Labnet Enduro™ GDS II and Enduro GDS Touch II Gel Documentation System

Instruction Manual

Catalog Numbers:
GDS2-1302
GDS2-1365
GDST2-1302
GDST2-1365

Table of Contents

Visit **www.labnetinternational.com** for additional product and technical information.

1. Introduction

Congratulations on purchasing your Labnet Enduro™ GDS II or Enduro GDS Touch II Gel Documentation System. The systems easily capture publication quality, 16 bit TIFF images. The systems are simple to set up and have a straightforward user interface for image capture, annotation, and contrast adjustment. Images are easily saved and opened in common gel analysis software for more detailed analysis.

The Labnet Enduro GDS II Gel Documentation System includes the following components:

◗ Labnet Enduro GDS II Gel Documentation System cabinet, including the camera and orange filter
◗ A-to-A male USB cable
◗ Quick Installation Guide and Quick Imaging Guide
◗ Labnet test target
◗ Labnet USB (includes imaging software, calibration files)
◗ 3-power cables: 110V/220V (US/EU/UK). Please select the correct one for your region.

The Labnet Enduro GDS Touch II Gel Documentation System includes the following components:

◗ Labnet Enduro GDS Touch II Gel Documentation System cabinet, including the camera and orange filter
◗ Tablet computer (includes imaging software, calibration files)
◗ Quick Installation Guide and Quick Imaging Guide
◗ Labnet test target
◗ 3-power cables: 110V/220V (US/EU/UK). Please select the correct one for your region.

For General Laboratory Use Only

This instrument is suitable for general laboratory use only. Therefore, it must be used only by personnel who know the health risks associated with the reagents that are normally used with this instrument.

Voltage Setting Information

The Labnet Enduro GDS II and Enduro GDS Touch II systems have a power supply that automatically chooses the correct voltage for your country or region.

Protection category: IP20 according to IEC 60529

2. Safety and Regulatory Compliance

Important Safety Information

Please read these instructions before operating the Labnet Enduro™ Gel Documentation Systems: Enduro GDS II-302 and Enduro GDS II-365 (Cat. Nos. GDS2-1302 and GDS2-1365, respectively), and the Enduro GDS Touch II-302 and Enduro GDS Touch II-365 (Cat. Nos. GDST2-1302 and GDST2-1365, respectively).

UV Safety Precautions

 CAUTION — Because ultraviolet (UV) radiation can cause serious damage to unprotected eyes and skin, we recommend wearing UV glasses or a face shield.

The Enduro GDS II and Enduro GDS Touch II systems come with a built-in ultraviolet (UV 200 to 400 nm) transilluminator inside the system. Exposure to UV radiation can cause permanent damage to the eyes and skin. The system enclosure confines the radiation within the system and shields the user from exposure. The system is also equipped with a two-way safety interlock switch that automatically cuts off the power to the transilluminator when the door is open during normal use.

◗ Always wear UV-protective eyewear that is specified by the manufacturer as providing protection at the wavelength(s) used, making sure that the eyewear protects any areas where radiation may come through (UV sunglasses may not prevent UV radiation from coming in through the sides or around the lenses).

◗ Always cover all skin that may be exposed to UV light, especially the face, neck, hands, and arms.

◗ Always make sure that any UV protection devices (such as the safety switch on the light cabinet apparatus) are working properly. If not, discontinue use until the device(s) are properly repaired.

◗ Use only UV lamps in the transilluminator.

Electrical Safety Precautions

Be sure to take proper precautions when handling any electrical equipment. NEVER work on any live circuit, fixture, receptacle, or switch. Safety rules you should follow whenever working with any electrical appliance include:

◗ Always shut off power at the main disconnect before changing a fuse.

◗ Always shut off power to the circuit before repairing or replacing a switch, receptacle, or fixture.

◗ Always tape over the main switch, empty fuse socket, or circuit breaker you are working on.

◗ Always check that the circuit is dead before beginning work on it. Using a circuit tester or voltmeter can help you determine this.

◗ Always unplug any appliance before repairing it.

