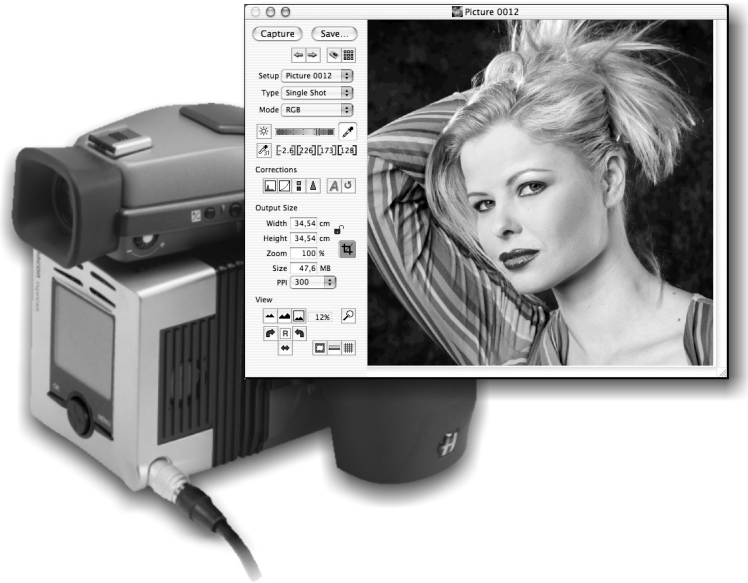
Software Reference

FlexColor 4.0 for Camera Backs

by Hasselblad Imacon



Software Reference - FlexColor 4.0 for Camera Backs, Part No 70030035 revision 1.0.

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Introduction

What's in this Manual

This manual provides a menu-by-menu, screen-by-screen listing of controls and settings available with **FlexColor**.

Topics include:

- Summaries of all menu commands
- Description of the **3f** file format
- Information about rotating and mirroring images
- Image management from the **Thumbnails** Window
- Full details of all tab sheets in the **Setup** window
- Full details of the **Preferences** window
- Instructions for editing **ColorSync™** profiles
- Brightness and contrast control with the **Gradations** window
- Advanced highlight and shadow settings with the **Histogram** window, including color neutralization and control
- Advanced color control with the **Color Correction** window
- Sharpening images with the **Texture** window

Software compatibility

The **FlexColor** software works with the entire range of Ixpress and FlexFrame digital camera backs and all Flextight scanners except for the Flextight 4800.

FlexColor under Mac OS and Windows

The CD that came with your digital camera system includes versions of **FlexColor** for both Macintosh and Windows-based systems.
The interface is nearly identical on both platforms, with mostly superficial differences to conform with the interface guidelines of the two systems.

Nearly all of the screen captures shown in this manual were taken from Mac OS X. Windows users will notice the following differences:

- In the **Setup** window, the color management tab is called **ICM** instead of **ColorSync™**.
- The menus are located at the top of the main **FlexColor** window instead of at the top of the screen.

System Requirements

IBM PC-Compatibles

- Minimum 233 MHz processor.
- Windows 2000 or XP.
- System RAM
  512 MB or more recommended - when performing micro step captures we recommend at least 1.5 GB. Ixpress 528C will not function with less than 2 GB.
- Screen resolution of 800 x 600 pixels with true colors (24 bits).
- Mouse or other pointing device.
- FireWire interface
  or
  SCSI Interface.
- Minimum available hard disk space of 10 GB

Macintosh

- Minimum Power PC processor.
- Mac OS X ver. 10.2.1 or later.
- System RAM
  512 MB or more recommended - when performing micro step captures we recommend at least 1 GB.
- Screen resolution of 800 x 600 pixels with true colors (24 bits).
- FireWire interface
  or
  SCSI interface.
- Minimum available hard disk space of 10 GB.

OS X Requirements

OS X V 10.2.1 or later is required. We recommend updating to the latest release available.

Devices can be connected by either SCSI or FireWire. Please note that if you are connecting a SCSI device through a SCSI to FireWire device it will be represented as a FireWire device - that is the bus number in the device window will be 9.

To be recognized by OS X, devices connected to a standard SCSI adapter must be present when booting the Mac.
A SCSI device connected via a SCSI to FireWire adapter will be recognized when the adapter is plugged in.
The SCSI device itself must be turned on before connecting the adapter to FireWire or rebooting.

The 3f File Format

When using the **Scan 3f** function (for scanners) or capturing an image with a digital camera back, **FlexColor** stores the image in the unique **3f (flexible file format)**.

The **3f file** is an extended TIFF-file containing

- Raw 16-bit image data
- A complete history of applied settings
- High quality preview image
- Custom icons and previews visible in the **Finder**.
- Meta-data (including IPTC tags) to support an image database.

In short this means that when you have scanned or captured your image, you can crop, resize and color correct an unlimited number of times afterwards.
You can easily integrate to databases, have fast previews in a number of applications and always be able to re-create the quality you need - all this from the same 3f file.

Image Archiving & Availability

Because a 3f file preserves all of the details captured by your scanner or camera, it is perfect for archiving. Then, for each new job, you will work with the 3f image in **FlexColor** and export it to create a new TIFF file in which your settings are applied - the only change made to the 3f file will be the addition of a new history record of the settings you used.

By making the 3f files available over your network, you will enable operators at any workstation to open an image in **FlexColor** and apply cropping, correction and conversion just as though they were working directly on the scanner or camera.

Editing 3f Files

FlexColor holds all tools required for making standard image correction of the 3f files.
If you need to apply pixel-editing to your image, **FlexColor** has a special plug-in for Photoshop. When installing **FlexColor**, this plug-in will be installed in the appropriate plug-in folder if Photoshop is already installed.
Please note that you will permanently alter your original scanning or capture data when you save using the plug-in.

To use your images in other image-editing and DTP applications, you must apply the required settings and then save them as TIFF files. TIFF is a standard format that is supported by the vast majority of imaging and DTP programs.

IPTC Tags

The International Press Telecommunications Council (IPTC) defines a standard used in the press industry for exchanging meta-information in news content, including images. The standard associates an object with its description within the same file. You can embed all kinds of information in your images, such as a caption, the place you took it, the date and even keywords and categories etc.

In **FlexColor** you are able to apply a number of IPTC-tags to your 3f files. See "The Info Window" on page 65 for details.
An extra copy of the IPTC data is stored in the **Adobe Image Resource** tag to enable **Extensis Portfolio** and other applications extracting metadata with **QuickTime** to read the keywords stored in the standard IPTC tag.

Many aspects of managing your images are made easier using the IPTC standard. Many software programs already exist for doing this, including Adobe Photoshop. It's the standard used by professional news agencies worldwide, and it's just as useful for others.

FlexColor Menus

FlexColor commands are available via a standard menu bar. Each of them is described briefly below. Note that most menu entries also list a keyboard shortcut to the right of the entry. Try to remember and use these shortcuts to speed up your work.

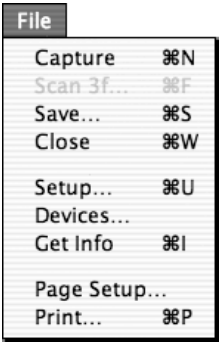
The FlexColor Menu

Except for the **Preferences** entry the **FlexColor** menu functions are standard for all applications.

- **Preferences**: Opens the **Preferences** window, which enables you to make general flash and shutter settings for your current camera model, select an application for viewing final images, and typing some default information for the 3f files.
  See "The Preferences Window" on page 47 for more information.

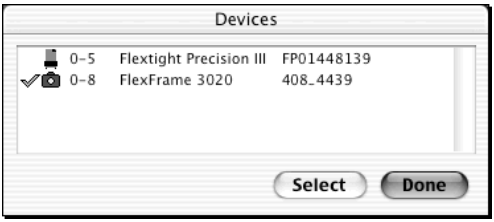
The File Menu

The **File** menu includes entries that initiate image captures and make settings for **FlexColor**.



- **Capture**: Captures an image using your current settings and saves it as a **3f** file (see page 10 for details). A preview of the image will be displayed in main **FlexColor** window right away, though rendering of the image will continue in the background for several seconds afterwards. You will not be able to view the image in full resolution until the rendering is finished, though you can make other types of settings. All setting are previewed using the full 16-bit color depth to display results.
- **Save**: Saves the image currently shown in the **FlexColor** window as a standard TIFF file. All current crop, mode, color and image-enhancement settings will be applied to the saved image.
- **Close**: Closes the currently selected window if possible.
- **Setup**: Opens the **Setup** window, in which most of the basic settings for an image capture can be made, saved and loaded.
  See "The Setup Window" on page 29 for more information.

- **Devices**: Opens the **Devices** window.

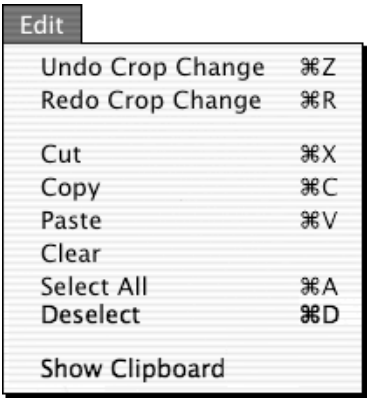


The window lists all connected devices allowing you to select which camera or scanner device you want to work with. Click on the one you prefer and click the **Select** button. If you have only a single scanner or camera connected this device is automatically chosen.
The numbers just to the right of the scanner or camera icon in the list (ex. 0-5) refers to the Bus no. (0) and the SCSI address (5).

- **Get Info:** Opens an **Info** window, which contains various information about the currently selected image.
See "The Info Window" on page 65 for a detailed description.
- **Page Setup.../Print… :** Enables you to print the contents of the **Thumbnails** window. Make sure you have selected the view by clicking on an image in the window, then select **Print**.

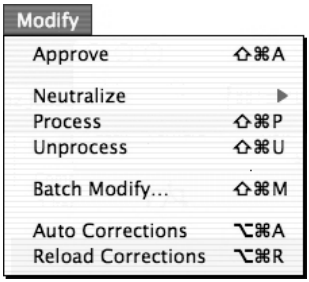
The Edit Menu

The **Edit** menu contains entries that enable you to undo multiple actions that you have made while making settings in **FlexColor**. It also enables you to cut, copy and paste text in various windows.



- **Undo**: Reverses your most-recent actions - for example, a crop area modification or a change in the **Setup** window. You are able to step back through a long series of actions.
- **Redo**: Reapplies the last action that you cancelled using the **Undo** command.
- **Cut**: If you have selected some text in a text field, then this command removes the text and saves it on a system-wide virtual clipboard.
- **Copy**: Saves the selected text on the clipboard without removing it.
- **Paste**: Places a copy of the text on the clipboard at the insertion point.
- **Clear**: Removes all text from the clipboard.
- **Select All**: Selects all of the text contained in the field in which the insertion point is standing. In the **Thumbnails** window, this selects all of the icons in the window (see "The Thumbnails Window" on page 61).
- **Deselect**: Removes the cropping of the currently shown image.
- **Show Clipboard**: displays the current contents of the clipboard.

The Modify Menu



The **Modify** menu gives you quick short cuts to functions that are also available from within the modify dialog in the **Thumbnails** window (see page 61 for details).
You have the possibility to select a number of files and choose **Process** from the **Modify** menu. This will add a corresponding number of processing tasks to the list in the **Task** window and processing of those files will take place in the background. Processing tasks will not be interrupted by new image captures.

Batch Modify

When using the **Batch Modify...** function to add settings from current settings the cropping will be maintained in the added settings.
If the images in question have different sizes the cropping will be scaled accordingly.

Neutralization presets

You have the ability to save and reuse named neutralization presets. This feature is also accessible from the **Modify** dialog in the **Thumbnails** window (see page 67 for details).

The View Menu

View	
Hide Tools	⌥⌘T
Grid	⌥⌘G
Overlay	⌥⌘O
Crop Mask	⌥⌘M
Soft Proof	⌘Y
Next Image	⌘→
Previous Image	⌘←
Rotate Clockwise	⇧⌘C
Rotate Counter Clockwise	⌥⌘C
Mirror	^⌥⌘M
Zoom Out	⌘–
Zoom In	⌘+
Fit to Window	⌘0
Zoom to 100%	⌥⌘0

The **View** menu exposes some of the "secret" short cuts that relate to the control of grid, overlay and crop mask and to zooming and selection of images.

The **Soft Proof** feature combines the ICC color profile of your monitor with the profiles of your camera back and output device to provide a simulation of the output colors on your screen. Enable this only when you are sure about the specific output device you are using. If you are making a general-purpose RGB capture, then keep this feature unselected.
A small **s** to the right of the **Color Info** area in the main **FlexColor** window indicates that **Soft Proof** is enabled.

The **Hide Tools** item lets you hide all tool windows.

The Maintenance Menu

The **Maintenance** menu is not available when you use **FlexColor** with a digital camera back.

The Window Menu

The **Window** menu opens and closes each of the image settings windows available with **FlexColor**. Each window that is currently open shows a check mark to the left of its name. For more information about each of these windows, see the appropriate section later in this manual:

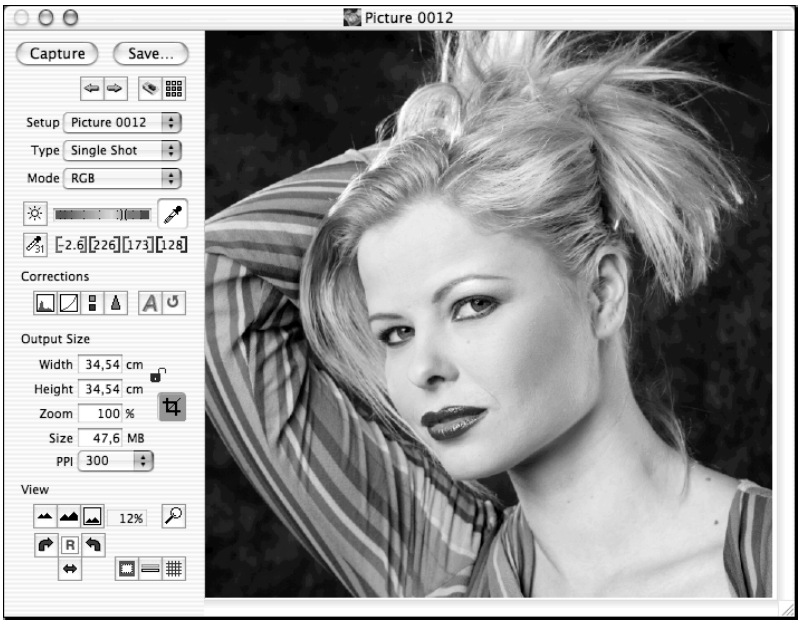
Gradations window . . . . . see page 87.
Histogram window . . . . . see page 93.
Color Correction window . . . . see page 99.
Texture window . . . . . see page 101.
Detail window . . . . . see page 105.
Exposure window . . . . . see page 79.
Thumbnails window . . . . . see page 61.
Color Info window . . . . . see page 83.
Live Video window . . . . . see page 107.
Tasks window . . . . . see page 111.

NOTE! The **Batch Scan** entry is not available when you use **FlexColor** with a digital camera back.

The Main FlexColor Window

Introduction

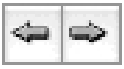
The main **FlexColor** window displays your preview images and provides access to most of the image capturing and editing functions available with **FlexColor**.



Capture and Save Tools

Capture Captures an image using your current settings.
A preview of the image will be displayed in the main **FlexColor** window right away.
All settings are previewed using the full 16-bit color depth to display results.

Save Saves the image currently shown in the **FlexColor** window as a standard TIFF file. All current crop, mode, color and image-enhancement settings will be applied to the saved image. The save task is added to the list in the **Tasks** window (see page 111 for details) and the actual save task will take place in the background



Previous/Next Image Buttons: Use these buttons to select previous or next image from the thumbnails folder.

Ixpress Contents Button: Opens the **Ixpress Contents** window displaying thumbnails of all images currently stored on the Image Bank's hard disk.

Thumbnails Button: Opens the **Thumbnails** window, which displays thumbnail images of all of the images saved in the current folder. See "The Thumbnails Window" on page 61 for more information.

