Typhoon
Instrument QuickStart

Contents

Instrument guidelines

Starting the instrument

Turn on the Typhoon™ instrument and allow 30 minutes for the instrument to warm up the lasers and system components. The on/off switch is on the right side of the instrument. Start the Scanner Control software. After the 30-minute warm-up time, you can begin scanning.

Shutting down the instrument

Close the Scanner Control software. Then turn off the Typhoon instrument. The on/off switch is on the right side of the instrument.

Maintaining the instrument

To clean the glass platen and sample lid, dampen a lint-free cloth with distilled water and wipe the surface of the glass platen and sample lid. Alternatively, you can use a lint-free cloth dampened with 75% ethanol to wipe the surfaces, and then wipe the surfaces again using distilled water. Because laboratory alcohol formulations can contain residue that is highly fluorescent, make sure you follow alcohol cleaning with distilled water.

Sample placement guidelines

Dry samples

Before you place a storage phosphor screen, microplate, dried membrane, or TLC plate on the glass platen, make sure the platen is clean and dry.

Wet samples

Place a small amount of distilled water on the glass platen. Then carefully position a wet gel (agarose or polyacrylamide) on the clean glass platen. Using too much water can cause the gel to move during the scan, which affects the quality of the collected data. In addition, do not trap air bubbles between the gel and the glass platen. Air bubbles will appear on the image.

Sandwich gels

You can collect data from polyacrylamide gels sandwiched between electrophoresis glass plates. To achieve optimum sensitivity, use low-fluorescence glass plates and make sure the bottom plate is 3 mm thick.

To reduce interference patterns caused by the two different pieces of glass, use two Kapton™ strips (supplied in the Typhoon accessory kit) positioned over the spacers on the outside edges of the 3-mm thick plate to raise the sandwich gel slightly above the glass platen.

Then use distilled water to fill the gap between the platen and the bottom of the 3-mm electrophoresis glass plate. Do not trap air bubbles between the sandwich gel and the glass platen. Rest one side of the sandwich gel on the glass platen and slowly lower it. When you can no longer lower the sandwich gel using your fingers, insert the Wonder Wedge™ tool (supplied in the Typhoon accessory kit) between the glass platen and the 3-mm electrophoresis glass plate. Then slowly remove the wedge.

After scanning, use the Wonder Wedge to help remove the sandwich gel from the glass platen.

375-641

Amersham Biosciences

Scanner Control guidelines

Setup recommendations

Application	Focal plane	Press sample
Agarose gel	Platen or +3 mm	No
Wet polyacrylamide (PA) gel	Platen	No
PA sandwich gel (3mm plate)	+3 mm	Optional
PA sandwich gel (<3mm plate)	Platen or +3 mm	Optional
Membrane or blot	Platen	Optional
Microarray glass slide*	+3 mm	Yes
Microplate	+3 mm	Yes
2D DIGE gels**	+3 mm	Yes

* Using microarray slides is described in *Microarray Slide Holder Kit for the Typhoon 8610, 9210, and 9410 Instruments* and in the *Typhoon User's Guide.*

** Using the 2D DIGE gels is described in the *Gel Alignment Guides Kit for the Typhoon Instrument* and in the *Typhoon User's Guide.*

Focal plane parameters

The Scanner Control software contains two parameters for the focal plane. The Platen parameter focuses the optics to just above the glass platen. The +3 mm parameter focuses the optics 3 mm higher than the glass platen. Choose the parameter that best fits where the labeled target is positioned in the sample.

In general, use the Platen parameter for thin samples (1-mm thick or less). Use the +3 mm parameter for sandwich gels and microplates. For samples that can vary in thickness, such as agarose gels, scan test samples using both parameters to determine which parameter provides the best results.

