

*MacBLL*TM

User Guide



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About this Guide

This guide explains how to set up and use the MacBLL™ software to make BLL files for imaging on a Lasergraphics Film Recorder. The guide assumes that you already know how to use a Macintosh. If you are new to the Macintosh, review your *Macintosh Owner's Guide* before proceeding.

BLL is the abbreviation for Binary Lasergraphics Language. The BLL format serves as a machine independent graphics output format for use by Lasergraphics rasterizers on the Macintosh and Windows.

“Installing MacBLL” explains how to install the MacBLL package.

“The Chooser Desk Accessory” tells how to bring up the Chooser desk accessory, select the driver, and set the configuration.

“The Page Setup Window” outlines how to adjust the page size of a document using the options on the **Page Setup** window prior to printing.

“The Print Window” shows how to print pages and explains the parameters on the **Print** window.

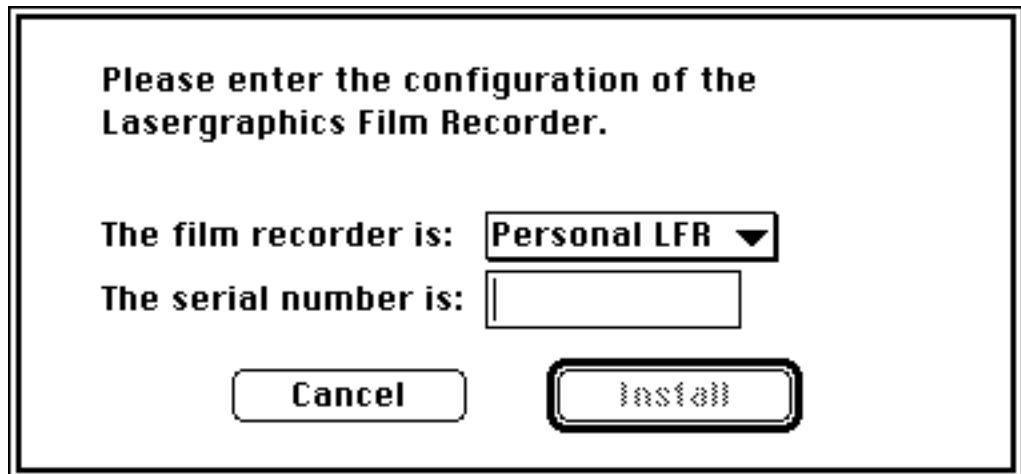
“The MacRascal Print Monitor” describes the main window of the application that runs in the background to process printed images into BLL files.

Screen illustrations in this guide are meant to be representative, not necessarily exact duplicates of screens that appear on your video monitor.

Installing MacBLL

To install the MacBLL software, you will need either a set of the MacBLL disks or a MacBLL Installation application downloaded from the Lasergraphics web site.

1. Disable any virus protection software that might interfere with the software installation.
- 2a. Activate the Finder and insert the first MacBLL disk. Open (or double-click) the Installer icon.
Or
- 2b. Open (or double-click) the MacBLL Installation application.
3. Click on the **Continue...** button. of the first installation message.
4. Set up the configuration options.



The screenshot shows a configuration dialog box titled "Please enter the configuration of the Lasergraphics Film Recorder." It contains two labels: "The film recorder is:" and "The serial number is:". The first label is followed by a dropdown menu currently showing "Personal LFR" with a downward arrow. The second label is followed by an empty text input field. At the bottom of the dialog are two buttons: "Cancel" and "Install".

