
Working with 3f

Introduction to the 3f Format and Workflow

Though most DTP applications and print devices work with 8-bit images, Flextight scanners actually capture 16-bit images. When FlexColor saves final scans as 8-bit TIFF or JPEG files, it starts with the full 16-bit scans to give the various correction controls (especially histogram, gradation and color correction) room to work, thereby enabling it to save an optimized 8-bit image.

The standard scanning workflow is to load an original, take a preview, make size and optimization settings and then save as a standard 8-bit TIFF or JPEG file. This is the best way to work when you are scanning images for a specific, single purpose. However, this results a final image in which much of the original scan data has been discarded during image optimization and sizing. This is not a problem for a single-purpose image, but if you need to use the image again later for another purpose, you might need to re-scan it in order to get acceptable quality for the new application.

Hasselblad's unique 3f image-file format gives you the opportunity implementing a more flexible and efficient workflow in which you store full resolution, 16-bit images in your library and then export from these as needed for various types of jobs. Here, you do not need to worry about making settings during the scan—you simply save all of the available scan data with each file. Later, when you are ready to use the image for a specific job, FlexColor enables you to open your 3f file, apply sizing and processing settings and then export to a standard 8-bit TIFF or JPEG file. Your original 3f images are not affected by your export settings, so you can return to them at any time, make new export settings and generate final images of maximum quality, just as if you had scanned and optimized the original all over again.

In addition to the raw image data, the 3f format stores a record of each export you have made, so you can re-export using previous settings at

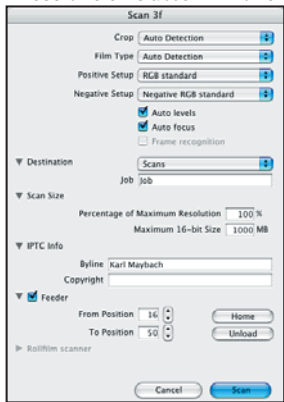
any time. It also holds many other types of meta data (such as name, key words, copyright details, etc.), which make 3f images perfect for indexing with a database to create a searchable image library. Because 3f is essentially an enhanced TIFF format, any image database application that can read TIFF files will also be able to index the meta data stored in 3f files.

The trade-off comes from the file size; 3f files use twice as much data per pixel and are furthermore usually full-resolution scans. These files can therefore be several times larger than files that were scanned, sized, optimized and saved for a specific print job. The 3f workflow is therefore most useful for bureaus and photography houses that are interested in provided libraries of images for use in a variety of settings. A large data-storage capacity is required.

Though all Flextight users can scan to 3f, customers using a Flextight scanner that features a batch feeder or roll-film loader will benefit most from the 3f workflow because it enables the entire batch to be scanned and saved without requiring operators to consider each image individually. By storing your 3f files on a network share, FlexColor users throughout your organization can load, optimize and export images whenever needed, without requiring access to a physical scanner.

Scanning to 3f

1. Press the 3f button in the main FlexColor window.



2. Set the **Crop** pop-up menu to one of the following:
 - **Auto Detection:** FlexColor will attempt to crop the image as tightly as possible to keep all unexposed pixels out of the scan.
 - **Current Crop:** FlexColor will use the crop area currently defined for the preview in the main FlexColor window. If you are batch scanning, then you should only choose this option if all of the originals you are scanning have the same format (e.g., 35 mm).
 - **Full Size:** FlexColor will capture the full size available with your current original holder or feeder. This setting will give you the fastest scan time because no extra processing is required during the scans.
3. Set the **Film Type** pop-up menu to one of the following:
 - **Auto Detection:** FlexColor will attempt to determine the film type by analyzing image colors during scanning. This is most useful when you are scanning a batch of mixed originals.
 - **Positive:** For positive color and black & white originals.
 - **Color Negative:** For color negative originals.
 - **B/W Negative:** For black & white negative originals.
4. Set the **Setup** menu(s) to match the setup(s) you wish to use for your scan. If you have set the **Film Type** to **Auto Detection**, then two setup menus are provided: one for positives and one for negatives. If you have set the **Film Type** to one of the specific settings, then only one setup pop-up menu is shown. The choices given in the **Setup** menu(s) include the default and custom setups for each appropriate film type.
5. Mark or clear the following checkboxes, according to your preferences:
 - **Auto levels:** FlexColor will set highlight and shadow points for each individual scan according to its internal algorithm. These will become part of the default setup for your 3f files, but your raw data will not be affected; you will be able to change them during export at any time.
 - **Auto focus:** FlexColor will refocus before each scan. Auto focus can add a few seconds to your scan times, but we recommend that you use it anyway. You must always use this when you are scanning mounted slides because slide mountings can vary in thickness. When scanning with Flextight original holders, you

can work with this box cleared; the scanner will then use its calibrated focus settings.