Setup Use this pop-up menu to choose between any of the currently available setups. A small + will appear to the right of the menu to indicate when you have made custom changes that affect the setup but have not been saved.

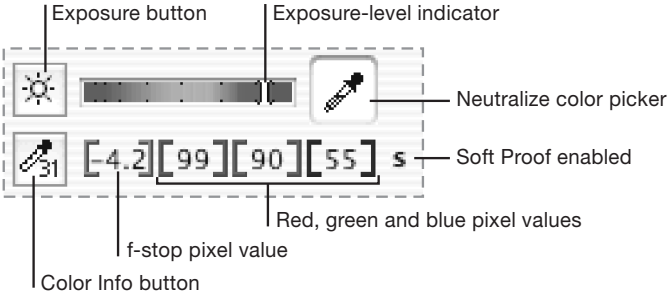
Type Use this pop-up menu to choose the type of capture you want to make (preview, single-shot, multi-shot or micro-step). This setting mirrors the **Type** setting on the **General** tab of the **Setup** window.
See "General Tab" on page 32 for more information.

Mode Use this pop-up menu to set the capture mode (**RGB**, **RGB 16 bit**, **Grayscale**, **Grayscale 16 bit**, **Lineart**, or **CMYK**). This setting mirrors the **Mode** setting on the **General** tab of the **Setup** window.
See "General Tab" on page 32 for more information.

Keyboard shortcuts

See "Appendix" on page 113 for related keyboard shortcuts.

Color and Exposure Analysis Tools



Use the exposure-level indicator to get a rough idea of how bright your picture is. Ideally, it should be near the top of the green area, but without entering into the red area, which indicates an overexposure. The indicator turns yellow to indicate a probably bad exposure and turns white to indicate a good exposure. Only the part of the image that is inside of your crop area is measured by this tool, which means that the measurement will change when you modify the crop area.

The various pixel value displays give you the f-stop and/or color values for the pixel currently under the mouse pointer in the preview. Use this tool to evaluate the exposure in particular areas of the captured image. When you are shooting in RGB mode, then you can read values for each of the three colors and the f-stop brightness, as shown above. However, if you are shooting to CMYK, then CMYK pixel values are shown, and no f-stop value appears. Use the **Color Info** window to read CMYK and f-stop values simultaneously (see below).

The Neutralize color picker helps you to obtain a neutral color balance in your image (see “Neutralizing Colors" on page 98 for details).
Next to the information displays are two buttons, which will open windows that give you even more information and control. These are:

Exposure Button: Click this button to open the **Exposure** window, which enables you to assess your exposure, set camera aperture, exposure time and ISO sensitivity, and make a black calibration. See "The Exposure Window" on page 79 for more information.

Color Info Button: Click this button to read pixel values from several points in the preview image. See "The Color Info Window" on page 65 for more information.

Corrections Controls

Gradation Button: Opens/closes the **Gradations** window. See "The Gradations Window" on page 87 for more information.

Histogram Button: Opens/closes the **Histogram** window. See "The Histogram Window" on page 93 for more information.

Color Correction Button: Opens/closes the **Color Correction** window.
See "Selective Color Correction" on page 99 for more information.

Texture Button: Opens/closes the **Texture** window.
See "The Texture Window" on page 101 for more information.

Auto Button: Click this button to apply automatic settings for highlight and shadow points based on the histogram of your image.

Reload Button: Click on this button to return all correction windows (**Gradations**, **Histogram**, **Color Correction**, and **Texture**) to the settings saved with the current setup.

Size Controls

Width The measured width of the output image. The units used are set on the **General** tab of the **Setup** window. See "General Tab" on page 32 for more information.

Height The measured height of the output image. The units used are set on the **General** tab of the **Setup** window. See "General Tab" on page 32 for more information.

Zoom The level of magnification applied when the image is saved. The **Width** and **Height** settings will update to reflect the setting you make here. Note that if you choose a setting other than 100%, then **FlexColor** will interpolate the image to fit the size you specify.

Size The file size of the final image file. This is affected by the **Width**, **Height**, **Zoom**, and **PPI** settings.
It is possible to type a desired output file size. This will adjust the zoom percentage correspondingly (max. 200%).

PPI The output resolution of the final image. The **Width** and **Height** settings will update to reflect the setting you make here.

Lock Button: The lock button enables you to lock the output width and height settings. When the lock is closed, then the output width and height will not change when you modify the crop area by dragging one of its corners, and the proportion of height to width will be maintained. Click on the lock to toggle its setting.

Crop Button: Usually this button is gray, which indicates that the crop tool is active. When the crop tool is active, you are able to click and drag on the preview image to create and manipulate the crop area. However, some tools, such as the color pickers, change the cursor so that it selects colors instead of defining a crop area. When one of these tools is active, the crop button is white. To return to the crop tool, click on the crop button.

Note the following points about working with the crop and size tools:

- When you work with the digital camera, you will typically know the target output dimensions and resolution. If so, first enter the dimensions in the **Height** and **Width** fields and choose the output resolution from the PPI pop-up menu. Then click on the lock icon so that it is closed (this will lock your height and width settings).
  You are now able to click and drag the crop area to define the composition of your image - the **Zoom** value automatically tracks your changes without changing the height, width, or PPI of your output image.
- To set the crop area, place the mouse cursor over the preview image. Click and hold over one corner of the area you wish to capture and drag the cursor away to outline the area. Release the mouse button to select the area.
- To move the crop area, place the mouse cursor inside the outline, then click and drag the area. Release the button to drop the area again.
- To resize the crop area, place the mouse cursor over one of the sides or corners. The cursor will change into a double sided arrow. Click and drag the side or corner to stretch or shrink the area.

Zoom Controls

Zoom Out: Click this button to make the preview image smaller.

Zoom In: Click this button to make the preview image larger.

Fit to Window: Click this button to resize the preview to fit the window.

Detail: Click this button to open the **Detail** window. Use this window to show details of the image and/or a strongly magnified view of the preview image for reading color values of a specific pixel in your image. See "The Detail Window" on page 105 for more information.

Keyboard shortcuts

See "Appendix" on page 113 for related keyboard shortcuts.

Orientation Controls

Rotate Buttons: If you choose to shoot with the camera back in portrait mode, then your subjects will be rotated so that they appears sideways in relation to the **FlexColor** preview window. If this annoys you, the use the rotate buttons to rotate the image in 90° steps in either direction. Both the preview and the final image will be rotated.

Mirror Button: Mirrors the preview and final image.

Orientation Icon: Shows the current rotation/mirroring in relation to the captured image.

Keyboard shortcuts

See "Appendix" on page 113 for related keyboard shortcuts.

Other Controls

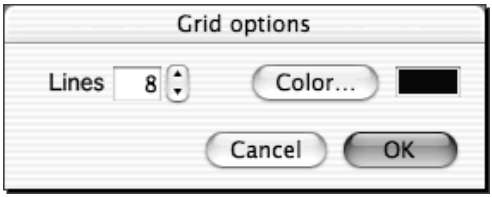
Grab tool: Holding down space activates the grab tool allowing you to drag the contents of the preview window around.

Crop mask button: Masks off the area outside the current cropping.

Overlay Button: Switches on and off the display of an overlay over the image in the preview window.
Activating this button without actually having added an overlay image will display a message describing this.
See page 28 for details about adding an overlay to the image.

Opacity slider: This slider occurs below the overlay button while the overlay is active. The slider gives you full control of the overlay image transparency.

Grid Button: Adds a grid over the preview and live video window. The grid can be useful for aligning objects in your setup.
Holding down the **option** key while clicking the button opens the **Grid options** window:



Here you are able to define the number and color of the lines in the grid.
The number of lines is per the smallest image dimension (width or height).

Scrolling

The scroll wheel on your mouse can be used in the preview window - hold down **option** key to scroll sideways.

Overlay

It is possible to add an overlay to the preview and live video windows to help with aligning your setup. All the standard image file types such as TIFF, JPEG, GIF, and PNG can be used.

The Mac version supports PNG-files with alpha channels giving you full control of the image transparency.

To add the overlay simply drag the image file into the preview window, or alternatively if you option-click the **Overlay** button you are given the possibility of browsing for the overlay image instead of dragging it into place.
Once in place you can click and drag the overlay image around to align it correctly and you can resize it by clicking the borders and dragging.

Clicking the **Overlay button** (see page 27) will turn the overlay on/off.

The Preview

FlexColor has been designed with the philosophy that when creating digital images, it is best to judge image quality with your eyes, not based on point measurements and color lookup tables. This is why we have drawn so much attention to the screen calibration procedure in the tutorial, and why we have integrated ICC color profiles to maintain the color accuracy you see on your screen all the way to print.

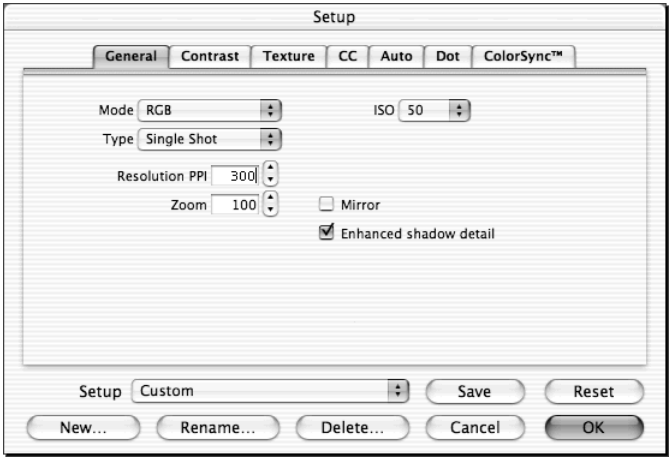
To make it easy for you to see and use the preview, **FlexColor** provides a large 16-bit image with a zoom function and magnifier window. Because your monitor can only show 8-bit colors, **FlexColor** calculates a new 8-bit image from the 16-bit information each time you apply a highlight, shadow, gradation, or color setting. This creates a very accurate preview image.

The Setup Window

Introduction

The **Setup** window shows many settings that affect the image and the way in which the other tools in the **FlexColor** application work. All of the settings displayed in the window can be saved and loaded from your hard disk.

To open the **Setup** window, type **cmd-U** or select **Setup** from the **File** menu.



Many of the settings, such as sharpness, gradation, and color correction, are available individually through tool buttons in the main **FlexColor** window. All settings you make using the individual tools are also applied to the **Setup** window, and vice versa.

The **Setup** window is divided into several tab sheets to help you find the setting you want to make.

The FlexColor Setup Philosophy

In the traditional prepress environment, where photographs are captured on film and then scanned, the professional scanner operator requires extensive education and experience to make all of the settings required to obtain good results. The operator examines each original and, applying his or her experience, enters a "best guess" of what all the settings should be for that particular type of original. Then the operator checks the preview and makes fine tuning adjustments. However, when shooting directly to digital, the photographer needs to be able to make these same decisions.

FlexColor simplifies this process by enabling you to save a library of setups that you use most frequently. Nearly all **FlexColor** settings, including all settings in the **Setup**, **Gradations**, **Histogram**, and **Texture** windows, are saved in each setup file.

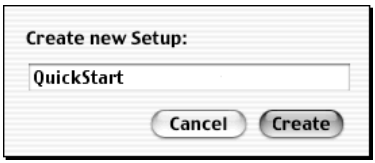
Each time you make a capture, select the closest setup from the **Setup** menu, define the crop, click on the **Auto** button, and you are 98 to 100% of the way to a perfect image capture (provided that you have neutralized the colors of your image - see "Neutralizing Colors" on page 98 for details).

FlexColor is delivered with several generic setups to get you started quickly. Use the **Setup** pop-up menu to choose a setup that is appropriate for your original. The name of each setup indicates its intended use.

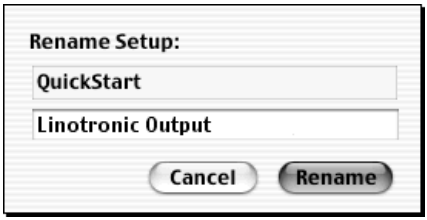
Start by using the generic setups. If you want to develop your own setup library, begin with the closest of the available generic setups, modify it, and save it with a new name.

Managing Setups

To create a new setup, click on the **New** button. A window will appear in which you can name the new setup. All of the settings currently applied in the **Setup**, **Gradations**, **Histogram**, and **Texture** windows will be saved in the new file.



To rename the currently loaded setup, click on the **Rename** button. A window will appear in which you can rename the setup.



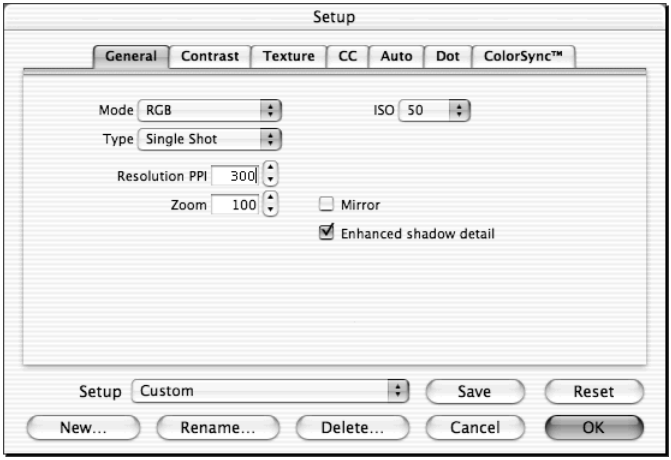
After you have made changes to the current setup, save them by clicking on the **Save** button in the **Setup** window.

To delete the current setup, thereby removing it from the **Setup** pop-up menus, click on **Delete**.

NOTE! The generic setups that ship with **FlexColor** are locked so that you can not accidentally modify, rename or delete them. If you want to modify a generic setup, then select the setup from the **Setup** pop-up menu, make modifications, then click on **New** to save your new setup with a new name.

General Tab

The **General** tab of the **Setup** window affects the general behavior of the interface and identifies the setup file currently loaded.



Mode

Provides a pop-up menu for choosing the color space used when you save an image as a TIFF file. The following options are available:

- **RGB**: stores final images as standard 8-bit RGB TIFF files.
- **RGB 16-bit**: stores final images as 16-bit TIFF files. This preserves the full color resolution captured by the camera back, but creates larger files that many applications cannot read.
- **Grayscale**: creates grayscale images, such as black and white photographs. Grayscale files are smaller than color files, so use this mode if your originals or final publications are in black and white. To obtain a grayscale result, **FlexColor** combines information from all three RGB color channels. ICC profiles have no effect when you capture images using this mode.
- **Grayscale 16-bit**: stores final images as 16-bit grayscale TIFF files. This preserves the full tonal range captured by the camera back.
  To obtain a grayscale result, **FlexColor** combines information from all three RGB color channels.

- **Lineart**: creates 1-bit images in which each pixel is either 100% black or 100% white. These files are even smaller than grayscale images. Use this mode if your originals are, for example, pen and ink drawings. To adjust the threshold at which the input will jump to either black or white, use the **Gradations** window. See "Setting the Threshold for Lineart Captures" on page 91 for more information. ICC profiles have no effect when you use this mode.
- **CMYK**: creates print-ready color images. You must set up an ICC profile to create CMYK images directly from **FlexColor**. See "ColorSync or ICM Tab" on page 41 for more information about ICC profiles.

Type

Use this pop-up menu to choose which type of capture to take. You have the following options:

- **Preview**: makes a single capture and applies minimal processing. This type of capture appears most quickly on your screen. Use it to check your exposure and composition and to make initial neutralization settings. Preview captures are not saved and are not good enough for production because they are not fully rendered.
- **Single Shot**: makes a single capture and applies full processing. If you are capturing images of people, animals, flowing water, or other moving objects, or if you are capturing from a hand-held camera, then you must use single-shot mode. Single shot images are fully rendered and processed so they take slightly longer than previews, but the results are of production quality.
- **Multi Shot**: makes four captures (one for each color, but with green captured twice for extra sharpness) and then combines them into a single, high-resolution image. If you are capturing images of unmoving objects, such as room interiors, studio sets or product shots, then you can use multi-shot mode. Images taken in multi-shot mode will be sharper and contain more detail than single-shot images. Multi-shot images will also stand up to greater enlargement later in production.
- **Micro Step**: extends the multi-shot functionality by making a total of 16 captures. This creates a high-resolution image (FlexFrame 3020 = 4000 x 6000 pixels, FlexFrame/Ixpress 384 = 8000 x 8000 pixels, and Ixpress 528C = 8000 x 10800 pixels) and digital files of up to 144 MB, 384 MB, and 528 MB respectively. Micro-step images will stand up to even greater enlargement than multi-shot images.