Protective Earth Terminal

The earth terminal, intended for connection to an external protective conductor for protection against electric shock in case of a fault, is located on the inside of the back panel.

Hot Surface Warning

Under normal conditions, the temperature of the glass surface of the UV transilluminator is below 50°C and safe to touch. However, if the system malfunctions, it is possible that the glass surface temperature exceeds 80°C. Please exercise caution when touching the glass surface with your hand when this occurs.

3. Specifications

Labnet System	Labnet Enduro™ GDS II Gel Documentation System	Labnet Enduro GDS Touch II Gel Documentation System
Camera	2.7 MP image resolution	2.7 MP image resolution
Lens	f/1.8	f/1.8
Light Sources	◗ Epi White ◗ 302 or 365 nm Transilluminator	◗ Epi White ◗ 302 or 365 nm Transilluminator ◗ Epi Blue
Trans White Light Illumination Tray	Optional	Optional
Field of View	15 x 20 cm	15 x 20 cm
Cabinet	◗ Door sensor to prevent accidental exposure to UV; automatically shuts off UV light when door is open ◗ Safety override, enabling band cutting on the UV transilluminator with automatic turn off after 5 minutes	◗ Door sensor to prevent accidental exposure to UV; automatically shuts off UV light when door is open ◗ Safety override, enabling band cutting on the UV transilluminator with automatic turn off after 5 minutes
Emission Filter	590 nm	590 nm
3-position Filter Slider	No	Yes
Certifications	CE, cTUVus	CE, cTUVus
Product Footprint	12" x 15" (30.48 x 38.1 cm)	12" x 15" (30.48 x 38.1 cm)
Computer	◗ Operating system: Windows® 7 1 gigahertz (GHz) or faster 32-bit (x86) or 64-bit (x64) processor (Intel), 2 gigabyte (GB) RAM (32-bit) or 4 GB RAM (64-bit), 16 GB available hard disk space (32-bit) or 20 GB (64-bit) ◗ Operating system: Windows® 10 Processor: 1 gigahertz (GHz) or faster processor (Intel), RAM: 2 gigabyte (GB) for 32-bit or 4 GB for 64-bit, Hard disk space: 16 GB for 32-bit OS 20 GB for 64-bit OS ◗ Minimum hardware requirements: 1.4 GHz processor speed, 2 GB RAM, 16 GB free hard disk space, 2 USBs (camera and printer)	Tablet included: Windows 8 tablet computer enables compatibility with existing networks, as well as easy setup ◗ Bluetooth and wireless compatible, or USB to LAN compatible ◗ 10.1" touch screen ◗ 2 GB of storage for short-term data saving

4. System Placement

Please make sure the system is located away from regular exposure to water, solvents, or corrosive material. Place on a flat and stable surface with 10 cm clearance on all sides, including the top, to allow sufficient air flow.

The system is intended for indoor use with the following ambient conditions:

a. Altitude up to 2,000 m

b. Temperature 5°C to 40°C

c. Maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C

The system should be placed away from interfering electrical signals and magnetic fields. If possible, a dedicated electrical outlet should be used to eliminate electrical interference from other instrumentation in your laboratory.

5. Labnet Enduro™ GDS II Gel Documentation System Installation Guide
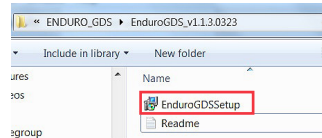
1.

Remove the Labnet Enduro GDS II Gel Documentation System from its packaging.

2.

Identify the Labnet USB and connect it to a Microsoft® Windows® 7, 8, or 10 computer.
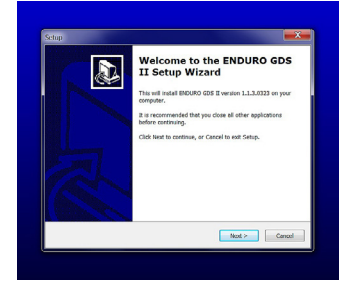
3.