- **Frame recognition:** Most Flextight original holders include a bar code that identifies the original format used by the holder (6x6, 6x7, 24x36, etc.), though not all Flextight scanners are equipped to read the code. If your scanner supports frame recognition, then this check box is available—mark the box to have the scanner read the code before each scan and then readjust itself as needed for each new format. The setting is disabled when a scanner that does not support frame recognition is attached to your computer. When this box is cleared or disabled, the scanner will scan using the frame format established by your selected setup regardless of what the bar code says. If you are using a batch feeder to scan a set of originals with varying formats, then you must make sure that all of your original holders include a bar code and then scan with this option enabled. Scanning will be slightly faster when you do not use frame recognition because the scanner will not need to stop to read the bar code before each scan.
6. The **Destination** settings control the folder in which your 3f files will be saved.
- The **Destination** pop-up menu shows the name of the current destination folder. To change this, click on the menu and choose **select destination**; this opens a file-browser window that you can use to navigate to and select a new destination folder.
 - The **Job** setting only has an effect when you are using the Flextight RF Scanner or a scanner fitted with the Mounted Slide Feeder (but not the standard Batch Feeder). Each of these scanner systems is normally used for batch scanning many images at once. Therefore, each time you start a new 3f scan with one of these scanners, FlexColor will create a new sub-folder under your selected **Destination** folder. The new sub-folder is named with the text you enter here in the **Job** field, plus a unique integer (e.g., Job 001, Job 002, Job 003, etc.). All scans from the batch are then saved in the new sub-folder and the **Thumbnails** window is set to show the contents of this new sub-folder. On your next 3f scan, another new folder will be created and the **Thumbnails** window will be set to show this new folder. For other scanner configurations, no sub-folders will be created and the **Thumbnails** window will

When you are ready to use a 3f image in an actual job, do the following:

1. Use the Thumbnails window to view the folder where your 3f image is saved.
2. Double-click on the target image to open it in the main **FlexColor** window. When you do this, the window title shows a thumbnail and the name of the file you have open (when scanning, it just says FlexColor).
3. Make correction settings (histogram, texture, gradation, etc.) just as you would when working with a scan preview.
4. Make sure you have selected the correct output profile to match the way the image will be printed. This is done using the **ColorSync** or **ICM** tab of the **Setup** window (see “The ColorSync or ICM Tab” on page 47 for details).
5. Establish your crop and output size by doing the following:
 - Set the **PPI** pop-up menu to the output resolution required for the job (typically, 300 for print jobs, 72 for the web).
 - Define your crop area.
 - Set the **Width** and **Height** to match the dimensions at which you will use the image for the current job.

Note that when you have done this, the **Zoom** value will be adjusted to match your settings so far. When a 3f file is loaded, this indicates the resizing that will be made from the full resolution file (when scanning, on the other hand, this indicates the optical zoom within the scanner). You will not be permitted to make settings that result in a zoom level over 200%—such images would not be sharp enough for professional use.

6. Do one of the following:
 - Click on **Save** to export the image and add the new setup to the 3f file history.
 - Go back to the **Thumbnails** window to add your new settings to the 3f file history and make them the current default for the image (see also “Modifying the Setup and/or History” on page 70). This way, you can prepare several images and then batch process them all at once later.
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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 45 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 45 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.