Resolution PPI

Defines the resolution of the output image. Set this value according to the requirements for your printed output. Most high-quality color work uses 300 ppi. Newspapers typically use less (150 to 200 ppi). On-screen display, such as for the web, requires only 72 ppi. See "Size Controls" on page 24 for more information about PPI and image sizing.

Zoom

The level of magnification applied when the image is saved. See "Size Controls" on page 24 for more information about zooming and image sizing.

ISO

Enables you to select between sensitivities of ISO 50 or 100. If you are using an Ixpress camera back, you will be able to select between ISO 200 and 400 as well.
This setting will also be reflected in the **Exposure Window** (see page 79).

Mirror

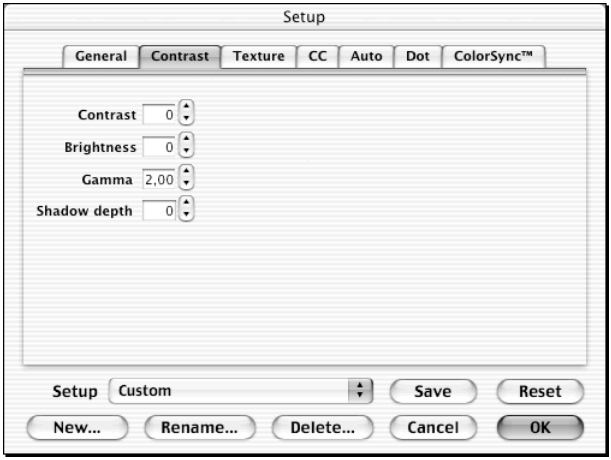
If your original is a mirror image, or if you want to create a mirrored image from the original, then place a check in this box. To keep the image as captured, make sure this box is not checked.

Enhanced shadow detail

Activates an algorithm that delivers more details in the shadow areas. This function is active by default and should only be deselected for images with a very narrow dynamic range or for images with an unusually high amount of color information in dark areas.

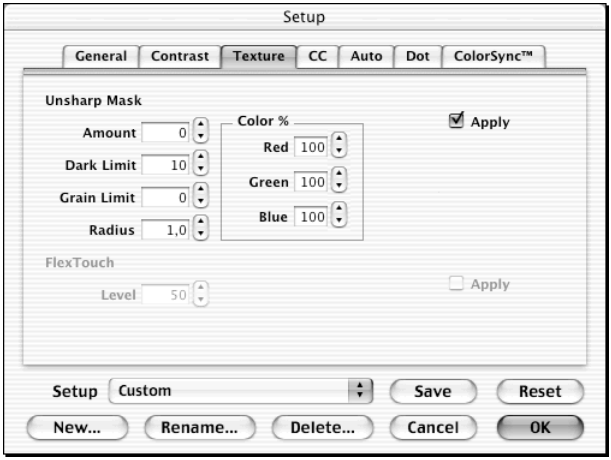
Contrast Tab

The settings on the **Contrast** tab sheet are exactly the same as in the **Gradations** window (available from the **Window** menu). Changes made here in the **Setup** window will also change the settings in that window, and vice versa. See "The Gradations Window" on page 87 for more information about these settings.



Texture Tab

The settings in the **Texture** tab reflect those made in the **Texture** window (available from the **Window** menu).



For more information about unsharp masking, see "The Texture Window" on page 101.

Color %

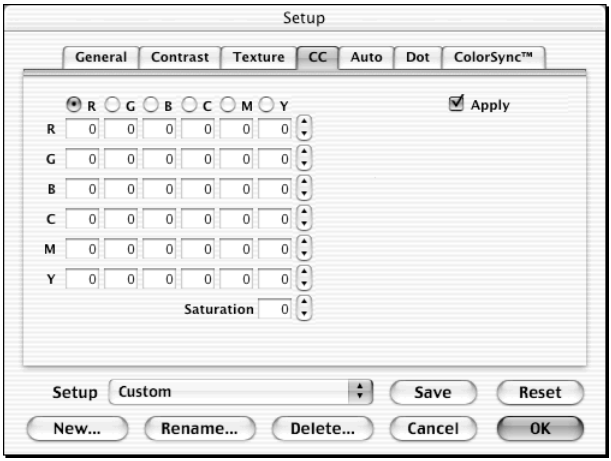
These three fields (Red, Green, and Blue) control the amount of sharpening effect applied in each color channel. Normally, you should leave them set to 100 each, which applies sharpening equally to all channels. In some cases, you may be able to reduce the effect of noise by applying less sharpening to one channel (typically the blue channel). You can also use these settings to create special effects.

Apply

Mark this check box to apply the unsharp mask filter to all images. Remove the check to disable the filter.

CC (Color Correction) Tab

The CC tab contains a color correction chart, which enables you to alter the way input colors are mapped onto the output colors. It can be used to remove or add color cast, or to create stronger colors in your images.



The matrix contains the same settings as the **Color Correction** window (available from the **Window** menu), and displays all of the settings you have made using that window. In many cases, it will be easier for you to make adjustments using the **Color Correction** window instead. See "Selective Color Correction" on page 99 for more information. However, the matrix shown here gives a better overview of all of the color correction settings for the current setup.

To activate the color correction, mark the **Apply** check box. To disable the color correction settings, remove the mark from this box. Click on the box to toggle the mark.

To modify the amount of any one color component in the image, click on the button next to the target color along the top of the matrix. Then use the up and down buttons for each component color along the left side of the matrix to add or remove that component from the target color. Alternatively, you can click on any of the fields in the matrix and edit the value with your keyboard.

To modify the saturation in the entire image, use the **Saturation** up and down buttons or input field.

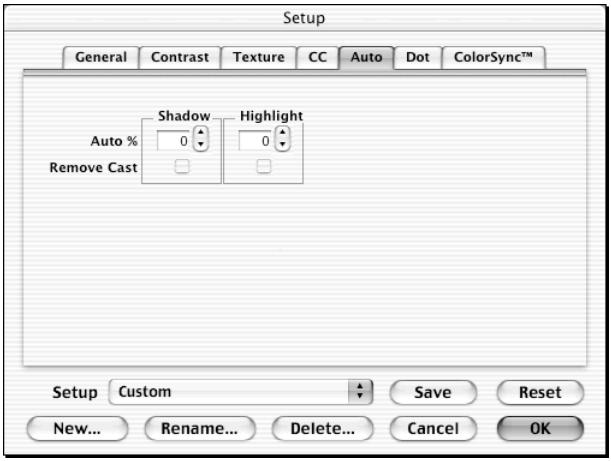
To reduce the amount of magenta:

	R	G	B	C	M	Y	
R	0	0	0	0	0	0	Neutral red
G	4	4	4	4	4	4	More green in all colors
B	0	0	0	0	0	0	Neutral Blue
C	0	0	0	0	0	0	Neutral Cyan
M	-4	-4	-4	-4	-4	-4	Less Magenta in all colors
Y	0	0	0	0	0	0	Neutral yellow

A full explanation on all of the applications of this tool would be complex and beyond the scope of this manual. If you would like to know more about color mapping, please speak with your printer or consult the electronic prepress section of your local library or book store.

Auto Tab

The **Auto** tab sheet has percentage settings for both **Shadow** and **Highlight**. When you use the **Auto** button, the **FlexColor** application computes what it thinks the highlight and/or shadow values should be based on the histogram of your image. It then modifies the values by the percentages that you set here to find the final setting. The percentage is applied to the difference between the highlight and shadow settings.



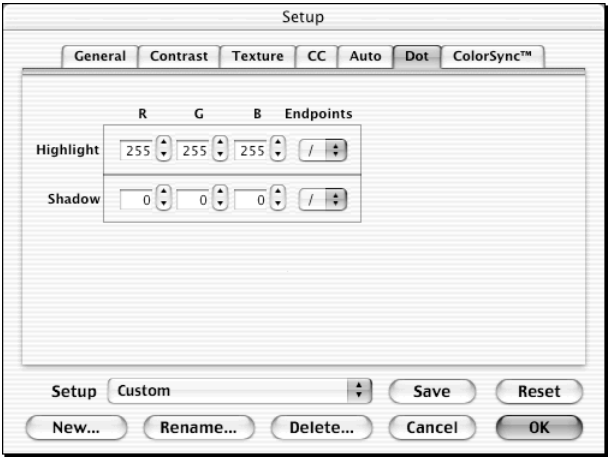
For example, if the **Auto** % for **Highlight** is set to 2 and you use the auto function on an image in which the highlight might normally be 200, then **FlexColor** will assign a highlight value of 196 (provided the shadow value was zero). If you find that you frequently need to adjust the highlight or shadow values to be tighter than the auto function normally chooses, then use a positive setting here. Positive settings will result in a relative increase in the contrast.

You are able to set negative values for the **Auto** % settings. This will make the automatic controls use less extreme settings for highlight and shadow than normal. For example, if the **Auto** % for **Highlight** were set to -2, and you use the auto function on an image in which the highlight might normally be 200, then **FlexColor** will assign a highlight value of 204 (provided the shadow value were zero). This setting will enable you to preserve more details at the extremes of the tonal range than you otherwise would if the highlight point were set lower.

For more information about working with highlight and shadow points, see "The Histogram Window" on page 93.

Dot Tab

These settings affect the output of the image brightnesses. Normally, the output will be a maximum (255) at the brightest (highlight) point and minimum (0) at the darkest (shadow) point for each color. However, this can sometimes cause trouble for the printing presses, especially when too much ink is applied for the paper to dry quickly enough.



Printers often request that images be prepared to lie within certain limits. The settings on this tab sheet limit output at the extremes at each color. Speak to your printer for advice about how to set these values.

The values in the three (RGB) columns control the maximum (for highlight) or minimum (for shadow). For RGB color, 8-bit values (0 to 255) are shown for each color.

The **Endpoints** pop-up menu determines how the values for the color columns will be assigned when the input values exceed the defined limits. They work as follows:

Cut-off: All values beyond the limit will remain at the limit.

Round-off: All values beyond the limit will be spread out evenly between the limit and the maximum (0 or 255).

Force max: All values beyond the limit will be forced to the maximum (0 or 255).

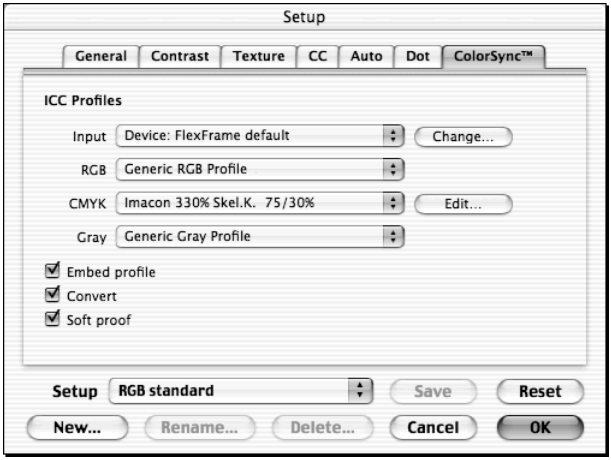
ColorSync or ICM Tab

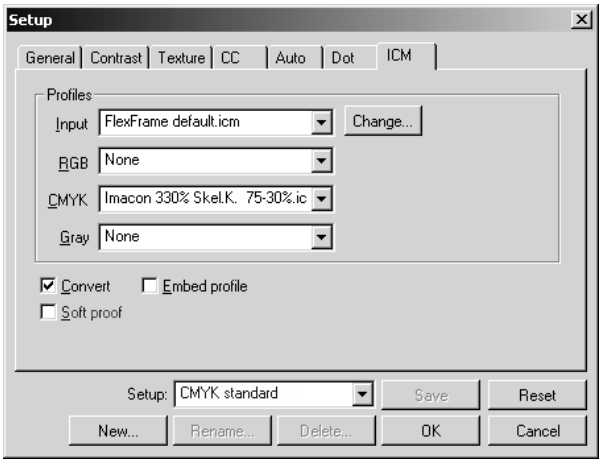
ICC color profiles define the color response of each device in your system. **FlexColor** uses these profiles to make calibrated, accurate, and high-quality color separations from your images.

Under Mac OS, ICC profiles are controlled by Apples ColorSync technology and the setup tab for selecting ICC profiles in **FlexColor** is called **ColorSync**™.

Under Windows, ICC technology is referred to as "ICM" (which stands for "Image Color Management") and the tab for selecting ICC profiles in **FlexColor** is called ICM.

The Ixpress digital camera backs and most monitors and output devices include ICC profiles, which will help to make sure that the colors in your original are maintained and that colors you see on your screen will be accurately reproduced on paper.



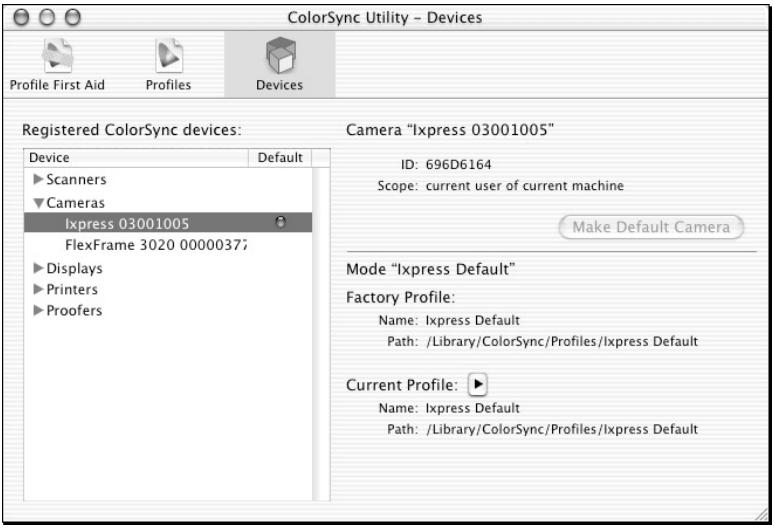


For more information about using ICC profiles, see the online help for your operating system.

For information about Apples ColorSync™ technology, check Apple's web site at:
http://www.colorsync.apple.com and/or **http://www.apple.com.**

Input (Mac)

This pop-up menu shows a list of input ICC profiles installed on your system.
When selecting an input profile it is possible to choose a "Device Default Profile", enabling you to define a setting that will always use the currently selected device profile for the current device. To do this select the second item in the input profile menu - it will be titled **Device:<profilename>**, where <profilename> is the name of the default profile for the current device.
To change the default profile simply click the **Change** button located to the right of the input profile menu. This will lead you to the **ColorSync Utility** application.



Here you simply select the **Devices** view which gives you a list of registered devices. After selecting your camera or scanner in the list you can either assign a new default profile or switch back to factory default.

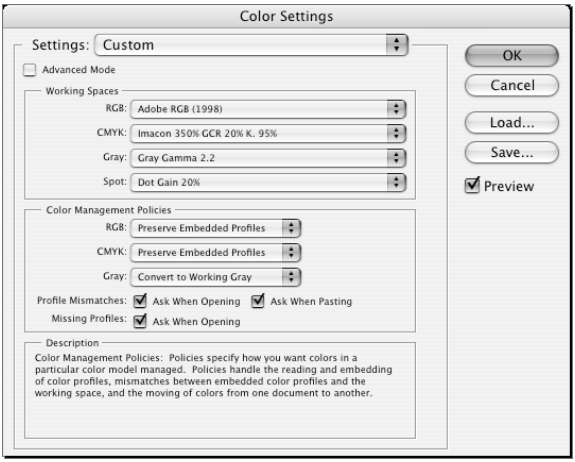
The standard settings installed all use the device default profile. The primary benefit of this feature is that you can now switch to your own custom input profile without having to edit any of your existing settings.

