stores the captured images in cached memory.

To File/Field Group/Both

Choose where captured images are stored by selecting *File* to have them automatically saved to a local drive, *Field Group* to save in the field group or *Both*. The directory where images will be saved is shown in the area immediately below, and can be changed at any time by clicking on the icon next to the disk address.

Auto Increment File Name

Select the *File Path* box to increment saved files. You must select the icon next to the *Field Path* box to select an initial file name. Once this is done each capture file name is automatically incremented by one.

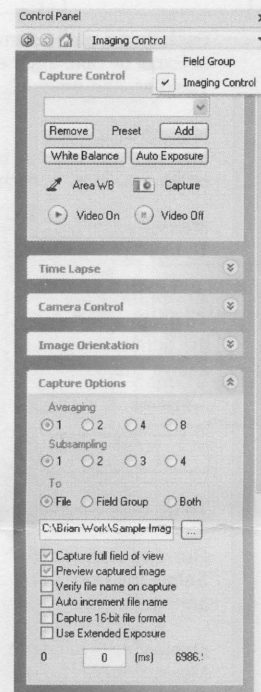


Figure 1: Capture Control

2) Calibration, Measurement and Annotation



Figure 2: Fit to Window icon

Calibration (captured image only)

Prior to performing calibration, turn off the *fit to window* option to display the image without sub sampling. To perform a calibration, place a stage micrometer in the field of view. Select the calibration icon which transforms the cursor into a crosshair. Left click once to start the calibration, drag the cursor over the known distance then left click again to complete the calibration. This produces a *Micrometer Calibration* dialog box. Input the length you have measured across the stage micrometer and the magnification on your microscope optics. Choose a linear measurement unit and input its conversion to microns (i.e. inch (in) = 25,400 microns). Press OK to complete the calibration. **Please note:** The .SIF file format retains all calibration and measurement information. Please ensure files are saved in this format if future measurements are to be taken.

Saving Calibrations

Multiple calibrations can be saved in the *Capture Control* section as seen in Figure 1. To save a calibration select the *Add* icon, which produces a *Preset Name* dialog box. Choose a name such as the optic you calibrated against (10x, 20x etc...) the select OK to save the calibration information. When previewing prior to capture you must choose the applicable calibration in the drop down box above the *Add* icon.

Finding Calibration Information

Calibration data for the live preview and captured images is found on the bottom right hand corner of the application window. The third item from the right is the current calibration setting.

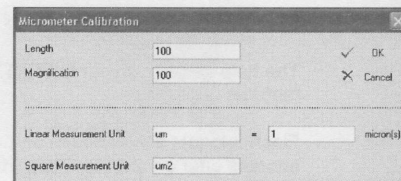


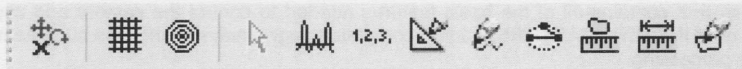
Figure 3: Micrometer Calibration Dialog Box



Figure 4: Calibration Data

Measurement

Measurements may be performed on any captured images once **INFINITY ANALYZE** has been calibrated. Left click a *Measurement* icon transforming the cursor to a crosshair, choose your starting point, drag your mouse to the end of your measurement and left click a second time to end the measurement.



Command	Parameter	Value
Caliper	Distance	63.50
Area Perimeter	Area	2347.90
Area Perimeter	Perimeter	182.03
Circle	Radius	27.28

Figure 5: Measurement Box

Each time a measurement is produced an entry is created in the *Measurement Box* found at the bottom of the software. Send this information to Excel by opening the Excel software, clicking on the data in the *Measurement Box*, dragging it to the Excel software tab on your Windows Taskbar, and dropping it.

Measure Options

Measure Options can be found in the *Measure* drop down menu. Here users can select the number of decimal places and other measurement options such as nomenclature.

Measure Colors

To change the color or size of measurements, select *Overlay Color* or *Overlay Size* in the *View* drop down menu.

Annotation

To place an annotation on your image select the annotation icon. This greys out the measurement icons and allows access to the annotation icons. Once the annotation section is selected, double click on the annotation to bring up a dialog box which allows changes to its font, size and shape. Note that annotations and measurements may not be performed at the same time.



To go back to measurements, click the *annotation* icon a second time.

Burning Annotations and Measurements

Select the *Burn Annotation* icon to permanently add measurements and annotations to an image. All measurements and annotations will be lost if an image is saved without burning it first.



Removing Annotations and Measurements

Measurements are removed using the *Reset Measurement* icon found in the measurement toolbar. Annotations are removed by selecting the *Delete* icon, but only when the annotation section is active. The number value for a measurement is considered an annotation and can only be removed when annotations are active. Measurements and annotations are removed separately.