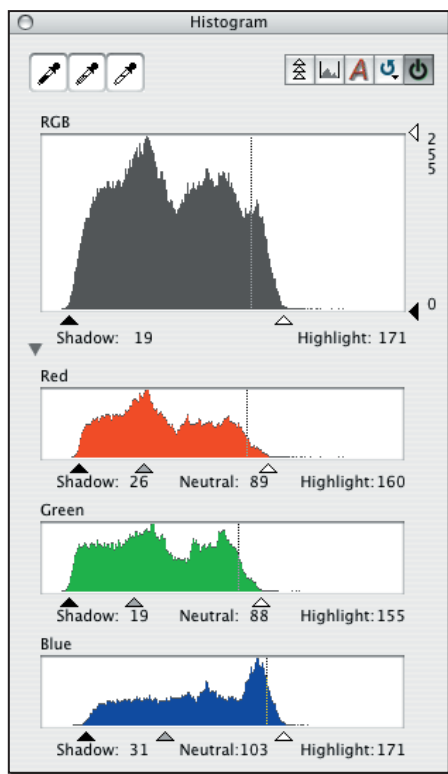
If you do not have any experience with digital images, then you should speak with an experienced professional, such as a scanner operator or digital photographer, about how these controls will affect your images. Ask him or her what to look for when you are evaluating your proof prints. You should also 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 89 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 45 for details about these settings.



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.



Keep original cast in highlight: By default, the highlight picker will set your selected point to pure white, thereby modifying the color cast in the highlights of your image. Click here to reset your highlight point to be the same in each color channel, thereby keeping the original highlight cast.



Show output histograms: By default the Histogram window shows the histogram captured by the scanner, with arrows indicating where the highlight and shadow points cut in. In the output, the brightness levels between these two points will be spread to cover the full dynamic range (0 to 255). When this is pressed (gray), the output histograms will be shown; when not pressed (white), the input histogram and highlight/shadow indicators are used.



Auto correction: Click here to apply the auto-correction algorithm to your image. FlexColor will then analyze your image and set recommended highlight, shadow and neutralization points.



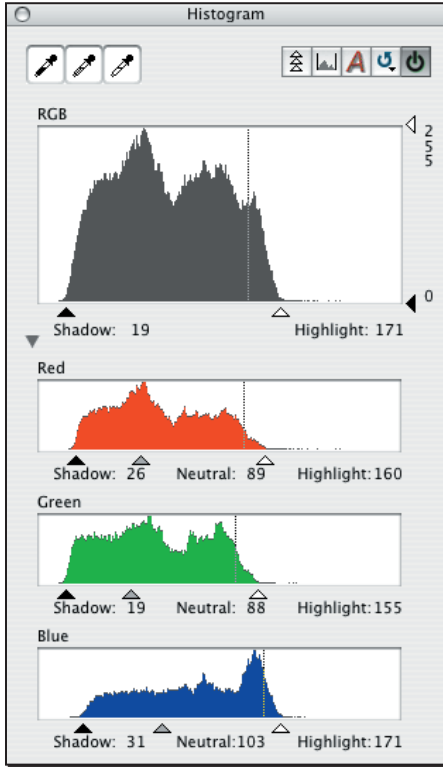
Apply settings: When this is pressed (grey), then your correction settings will be applied to the preview and final image. When not pressed (white), then the tool will hold your settings, but they will not be applied to the image.



Reset/Preset: Click once here to reset the control to the settings from your loaded setup or preset. Click and hold to open a menu for selecting, saving and deleting presets. See “Working with Presets” on page 97 for complete details about how to work with this menu.

Hide/Show Color Channels

Click on this triangle to display separate histograms for each color channel. You are able to adjust highlight and shadow values separately for each.



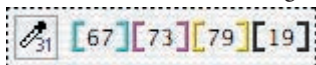
The Histogram Color Pickers

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:

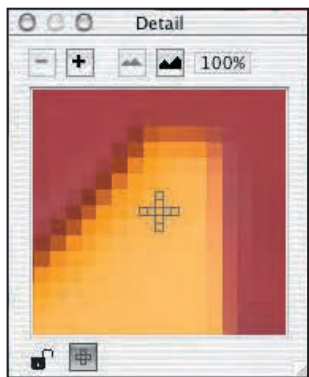
1. Click on the appropriate eyedropper button for the type of tonal range setting you would like to make. Your mouse pointer turns into the selected eyedropper.

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 outlined 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.

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- 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.
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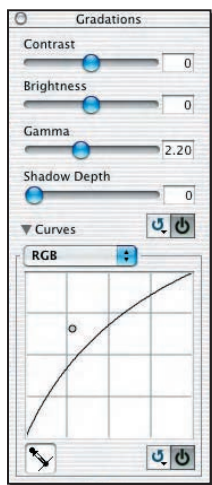
The Gradations Window

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-2 or click on the **Gradation** button in the **Correction** area of the main **FlexColor** window, or select **Gradations** from the **Windows** 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 scanner at a given gamma setting. The default is 2.0. 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.