Input (PC)

Functionality is basically the same as for Mac except that clicking the **Change** button will open the **Scanners and Cameras** control panel which shows the list of connected devices.
Here you can select properties for your device(s) which will bring up a dialog box from where (e.g. **Color Management** tab) you can change the color management e.g. the list of attached profile(s).
Please note that **FlexColor** will always choose the first profile found in the list if more than one are present.

RGB

This pop-up menu lists all of the RGB profiles currently installed on your system. Choose a profile that represents the color space in which you work. (If you are using Adobe Photoshop, you can choose the space used by Photoshop). To see which space is used by Photoshop, start Photoshop and choose **Edit -> Color Settings**. The Color Settings window appears (see the *Getting Started...* manual for more information about using this window). In this example the RGB working space is the ICC profile Adobe RGB (1998).



If you choose an RGB color space (ex. Adobe RGB 1998) you should check both the **Convert** and **Embed Profile** fields on the **ColorSync** or **ICM Tab**.

When selecting the default output profile for RGB, **FlexColor** will use the output profile as specified on the **Output Profiles** tab in the **Preferences** window - see page 51 for details.

CMYK

This pop-up menu lists all of the output profiles currently installed on your system. Choose the profile specific for your output device, or select the closest of the generic profiles supplied with **FlexColor**. See "Generic ICC Output Profiles" on page 55 for more information about the generic profiles.
When selecting the default output profile for CMYK, **FlexColor** will use the output profile as specified on the **Output Profiles** tab in the **Preferences** window - see page 51 for details.

Edit

The **Edit** button appears only if you are using the Mac OS version of **FlexColor**. Click on this button to edit the output profile. Use this feature only if you are an advanced user, or on the advice of your printer. For more information about editing ColorSync profiles, see "Editing ColorSync Color Profiles" on page 56.

Gray

FlexColor offers full ICC support even when saving images in grayscale. To do so simply check the required **Embed** and **Convert** options, and if you have checked **Convert** you also need to select a grayscale output profile from the menu.
Please note that you do not need to select a different input profile when in grayscale mode, as a suitable grayscale input profile is automatically generated based on the currently selected RGB input profile.
When selecting the default output profile for Grayscale, **FlexColor** will use the output profile as specified on the **Output Profiles** tab in the **Preferences** window - see page 51 for details.

Embed Profile

Mark this checkbox to embed a profile with your saved image. The embedded profile will always match the content of the file. If conversion is active the embedded profile will be the output profile corresponding to the current capture mode setting - either the RGB or the CMYK profile. If the convert checkbox is not checked the embedded profile will be the current input profile.

Convert

If this checkbox is marked data will be converted according to the current settings of input and output profile. Otherwise the output files will contain data without any ICC corrections applied.

Softproof

Mark this checkbox to see an on-screen representation of the colors expected from your output device. It combines the output profile with the monitor profile selected for your system to create a simulation of the output colors. See the *Getting Started...* manual for instructions on how to set up a monitor profile for you system and for advice about using the **Softproof** feature.

The Preferences Window

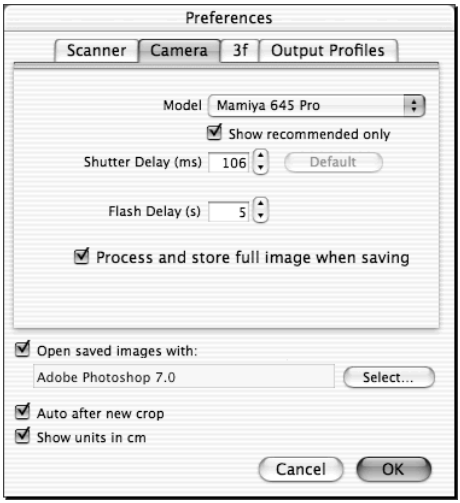
Introduction

The **Preferences** window contains several miscellaneous settings that control the general functions of the camera back and the software. The **Preferences** window settings are universal for the **FlexColor** application, they are not saved with the other settings in the setup files.
To open the window, select **Preferences** from the **FlexColor** menu.

Scanner Tab

For scanners only!

Camera Tab



The **Camera** tab holds the following settings for your current device:

Model

FlexColor must know which kind of camera body you are using so that it can control the camera correctly. Choose your camera body from the

Model pop-up menu before you start taking pictures for the first time and each time you change the type of camera body that you are using with the camera back.
To set the **Model** list to show only cameras compatible with your current camera back, mark the **Show recommended only** check box.
If you are using an unlisted camera body, then chose **Generic**. In this case, you may need to experiment a bit with the **Shutter delay** setting to optimize your results (see below).

Shutter Delay

When you click on the **Capture** button in **FlexColor**, a short amount of time elapses between the moment you issue the expose command and the moment the flash is fired. The camera body needs to allow some time for its internal mechanics to, for example, move the mirror and open the shutter. **FlexColor** must know this time so that it can correctly synchronize the shutter, flash and CCD exposure.

The shutter delay time is different for each camera back model. The delay is set automatically when you choose a camera body from the **Model** pop-up menu. However, you must set this manually when you choose the **Generic** setting.

NOTE! Even when working with a specific camera body, you are able to adjust the shutter delay time manually if necessary. The value is resettable by clicking the **Default** button.

Under normal circumstances you simply choose the preferred camera from the drop down menu. You could however experience that your camera does not perform correctly using the default shutter delay, causing colors to slide or other unwanted effects. This is due to a timing error in the camera different from the factory setting.
To correct this you are enabled to alter the default shutter delay settings. If you experience problems start by increasing the delay quite a bit, for example 100 ms. Then decrease the shutter delay in small steps until your image looks right. This way you will find the correct synchronization for your selected camera.

Flash Delay

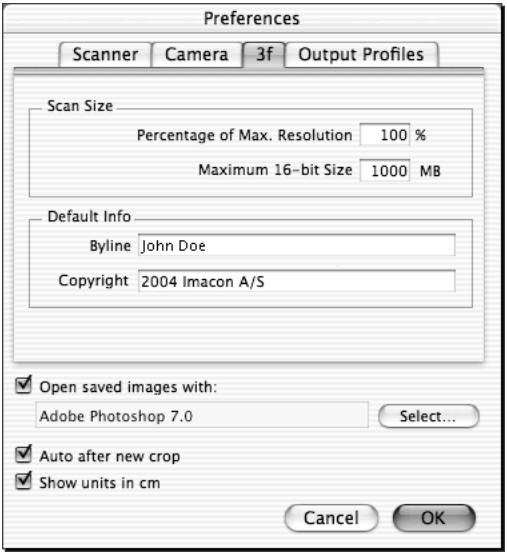
When you use one of the multi-exposure modes, **FlexColor** will instruct the camera back to make the captures as quickly as possible, allowing time for the image data to download after each capture. If your flash system requires extra time beyond this to be ready to flash again, then enter the required minimum charge time (in seconds) in the **Flash delay** field.

Process and store full image when saving

Check this if you want to avoid updating the 3f files with the processed info when saving from these. In this case processing will only be done for the actual cropped area and your unprocessed 3f file will stay small and unprocessed.

3f Tab

When you make a capture, the image is saved as a 3f file in the currently selected folder. The 3f file can contain various information about the file, as described in "The 3f File Format" on page 10 earlier in this manual.



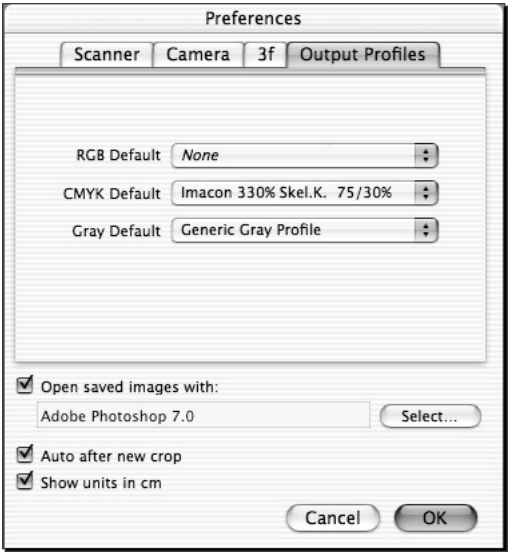
Scan Size

These settings are only relevant when using **FlexColor** with a scanner device.

Default Info

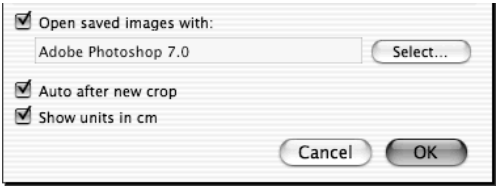
Prior to taking a number of captures where you want to add the same name and copyright information to all of the shots, you can type this information in the **Byline** and **Copyright** fields. Later when opening the **Info** window for one or more of the captures, this information will show up in the corresponding fields here. See "The Info Window" on page 65 for references.

Output Profiles Tab



Here it is possible to define the default output profiles for RGB, CMYK and Grayscale. In the setup **ColorSync** tab you can choose to use the default profile instead of specifying a specific output profile.
The standard settings will specify the default output profiles for all color spaces. Therefore it's possible to change the specific output profile used by all standard settings simply by selecting another profile in the **Output Profiles** tab.

General FlexColor Settings



The bottom of the **Preferences** window shows the following general **FlexColor** settings:

Opening Saved Images

After saving an image as a TIFF file, **FlexColor** is able to launch the application of your choice and open the saved image in that application. If you would like to use this feature, place a check in the **Open in** checkbox, then click the **Select** button. Use the appearing standard file finder window to locate and select the application you would like to use for viewing your saved images.

Auto after New Crop

FlexColor includes an auto tonal range function, which analyzes the cropped image and sets highlight and shadow values accordingly. You can use it at any time by clicking on the **Auto** button in the main **FlexColor** window.

The **Auto after new crop** checkbox provides an optional shortcut for using the auto function. When this checkbox is marked, each time you make a new crop, **FlexColor** will immediately analyze the image contained in the crop area and set highlight and shadow values, just as if you had clicked on the **Auto** button.

You can also control this function by holding down the **option** key as you define a new crop:

- If the **Auto after new crop** checkbox is enabled, then hold down the **option** key to make a new crop *without* invoking the auto function.
- If the **Auto after new crop** checkbox is disabled, then hold down the **option** key to *apply* the auto function to your new crop.

NOTE! This function will not update the highlight and shadow settings when you move or resize an existing crop area; it only responds when you create a new crop area. If you would like to use the auto function again

after moving or resizing a crop area, click on the **Auto** button in the main **FlexColor** window.
For more information about tonal range and the **Auto** function, see "The Histogram Window" on page 93 and "Auto Tab" on page 39. For more information about cropping, see "The Main FlexColor Window" on page 21.

Show units in cm

Check this box if you want the **Height** and **Width** values in the main **FlexColor** window to be displayed in cm. If this box is not checked, the values will be displayed in inches.

FlexColor ICC Profiles

Generic ICC Output Profiles

FlexColor includes six generic ICC output profiles for generating various types of color separations. The name of each profile provides a description of the results it creates. See Table 1 for details.

Profile	Max Ink	Black Generation	Max Black	Black Starts	Use
Imacon 250% GCR 40% K.90%	250%	GCR 40%	90%	n/a	Newspapers, low ink
Imacon 280% GCR 30% K.90%	280%	GCR 30%	90%	n/a	Newspapers, standard
Imacon 330% GCR 20% K.95%	330%	GCR 20%	95%	n/a	Glossy paper (magazines)
Imacon 330% Skel. K. 75/30%	330%	Skeleton Black	75%	30%	General use, glossy paper
Imacon 350% GCR 20% K.95%	350%	GCR 20%	95%	n/a	High-end, high ink
Imacon 350% Skel. K. 91/30%	350%	Skeleton Black	91%	30%	Extreme high-end (e.g. art repro)

Table 1: Generic ICC output profiles included with FlexColor.

GCR stands for gray color replacement. It is a scheme for adding black to dark colors, thereby reducing the total amount of ink applied. A high percentage of GCR results in more black ink in the image (and, consequently, less ink of other colors).

The skeleton black scheme does not add nearly as much black - especially in the colors, thus resulting in brighter colors, but also requiring higher quality paper. These profiles also specify the minimum ink percentage in each channel that a color must have before any black is added at all.

If you are not sure which profile to use, ask your printer if there is a limit on the maximum ink percentage and be sure to choose a profile that limits the percentage appropriately. In the majority of cases, the Imacon 330% Skel. K. 75/30% profile will provide the best results.

In some cases, an ICC profile for your (or your service bureaus) specific output device may be available. If so, then use it instead.

If your results are not satisfactory, then speak with your printer for advice about how you should modify the profile. See "Editing ColorSync Color Profiles" on page 56 for instructions.

Editing ColorSync Color Profiles

NOTE! The profile editor is only available with the Mac OS version of **FlexColor**.

FlexColor includes both a ColorSync input profile designed for the Ixpress digital camera backs and a set of generic output profiles, each of which is designed to create good results under a different set of conditions.

These generic profiles will deliver adequate to excellent results. If, after testing an output profile and speaking with your service bureau, you find that you would like to fine tune an output profile, then follow the procedure below.

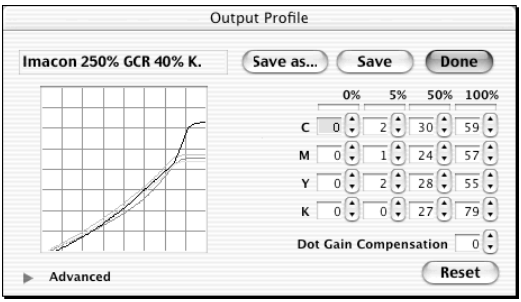
The settings available for editing the output profiles are both highly detailed and very powerful. In general, they are intended for users who are very experienced in making color separations. Most likely, you should speak with your service bureau about how to make these settings.

1. Run the **FlexColor** application.

2. Choose **Setup** from the **File** menu. Then click on the **ColorSync**™ tab.

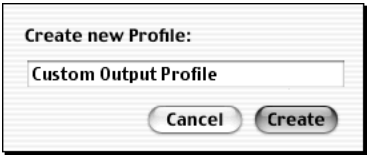
3. Use the **CMYK** pop-up menu to select the profile you would like to edit. Note that the profile you select must be as close as possible to the profile you want to make - you are not able to create a completely different profile using the editor. The menu lists all of the profiles currently installed in the **ColorSync**™ **Profiles** folder in the **Preferences** folder of your **System Folder**.

4. Click on the **Edit** button. The **Output Profile** window appears.



5. We recommend that you save your edited profile using a new name, so click on the **Save as** button.

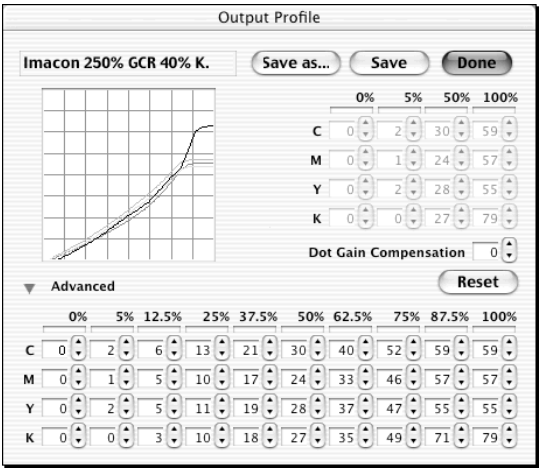
The **Create New Profile** window appears. Type a name for your edited profile and click on the **Create** button.



6. Return to the **Output Profile** window. It shows the output values applied in the final separated file for each color at each of four brightness (neutral-gray) levels (0%, 5%, 50%, and 100%). By adjusting these levels, you are able to control how colors will appear in your output. For example, if your prints look too yellow in the highlights, then you could turn down the Y value for 0% and/or 5% values. In many cases, this is all the level of detail you will need.

7. The **Dot Gain Compensation** setting compensates for the default dot-gain setting of the existing profile. The setting is relative, and can be positive or negative. Generally, this value varies from printer to printer. Finding the correct setting will require some trial and error.

8. If you need to make even more detailed adjustments, then click on the triangle next to the **Advanced** heading.



9. The **Advanced** section includes value settings for even more gray levels. These settings include the same four levels that you were able to adjust using the standard part of the **Output Profile** window.