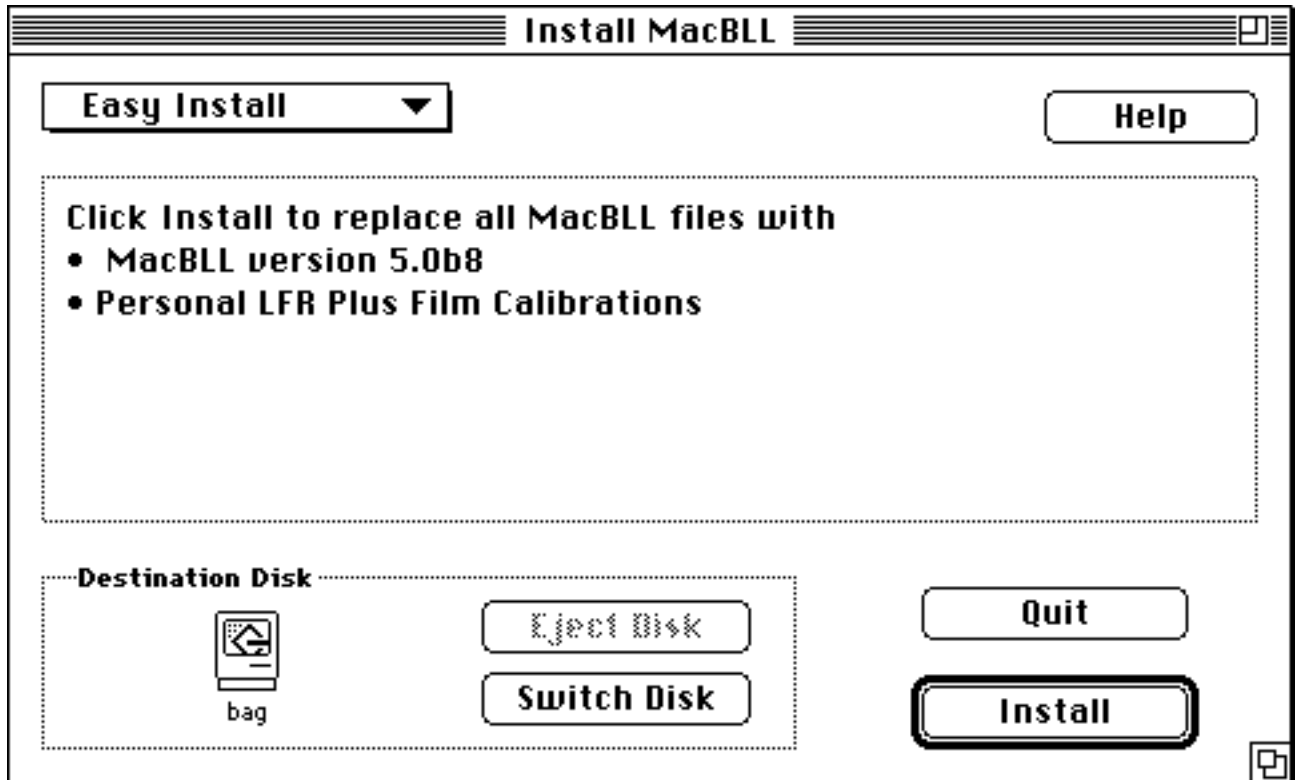
Push on the pop-up **film recorder** menu and select the model of film recorder for which you will be making BLL files.

Type in the **serial number** of the film recorder. The serial number can be found on the rear of the film recorder. If there is a dash (-) in the number, enter it also.

► **NOTE:** It is important to set the correct Film Recorder type and serial number. If this is not correct, the BLL file may not be able to be imaged. It may have the wrong resolution or film calibration.

Click on the **Install** button. If the **Install** button is not enabled, go back and check the film recorder model and serial number entries again.

5. Use the Easy Install window.



Check the **Destination Disk**.. The software will install into the system folder of your startup disk. Click on the **Switch Disk...** button to choose a different system disk.

Click **Install** for the Easy Install process. Insert additional MacBLL disks as the installer requests them.

6. Re-enable your virus protection software.



These items will be installed on your hard disk in the System folder:

BLL File is the Chooser driver that you use to create BLL files for imaging at a later time or at another station.