For Apply setting or Reset/Preset see at page 88.



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



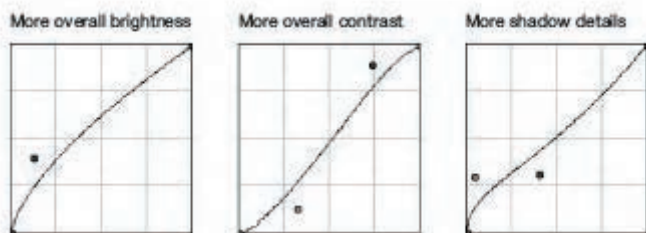
The **Gradations Color Picker** in the lower left corner of the **Gradations** window enables you to place a gravity point on the curve at the brightness of a point that you select in the preview. Click on the eyedropper icon to activate the gradations color picker, then click on a point in the preview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



- 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 36 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:

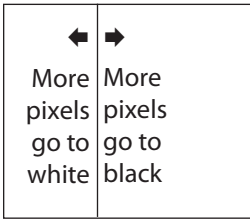
- Pressing **ctrl-tab** to step between gravity points (when more than one point is defined)
 - To move a gravity point, either drag it with your mouse or activate it and then use the arrow buttons on your keyboard. Hold down the **ctrl** key to move the point in larger increments.
 - While dragging a gravity point using the mouse, hold down the **shift**
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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 Scans

When you are scanning 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.



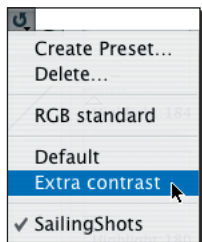
Click and drag on the line to adjust the threshold level to the right (which will cause more pixels to go to black) or the left (which will cause more pixels to go to white).

Working with Presets

The **Gradation** Window, and many of the other image-correction windows, includes a preset/reset button, which enables you to save your favorite settings, load them and/or to reset the tool to the selected preset or setup.



In all image correction windows, the preset/reset button looks the same. Click on the button just once to return to your saved preset or setup. Click and hold to open a pop-up menu for selecting preset option (see below). Initially, the loaded preset will be the one from the setup you chose for the scan. However, if you have chosen another preset, then a click on the preset/reset button will return to the saved preset settings.



The pop-up menu is divided into up to four sections, giving you the following options:

- **Create Preset:** Saves your current tool settings. A window will open in which you can name the new preset.
- **Delete:** if you have currently loaded one of your own custom presets, then this entry is available. Select it to delete the current preset (shown with a check mark in the menu).
- **Current setup setting:** the second section down from the top shows the name of the current setup. Select this entry to revert to the setup.
- **Factory presets:** the third section down from the top shows the name of the factory presets available for the current control (if any). Usually, this includes an entry called “Default”, which resets the control to have a neutral effect. Select one of these entries to use a factory preset. Factory presets cannot be deleted
- **Custom presets:** the last section in the menu lists the presets you have saved for the current tool (if any). Select one of these entries to load your custom preset.

The currently loaded preset shows a check mark in this menu. If you click once on the preset/reset button, this selection will be reloaded from disk.

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

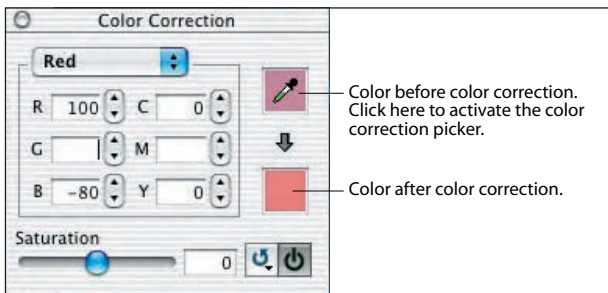


To open the **Color Correction** window, type cmd-3 or click on the **Color Correction** button in the **Correction** area of the main **FlexColor** window, or select **Color Correction** from the **Window** menu.

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.

Note also the **Apply** checkbox. When this box is checked, the color correction will be applied to your preview and saved image. Remove the check to disable color correction without erasing your settings. Click on the box to toggle the check.