10. When you are done making settings in the window, click on the **Save** button to apply the settings to your new profile.

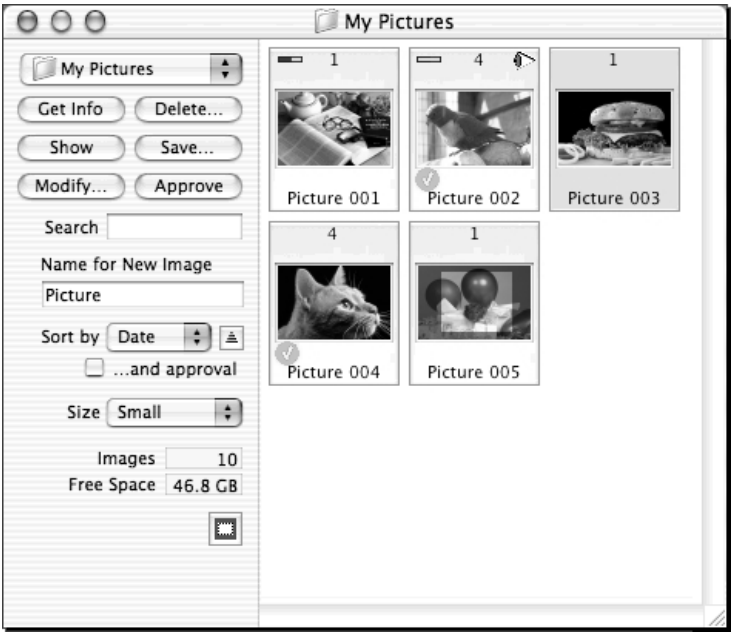
The Thumbnails Window

Introduction

The **Thumbnails** window works like a light table, showing you a small preview image of each of the captures stored in a the currently selected folder. Use the **Thumbnails** window to review your work, load images into the main **FlexColor** window and to save images as standard TIFF files.

Opening the Thumbnails Window

To open the **Thumbnails** window, type **cmd-8** or click on the **Thumbnails** button in the main **FlexColor** window or select **Thumbnails** from the **Window** menu.



Selecting a Thumbnails Folder

Use the folder pop-up menu to select the folder you want to use for your thumbnails. The menu contains both recent and favourite locations. The name of the current folder (*ex. My Pictures*) appears in the title bar of the **Thumbnails** window.

Files and Formats

When you make a capture, the image is saved as a 3f file in the currently selected folder and displayed in the preview area of the main **FlexColor** window.

See "The 3f File Format" on page 10 earlier in this manual for a detailed description.

The **Thumbnails** window shows all of the 3f files saved in the currently selected folder and allows you to load any of them in the preview area of the main **FlexColor** window.

Saving Crop and Imaging Settings

All of the crop, mode, color and image-enhancement settings in effect when capturing an image will be saved with the 3f file in the current folder. If you make new settings with the various tools of **FlexColor** while a capture is loaded into the main **FlexColor** window, your new settings will not be saved unless you click on **Save** in the main **FlexColor** window. When you do this, **FlexColor** will create a TIFF file of the current image in which all of the current crop, mode, color and image-enhancement settings are applied. In addition, the settings will be saved as an entry in the **History** list of the **Info** window for the current 3f file.
See "The Info Window" on page 65 for details.

When you load a file from the **Thumbnails** window into the main **FlexColor** window, all of the crop, mode, color and image-enhancement settings currently selected as default for the 3f file will also be loaded into **FlexColor**.

Using the Thumbnails Window

Viewing the Thumbnails Display

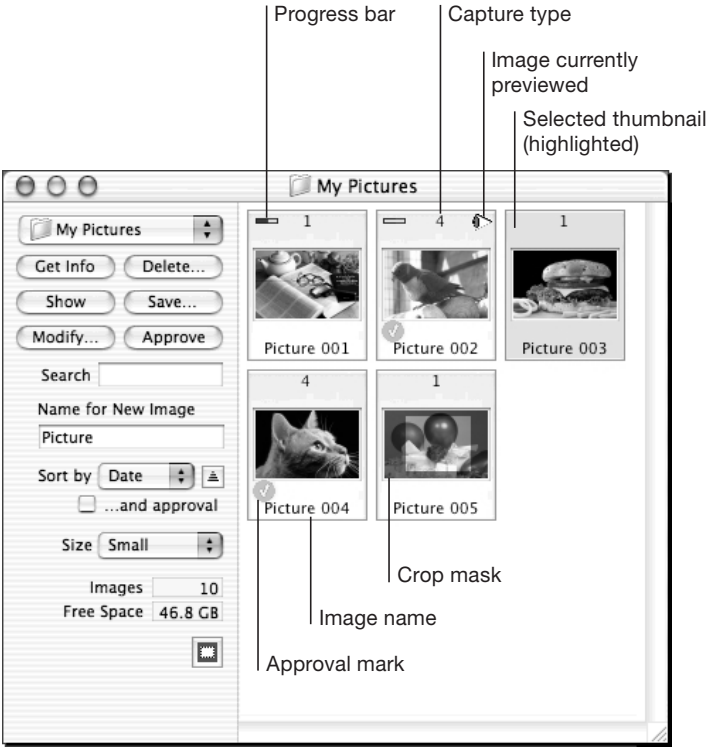
You have two types of options for controlling how the thumbnails will be displayed in the **Thumbnails** window:

Sort by Use this pop-up menu to choose whether the thumbnails should be sorted by **Date** (the order in which they were created) or by **Name**. If you wish to reverse the sorting order click the **Descending/Ascending** button to the right of the pop-up.
Also it is possible to sort the captures by their approval status by checking the **... and approval** checkbox.

Size Use this pop-up menu to choose how large you would like the icons to appear in the **Thumbnails** window.

Crop mask button: Masks off the area outside the current cropping (if any) for each image.

The **Thumbnails** window displays information about each capture:



The "Capture type" will be shown as one of the following values:

- **1** for single-shot and the preview-shot
- **4** for multi-shot
- **16** for micro-step

After capturing, a preview image is shown as quickly as possible in the main **FlexColor** window. However, extra processing is still required before you can view the image in full resolution (See "Processing Workflow" on page 100 for further details).

Selecting Images

You are able to select one or more images in the **Thumbnails** window. Once you have selected an image, it will be shown highlighted. Then you are able to, for example, rename, delete, view or save it.

Use the following techniques to select images:

- Click once on an icon to select a single image.
- **Cmd**-click to select several images.
- Select several images by dragging the mouse cursor across them.
- **Shift**-click to select a consecutive row of images.
- Press **cmd-a** or choose **Select All** from the **Edit** menu to select all of the icons in the **Thumbnails** window.
- Press and hold **cmd**-key then use **left** or **right** keys to open previous or next image respectively.

Working with Selected Images

The **Thumbnails** window includes the following controls, which operate on the images you have highlighted:

Please note that if you **ctrl**-click on a thumbnail you will get a contextual menu containing most of the functions described below.

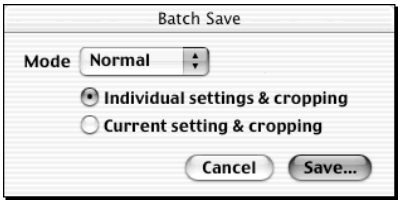
Get Info Opens the **Info** window, that holds various information about the image, such as size, resolution, exposure time and various information about copyright etc. (you can also choose **Get Info** from the **File** menu or type **cmd-I** to open the **Info** window).
Note that an **Info** window will be displayed for each of the selected files.
See "The Info Window" on page 65 for a detailed description.

Delete Moves the currently selected image(s) to the **Trash**. You will be asked to confirm the operation. Pressing the **command (cmd)** key while clicking **Delete** will move the image(s) without confirmation.
Note that you can delete the images using the **del** or **cmd-del** keys on your keyboard as well.

Show Displays the currently selected image in the main **FlexColor** window, where you can view and work with it (this can also be obtained by double-clicking on an icon). The crop, mode, color and image-enhancement settings selected as default for the selected file will also be loaded into **FlexColor**. The button is only available when you have selected a single image.

Please note that when double-clicking an icon or clicking the **Show** button, a low-resolution image will be displayed immediately in the preview window.
If image has already been processed, the high resolution preview is being processed in the background and when finished the preview is updated (typically after 20-30 secs).

Save This button saves all of the currently selected **Thumbnails** images. When you click the button, the **Batch Save** window appears, asking if you would like to save using the **Individual settings & cropping** saved with each file, or to apply the **Current settings & cropping** (as seen in the current preview of the main **FlexColor** window) to all captures.



Choose either of the settings and then use the **Mode** pop-up menu to select one of the following save options:

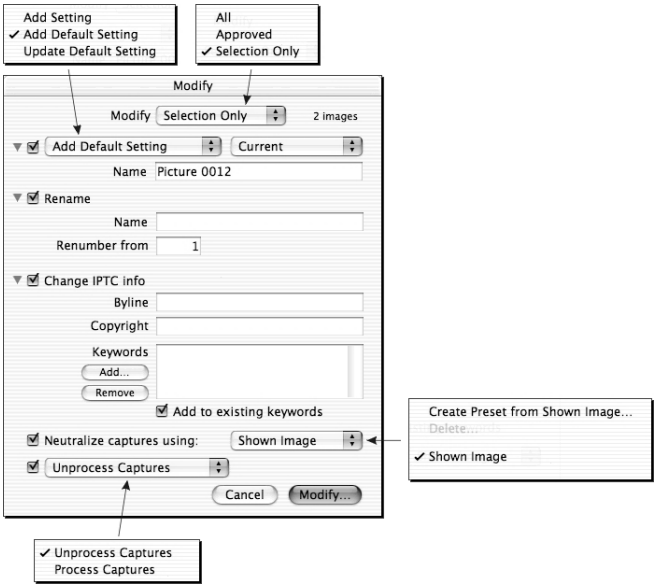
Normal: to save the selected images as TIFF-files.

Preview: to save the selected images as a low-resolution TIFF-file for preview purposes.

Layers: to save the selected images as separate layers in a Photoshop file (.psd)

Having selected the appropriate save options, click the **Save** button.
Previews are saved in the foreground while saving images using the **Normal** or **Layers** modes will take place in the background and the save tasks will be added to the list in the **Task** window (see "The Task window" on page 111 for details).

Modify Enables modification of the images in the current thumbnails folder. 5 different operations are possible, all of which can be performed simultaneously.



Modify: From this pop-up menu you can select whether you want to modify selected images, approved images, or all images.

Add Setting: Lets you choose to update the current default setting of an image. The setting info used can either correspond to the current settings or you can select to use a specific saved setup.

Rename: To rename the selected images type a name and the number from which the images should be renumbered.

Change IPTC info: The **Byline** and **Copyright** information is only updated if you actually enter new data in these fields. For **Keywords** you have the option of either adding to existing keywords or to replace them with a new list.

Neutralize captures using: Select from your saved neutralization presets or use the neutralization of the currently shown image.
To create a preset simply select **Create Preset from Shown**

Image... from the pop-up menu. Name the preset in the appearing window and click on **Create** and it becomes available in these menus. To use it to neutralize other images simply select those and choose **"Your preset name"**. from the op-up menu.
Presets can only be removed by using the **Modify** dialog.

Process/Unprocess captures: You have the possibility to select a number of files and choose **Process Captures**. This will add a corresponding number of processing tasks to the list in the **Tasks** window (see page 111 for details) and processing of those files will take place in the background. The processing tasks will not be interrupted by new image captures.
If images have already been processed the **Unprocess Captures** function removes the processed image data from the selected captures, thereby reducing file sizes.

Make all required modification settings then click the **Modify** button to perform the modifications.

The **Modify** dialog can also be used to modify the currently loaded image. With the preview window in front select **Batch Modify** from the **Modify** menu. This gives you a modify dialog that acts on the shown image only. The primary benefit here is that it gives you a very easy way to update the current default setup of an image after making adjustments.

Approve A capture is approved by selecting it and clicking the **Approve** button or simply typing 'a'. Approved captures are marked by a checkmark in the lower left corner. To remove the approval mark click the **Approve** button or type 'a'.

Thumbnails Searching

Using the **Search** field enables you to filter the **Thumbnails** window contents. Simply enter the text you want to search for and type **Return**, and only images containing this text will be shown.
The function searches for the text in all IPTC tags and the actual file names, but typical use will be to search for IPTC keywords.
To return to an unfiltered display simply delete the text from the **Search** field and type **Return**.

New-Image Controls

The name given to each new capture is based on the text you enter in the **Name** field of the **Thumbnails** window. This will cause each new capture to be named with the **Name** you chose plus a unique number, thereby ensuring that each new capture does not overwrite older captures.

NOTE! The **Name** setting does not affect images captured in **Preview** mode. Preview shots are never saved and are not visible in the **Thumbnails** window. Preview-shot images are intended only as a fast way of checking your exposure, composition and color cast on screen before making a final single-shot, multi-shot or micro-step exposure for use in production.

Printing the Thumbnails

You can print the contents of the **Thumbnails** window:

- Make sure you have selected the view by clicking on a shot in the window.
- Select **File -> Print**.

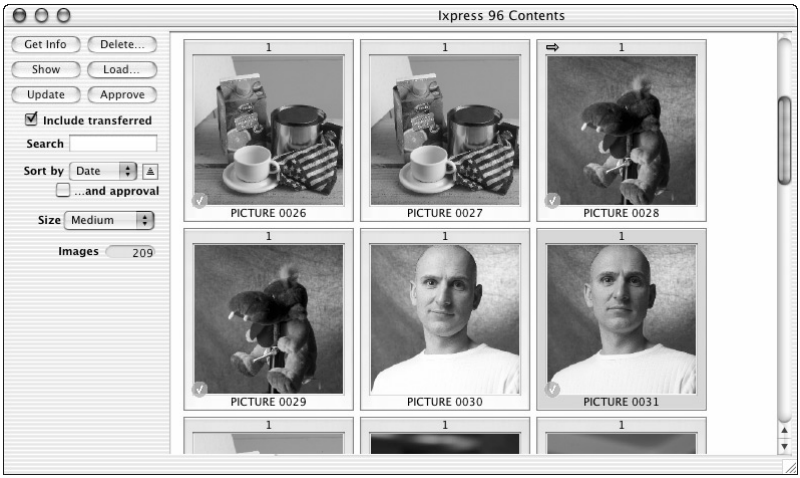
Ixpress Contents Window

Introduction

During computer-free operation, the Ixpress Camera Back and the Image Bank work as a single unit. All shots are saved straight to the Image Bank's hard disk, which has a capacity of more than 1000 shots. To work with these images in **FlexColor** they will have to be transferred to your current thumbnails folder.

Using the Ixpress Contents Window

After shooting, simply switch on and connect the Image Bank to a computer with a running **FlexColor** application (see the *"Ixpress User's Guide"* for details).
Within a few seconds the **Ixpress Contents** Window is available with thumbnails ready to load.



The **Ixpress Contents** window displays the following:

From the **Ixpress Contents** window you have the following options:

Get Info Displays a basic image file information window for each of the selected shots.

Delete... Deletes the currently selected shot(s) from the Image Bank's hard disk.

Show Shows the image in **FlexColor's** preview window and a transfer of the selected image to your thumbnails folder will start. Double-clicking or typing **Return** will have the same effect.

Load... Transfers the selected shot(s) to the currently selected **Thumbnails** folder and saves them as "3F" files - see "Load Images" on page 74 for details.

Update Updates the **Ixpress Contents** window with new pictures from the Image Bank.

Approve Approves the selected shot(s). When a shot is approved a checkmark is applied to the thumbnail.

Sort by Use this pop-up menu to choose whether the thumbnails should be sorted by **Date** (the order in which they were created) or by **Name**. If you wish to reverse the sorting order click the **Descending/Ascending** button to the right of the pop-up.
Also it is possible to extend the sorting by checking the **...and approval** checkbox.

Size Use this pop-up menu to choose how large you would like the icons to appear in the **Ixpress Contents** window.

Images Displays the total number of images currently stored on the Image Bank's hard disk.