Image Window Size

The size of the image window may be defined by the user. To activate this feature select the *Fit to Window* icon as seen in Figure 6, then the *Minimize/Restore* icon in the upper right hand side of the software. To set the window size select *Image Window Size* in the *View* drop down menu. To capture this section of the image uncheck the *Capture Full Field of View* box in the *Capture Options* section.



Figure 6: Fit to Window and Minimize/Restore Icons

3) Additional Help

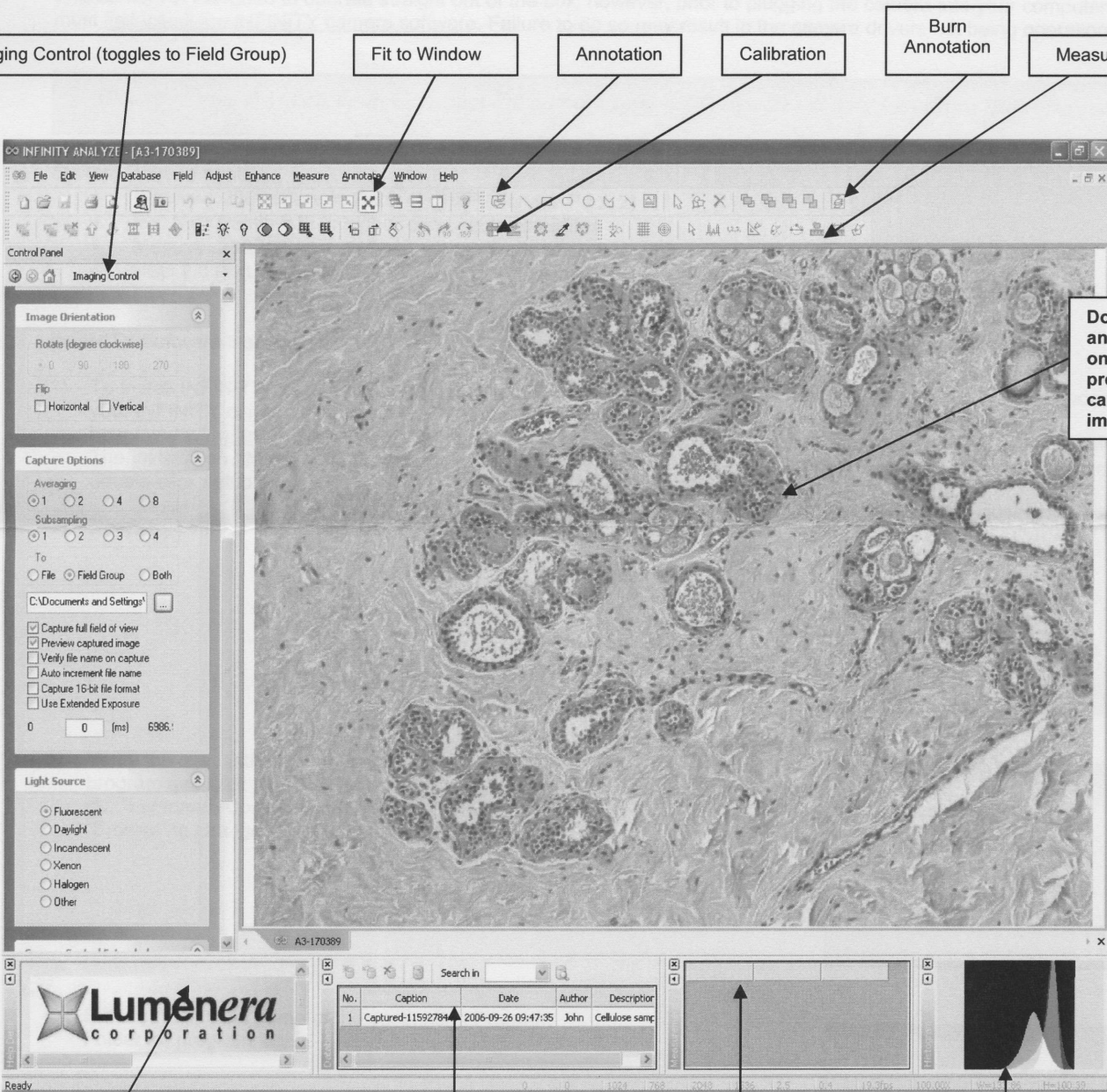
The help section of your **INFINITY ANALYZE** software contains a complete user-friendly manual that includes a detailed description of all the features available.

Flash tutorials are available on the support/download section of the Lumenera website at www.lumenera.com/support/download.php. These tutorials offer an excellent opportunity to view the various functions of **INFINITY ANALYZE**.

