invitrogen QUICK REFERENCE

iBright™ CL1500 and FL1500 Imaging Systems

Catalog Numbers A43678, A43679, A44114, A44115, A44240, and A44241

Pub. No. 100085108 **Rev.** A

WARNING! Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves. Safety Data Sheets (SDSs) are available from **thermofisher.com/support**.

Set up after unpacking

Once unpacked and installed, power on the imager and follow the touchscreen prompts to set up a network configuration, enter instrument information, and install the turntable.

Package should include: iBright™ Imaging System, Sample Stage/Turntable, White Transilluminator Screen, Sample Blot, Product Information Sheet, Quick Reference Guide, and Safe Imager™ Viewing Glasses. Region-specific power cord shipped separately.

Note: For detailed information and safety symbols on this instrument, refer to the iBright™ Imaging Systems User Manual (Pub. no. MAN0018592).

Modes

Invitrogen™ iBright™ Imaging Systems allow users to image in a mode specific to a sample type. Each mode is optimized to produce a high quality image for further analysis and data collection.

Chemi Blots

Mode to image chemiluminescent Western blots.

Fluorescent Blots (FL1500 model only)

Mode to image fluorescent Western blots using a single channel or up to 4 channels using excitation wavelengths of 455-485 nm, 515-545 nm, 610-635 nm, 610-660 nm, and 750-768 nm with corresponding emission wavelengths of 510-555 nm, 565-615 nm, 675-720 nm, 710-730 nm, and 800-850 nm.

Nucleic Acid Gels

Mode to image DNA and RNA gels stained with fluorescent nucleic acid stains such as Ethidium Bromide, SYBR™ Safe, SYBR™ Green (I or II), SYBR™ Gold and similar products.

Protein Gels (Protein Visible and Protein Fluorescence)

Mode to image visible, stained protein gels (using white screen) and fluorescent, stained, or labeled protein gels.

Note: Do not use the white screen for protein fluorescence.

Note: Stained or labeled protein on nitrocellulose or PVDF membrane should be imaged using Universal mode.

Universal

Mode to image samples containing multiple signals, such as chemiluminescence, fluorescence, and/or colorimetric stains. Image display is similar to Fluorescent Blots and allows you to assign false color to any sample.

Gallery

Mode to retrieve, analyze, and manage images. Images are saved into a guest gallery or a registered user's gallery.

Get started

If the unit is off

If the unit is in sleep mode, touch the screen to activate the instrument.

Note: If the instrument does not respond to touch, ensure it is plugged in and turn on using the switch on the back of instrument. Continue to step 1 below.

If the unit is on and in active mode

1. Touch ⓐ to sign in to use or set up a user profile.

   Note: If security mode is active, the system will default to the sign-in page. For those not logged on as a user (guest), acquired images are saved to a guest gallery. Images cannot be transferred between user and guest galleries. Registered users can access images in guest gallery by checking View guest's images under the filter options in Gallery. When logged in as a guest, images cannot be exported to a network drive or cloud storage.
2. From the **Welcome** screen, choose the appropriate Mode from the drop-down menu.
3. Touch ⏏ to open drawer.
4. Insert sample into the middle of the viewing area.
5. Touch ⏏ to close drawer.

   The system will auto zoom, auto focus, and auto rotate the sample for preview imaging.

Acquire an image

Image using Chemi Blot

1. Touch **Smart Exposure**. View the image preview and recommended exposure time.
2. Based on the image preview, use the controls on the right side of the screen to adjust the exposure time. The image preview will update in real time. To adjust the time:
   a. Use the + or – to adjust exposure time.
   b. Finger swipe in the segmented dial to adjust exposure time.
   c. Touch the center box to select a preset exposure time from a menu.
   d. Enter a custom time by touching **Custom**.
3. Touch **Capture** to acquire image with the indicated exposure time.