Image Searching

Using the **Search** field enables you to filter the **Ixpress Contents** window contents. Simply enter the text you want to search for and type **Return**, and only images containing this text will be shown.
To return to an unfiltered display simply delete the text from the **Search** field and type **Return**.

Show Transferred Images

By default the **Ixpress Contents** window will only show images that has not been transferred to the current thumbnails folder, but selecting the **Include transferred** option will enable you to see all stored images - in this case transferred images are marked with a small arrow in the upper left corner.

Transferring Images

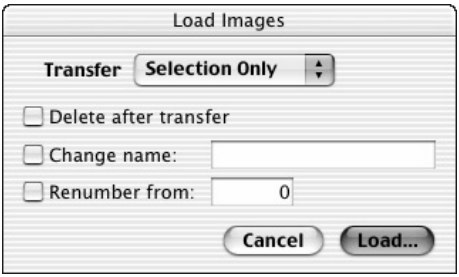
To transfer the images from the Image Bank to the currently selected thumbnails folder you have the following options:

Drag and drop: Simply select a number of thumbnails in the **Ixpress Contents** window and drag them to the thumbnails window.

Show single image: Select a single image in the **Ixpress Contents** window and click the **Show** button. Immediately the image will be shown in **FlexColor's** preview window and a transfer of the selected image to your thumbnails folder will start. Double-clicking or typing **Return** will have the same effect.

Load Dialog: Using the **Load Images** dialog box gives you more control of the image transfer:

- Select the images you want to transfer and click **Load...**
  A **Load Images** dialog box appears:



- From the **Transfer** pop-up menu choose whether you want to load **All**, **Selection Only,** or **Approved**.
- Check the **Delete after transfer** checkbox if you want the images to be deleted from the Image Bank's harddisk after having loaded them to the computer.
- Check the **Change name** checkbox if you want the images to be renamed while loaded - type the new name in the name field.
- Check the **Renumber from** checkbox if you want the images to be renumbered while loaded - type the starting number in the number field.
- Click **Load...**
  The images will be transferred to and saved in the currently selected folder on the computer.

The Info Window

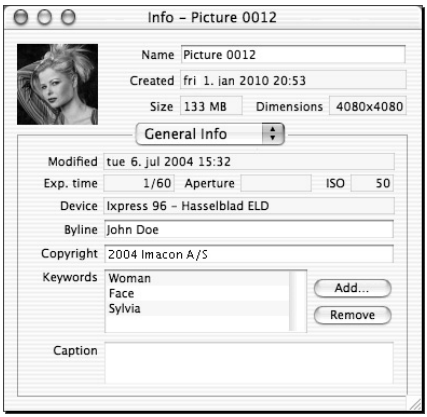
Introduction

The **Info** window holds various information about the currently selected file and its contents, a complete history of applied settings and the possibility to add unique file data (including IPTC-tags) such as copyright information and keywords to support an image database.

Using the Info Window

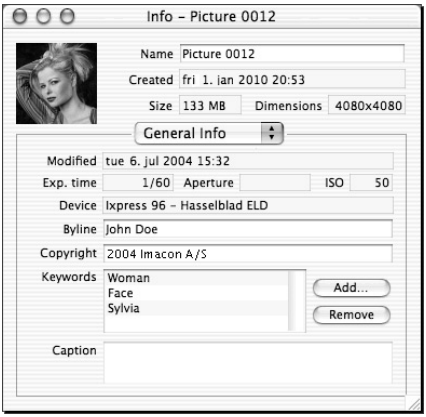
Opening the Info Window

From the main **FlexColor** window, when an image is loaded, choose **Get Info** from the **File** menu or type **cmd-I**. The **Info** window will be displayed.



From the **Thumbnails** window you can select one or more thumbnails and use the **Get Info** button to display an **Info** window for each of the selected files.

The basic file information at the top of the **Info** window shows the name of the 3f file, the date of creation and the file size and image dimensions. To change the file name simply type a new name in the **Name** field. The thumbnail image displayed is created using the settings set as default in the **History** list.



General Info

The **General Info** section holds the following information:

Modified Date of the latest modification.

Exp. time The shutter time used when exposing the image.

Aperture Aperture setting used when exposing the image.
This field will only show a value if you are using a camera, that allows you to adjust the aperture from your computer, otherwise the field will be empty.

Device Device used to capture the image.

Use the following fields to enter your own file information:

Byline Name of photographer.
The contents, if any, from the **Byline** field in the **Default Info** section of the **3f** tab in the **Preferences** window (see page 50) will be added automatically each time an image is captured.

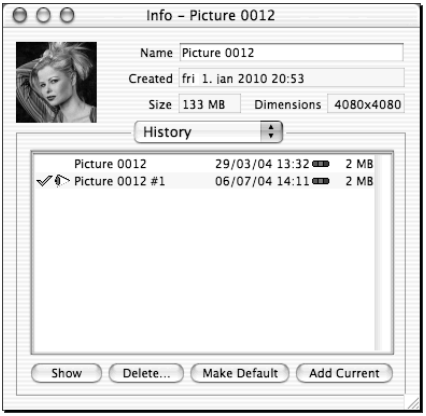
Copyright Copyright information.
The contents, if any, from the **Copyright** field in the **Default Info** section of the **3f** tab in the **Preferences** window (see page 50) will be added automatically each time an image is captured.

Keywords Add unique keywords about the image.
The keywords can be used to find the image in an image data-base.

Caption Use this field for optional text information.

History

To display the **History** list, select **History** from the drop-down menu.



The history list includes an entry (with name, date, time and file size) for each time new settings have been applied to the image and for each TIFF file, that has been created from it.

The buttons below the list have the following functions:

Show Select an entry and click the button (or double-click the entry) to load the image into the **FlexColor** preview window. The image will be loaded with the exact settings used when the corresponding entry was generated. The eye icon to the left of the entry indicates the file currently loaded.

Delete... Deletes an entry.

Make Default Use button to select the entry with the settings that the file should be opened with. The check mark to the left indicates which entry is currently selected as default. The settings of the entry selected as default are also applied to the thumbnails displayed in the **Info** window and in the **Thumbnails** window.

Add Current Adds an entry to the list with the settings of the image currently displayed in the **FlexColor** preview.

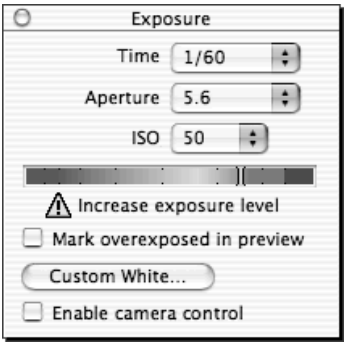
The Exposure Window

Introduction

The **Exposure** window enables you to quickly assess your exposure and to make shutter time, aperture, and ISO settings for camera bodies that allow these to be set remotely.

Even for camera bodies that do not allow the shutter time to be set remotely, you must select a shutter time setting that matches (or is slightly longer than) that of your camera body to ensure that the CCD does not begin to transmit its readings before the shutter closes.

To open the **Exposure** window, type **cmd-7** or click on the **Exposure** button in the main **FlexColor** window or select **Exposure** from the **Window** menu.



Using the Exposure window

Judging the exposure

The **Exposure** window provides two tools for judging the exposure of the current capture.

The **Meter** in the center of the window indicates the overall brightness of the image. Ideally, it should be near the top of the green area, but without entering into the red area, which indicates an overexposure. The indicator

turns yellow to indicate a probably bad exposure and turns white to indicate a good exposure. Only the part of the image that is inside of your crop area is measured by this tool, which means that the measurement will change when you modify the crop area.

For over- or underexposed images or crop areas the window will display a warning to either decrease or increase the exposure.

Place a mark in the **Mark overexposed in preview** check box to see an indication of the overexposed areas in the preview. These areas will be highlighted in bright pink so that you can decide if they are important to your subject. Clear this check box to remove the highlighting from the preview.

Setting the Exposure

Some camera bodies allow the aperture and shutter speed to be set by remote control, though most require you to set the exposure using the standard controls on the camera body.
If you are able to and want to control the aperture and shutter speed from **FlexColor** then place a checkmark in the **Enable camera control** check-box.

The camera body that you select in the **Preferences** window affects the availability and functionality of the **Shutter time** and **Aperture** settings here in the **Exposure** window. You must identify your camera body in order for the **Exposure** window to work correctly. See "The Preferences Window" on page 47 for details about how to set your camera body type in **FlexColor**.

Shutter Time

The **Shutter time** setting controls how long the CCD will be exposed before the image data starts to be downloaded to your computer. You must adjust the CCD exposure time used by your camera back to be sure that it is not shorter than your shutter speed.

If you are working with a camera body that allows the shutter speed to be set remotely, then the **Shutter time** setting will also control your shutter speed.

A good strategy for working with the **Shutter time** setting with most camera bodies is to keep it set to 1/15 sec. Then be sure that you do not set your camera body to use an exposure time that is longer than this. If you

do need a longer exposure time, then remember to change the setting in **FlexColor** to match the setting on your camera.

Note, however, that if you are working with a camera body that allows you to set the shutter speed from **FlexColor**, then you can just set the exposure time for each capture by using the **Shutter time** setting.

Aperture

Some camera bodies allow you to adjust the aperture from your computer. If you are using one of these bodies, then the **Aperture** setting controls your camera body. For other camera bodies, this setting will be inactive (grey).

ISO

The **ISO** pop-up enables you to select between sensitivities of ISO 50 or 100. If you are using an Ixpress camera back you will be able to select between ISO 200 and 400 as well.
This setting will also be reflected on the **General** tab in the **Setup** window (see "General Tab" on page 32).

Custom White Calibration

The Custom White calibration can be used to compensate for cast effects introduced by wide angle lenses or tilt settings. This is done by adjusting the factory white calibration based on an actual capture made with the exact lens and tilt settings that you need to use.
To perform the calibration click the **Custom White...** button and follow the directions given in the appeaaring window.

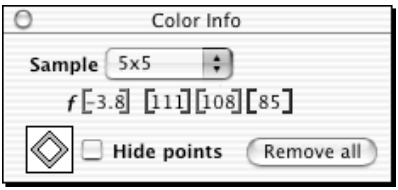
The Color Info Window

Introduction

The **Color Info** window enables you to read pixel values at any point in your image. You can also set up to five fixed **Sample points** and read the values at all of them simultaneously to monitor the effects of your other settings.

To open the **Color Info** window, type **cmd-9** or click on the **Color Info** button in the main **FlexColor** window or select **Color Info** from the **Window** menu.

Reading Values in the Color Info Window



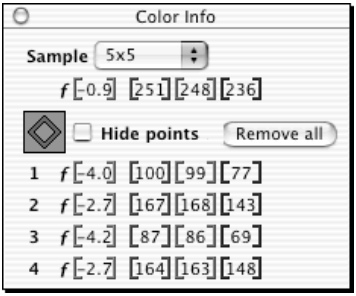
To use the **Color Info** window, place the mouse cursor over the preview image. The number fields in the window indicate the pixel brightness at the selected position in the image. Note the following:

- When showing RGB, the values indicate pixel brightness values (0 - 255) with white = 255, 255, 255.
- When showing CMYK, the output values indicate ink percentage values (0 - 100) with white = 0, 0, 0, 0. However, input values are still shown in RGB, as described above.
- The *f* value indicates the f-stop brightness of the pixel including all colors.

The **Sample** pop-up menu indicates the size of the area sampled by the color picker (mouse cursor). The numbers shown in the **Color Info** window indicate averages of the values found in the sample area. You can choose a setting of 1x1, 3x3 or 5x5 pixels.

Setting Fixed Sample Points

You are able to set up to five fixed **Sample points** so that you can monitor the effects that your settings are having in key areas around your image. Each sample point is indicated with a diamond and a number in the preview image. The current values for each sample point are shown next to the appropriate number in the **Color Info** window.



To set a sample point, click on the **Sample Point** button, which will turn grey when it is activated. Then click on a point in your image to place the point. A numbered diamond will then appear on the preview image at the point you select.

You can work with the sample points as follows:

- To move an existing sample point, activate the sample point picker by clicking on the **Sample Point** button to make it grey, then click and drag on the target point.
- To delete an existing sample point, activate the sample point picker, click once on the target point and then press the backspace button on your keyboard.
- To keep the existing sample points, but hide them in the preview, mark the **Hide points** check box. To view and/or edit the points again, remove the mark from this check box.
- To remove all sample points from your preview click **Remove all**.

Active and Reload Buttons

Introduction

The **Color Correction**, **Histogram** and **Texture** windows all have a set of **Active** and **Reload** buttons (see below) arranged in a standard fashion, while the **Gradations** window has two separate sets, one for sliders and one for curves.
The button functions are described below.

Active Button

When this button is grey, all corrections made in the respective tool window will be applied to your preview and saved image. Disabling the button will remove the corrections without erasing your settings.

Reload button

The **Reload** button has multiple functionalities. Simply clicking it will reload the tools parameters from the currently loaded setup.
The button has a small triangle on it, indicating that if you click and hold down on the button a menu will popup. This menu enables you to save and load presets for the tool that the button is associated with.
The tool reload menus have at least one factory preset named **Defaul**t. You can use this to obtain neutral settings for each tool – simply option click the **Reload** button to load the default settings.

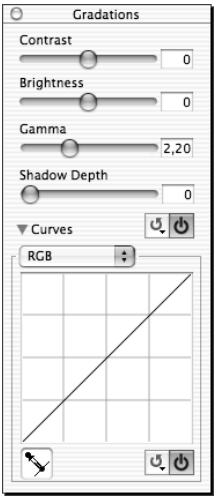
Please note that the **Reload** button located in the **Color Corrections** area of the main **FlexColor** window does not have the functionalities as described above - clicking this button simply return all correction windows (**Gradations**, **Histogram**, **Color Correction**, and **Texture**) to the settings saved with the current setup (see "Correction Controls" on page 24 for details).

The Gradations Window

Introduction

The functions described in this section will not always be needed during normal operation. They enable you to make fine adjustments to your output images that will affect brightness and contrast and will compensate for printing conditions. As with the advanced highlight and shadow controls, take care when using the **Gradations** settings. Take some time to experiment with its settings. Look at the preview to see how the curve will effect images. Save some images after using the settings and inspect them closely. Take notes on the kind of settings you use and make a comparative proof print.

To open the **Gradations** window, type **cmd-1** or click on the **Gradation** button in the **Correction** area of the main **FlexColor** window, or select **Gradations** from the **Window** menu.



The **Gradations** window includes sliders for **Contrast**, **Brightness**, **Gamma** and **Shadow depth**. It also includes a gradation curve, which is a plot of input brightness (on the horizontal-axis) versus output brightness (on the vertical-axis). You can hide or show the curve by clicking on the small triangle beneath the **Shadow depth** slider.

All of the settings you make using the curves and sliders in the **Gradations** window are saved with the current setup. The contrast, brightness, gamma and shadow depth settings can also be adjusted using the **Contrast** tab of the **Setup** window.

Using the Sliders

The sliders provide a quick and easy way to adjust the contrast, brightness, gamma, and/or shadow depth of your images. These adjustments affect the image, but are not reflected on the gradation graph that appears at the bottom of the window if you click on the triangle.

The sliders behave as follows:

- **Contrast**: This control affects the contrast in the image. Positive values increase contrast in the overall image by compressing the contrast in the highlight and shadow areas. Negative values reduce contrast in the midtones, but improve visibility at the extremes of the tonal range. This control is easy to use, but is less precise than using the curve.
- **Brightness**: This control affects the brightness of all points in the image. Positive values brighten the image, negative values darken it. This control is easy to use, but is less precise than using the curve.
- **Gamma**: The gamma setting applies a predefined gradation curve. However, unlike the standard gradation curve, the gamma setting is strictly controlled, so it enables you to use a color management program that is calibrated to the camera back at a given gamma setting. The default is 2.2. If you raise the gamma setting, then the image will become lighter and more details will be visible in the dark areas. The opposite occurs if you decrease the setting.
- **Shadow depth**: This setting controls a complex algorithm that affects the level of detail visible in the shadow areas of your image. The higher you move this slider, the more detail you will be able to see in the shadows. However, this will also reduce contrasts in the rest of the image. A setting of zero effectively disables this feature.