For further assistance contact:
Lumenera Technical Support

(613)-736-4077
support@lumenera.com

INFINITY ANALYZE Software Overview



The screenshot shows the INFINITY ANALYZE software interface. The main window displays a histology image. On the left is the Control Panel with sections for Image Orientation, Capture Options, and Light Source. At the bottom are the Help Screen, Database, Measurement Box, and Histogram.

Callouts point to the following features:

- Imaging Control (toggles to Field Group)
- Fit to Window
- Annotation
- Calibration
- Burn Annotation
- Measurement
- Double click anywhere on the live preview to capture an image.

Database Table:

No.	Caption	Date	Author	Description
1	Captured-11592784	2006-09-26 09:47:35	John	Cellulose samp

INFINITY Camera and Software Installation Guide

This guide explains the steps involved in the installation of the INFINITY software and camera, as well as system-requirements and helpful tips.

This camera is designed to operate straight out of the box, however, prior to plugging the camera into your computer you must first install the INFINITY camera software. Failure to do so may result in the camera drivers not being operational.

Please ensure that you do not connect the camera to your computer prior to installing the software.

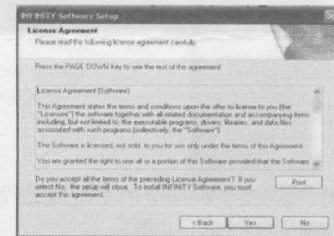
System Requirements:

- Windows 2000 (Service Pack 4) or XP (Service Pack 2)
- 600 Mhz Pentium III or higher compatible computer
- Memory: 256 MB min., 512 MB recommended
- USB 2.0 Port

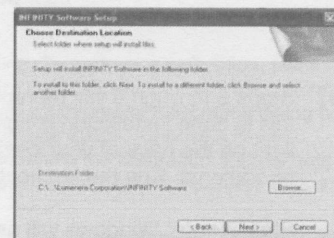
INFINITY Software Installation:

- 1) To install INFINITY camera software, close all open applications and insert the INFINITY software CD included with your INFINITY camera into the CD-ROM drive. If you are upgrading your software, go to: <http://www.lumenera.com/support/download.php> to download the newest version of INFINITY camera software. The installation should start automatically. If it does not, double-click "My Computer", double-click the CD icon, and double-click setup.exe

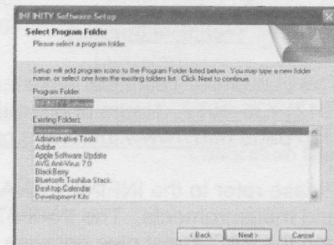
- 2) Read the License Agreement carefully and click "Yes".



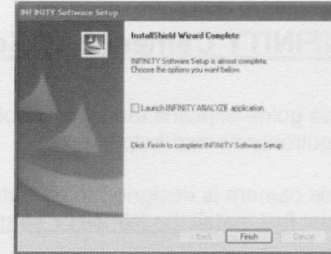
- 3) Verify the destination folder in which to install the program and click "Next". The default destination is c:\...\Lumenera Corporation\INFINITY Software. Click "Browse" to change the destination folder.



- 4) Enter or select the name of the destination Program Folder for program icons.



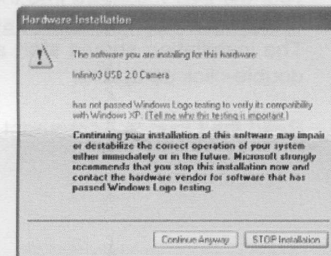
- 5) Click "Finish". INFINITY software installation is complete.



- 6) Please connect your INFINITY camera to the computer. The *Found New Hardware Wizard* will now start. Select "Install the Software Automatically" and click next.



- 7) The *Windows Logo testing* screen may now appear. Click "Continue Anyway".



- 8) Once the INFINITY camera drivers have loaded you may click "Finish".



- 9) Steps 6 through 8 will be repeated a second time. Once this is done installation is complete. An illuminated LED light on the back of your camera will confirm it is operational. Run the application from your Start menu.

Please note: Windows will ask you to re-run these steps each time you plug the camera into a new USB 2.0 port.

Technical Support

The Lumenera Technical Assistance Center (TAC) may be contacted by e-mail (support@lumenera.com) or by phone (613) 736-4077. Hours of operation are 9am to 5:30pm EST. Valuable information is also available online on the TAC web page <http://www.lumenera.com/support/index.php>.

Please refer to the INFINITY ANALYZE Quick Start Guide for tips on how to get started with camera control, calibrations and measurements. The INFINITY ANALYZE overview gives a graphical location of the main features of the software and the FAQ sheet give answers to common questions.