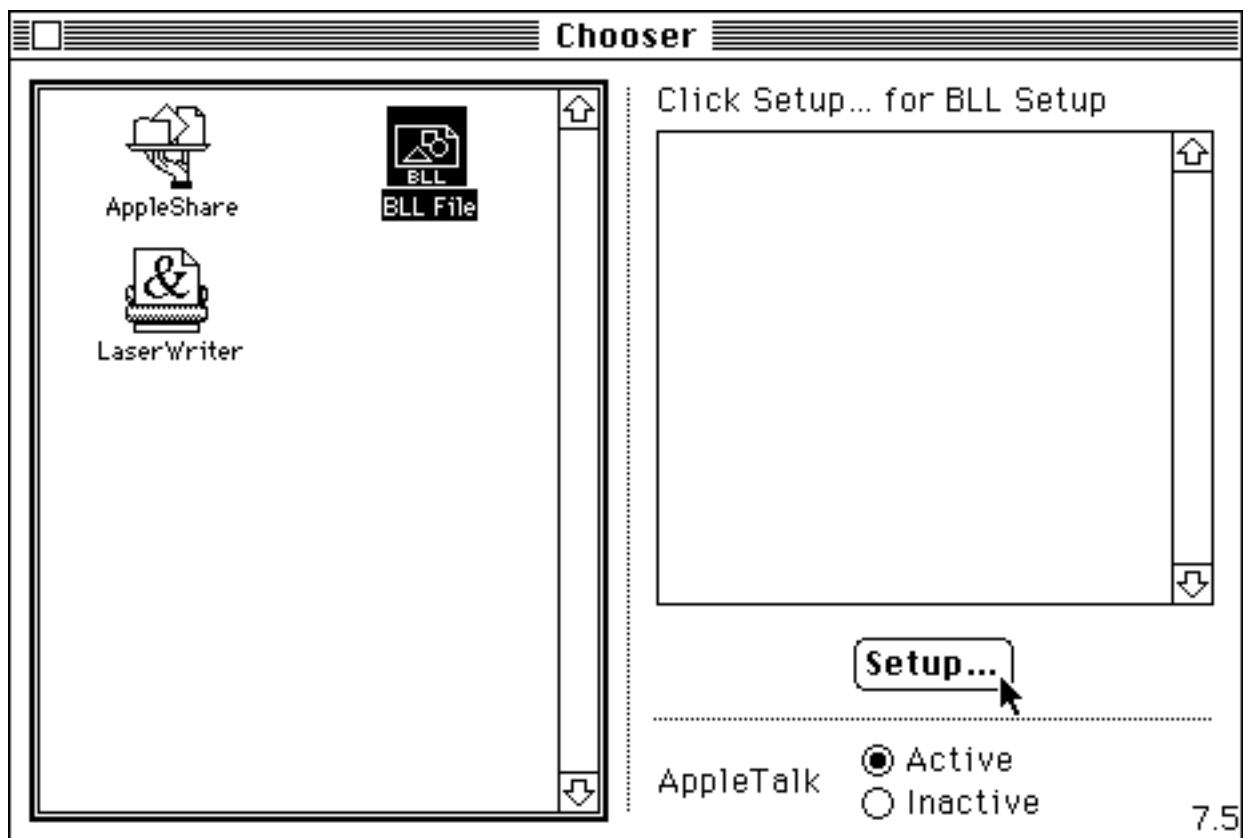
The **MacRascolQ Data folder** contains supporting data files that are used by the MacBLL software.

The Chooser Desk Accessory

The Chooser desk accessory is used to select the device driver to which output will be sent. This desk accessory is often used to select a driver before a document is created so that the **Page Setup** window will reflect the page boundaries of the device.

Select **Chooser** from the “Apple” menu. When the Chooser window appears, select **BLL File** from the list on the left side of the window.

BLL files capture all elements of your image, and can be imaged accurately on a film recorder connected to another Mac or PC. The Mac or PC with the LFR attached does not need your fonts or clip art loaded to image your BLL file. All such attributes are embedded in the BLL file.



Click on the **Setup...** button to set or check the configuration. See the following **Driver Setup Window** section.

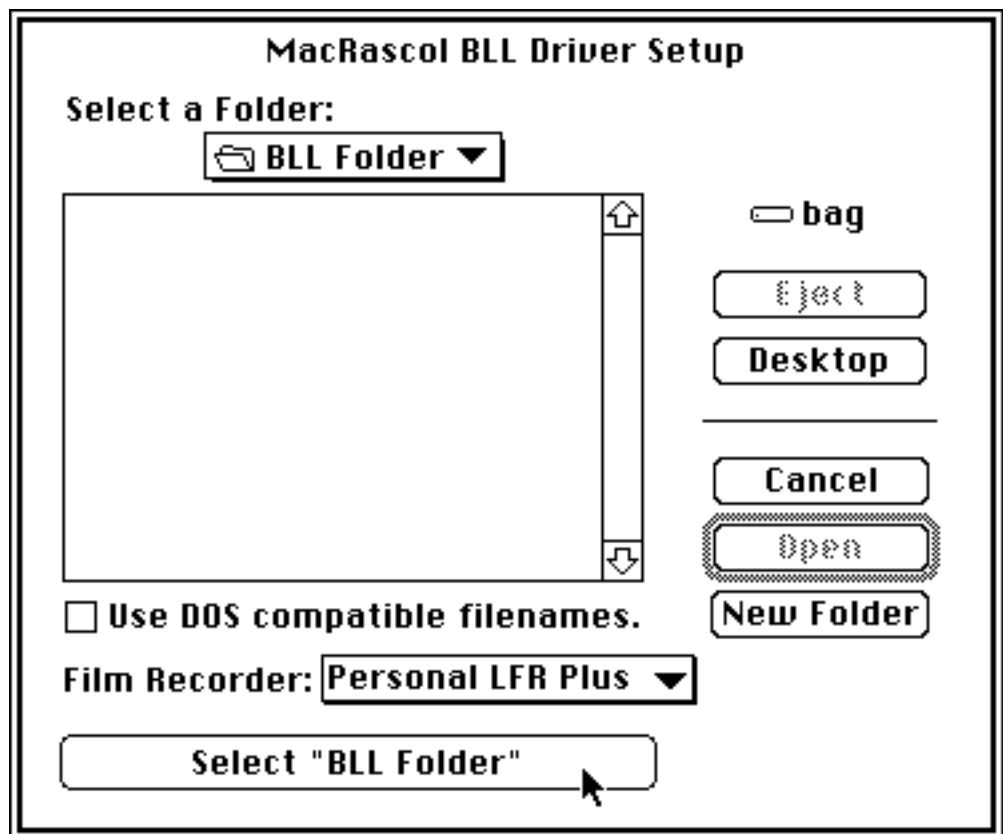
After you have set up the BLL File driver, close the Chooser desk accessory to complete the driver selection procedure. You are now ready to use the **Page Setup** and **Print** commands from your application to make BLL files.