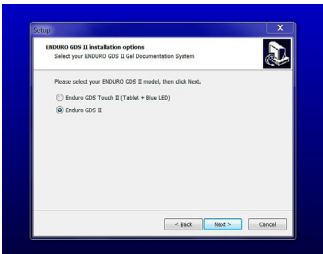On the USB, find the folder "Enduro Imaging Files\ Enduro_v_XXX" and open it. Double click on the **Setup** file.

(You may see a message pop up that says "Do you want to allow the following program from an unknown publisher to make changes to this computer?" Select **Yes**.)
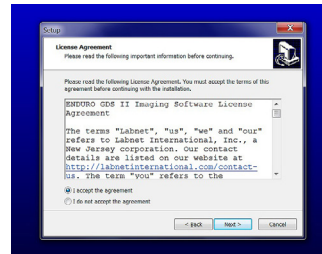
4.

Click **Next** to begin the Setup Wizard.

5.

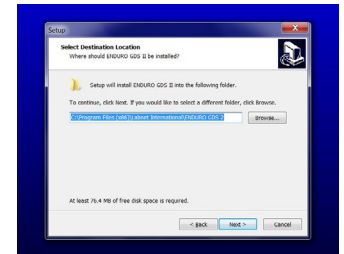Select **Enduro GDS II**, then click **Next**.

6.
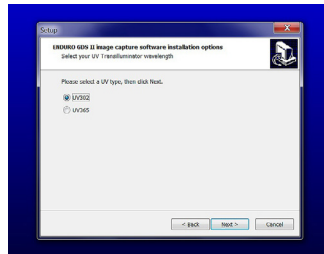
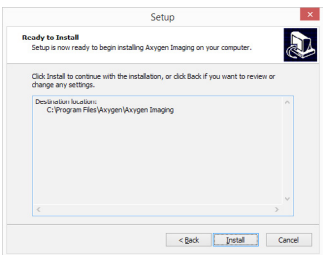
Select the UV wavelength of the system.

7.
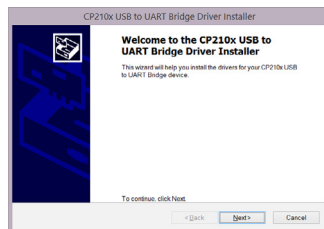

To continue, accept the license agreement. Then click **Next**.

8.

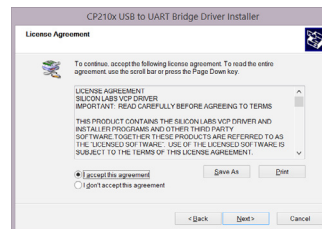Select your installation location, then click **Next**.

9.

Click **Install** to continue with the installation.
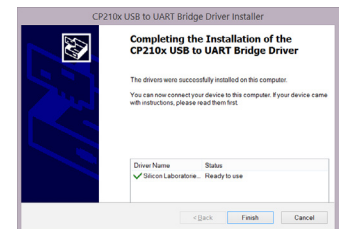
10.

Click **Next** to begin the driver installation.

11.

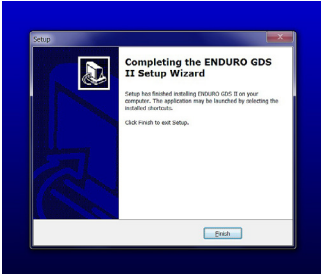To continue, accept the license agreement. Then click **Next**.
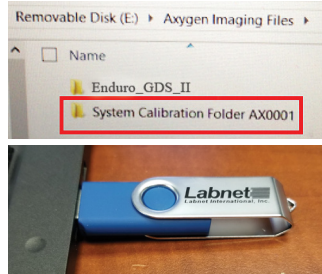
12.

After the installation is complete, click **Finish**.

Visit **www.labnetinternational.com** for additional product and technical information.

13.

Click **Finish** to exit the Setup Wizard.

14.

On the Labnet USB, locate the folder "Enduro Imaging Files\ System Calibration Folder AXXXXX."

15.

Find the "Master" folder within the "System Calibration Folder." Copy the Master folder, and paste it in C:\Enduro Imaging Files\Enduro_v_XXX.

When asked if you would like to replace the existing folder, select **Yes**.

*Note: if you cannot see the Program Data folder, please make sure you can view "hidden" files in Windows®.