To neutralize all settings in all color channels of the gradation curve and sliders, click on the **Reset** button. None of your other **FlexColor** settings will be affected.

NOTE! The sliders affect all colors equally. They are not affected by the setting in the color channel pop-up menu located above the gradation curve.

Using the Gradations Color Picker

The **Gradations Color Picker** in the lower left corner of the **Gradations** window enables you to place a gravity point on the curve at the brightness of a point that you select in the preview. Click on the eyedropper icon to activate the gradations color picker, then click on a point in the preview to place the gravity point. See the next section for more information about using the curve.

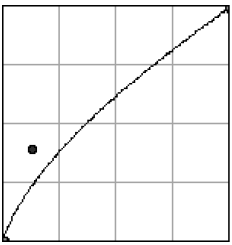
Using the Curve

The gradation curve is a plot of input brightness (on the horizontal-axis) versus output brightness (on the vertical-axis). It provides extremely detailed control over brightness and contrast in your final image, and even provides individual control over each color channel. You can hide or show the curve by clicking on the small triangle beneath the **Shadow depth** slider.

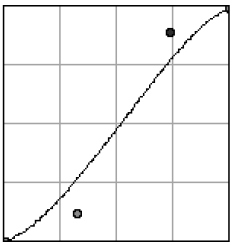
To adjust the curve, click and drag on the graph. Each time you click on a new point, you will create a gravity point, which will pull the curve toward itself. This system makes sure that the curve is always smooth. The preview image will update to reflect your changes.

Here are some guidelines to help you make adjustments to the gradation curve:

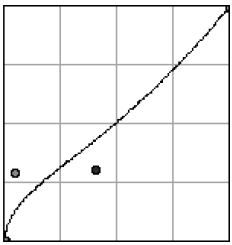
More overall brightness



More overall contrast



More shadow details



- To add a gravity point to the curve, click anywhere on the graph or use the Gradations Color Picker, as described in the previous section.
- To remove a gravity point from the curve, click on the point and then press the backspace button on your keyboard.

- A neutral (default) gradation curve is a straight, diagonal line from the lower left to the upper right of the graph.
- To add brightness to the image (without affecting the highlight value), drag the curve up above neutral. To darken an image, drag it below neutral.
- To reduce the contrast in the shadow, midtone, or highlight make the curve more flat on the bottom-left, center, or top-right areas respectively.
- To increase the contrast in the shadow, midtone, or highlight make the curve more steep on the bottom-left, center, or top-right areas respectively.
- To adjust the gradation in a single color channel, use the pop-up menu located above the gradation curve. Options are: **RGB**, **Red**, **Green**, **Blue**, **Cyan**, **Magenta**, or **Yellow**. This gives you a very powerful method of adjusting color in your images.
- To adjust the gradation without changing the color balance, set the pop-up menu above the gradation curve to RGB.
- All of the settings made to the gradation curve are saved with the setup, just as all of the settings shown in the **Setup** window. See "Managing Setups" on page 30 for instructions about how to select, load and save setups.
- To neutralize all settings in all color channels of the gradation curve and sliders, click on the **Reset** button. None of your other **FlexColor** settings will be affected.

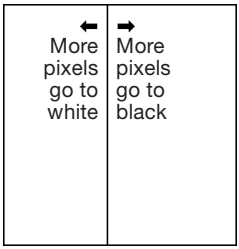
Keyboard Shortcuts

While working with the gradation curve you have the following possibilities:

- Pressing **ctrl-tab** to step between gravity points (when more than one point is defined)
- To move a gravity point, either drag it with your mouse or activate it and then use the arrow buttons on your keyboard. Hold down the **ctrl** key to move the point in larger increments.
- While dragging a gravity point using the mouse, hold down the **shift** key to restrict its movement to the horizontal direction.
- Clicking in the curve area while holding down the **alt** key changes the numbers of grid lines.

Setting the Threshold for Lineart Captures

When you are saving in **Lineart** mode, **FlexColor** applies a threshold to create an image in which every pixel is either completely black or completely white. In this case, the gradation curve is simply a vertical line. You can move this line left or right to adjust the input level at which the threshold is applied.



Click and drag on the line to adjust the threshold level to the right (which will cause more pixels to go to black) or the left (which will cause more pixels to go to white).

The Histogram Window

Introduction

The easiest way to set the highlight and shadow points is to use the **Auto** tonal range button in the main **FlexColor** window. However, in some cases, the auto function will not provide the desired results. The color pickers and sliders in the **Histogram** window provide the tools you need to fine tune your highlight and shadow points.

- The Highlight Point is the brightness above which all input pixels will be output at white (usually 255, unless you have set values in the **Dot** tab sheet of the **Setup** window - see "Dot Tab" on page 40 for details).
- The Shadow Point is the brightness below which all input pixels will be output at black (usually 0, unless you have set values in the **Dot** tab sheet of the **Setup** window - see "Dot Tab" on page 40 for details).

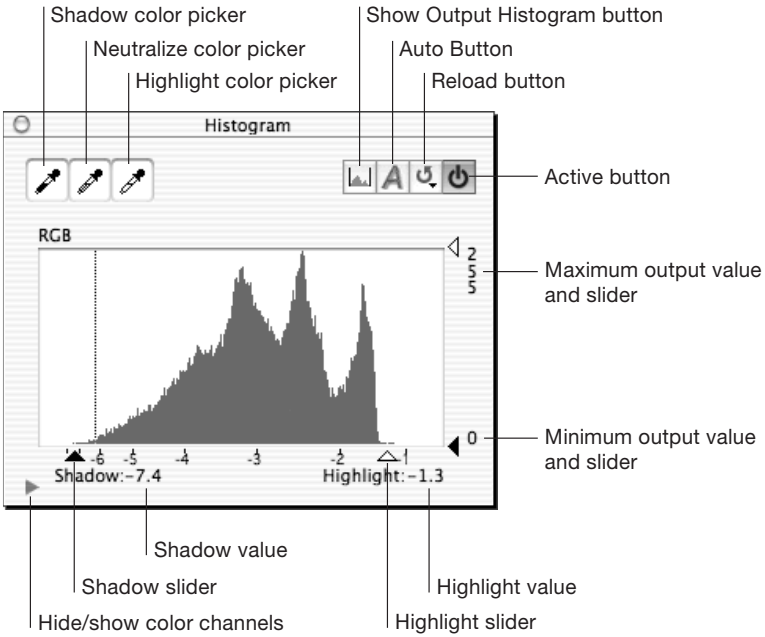
You must take care when using these settings, as they can have a powerful effect on your images. Take some time to experiment with them. Look at the preview to see how these settings will effect the image. Save some images after using these controls and inspect them closely. Take notes on the kind of settings you use and make a comparative proof print.

If you do not have any experience with digital images, then you should speak with an experienced professional, such as a scanner operator or digital photographer, about how these controls will affect your images. Ask him or her what to look for when you are evaluating your proof prints. You should also read some books about digital photography, digital imaging, scanning, and color reproduction.

The Histogram Display

To open the **Histogram** window, type **cmd-2** or click on the **Histogram** button in the **Correction** area of the main **FlexColor** window, or select **Histogram** from the **Window** menu.

The **Histogram** window contains a graph that indicates the tonal range of your image. The graph displays the number of pixels (on the vertical axis) of each brightness (on the horizontal axis). Pixels with a value of 0 (black) are shown on the left; pixels with a value of 255 (white) are shown on the right.



Color Pickers

These enable you to click on pixels in your image to set highlight, shadow and neutral points. See "The Histogram Color Pickers" on page 96 for more information about using them.

Sliders

Click and drag the sliders to set the highlight and shadow points and to set the minimum- and maximum output values. The min. and max. output values reflect the settings on the **Dot** tab of the **Setup** window.
See "Dot Tab" on page 40 for details about these settings.

NOTE! You can also use the arrow keys on the keyboard to move a slider once it has been selected. Hold down the **ctrl** key to move in larger increments. Use **ctrl-tab** to step between sliders.

Histogram Cut-off View

If you hold down **option** key while dragging the shadow or highlight slider in the RGB histogram you will get an illustration of the areas in the image that are cut off by the current slider setting.

Buttons

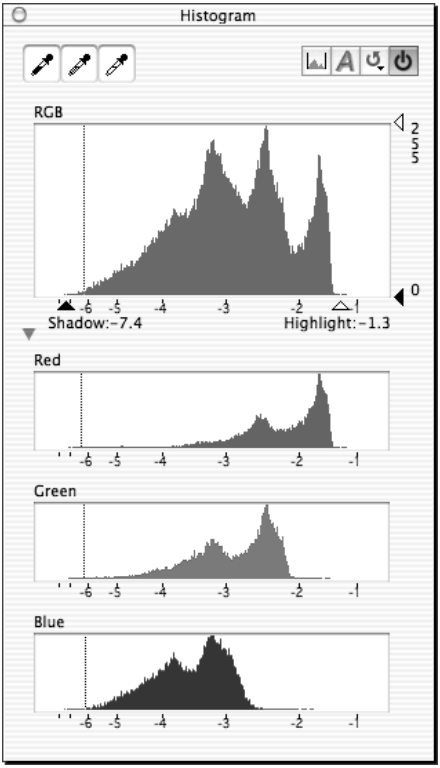
Show Output Histogram Button: Click this button (enabled when grey) to display the histogram as it appears after the highlight and shadow values are applied. Disable it to work while viewing the histogram of the image before these settings are applied.

Auto Button: Click on this button to have **FlexColor** assign highlight and shadow values based on the histogram of your image. If the current setup is configured to remove color cast, the image will also be automatically neutralized.

Reload/Active Buttons: See description on page 85.

Hide/Show Color Channels

Click on the triangle in the lower left corner of the window to display separate histograms for each color channel. You are able to adjust highlight and shadow values separately for each.



The Histogram Color Pickers

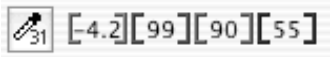
The histogram color pickers enable you to point at any pixel in your preview image and assign the highlight, neutralize, or shadow point based on the value of that pixel.

Both the highlight and shadow color pickers will affect the brightness and contrast in your image by choosing the tonal range.

To use the color pickers:

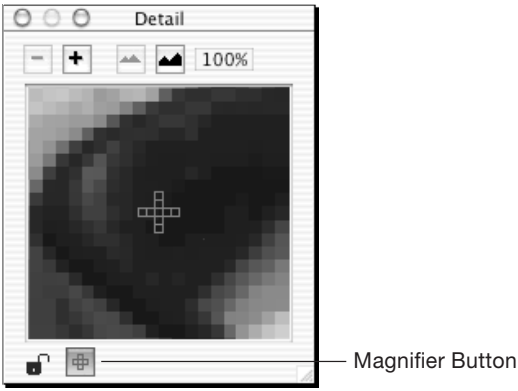
1. Click on the appropriate eyedropper button for the type of tonal range setting you would like to make. Your mouse pointer turns into the selected eyedropper.

2. Move the mouse pointer over the preview image; note pixel value readings that appear in the **Color** area of the main **FlexColor** window. Note that the numbers displayed in the **Color** area are the current values (after histogram or gradation settings).



3. The **Detail** window can help you see individual pixels. To open the **Detail** window, type **cmd-5** or select **Detail** from the **Window** menu (or click on the **Detail** button in the **Zoom** area of the main **FlexColor** window).

   To use the magnifier function of the **Detail** window push the **Magnifier** button. Note that the pixel selector is out-lined at the center of the window.



4. Place the tip of the eyedropper over an appropriate pixel in the preview image.

   - When selecting a highlight point, select an object in the image that you would like to have print white. Check the pixel values at several potential white points to help you pick the best one (usually the brightest one that is not already at the maximum of 255 in any of the colors). All pixels brighter than the one you selected will burn out.

- When selecting a shadow point, select an object in the image that you would like to have print black. Check the pixel values at several potential black points to help you pick the best one (usually the darkest one that is not already at the minimum of 0 in any of the colors). All pixels darker than the one you selected will be black.
- When selecting a neutralize point, select an object in the image that should be a neutral (gray) color. This will not affect the image brightness, only the color cast. For best results, select a point close to the middle of the exposure range, for example with RGB pixel values around 150.

5. Click on the target point. The highlight, shadow or gray value will be reassigned to the values shown for that pixel in the info area. Your screen will be instantly updated.

6. Inspect the preview using the **Detail** window and **Color** area. Look for areas that are burned-out (showing values of 255) and also check the shadow areas to be sure you have not hidden any details in these areas. You can undo your settings by selecting **Edit -> Undo** or pressing **cmd-z** on your keyboard.

Neutralizing Colors

Working with digital photography is somewhat different from using conventional film.
To obtain a neutral color balance in your image you will have to perform a neutralization of the image.
To achieve the correct neutralization it is advised to use a **Macbeth Color Checker Chart**. Use the neutralization picker (center) and click on one of the grey patches of the chart. Alternatively you can use an area in the image which you are certain has a natural grey balance but you might experience colors shifting doing so.
Whenever you change the setup, lightning or other physical aspects which could influence your image it is advised to perform a new neutralization. Once your image is neutralized it will stay that way until you either change the setup or perform another neutralization.

You can undo a neutralization setting by selecting **Edit -> Undo** or pressing **cmd-z** on your keyboard.

Selective Color Correction

Introduction

Sometimes you need more control over the image colors than simply removing a color cast. **FlexColor** features a powerful selective color correction feature, which enables you to adjust the appearance of specific colors throughout your image.

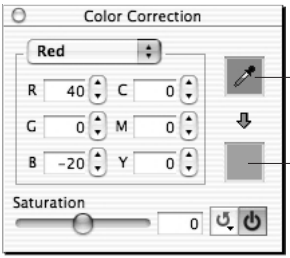
Opening the Color Correction Window

To open the **Color Correction** window, type **cmd-3** or click on the **Color Correction** button in the **Correction** area of the main **FlexColor** window, or select **Color Correction** from the **Window** menu.

Using the Color Correction Window

To use the **Selective Color Correction**:

1. Open the **Color Correction** window by selecting **Color Correction** from the **Window** menu, or clicking on the **Color Correction** button in the main **FlexColor** window.



2. Click on the upper square area to the right in the **Color Correction** window to activate the color correction color picker.

3. Click on the color in the preview image that you would like to change. The color will immediately appear in the top (before) color box. Offsets to its pixel values are listed in the **R**, **G**, **B**, **C**, **M**, and **Y** fields (by default, these values are all set to zero).

4. The pop-up menu near the top of the window displays the nearest primary color to the one you picked in the preview. Adjusting this color will have the most dramatic effect on the color you chose. However, if you wish to edit a different primary color, then select a different color from the pop-up menu.

5. Add or subtract any of the other colors using the arrow buttons and numerical entry fields provided for each color channel. Positive values will add the respective color, negative values will remove it. All pixels containing the color selected in pop-up menu will be adjusted proportionately.

6. If you would like to change the saturation throughout the image, then use the **Saturation** slider. The hues will remain the same, but all of the colors will become either more or less strong, depending on whether you choose a positive or negative setting, respectively.

7. The lower square updates to show the effects your changes will have on the color you selected in the preview. Continue to adjust the settings until you are satisfied with the color shown in this box.

The functionalities of the **Active** and **Reload** buttons are described in details on page 85.

You can also view and edit settings made in the **Color Correction** window by looking at the **CC** tab in the **Setup** window. The color correction settings are saved and loaded together with all of the other settings in the **Setup** window, so you can keep a library of your favorite settings by saving a new **Setup** file for each one. See "Managing Setups" on page 30 for more information.

NOTE! If you are using the **Gradations** window to lighten the image, then you may notice that the saturation decreases. To compensate, you may then increase the saturation in the **Color Correction** window, which will make the image look a bit darker again. Avoid entering a cycle in which you repeat each of these settings until both windows are set to extremes. Extreme settings will typically degrade your image.

The Texture Window

Introduction

The **Texture** window holds both the **Unsharp Mask** filter and the **FlexTouch** filter.

Unsharp Mask Filter

The **Unsharp Mask** filter applies an algorithm that increases contrast along sharply defined edges.
Unsharp masking has the potential to both improve and degrade your image - it makes the makes the image look sharper, but can also bring out noise or graininess. Most typically, noise will appear first in the dark areas of the image.