Driver Setup Window

The **Driver Setup Window** sets the configuration of the BLL File driver.

From the Setup window you select a folder for the MacRascal Print Monitor to place the BLL files as they are generated. You may select a removable disk if you are sending the files to a service bureau.

You may select a special folder on your network designated as a drop box for the WinRascal software. WinRascal software runs under Windows and can image BLL files to a film recorder attached to a PC. WinRascal is available from Lasergraphics or your dealer.



Use DOS compatible filenames.

Click this check box if the generated BLL files will be used on an IBM® PC compatible. When the box is checked, MacRascol generates BLL files with legal DOS filenames which are made up of one to eight characters followed by a period and the three letter extension "BLL."

Check **Use DOS compatible filenames** to minimize compatibility problems if the files may be moved to a non-Macintosh disk or a WinRascol drop box.

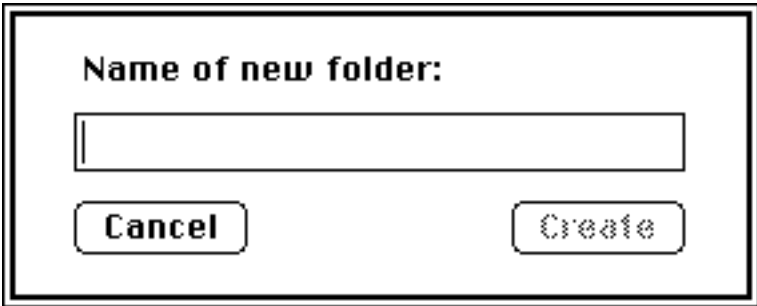
Film Recorder:

Pop up this menu to set the LFR type in your configuration.

Be sure to set the correct Film Recorder type. The BLL file may not image properly if this information is incorrect. It may have the wrong resolution or film calibration.

New Folder

Click this button to create a new folder inside the currently displayed folder. Type a new folder name and click **Create**.

A rectangular dialog box with a double-line border. At the top, it contains the text "Name of new folder:". Below this text is a single-line text input field. At the bottom of the dialog, there are two buttons: "Cancel" on the left and "Create" on the right. Both buttons have a slight 3D effect with a shadow.

Select "folder name"

Click this button to save the currently selected folder as the BLL output folder.