Press Sample parameter

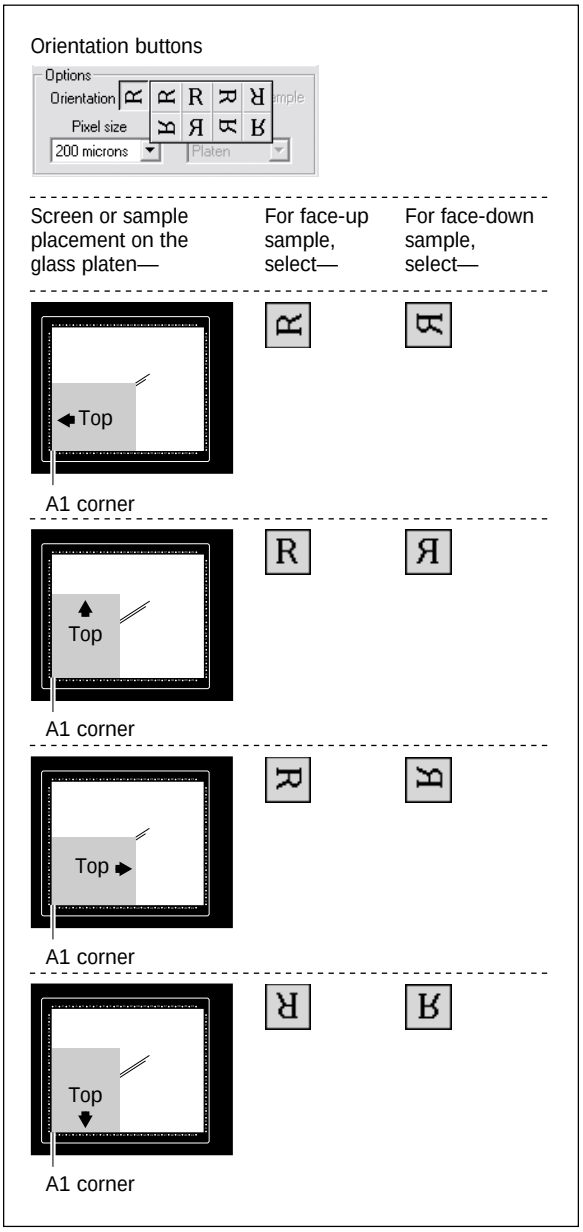
The Press Sample parameter prevents a sample from moving during scanning. Use the Press Sample parameter with minigel sandwich formats to hold the sandwich gel in place. Place a clean electrophoresis glass plate on top of a membrane or a blot sealed between plastic sheets or page protectors. (If necessary, you can use the Press Sample parameter to hold down the glass plate.)

Caution: Do not use Press Sample with wet gels. Pressing a wet gel will damage the sample.

Because a large polyacrylamide sandwich gel is heavy, you do not need the Press Sample parameter.

Orientation

The A1 location for the sample placement is at the lower left corner of the glass platen. You can reduce the scan time by placing the long side of the sample along the lettered (A through R) side of the glass platen. Use the orientation buttons to reorient the top of the sample. During the scan, an image of the sample appears in the ImageQuant™ Preview window.



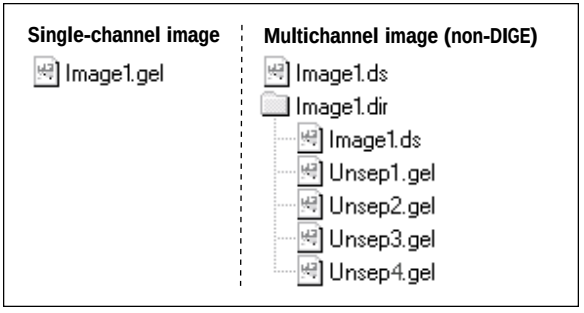
Multichannel fluorescence scans

If all the following criteria are satisfied, two fluorescent scans can be acquired simultaneously:

- The same laser is selected, or the red and green lasers are selected (make sure you select Speed mode).
- Different emission filters are selected, or at least one scan uses no emission filter.
- The same sensitivity parameter is used.
- The beamsplitter wavelength is between the two emission filters and at least 5 nm from each emission filter.

File structure

You can create two types of images using the Typhoon instrument and the Scanner Control software. All storage phosphor scans, most chemiluminescent scans, and fluorescent scans containing one dye create a single-image file, which is designated by the .gel file extension. Fluorescent scans that contain two, three, or four fluorescent dyes create a dataset image file, which is designated by the .ds file extension. A folder labeled with the .dir extension contains the individual .gel files that make up the dataset image. The folder also includes a backup copy of the .ds file. If you are using the DIGE file naming format, you provide a unique name for each file (.gel). The software creates one .gel file for each image scan area (up to four images per scan area).



Saving files

To avoid slowing or delaying the scan, always save the image files on the local hard drive. After scanning, you can transfer the files and folders to a remote workstation and continue the analysis.

Scanning guidelines

Previewing the scanned data

The ImageQuant Preview window displays an image of the sample as the sample is scanned. You should monitor the preview image and check for saturated data. Saturated data appear as red areas in the image. If key areas of the image are saturated and you want to perform quantitation on the image, you will need to scan a fluorescent or chemiluminescent sample again using a lower PMT voltage setting. If you scanned a storage phosphor screen, you will need to expose a clean screen to the sample and reduce the length of the exposure time.

If the preview image displays all the relevant data before the instrument finishes the scan, you can cancel the scan and save the data.

Quickly assessing the quality of the scan

Display the scanned image in ImageQuant. Use the Gray/Color Adjust, Pixel Locator, or Create Graph features to assess the signal values across the image.

Getting information and help

- The *Typhoon User's Guide* provides step-by-step procedures for using the instrument and software. The user's guide is available in printed and electronic versions. To view the electronic version, choose User's Guide from the Help menu in the Scanner Control window.
- Technical Support provides assistance by phone or fax.

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May 2002