



# *ImageEZE™*

## User Manual

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# Introduction and Initial Setup

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## Introduction

This manual gives full instructions for setting up ImageEZE™ and provides basic operations of ImageSource™ acquisition and ImageAide™ analysis software.

The manual is divided into two parts: Introduction and Initial Setup and Getting Started with ImageEZE.

Initial Setup gives a brief overview of the ImageEZE hardware and instructions for connecting up its components.

Getting Started part of the manual takes you through basic procedures for capturing an image and sending it to ImageAide for analysis.

# ImageEZE Initial Setup

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## *Overview*

ImageEZE is an affordable fully automated gel documentation and analysis system. It features a laboratory grade 8-bit CCD performance with many outstanding features usually only associated with advanced systems.

Standard ImageEZE system (GL-3001) is supplied with:

- GeneLine darkroom hood with CCD bracket (GL-1000 with GL-0300) fitted with 8-bit CCD camera (GL-0100), CCD lens adapter (GL-0140), zoom lens (GL-0110), close-up lens (GL-0120) and standard UV/IR filter (GL-2100)
- ImageSource data acquisition kit (GL-3100) which includes acquisition board, CCD camera cables (attached to camera assembly above) and ImageSource software on CD ROM
- ImageAide band matching analysis software on CD ROM (GL-3300) and security dongle key
- Manuals on CD ROM:
  - ImageEZE.pdf (this installation Guide)
  - ReferencelImageSource.pdf
  - GettingStartedImageAide.pdf
  - ReferencelImageAide.pdf

ImageEZE Plus system (GL-3051) is supplied with:

- Standard ImageEZE system components (see listing above)
- UV transilluminator, 312nm, variable-intensity (TVC-312R)

*Note: ImageEZE must be used with a PC that has Windows 98SE, 2000/XP or Vistax86 platform. CPU must also have a spare PCI slot for installation of prymo card.*

# ImageEZE Initial Setup

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## *Connecting the System*

1. Turn on the PC (customer-supplied) and load the ImageSource analysis software into CD-ROM drive.
2. The installation program will start automatically. If it does not, locate the CD-ROM drive in Windows Explorer and double-click the setup.exe. Follow instructions on screen and complete the software installation.
3. Turn off computer (follow normal shut down procedures), remove the cover and locate spare PCI slot. Fit the acquisition board into slot appropriately.
4. Replace the cover of the computer and connect peripheral computer components (monitor, keyboard, mouse, etc.)
5. With hood placed securely on UV transilluminator (TVC-312R or your own), connect the CCD camera assembly (pre-focused at factory) to the PC by inserting the serial end of camera cable to the acquisition board serial port on the computer.
6. Turn on the computer and restart the ImageSource software. Message of successful installation will be indicated.
7. Load the ImageAide analysis software into CD-ROM drive. Follow installation instructions on screen.
8. ImageEZE is now ready for use with a transilluminator light source. See Getting Started with ImageEZE (Chapter 2) for ImageEZE operations.

# Software Overview

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## *ImageSource Acquisition Software*

ImageSource program is used to control the hardware, to capture images and to process the captured images. In particular, ImageSource offers control of illumination and exposure length while viewing a live image from the camera.

You can use ImageSource to capture images:

- from a live image
- as a single frame capture
- in a series with the same or variable exposures
- using auto exposure

## *Software capabilities:*

The patented Extended Dynamic Range (EDR) feature allows you to extend the dynamic range of the system's camera. In particular, it increases the detail in low intensity areas of the image allowing you (and analysis software like ImageAide) to distinguish features in dark parts of the object that would otherwise be undetectable without saturating the lighter areas.

The neutral field correction provided by ImageSource allows you to correct for uneven illumination while maintaining Good Laboratory Practice.

The histogram display allows you to maximize the image contrast without losing any detail.

For presentation purposes, you can process captured images to create a negative image, and increase or decrease the sharpness. You can also crop

## Software Overview

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images or flip them horizontally or vertically. ImageSource also allows you to add graphical and textual annotations, then save as separate file from the image for further course of action. All processing is performed on a copy of the original image, which is saved with the original image. In accordance with Good Laboratory Practice, ImageAide will always analyze the original unprocessed image in the image file.