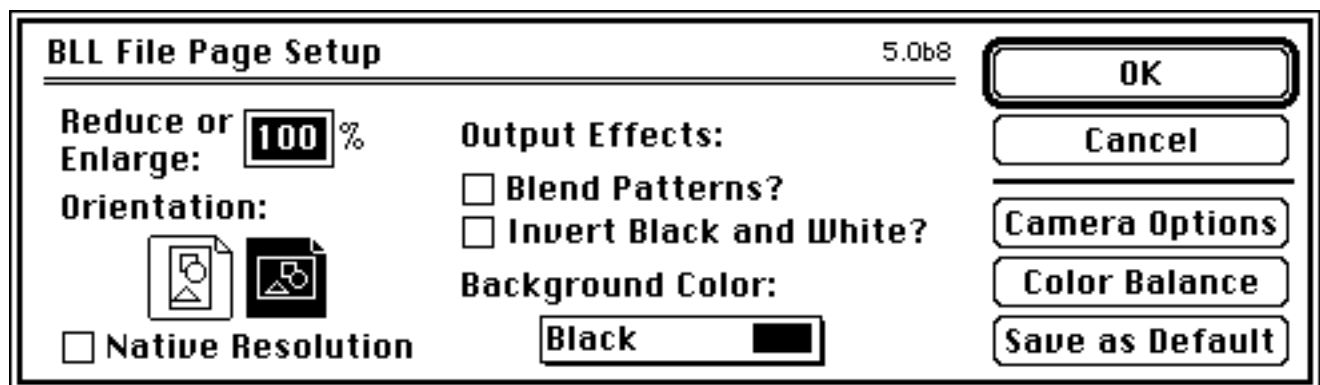
Cancel

Click this button to discard the changes, if any, you have made in this window.

The Page Setup Window

The **Page Setup** window affects the page size shown by the application. This window is often used when a document is first created to set the page boundaries. If the document was previously created for a different device, use the Page Setup window prior to printing.

Select Page Setup... from the File menu of your application. Note that the procedure for bringing up the Page Setup window differs for some applications. Verify that the window is titled "**BLL File Page Setup**". If not, go back to the **Chooser** and select **BLL File**.



Reduce or Enlarge

Type in a percentage in the box to reduce or enlarge the image on the film (20% to 500%). Use this to adjust the page size to match your images.

The LFR page size is arbitrarily set to about 12 by 8 inches. For example, reducing the image to 90% will allow you to work with an 8.89 inch wide document in your application. That is, reducing the image causes the application to show a larger page size. Adjusting this value can avoid the task of reformatting a document created for a different printer.



Portrait



Landscape

Orientation;

Click on one of the icons to select either "portrait" or "landscape." Some applications only allow one of these selections.

This will affect the page area displayed in your document window.

Native Resolution

Some older applications will produce better quality output if prompted with the high resolution of the film recorder. You can experiment with this by checking the **Native Resolution** box. It may or may not improve the output.

Check to request high resolution output from your application. For certain applications this option is preset and cannot be changed. It will appear grayed out if this is the case. For other applications it will reflect its previous setting from the last time it was changed from that application.

A few applications will reduce the size of the image when the **Native Resolution** box is checked. In this case, you should leave it unchecked.

Most applications are able to communicate properly with the BLL File Chooser driver, and you will not need to adjust the setting of this box.

Blend Patterns?

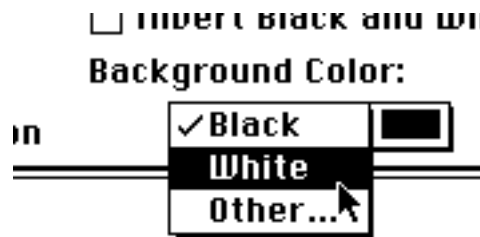
Check this box to cause all patterned objects printed by the application to be replaced with a color that is a blend of the colored dots of the pattern.

If your document uses patterns to simulate more colors on the screen, then this option will blend the pixels of the pattern and paint the film with a solid color. If your document uses patterns to simulate textures, do not check this option.

Invert Black and White?

Check this box to cause all black objects printed by the application to be replaced with white and all white objects replaced with black.

If your document uses black lines on a white background, you may want to check this box when making slides.



Background Color

Pop up this box to change the color printed behind the application image. This color will be visible if the application does not draw to the edges of the page, or it leaves holes between the objects that it draws.

Sometimes an application will assume it is drawing on white paper and not paint the white portions of the image. In this case, you should set the background color to **white**.

Camera Options and Color Balance

Click these buttons to set film exposure, color balance, and gamma parameters. See the following sections.

Save as Default

Click this button to save the settings as the initial settings for new documents.

The application normally saves with the current document the settings you have made in the **Page Setup**, **Camera Options**, and **Color Balance** windows. Clicking the **Save as Default** button also saves this set of settings for new documents that you create in this and other applications. This means that you will not need to remember to set the correct film type every time you create a new picture.

► **NOTE:** Additional items may be added to the **Page Setup** window by the application. Refer to your application's documentation for details.

Camera Options

Film Recorder: Personal LFR Plus

Film Type: 35mm Kodak Electronic Output Film, v3 ▼

Resolution: Fine (4K) ▼

Antialiasing: None ▼

Minimum Exposure Time:

☒ Fastest Possible

☐ Minutes

Color Balance:

Red	Green	Blue	Gamma
100%	100%	100%	0.5

Film Recorder

The **Film Recorder** setting selects the options available for each model and the basic film exposure parameters for the hardware. Verify that the correct film recorder is listed at the top of the window. If not, go back to the **Chooser** to set it properly.