The **Reset** button returns all color correction setting to neutral. It does not affect any of your other **FlexColor** settings.

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 36 for more information.



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 features more sharp, but can also bring out noise or graininess. Most typically, noise will appear first in the dark areas of the image.

Color Noise Filter Settings

The color noise filter operates on the color information in your image to remove electronic and/or film-grain “noise” from the colors. In some images, you might notice this noise manifest itself as graininess in the darkest and most saturated colors.

FlexTouch Filter

This filter can be used for eliminating dust & scratches from the image. Please note that the primary working area of the filter is the fine dust & scratches, which are only recognizable in 100% view. Very obvious scratches and large pieces of dust or hair will not be removed - a manual retouch will still be necessary in these cases.

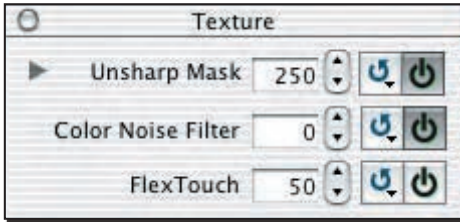
Preview

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 107 for information about how to use the **Detail** window.

Using the Texture Window

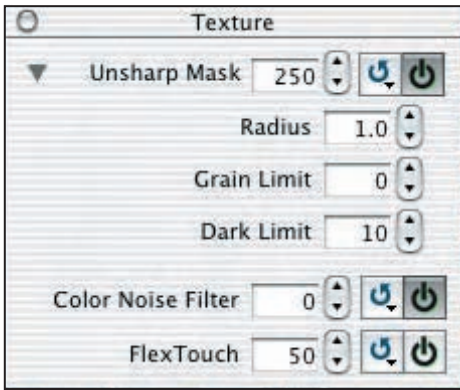


To open the **Texture** window, type **cmd-4** or click on the **Texture** button in the **Correction** area of the main **FlexColor** window, or select **Texture** from the **Window** menu.



To access either of the filter's setting parameters, click the appropriate 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:

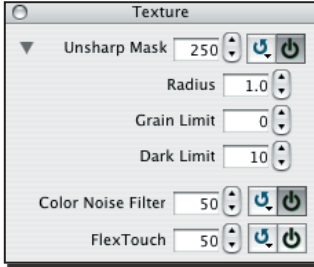
- **Apply checkbox:** Turns the unsharp masking filter on or off. When the box is checked, the filter will be applied to your final image and to the preview image (and detail images in the **Detail** window). To disable the filter, remove the check. Click on the box to toggle the check.

- **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 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.

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 42 for instructions.

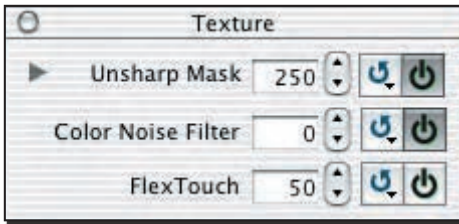
Color Noise Filter Settings

The filter works by first converting the image into the LAB color space (in which brightness information is separated from color information) and then removing graininess from the color channels. After processing, the filter transforms the image back into standard RGB data. This process essentially blurs information in the color channels, but because most of the sharpness information is stored in the brightness channel, the overall sharpness of your image will be affected much less than the color noise.



To apply the filter, open the **Texture** window and set the **Color Noise Filter** field to a value between 0 and 50. A setting of 0 effectively disables the filter; a setting of 50 gives the maximum effect. The best setting to use varies by image, so you must experiment to find the optimal setting.

FlexTouch Filter



- **Level:** Controls the strength of the filtering effect. The best way to adjust the level is to make detail views of a section in the image with dust and a section with fine details. Then turn up the level until you see an effect in the actual image details - then turn it down a few steps.

As with other image-correction setting, you have the following additional controls for managing your color noise filter settings:



Apply filter: When this is pressed (grey), then the filter will be applied to the preview and final image. When not pressed (white), then the tool will hold your filter setting, but it will not be applied to the image.



Reset/Preset: Click once here to reset the control to the settings from your loaded setup or preset. Click and hold to open a menu for selecting, saving and deleting presets. See “Working with Presets” on page 97 for complete details about how to work with this menu.