   Captured image appears on screen and automatically saves to the gallery.
   - If an acceptable image, touch **Export**, **Gallery** or **Analyze**.
   - If an unacceptable image, touch **Trash** to remove image, then return to step 2 to adjust exposure conditions.

Image using Fluorescent Blot (FL1500 model only)

1. Assign dyes from the list to up to 4 channels.

   Note: Multiplexing orange and red dyes is not recommended.
2. Touch **Smart Exposure**. View the preview image and recommended exposure time.

   Two images will display. The top image is the selected grayscale channel, and the bottom image is the color composite of the overlaid, selected channels.
3. Toggle eyeballs on or off to display in the composite overlaid image. Select the appropriate channel for editing (displayed in top image location).
4. Proceed to step 2 in "Image using Chemi Blot" on page 2 to adjust and capture the image.

Image using Nucleic Acid Gel

1. Touch **Smart Exposure**. View the preview image and recommended exposure time.
2. Proceed to step 2 in "Image using Chemi Blot" on page 2 to adjust and capture the image.
3. *(Optional)* Band excision can be done by touching **More Options ▸ Band Excision** and following the screen instructions.

Image using Protein Gel (Protein Visible)

1. Place the white screen directly on the transilluminator glass.
2. Place the sample directly on the white screen.

   Note: We recommend the white screen for colorimetric stained protein gels).
3. Touch **Smart Exposure**. View the preview image and recommended exposure time.
4. Proceed to step 2 in "Image using Chemi Blot" on page 2 to adjust and capture the image.

   Note: Universal mode is recommended for colorimetric-stained protein on nitrocellulose or PVDF membrane.

Image using Protein Gel (Protein Fluorescent)

1. Place sample directly on transilluminator glass.

   Note: Do no use white screen.
2. Touch **Smart Exposure**. View the preview image and recommended exposure time.
3. Proceed to step 2 in "Image using Chemi Blot" on page 2 to adjust and capture the image.

Image using Universal mode

1. Assign up to 4 channels from the list and select dyes/stains/substrate from the sub list to assign correct imaging conditions.
   - FLUOR TRANS: Image fluorescent samples, such as SYPRO™-stained fluorescent gels, using the green transilluminator as excitation source.
   - CHEMI: Image blots containing chemiluminescent samples.
   - VISIBLE: Image membranes or opaque samples containing colorimetric signal, such as Thermo Scientific™ Pierce™ Reversible Membrane Stain or Ponceau S stained membranes.
   - PROTEIN GEL (Protein Visible): Image gels stained with colorimetric stains (e.g., Coomassie or silver-stained gels). Ensure the white screen is placed under the sample.
   - PROTEIN GEL (Protein Fluorescent): Image protein gels stained with fluorescent stains/labels (e.g., No-Stain™ Protein Labeling Reagent and SYPRO™ dyes). Ensure the sample is placed directly on the transilluminator glass.
   - TPN: Designate channel as standard for total protein-based normalization (TPN). During analysis, software will automatically perform TPN using this channel as the reference channel.
2. Touch **Smart Exposure**. View the preview image and recommended exposure time.

   Two images will display. The top image is the grayscale image of the selected channel, and the bottom image is the color composite of all the channels selected for display.
3. Toggle eyeballs on or off to display channels in the composite image. Select the appropriate channel for editing (displayed in top image location).
4. Proceed to step 2 in "Image using Chemi Blot" on page 2 to adjust and capture the image.

Gallery

- View image files as thumbnails or a list.
- Select one, multiple, or all image files in the gallery. Select **Actions** to review the selected image file(s) and perform additional functions.
  - Delete a selected image file from the tray using **Trash**. **Deleted images are removed from the gallery.**
  - Export image files in the tray using **Export**.
  - Analyze a selected image file in the tray using **Analyze**.
  - View the image information for the selected image file using **Image Information**.
  - Adjust the appearance of a selected image using **Image Adjust**.
  - To generate a pdf report for a selected image file, touch **Analyze ▸ Next ▸ More Options ▸ Generate Report**. Report contains images, image information, and densitometry data in table format. Report can be printed to a network printer and/or exported to a USB or network drive.