Film Type

Set this to the type of film loaded in the camera back.

Film Type is the most important setting for the image. It specifies the carefully controlled amount of light required to get the most out of the film. The film type controls are slightly different for each model of film recorder Lasergraphics makes, due to the differences in optics and driving electronics.

Film types listed in the second section of the Film Type menu come from Lasergraphics Film Calibration (LFC) files stored in the MacRascalQ Data folder inside your system folder.

Resolution

Set this to the pixel resolution desired.

Fast (2K) resolution produces 2000-line images. **Fine (4K)** resolution produces 4000-line images. **Extra Fine (8K)** resolution produces 8000-line images. **Ultra Fine (16K)** resolution produces 16000-line images. The actual number of dots imaged on the film depends on its shape.

Antialiasing

Set this to the antialiasing level desired.

Antialiasing is seldom useful for film recorders, especially when exposing at higher resolutions. However, **Level 1** antialiasing may produce smoother edges and lettering in images. **Level 2** antialiasing is a more intense version of **Level 1**. Note that antialiasing increases processing time significantly.

Minimum Exposure Time

This option allows you to match the timing of your film recorder to the MacRascol rasterizer. Doing this eliminates periodic faint horizontal lines that sometimes appear when the film recorder is forced to wait for data from the rasterizer.

Recent Lasergraphics film recorders will automatically adapt to virtually any data rate. It is highly likely you will never have to use this option.

Click **Fastest Possible** if there are no periodic faint horizontal lines, and you are satisfied with the output slides. Click **Minutes** if periodic faint horizontal lines exist. Then type the minimum exposure time in minutes (e.g. **5.5**) in the box. This will be the fastest possible exposure time for this image. It may take longer. As an initial value, multiply the normal imaging time by 1 1/2 and use that as the minimum exposure time. If the lines still exist, try a factor of 2, and so on until they disappear.

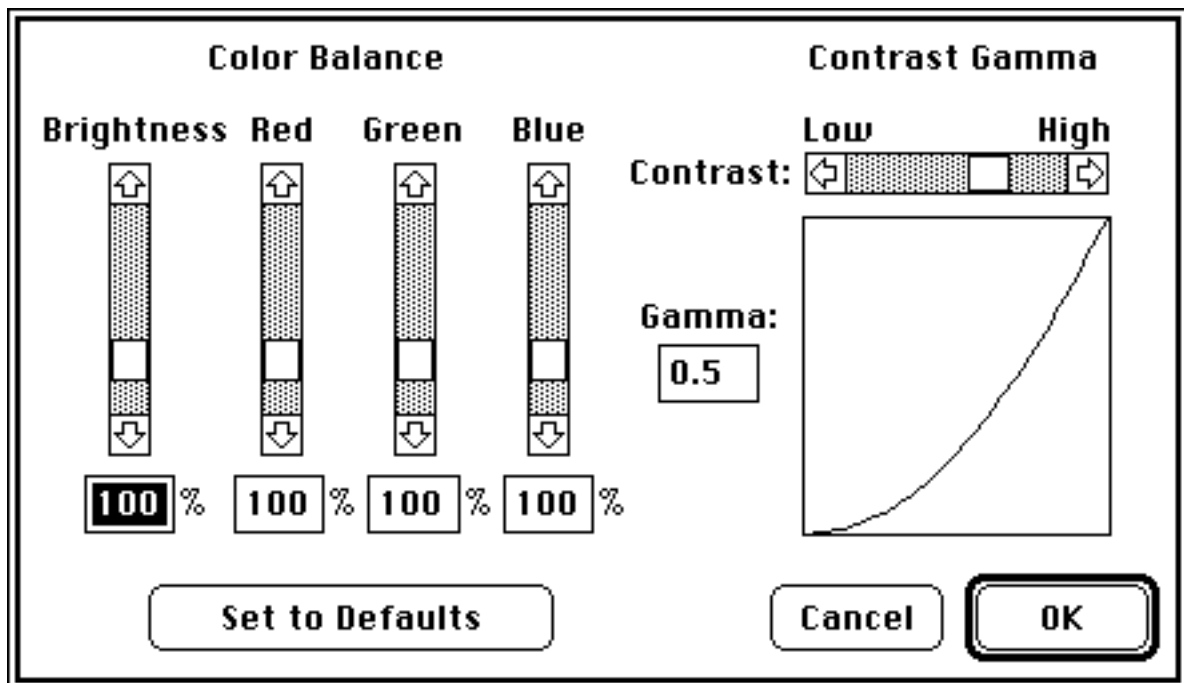
Color Balance

The current color balance values for **Red**, **Green**, and **Blue** are shown here along with the current **Gamma** value. To change any color balance values, click **Set**. Clicking **Set** displays a window that lets you set the **Brightness**, adjust

the balance of **Red**, **Green**, and **Blue**, and enter the **Gamma** value. See the following section for a detailed description of the film recorder **Color Balance** window.