16.
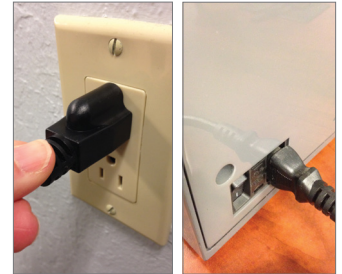
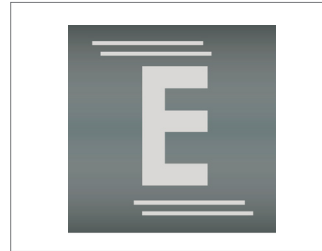Plug the system into an available outlet.

17.

Connect the A-to-A USB cable to both the system USB and the computer. **On the Labnet system, ensure the USB is plugged into the lower USB on the right hand side of the instrument.**
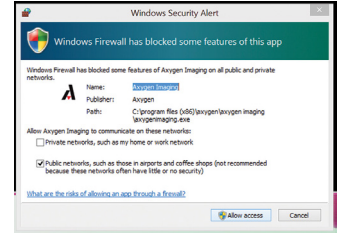
18.

Power on the Labnet Enduro GDS II system using the switch in the back. Wait about 20 seconds before proceeding to the next step.

19.

Launch the capture software.

20.

The first time you run the Enduro Capture Software, you will receive the message above. Click **Allow Access**.

6. Labnet Enduro™ GDS Touch II Gel Documentation System Installation Guide

1.

Remove the Labnet Enduro GDS Touch II Gel Documentation System from its packaging.

2.

Locate the tablet computer.

3.

Remove the wing nuts from the back of the tablet.

4.

Mount the tablet on the system.

5.

Secure the tablet in place with the wing nuts.

6.

Connect the mini-USB cable to the tablet.
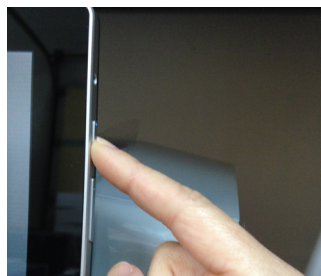
7.

Connect the power cable to the tablet.

8.

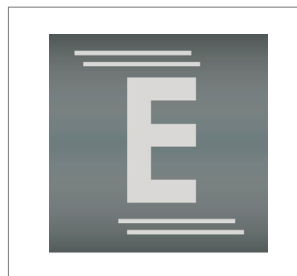Plug the system into an available outlet.

9.

Power on the system using the switch on the back.

10.

Power on the tablet.

11.

Launch the capture software.

7. Image Acquisition

1. After the acquisition software is launched, select the **Darkroom** tab.

2. Place your sample in the imager. The capture software will be in "Live" mode to allow you to position your sample.

3. Close the cabinet door.

4. Select your light source.

Here is a quick guide to select your light source:

System	Labnet Enduro™ GDS II Gel Documentation System	Labnet Enduro GDS Touch II Gel Documentation System
EtBr Gel	UV 302 or 365	UV 302 or 365
Sybr Safe Gel	UV 302 or 365	Epi Blue
Coomassie Gel*	Visible	Visible

*Requires optional white light tray.

5. Select exposure time. If you are not sure of your exposure time, select **Auto Exposure**. Otherwise, you can select a time using the exposure slider.

6. A preview of your image will be displayed. If the image is acceptable, select **Image Capture**. Otherwise you can continue to modify the exposure time.

7. When you are done, your image will be displayed in the home tab. You can now save your image.

8. Overview of Software Features

Home Tab

Open

Open a previously saved image.

Save

Save allows you to perform one of three actions:

- Save – save the currently active image
- Save as – allows you to save the currently active image under another file name
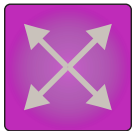- Save all – saves all open images

Print

Print active image.

Email

Allows you to email the active image. Please see "Email Settings" in the Settings section of this guide.

Resize

An image can be resized up to 3 times its original size.

Crop

When you select the crop tool, a crop window will appear over your image. Drag the corners of the crop window to your desired size, and then select "Crop ROI" from the bottom of the screen. If you do not want to crop, select "Cancel."