Export

1. Choose appropriate export destination from the drop-down menu **Destination**.
   - Connect
   - USB port
   - Network drive
   - Printer
2. For exporting to a USB drive, network drive, or a network printer, choose the appropriate file type from the menu under **File Type**. More than one file type can be selected at a time. Click **Next**.
   - Publication (TIFF, JPEG, PNG): Images are exported as 24-bit RGB image files as they appear on the instrument with any image adjustments or false coloring applied. Optimal format for the printing or presentation of images.
   - Analysis (TIFF, G2I): Images are exported as 16-bit raw image files. The exported files represent the raw data with no image adjustments. Optimal format for downstream analysis and quantitation of the image using appropriate external analysis software. G2i files can only be analyzed using iBright™ Analysis Software.
3. Select the resolution and image size (only for images selected for publication).
4. Select **Export** or **Next**. If exporting multiple files, enter the folder name and select **Export**.

Analyze (on board)

- Automatically analyzes selected image file by identifying up to 4 analysis frames and the lanes and bands associated with each frame.
- Automatically saves analysis results and adjustments to the image file.
- See the user guide for detailed instructions.
- Additional cloud- and desktop-based analysis software is available. See "iBright™ Analysis Software" on page 4.

iBright™ Analysis Software

For access to the Connect version of the analysis software, go to **thermofisher.com/cloud**. Sign-in or register, then select iBright™ Analysis Software under Protein Biology.

For desktop-based software (Windows™ or Apple™ OS, go to **thermofisher.com/ibrightanalysis**. View the system requirements in the table below.

After completing the download, perform the installation process based on your configuration.

IMPORTANT! You must be logged into the system using an Administrator-type account.

Downloading a new installer:

1. Locate the installer at **thermofisher.com/ibrightanalysis**.
2. Click **Download**.
3. Fill in the web form.
4. On the **Thank You** page, click the system-specific installer link to begin the download.

   Note: For PC, download the installer appropriate for your system (e.g., 32-bit or 64-bit). To determine your system configuration, click the Windows™ start button, then enter "system information". Click on System Information to bring up your system configuration.
5. Perform the installation process based on your system configuration:

PC	Mac
1. Open the installer file (iBrightAnalysisSoftware.exe) from the download folder or location where web-browser downloads are saved. 2. Accept the terms and conditions (End User Licensing Agreement). 3. Click **Install**. 4. Launch the application from the shortcut created on your desktop.	1. Open the download folder and double-click on iBrightAnalysisSoftware.zip to extract files. 2. Open the iBrightAnalysisSoftware.pkg. **Note:** You will see a pop-up window if xcode command line tool is not installed on your system. Accept the Apple™ Xcode license and install the software. 3. Accept the terms and conditions (End User Licensing Agreement). 4. Click **Install**. A prompt will ask your password for application installation. 5. Launch the application from the Applications folder.

	PC	Mac
System configuration	Windows™ 7, 8, 8.1, and 10 with 32-bit and 64-bit operating system	OS X 10.10: Yosemite, OS X 10.11: El Capitan, macOS 10.12: Sierra, macOS 10.13: High Sierra, macOS 10.14: Mojave
RAM	8 GB minimum	8 GB minimum

Note: Should you experience any issues with installation or have further questions, contact our technical support at **technicalsupport@thermofisher.com**.

Limited product warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale at **www.thermofisher.com/us/en/home/global/terms-and-conditions.html**. If you have any questions, please contact Life Technologies at **www.thermofisher.com/support**.

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For descriptions of symbols on product labels or product documents, go to **thermofisher.com/symbols-definition**.

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Revision	Date	Description
A	08 May 2019	New quick reference for iBright™ CL1500/FL1500 Imaging Systems.