Color Balance

The window lets you modify the film type setting. **Color Balance** controls the amount of light that can be applied to any dot in the image. **Gamma** controls the contrast of the image, or the amount of light applied for the middle-value colors of the image.



Normally, all color balance values are set to 100%. Since color perception is subjective, this dialog box lets you adjust the film recorder's color balance to match your taste.

Increasing the amount of a color causes that color to be more prominent than the other two. For example, if you increase **Blue**, your images will have a bluish cast.

Decreasing the amount of a color causes the other two colors to be more prominent. For example, if you decrease the amount of **Blue**, your images will look more yellow. This is because decreasing **Blue** is like increasing **Red** and **Green** which combine to form yellow.

Doubling a color's value results in twice as much of that color in your images. However, since **Color Balance** is intended for making slight changes in overall color and not for improving poor images, you should normally restrict all changes to the range 80–120%.

You may adjust all three colors together by changing the **Brightness** value. This has the effect of changing the overall brightness of the image without changing the color balance. The range of the **Brightness** setting is restricted depending on the settings of **Red**, **Green**, and **Blue**.

The **Contrast Gamma** adjustment allows you to adjust the contrast of the output image through a nonlinear function. You may set the value of **Gamma** in the range of $1/7$ to 7 (0.14 to 7.00); although, useful values are usually between 0.25 and 2.00. By adjusting **Gamma** you can affect the midtones of the image without affecting the highlights. When **Gamma** is between $1/7$ and 1, output midtones are darker. When **Gamma** is between 1 and 7, output midtones are lighter. Lower values of **Gamma** produce higher contrast output images, and higher values of **Gamma** produce lower contrast output images.

When **Gamma** is 1, the gray mapping is linear, and output images have a “flat” contrast. However, most images look best at a **Gamma** between 0.5 and 0.7.

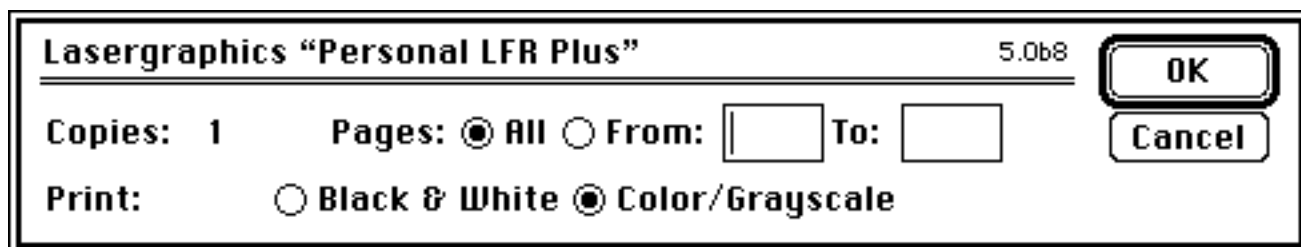
The graph displayed in the window shows how input intensity values are mapped to resulting output intensities. The horizontal axis increases from left to right and represents pixel brightness IN. The vertical axis increases from bottom to top and represents adjusted pixel brightness OUT.

■► **NOTE:** Many other factors affect the final color you see on the film: the film manufacturer, the type and age of the film, and the equipment, chemicals, and experience of the film developer.

The Print Window

The **Print** window controls the parameters that describe the printing process. This window is used to extract the images of the document and place them in the queue.

Select **Print...** from the File menu of your application. Note that the procedure for bringing up the **Print** window differs for some applications. Verify that the window is titled “**Lasergraphics.**” If not, go back to the **Chooser** and select **BLL File**.



Pages:

Click **All** if you want all pages of the document to be printed, or click **From** and enter a page range to be printed.

Print: Color/Grayscale

Click for the full-color (24-bit color) image capture mode of the driver. Generally, **Color/Grayscale** is preferred unless the Macintosh or the application does not support full color mode.

Print: Black & White

Click for the old 8-color image capture mode of the driver.