FlexTouch Filter

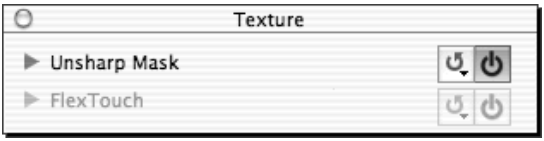
For scanner use only!

Preview

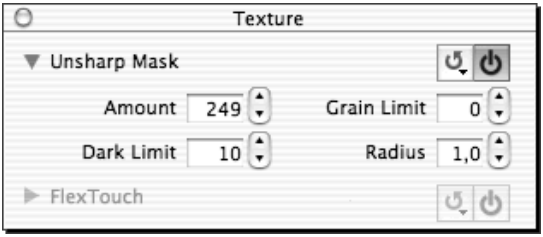
Preview your settings using the **Detail** window. When using the **Unsharp Mask** filter it is recommended to use at least two detail previews so that you can compare the sharpening effect in two different areas of your image - use one to check for enough sharpness in the bright or midtone areas and another to check for noise resulting from too much sharpness in the shadow areas. See "The Detail Window" on page 105 for information about how to use the **Detail** window.

Using the Texture Window

To open the **Texture** window, type **cmd-4** or click on the **Texture** button in the **Correction** area of the main **FlexColor** window, or select **Texture** from the **Window** menu.



To access the **Unsharp Mask** filter settings, click the triangle to the left.



Unsharp Mask Filter

To change the filter's settings, click in the appropriate field and edit the value with your keyboard or use the up- and down arrow buttons. The controls have the following effects:

- **Reload/Active Buttons:** See page 85 for detailed description.
  Please note that when the **Active** button is enabled the filter will not only be applied to your preview image and final image but also to any detail images in the **Detail** window.
- **Amount**: Controls the strength of the sharpening effect. The higher the value, the stronger the sharp lines will become. Depending on your image, a value between 80 and 200 is recommended.
- **Dark limit**: Sets the brightness level below which the filter has no effect. This will keep the filter from enhancing noise or unwanted textures in your image. The higher this number, the less extensive the sharpening effect will appear. Depending on your image, a setting between 0 and 20 is recommended.

- **Grain limit**: Prevents the filter from sharpening low-contrast features in the image, such as film grain, noise, or textures. It works by comparing brightness of each pixel to the brightnesses of its surrounding pixels. If brightnesses differ by less than the **Grain limit**, then no sharpening is applied to the target pixel. If your image looks grainy after sharpening, try to increase the **Grain limit** setting.
- **Radius**: Sets the radius in which the unsharp masking algorithm looks for sharp edges. The larger the radius, the more extensive the sharpening effect will be. The setting you choose will depend on the contents of your image and the resolution you are using. Generally, use a large radius with high-resolution images. Use a smaller radius for lower resolutions images.
- **Reset button:** Returns the filter to its default settings (Amount=0, Dark limit=10, Grain limit=0, and Radius=1). None of your other **FlexColor** setting will be affected.

It is also possible to apply different amounts of sharpening to each color channel. This is controlled on the **USM** tab of the **Setup** window. See "USM (Unsharp Masking) Tab" on page 36 for instructions.

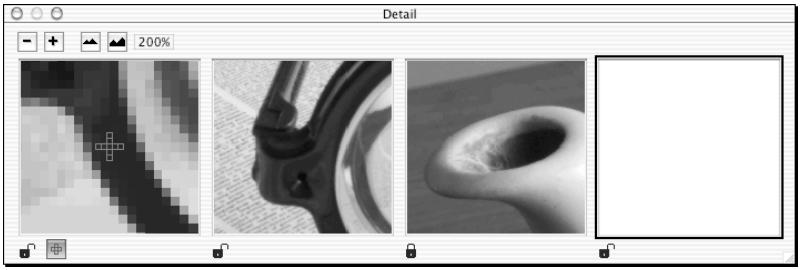
FlexTouch Filter

For scanner use only!

The Detail Window

Introduction

The **Detail** window can show up to 4 detail views of the preview image (in 100 to 400%).



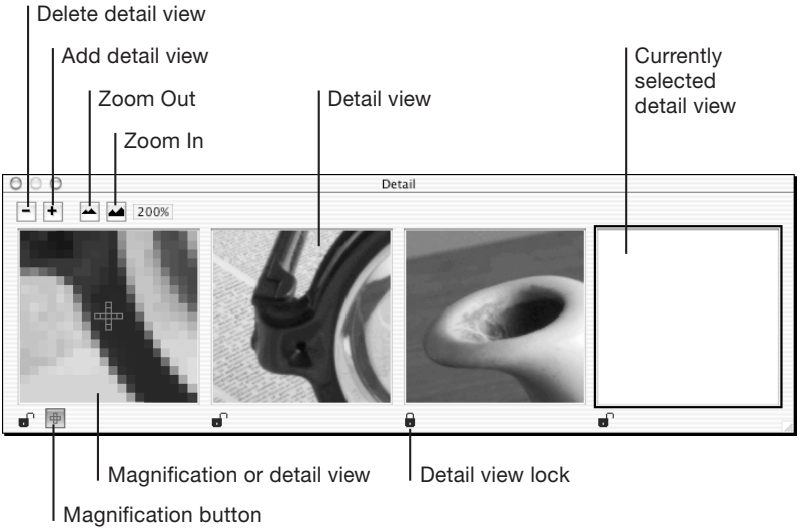
The detail views are especially useful when you want to see the effect of the corrections performed using the various correction tools in different areas of your preview image.

The detail views also enables inspection of the final image quality immediately after capture, even though the image has not yet been processed.

The view to the left can be used either as a detail view or as a magnification view enabling you to read color values for a specific pixel in your image.

Using the Detail Window

To open the **Detail** window, type **cmd-5** or click on the **Detail** button in the **Zoom** area of the main **FlexColor** window or select **Detail** from the **Window** menu.



Use the **"-"** and **"+"** buttons to add or delete a detail view (views are deleted from right to left) and select zoom level using the **Zoom In** and **Zoom Out** buttons.
To create a detail view, click inside the view frame to activate it, then move the cursor over the preview image - note that while you move the cursor over the preview image, the detail view will show a low-resolution view of the area around the cursor. Once you have located the spot in the preview image from where you want the detail, click it once and the detail image will be created in your currently selected detail view.
To make comparison between different settings, you can lock individual views by clicking the **Detail View Lock** icon which will prevent the view from being updated when settings are changed.
To use the left view as a magnification view click the **Magnification** button below the view. The magnified image shown is the area surrounding the mouse pointer. The selected pixel is the one directly under the cross-cursor in the center of the magnification view.

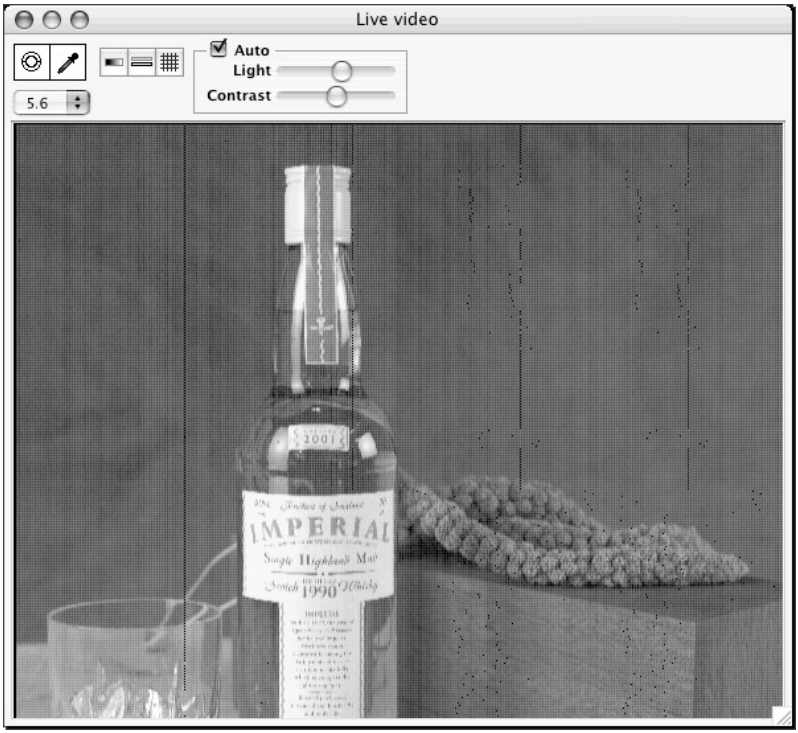
The Live Video Window

Introduction

The **Live Video** window gives you rapidly updated overview and detail windows to use for focusing and composition on the set.
This allows for focusing solutions for view cameras and other cameras without a ground glass.

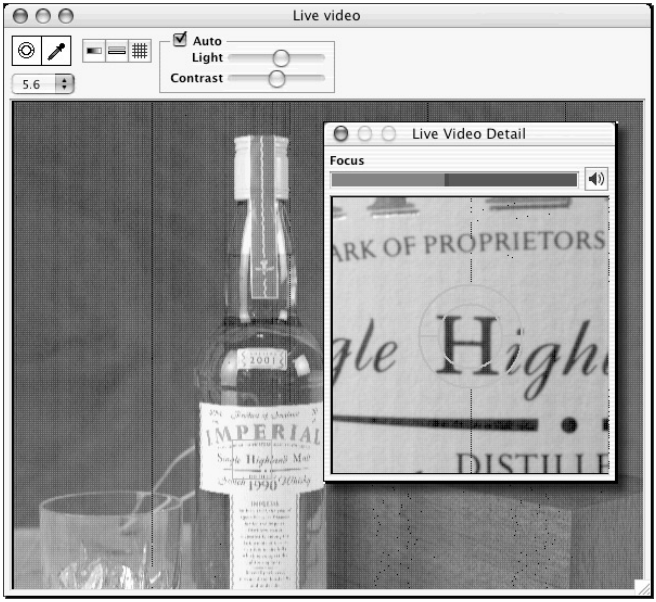
To open the **Live Video** window, type **cmd-L** or select **Live Video** from the **Window** menu.

NOTE! On certain cameras you must set the shutter in 'B' position before using the **Live Video** mode.



Live Video Window Tools

Live Video Detail Picker: Opens the **Live Video Detail Window.** Click on the **Live Video Detail Picker** button, which will turn grey when it is activated. Then click in the overview of the **Live Video** window.



The **Live Video Detail** window shows the image in 1:1 and you will get a relative focus readout - simply try to maximize this when adjusting the focus. You can click in the window to select the spot where focus is measured.

Neutralize Picker: Enables you to neutralize the image (see "Neutralizing Colors" on page 98 for details). Click on the **Neutralize Picker** button, which will turn grey when it is activated. Select an object in the overview image that should be a neutral (gray) color.
Please note that you can undo a neutralization setting by selecting **Edit -> Undo** or pressing **cmd-z** on your keyboard. Note that the picker will be unavailable when **Black & White** mode is selected.

Black & White button: Shows the Live Video in black and white. In many cases this will make it more comfortable to watch the preview, disabling any distracting colors.
When in Black & White mode the **Neutralize Picker** will be disabled.

Overlay Button: Switches on and off the display of an overlay over the view in the live video window.
Activating this button without actually having added an overlay image will display a message describing this.
See page 28 for details about adding an overlay.

Opacity slider: This slider occurs below the overlay button while the overlay is active. The slider gives you full control of the overlay image transparency.

Grid button: Makes a grid over the overview. The grid can be useful for aligning objects in your setup.

Audio Feedback: Turn on audio feedback corresponding to the focus meter.

Aperture

Some camera bodies allow you to adjust the aperture from your computer. If you are using one of these bodies, then the **Aperture** setting controls your camera body. For other camera bodies, this setting will be inactive (grey).

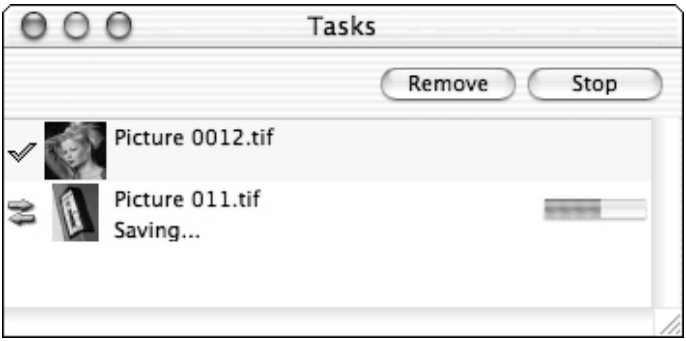
Adjusting Light and Contrast

By default the **Light** and **Contrast** settings are done automatically, but unchecking the **Auto** box will enable you to adjust these parameters manually.

The Tasks Window

Background save from 3f

When saving final images from a 3f file the actual save process will take place in the background.
The **Tasks** window will pop up.



The window shows the progress of all scheduled background operations. After a save task has finished it will remain in the list - you may double click it to open the saved image in the selected helper application.
Tasks which are not currently active can be removed from the list by selecting them and clicking the **Remove** button. Likewise active tasks can be cancelled by selecting them and clicking the **Stop** button.
If you're saving from an unprocessed camera image the necessary processing will also take place in the background.
Please note the option in the camera preferences that allows you to avoid updating the 3f files with the processed info when saving from these. In this case processing will only be done for the actual cropped area and your unprocessed 3f file will stay small and unprocessed (see page 47 for details) .

Appendix

Keyboard Shortcuts

Main FlexColor Window

F5: Makes a preview capture.
F6: Selects **Single shot** mode.
F7: Selects **Multi shot** mode.
F8: Selects **Micro step** mode.
F9: Takes a capture using your current settings.
Cmd ← or → : Opens previous or next image respectively.
Space: Press and hold to drag preview around.
Cmd-0: Zoom to fit the entire preview image in the window.
Cmd +: Zoom in.
Cmd –: Zoom out.
Alt-Cmd-0: Zoom to 100%.

Thumbnails Window

Cmd-A: Selects all of the icons in the window.
Cmd-click: Selects several images.
Shift-click: Selects a consecutive row of images.
Cmd-I: Opens an **Info** window for the currently selected image(s).
a: Toggles the approval status of the selected image(s) on/off. Approved pictures are marked by a checkmark in the lower left corner.
del: Deletes the currently selected image(s) from your hard disk. You will be asked to confirm the operation.
Cmd-del: Deletes the currently selected image(s) from your hard disk without confirmation.

Info Window

F10: Toggles between **General** and **History**.

File Menu

Cmd-N: Takes a capture using your current settings.

Cmd-S: Saves the image currently shown in the **FlexColor** window as a standard TIFF file.

Cmd-W: Closes the currently selected window if possible.

Cmd-U: Opens the **Setup** window.

Cmd-I: Opens an **Info** window, which contains various information about the currently selected image.

Cmd-P: Enables you to print the contents of the **Thumbnails** window. Make sure you have selected the view by clicking on a thumbnail in the window.

Edit Menu

Cmd-Z: Reverses your most-recent actions - for example, a crop area modification or a change in the **Setup** window. You are able to step back through a long series of actions.

Cmd-R: Reapplies the last action that you cancelled using the **Cmd-Z** command.

Cmd-X: If you have selected some text in a text field, then this command removes the text and saves it on a system-wide virtual clipboard.

Cmd-C: Saves the selected text on the clipboard without removing it.

Cmd-V: Places a copy of the text on the clipboard at the insertion point.

Cmd-A: Selects all of the text contained in the field in which the insertion point is standing.

Cmd-D: Removes the cropping of the currently shown image.

Window Menu

Cmd-1: Opens/closes the **Gradations** window.
Cmd-2: Opens/closes the **Histogram** window.
Cmd-3: Opens/closes the **Color Correction** window.
Cmd-4: Opens/closes the **Texture** window.
Cmd-5: Opens/closes the **Detail** window.
Cmd-7: Opens/closes the **Exposure** window.
Cmd-8: Opens/closes the **Thumbnails** window.
Cmd-9: Opens/closes the **Color Info** window.
Cmd-L: Opens/closes the **Live Video** window.