Original and processed images can be exported to files using a wide range of standard graphics formats, and you can choose whether or not to ‘engrave’ the annotations on the exported image.

### *ImageAide Analysis Software*

ImageAide is an extremely powerful and easy-to-use image analysis program. It is fully automated, allowing analyses to be carried out in seconds. However, it is also extremely flexible, giving you the option to control every aspect of the analysis manually if you wish.

## Summary

Your ImageEZE system should now be fully assembled and ready for use. You should now go to the Getting Started chapter to find out how to turn it on and start working productively with it.

# Getting Started with ImageEZE

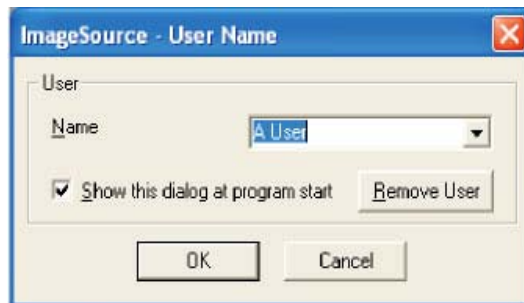
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This chapter gives a quick introduction to using your ImageEZE system, taking you through the processes of starting up, capturing an image and opening the image in ImageAide for analysis.

## *Starting up*

1. Make sure the power leads from all components are connected to a live supply.
2. Place sample on the surface of the transilluminator (UV or white light source) toward the middle of the viewing field. Gently position the camera/hood assembly on top of the transilluminator.
3. Turn on the main power switches for transilluminator, computer, monitor and printer (if applicable). The ImageEZE will take a little time to start up while it loads Windows and then ImageSource.

When ImageSource starts up the first time, you will be asked to log on:



Type in your name. This is now your configuration and any subsequent changes you make to the program will be store as defaults under this name. Individual names and their corresponding user preferences can be added for future selections. If you have opened ImageSource before and entered your name, you will be able to select it from the drop-down list.

Press **OK** to open ImageSource.

## Getting Started

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### *Acquiring the image*

The main ImageSource Application window will open with the Image Capture toolbox displayed on its left-hand side:



**Green Button** (View Live Image): This default/standby mode signifies the camera is ready to capture an image automatically. Click on button or select File\New Image (from camera) with the drop down menu for image capture.

**Red Button** (Freeze Image): Manual camera manipulations can be accomplished in this mode.

1. Adjust aperture (amount of light) with the “top” ring on camera.
2. Zooming adjustments can be made with the “bottom” ring.
3. Once the image is set, click the red button to green. The image can now be captured automatically.

*Refer to separate ImageSource manual for full software usage (ReferenceImageSource.pdf).*

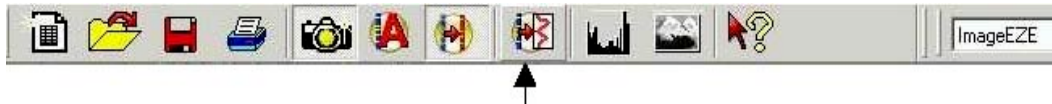
## Getting Started

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### *Analyzing the image*

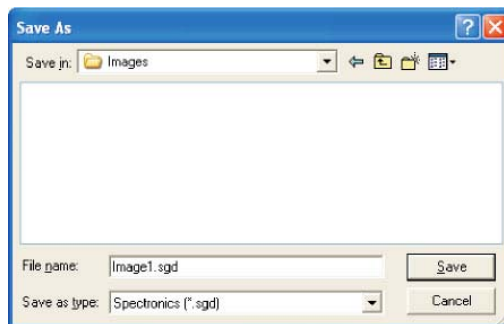
Using single-click icon from ImageSource software, the acquired image can be exported directly to ImageAide software for further analysis.

To start up ImageAide to analyze the image in the selected Image window:



Click the Send to ImageAide button

A standard Windows **Save As** dialog box will open for image file to be saved:



1. Select a folder to hold the image file from the **Save in** drop-down list and the file list box below it.
2. Enter a name for the image file in the **File name** box.
3. Press **Save** to save the image with the new name.

Once you have saved the image, ImageAide will open with the selected image ready for analysis – Refer to separate ImageAide manuals for full software usage (GettingStartedImageAide.pdf and ReferenceImageSource.pdf).