Rotate

Rotate allows you to rotate your image one of four ways:

- Right 90 degrees
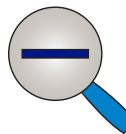- Left 90 degrees
- Flip horizontal
- Flip vertical

Image Info

Captures some of the information on how your image was captured, including the date and time captured, and exposure time. Additionally, it tells you the light source and calibration value.

Zoom In

Zoom in on center of image

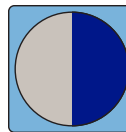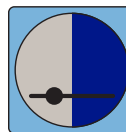**Zoom Out**

Zoom out from center of image

Zoom Fit

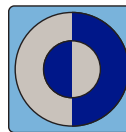Adjusts zoom to fill window. Displays % in the lower left corner of the window.

Auto Contrast

Calculates a balanced contrast ratio.

Manual Contrast

Allows you to manually adjust the black and white levels of your image.

Invert

Gives the inverse of the image.

Display Saturation

Saturated pixels are displayed in red.

8. Overview of Software Features (continued)

Darkroom Tab

UV 302

Selects the Trans UV 302 light source.

UV 365

Select the Trans UV 365 light source.
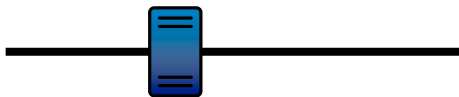
Epi White

Selects the Epi White light source.

Epi Blue

Turns on the Epi Blue light source. (Labnet Enduro™ GDS Touch II Gel Documentation System only)
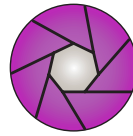
Trans White

Optional – with the purchase and calibration of the white light tray. You select the Trans White light source.

Slider

Use this slider to select your exposure time. As you change the time, wait for the live image below to update for the best experience. Alternatively, you can type in the exposure time in the text fields to the right, and then select **Enter**.

Auto Exposure

Calculates an exposure time using the full dynamic range of the camera.
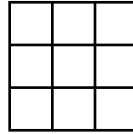
Show Grid

Displays a grid over the live image so you can make sure your gel is vertically and horizontally straight.
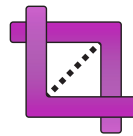
Select ROI

Select ROI has two functions:

◗ Select ROI then select **Image Capture** – this results in a final cropped imaged

◗ Select ROI then select **Auto Exposure** – this results in auto exposure calculations only influenced by your region of interest.

Image Capture

Select this to capture your image. It will be displayed in the Home tab for further work.
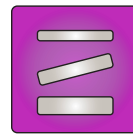
Band Excision

If you need to open the door and view your gel with the lights on, you can override the safety precautions in our system.

NOTE: **Always wear protective eyewear when dealing with UV light**. To use the band excision tool, select your light source then select band excision. A dialog box will appear and ask you to pull out the safety switch on the right side of the system. Open the door, pull the safety switch, and the light will go on. Select "Band Excision" again to turn the light off. The light will automatically turn off after 5 minutes.

8. Overview of Software Features (continued)

Annotations Tab

The annotations tab lets you annotate or draw on an open image.

Pointer

This is the object selector. It allows selection of text boxes, objects, lines, etc., in order to edit or delete them. For example, to change the color of a box, select the pointer, double click on the box to be changed, then select the color select tool and click on the color desired.

Rectangle

Draw a rectangle on the image

Ellipse

Draw an ellipse on the image

Line

Draw a line on the image

Text

Click on the text box, then draw a rectangle. This rectangle will be where your text appears. You can change the size of the font after you type your text.

Pencil

Use this to free-hand draw on the image.

Undo

Use this tool to undo your last few steps.

Redo

Redo your last step.

Delete

Delete the highlighted annotation object.

Font/Color/Line Width

Once an annotation object is selected using the pointer, you can edit the line width and the color, and in the case of text, the font.

Settings Tab

The password for settings is **admin**.

Email Settings

You can email files to yourself if you set up an email account for the imaging system. Contact your IT department for the best values to set.

Change Password

The default system password is admin (all lowercase). If you would like to change this password, you can do so here.