The Thumbnails Window

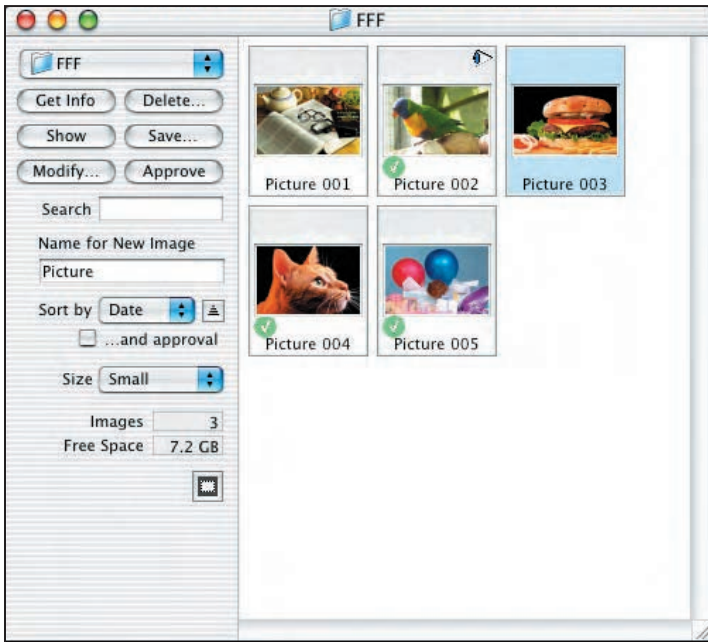
Introduction

The **Thumbnails** window works like a light table, showing you a small preview image of each of the scans made using the 3f button and stored in the currently selected folder. Click the **Folder** button to select the folder you want to use for your thumbnails. The name of the folder (ex. My Pictures) appears in the title bar of the **Thumbnails** window. 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.



Files and Formats

When you scan using the Scan 3f button, the image is scanned and 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

If you make new settings with the various tools of FlexColor while a 3f file 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 or JPEG 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 79 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:

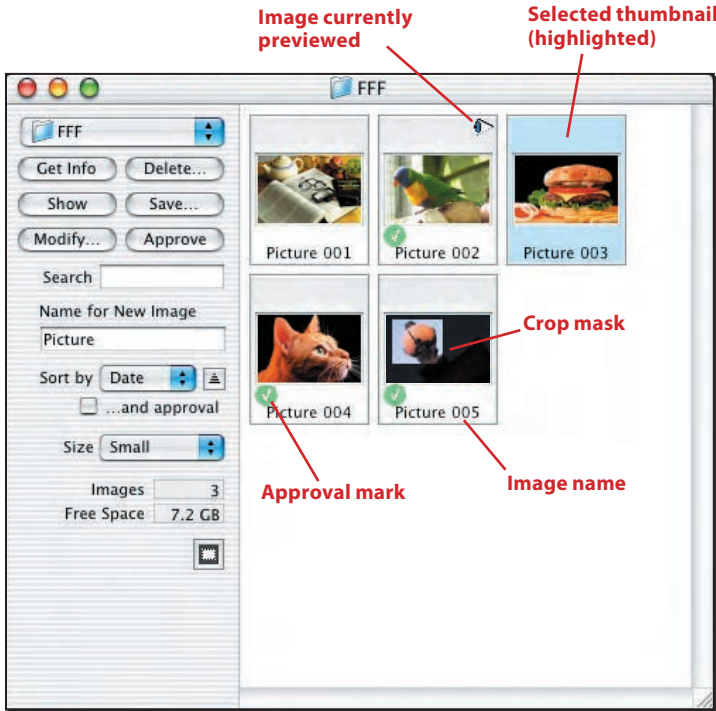
Sorting Use this pop-up menu to choose whether the thumbnails should be sorted by **Date** (the order in which they were created) or by **Name**. If you wish to reverse the sorting order click the Descending/Ascending button to the right of the pop-up. Also it is possible to sort the thumbnails by their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

Size Use this pop-up menu to choose how large you would like the thumbnails 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 3f file:



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 a thumbnail to select a single image.
- Cmd-click to select several images.
- 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 thumbnails in the **Thumbnails** window.

Working with Selected Images

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

Get Info Opens the **Info** window, which holds various information about the image, such as size, resolution, frame size 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 79 for a detailed description.