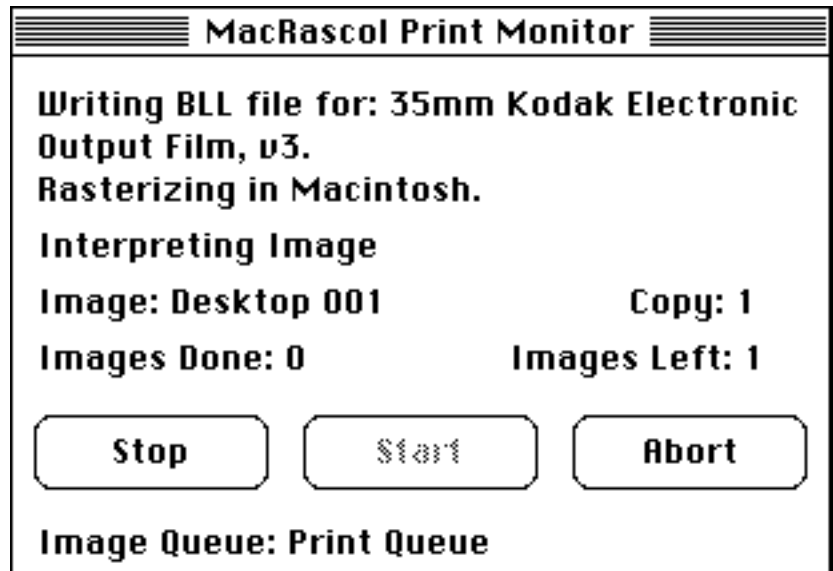
➡ **NOTE:** Additional items may be added to the **Print** window by the application. Refer to your application’s documentation for details.

Clicking **OK** makes the BLL File Chooser driver capture the document to disk. It automatically runs the MacRascal Print Monitor application in the background to process it into a BLL file.

The MacRascol Print Monitor

The MacRascol Print Monitor processes files saved by the BLL File Chooser driver into BLL files. It automatically runs in the background and normally requires no intervention.

The MacRascol Print Monitor's window lets you start or stop processing and shows the status of the queue being processed.



The first line is the status line. The following table lists potential status messages.

Message	Description
Imaging stopped.	No processing is in progress.
Writing BLL file for: <i>film name.</i>	An image is being processed for a film recorder.
Waiting for Print Images.	The Print Monitor is waiting to process images from the Print Queue as soon as they are printed.
Aborting current exposure	You clicked Abort .
Imaging will stop when current exposure has completed	You clicked Stop .

Image:

The name of the image that is waiting to be processed or is currently being processed. This is blank when all images have been processed.

Copy:

BLL File always prints one copy. This is displayed only while processing is in progress.

Images Done:

The number of images in the current batch that have been processed successfully.

Images Left:

The number of images that are remaining to be processed.

Image Queue:

The name of the queue being processed. BLL File always uses Print Queue.

Stop button

Click to halt processing after the current image is done. This button is available only while processing is in progress. Compare with **Abort**.

Start button

Click to begin processing images.

Skip Image button

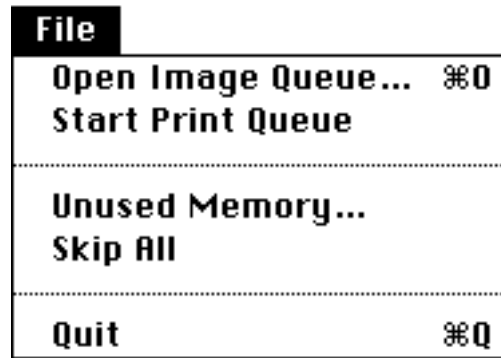
Click to delete the current image and proceed to the next queued image. The button changes to **Abort** during processing.

Abort button

Click to halt processing immediately. This button changes to **Skip Image** when processing stops. Compare with **Stop**.

The File Menu

File menu commands enable you to open a queue for processing, start processing from the Print Queue, and quit MacRascol Print Monitor.



Open Image Queue...

BLL File always uses the Print Queue.

Start Print Queue

Starts processing images from a special queue called the Print Queue. When MacRascol Print Monitor runs in the background, it will immediately process any image that appears in the Print Queue, and each image will be deleted from the queue upon successful completion.

Unused Memory...

Displays a window that lets you specify how much RAM memory MacRascol Print Monitor leaves for use by system functions.

Selecting **70K** or **200K** is optimal for almost all situations. However, you will need to set it higher if you get an error while imaging that tells you to increase Unused Memory.

Skip All

In the Print Queue, selecting Skip All will delete all images waiting.

Quit

Halts any processing and exits MacRascol Print Monitor.