Create Flats

This tool is used to create flat field image for certain light sources. Flat files are used to calibrate light sources for the most even illumination. Flat field calibration is required if you purchase the White Light Tray accessory. Instructions for calibration and use are included with the tray.

Enable Trans White

When optional White Light Tray is purchased, enables Trans White to appear as an option in the darkroom.

Help Tab

Allows you to view this user manual, save it, or print it.

9. Optional Accessories

Labnet Cat. No.	Description
GDS2-1302	Labnet Enduro™ GDS II-302 Gel Documentation System
GDS2-1365	Labnet Enduro GDS II-365 Gel Documentation System
GDST2-1302	Labnet Enduro GDS Touch II-302 Gel Documentation System
GDST2-1365	Labnet Enduro GDS Touch II-365 Gel Documentation System
GDS2-WLCS	Gel Documentation System White Light Conversion Screen for Labnet Enduro GDS II
GDS2-GCT	Gel Carrying Tray for Labnet Enduro GDS II Gel Documentation System
GDS2-GCS	UV transmitting tray that protects UV transilluminator when cutting out bands
GDS2-OG	Orange glasses ideal for reducing background when cutting out bands with blue light
GDS2-USBS	USB hub
GDS2-USBMK	USB mouse and keyboard

10. Limited Warranty

Corning Incorporated (Corning) warrants that this product will be free from defects in material and workmanship for a period of two (2) years from date of purchase. CORNING DISCLAIMS ALL OTHER WARRANTIES WHETHER EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE. Corning's sole obligation shall be to repair or replace, at its option, any product or part thereof that proves defective in material or workmanship within the warranty period, provided the purchaser notifies Corning of any such defect. Corning is not liable for any incidental or consequential damages, commercial loss, or any other damages from the use of this product.

This warranty is valid only if the product is used for its intended purpose and within the guidelines specified in the supplied instruction manual. This warranty does not cover damage caused by accident, neglect, misuse, improper service, natural forces, or other causes not arising from defects in original material or workmanship. This warranty does not cover motor brushes, fuses, light bulbs, batteries, or damage to paint or finish. Claims for transit damage should be filed with the transportation carrier.

In the event this product fails within the specified period of time because of a defect in material or workmanship, contact Corning Customer Service at: USA/Canada 1.800.492.1110, outside the U.S. +1.978.442.2200, visit **www.corning.com/lifesciences**, or contact your local support office.

Corning Customer Service will help arrange local service where available or coordinate a return authorization number and shipping instructions. Products received without proper authorization will be returned. All items returned for service should be sent postage prepaid in the original packaging or other suitable carton, padded to avoid damage. Corning will not be responsible for damage incurred by improper packaging. Corning may elect for onsite service for larger equipment.

Some states do not allow limitation on the length of implied warranties or the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights. You may have other rights which vary from state to state.

No individual may accept for, or on behalf of Corning, any other obligation of liability, or extend the period of this warranty.

For your reference, make a note of the model number, serial number, date of purchase, and supplier here.

Model No. _____   Serial No. _____

Date Purchased _____   Supplier _____

11. Product Disposal

According to Directive 2012/19/EU of the European Parliament and Council of 4th July 2012 on waste and electronic equipment (WEEE) as amended, the Labnet Enduro™ GDS II and Enduro GDS Touch II Gel Documentation Systems are marked with the crossed-out wheeled bin and must not be disposed of with domestic waste.

Consequently, the buyer shall follow the instructions for reuse and recycling of waste electronic and electrical equipment (WEEE) provided with the products and available at **www.corning.com/weee**.

To request certificates, please contact us at **www.labnetinternational.com.**

Warranty/Disclaimer: Unless otherwise specified, all products are for research use only. Not intended for use in diagnostic or therapeutic procedures. Corning Life Sciences makes no claims regarding the performance of these products for clinical or diagnostic applications.

Visit **www.labnetinternational.com** for additional product and technical information.

For additional product or technical information, visit **www.corning.com/lifesciences** or call 800.492.1110. Outside the United States, call +1.978.442.2200 or contact your local Corning sales office.

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