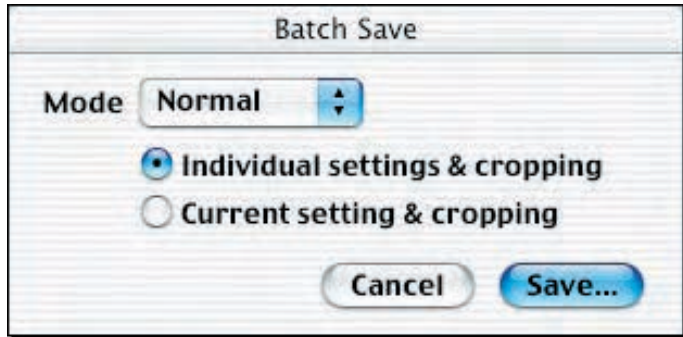
Delete Deletes the currently selected image(s). You will be asked to confirm the operation. The image(s) will be permanently deleted from your hard disk too. Pressing the command (cmd) key while clicking **Delete** will delete the selected image(s) without confirmation.

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 a thumbnail). 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 a thumbnail or clicking the **Show** button, a low-resolution image will be displayed immediately in the preview window, while 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 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 files.



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.

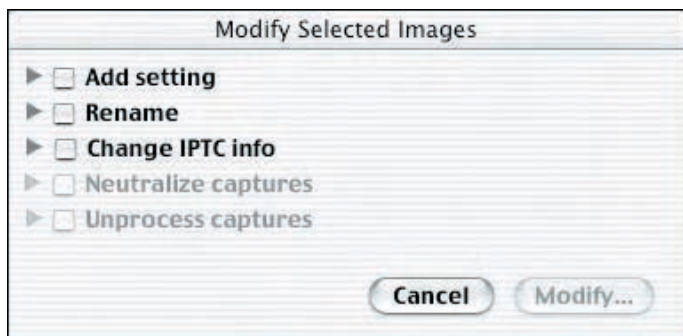
Preview: to save the selected images as a low-resolution TIFF-file for preview purposes.

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

Having selected the appropriate save options, click the **Save...** button.

Modifying Selected Images

The **Thumbnails** window gives access to many different types of information about each image. It provides settings that enable you to modify the images by adding new setups to the history, selecting a default setup, entering meta data and more.



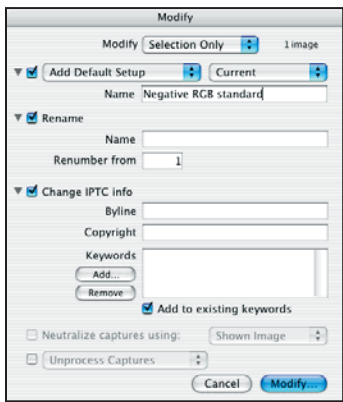
You can make these settings in two ways: using the **Info** window or by using the **Modify** window, each of which is available from the **Thumbnails** window. The two windows provide slightly different options; generally you will use the **Info** window to work with individual images and the **Modify** window to modify several images at once, though you might also sometimes use the **Modify** window for single images. The **Modify** window and its settings are described in this section; for details about the **Info** window, please see “The Info Window” on page 79.

Modifying the Setup and/or History

Each 3f file holds at least one setup, which is the setup used when the file was first scanned. Each time you export from a 3f file, the setup used for the export is added to the history. When more than one setup exists in the history, one of them is designated as the default setup, which is applied to the thumbnail and is loaded when the file is opened in the main **FlexColor** window.

You can use the **Modify** window to add a new setup, modify an existing setup and/or make your new setup the default. To do this:

1. establish the setup you wish to use by doing one of the following:
 - Load a target 3f image into the main FlexColor window and work with the image size, position and correction controls until you have the setup you need. This setup is known as the “current” setup.
 - Establish a current setup as described above and then save it as a new stored setup (see “Managing Setups” on page 36 for details).
 - Review your list of existing, saved setups and decide which of these you wish to apply to your image.
2. Go to the **Thumbnails** (light table) window and select the image or images you wish to modify. Note that the **Modify** window also enables you to choose to apply your modifications to all images or to all approved images, in which case it does not matter which images you select now (see below).
3. Click on the **Modify** button in the **Thumbnails** window to open the **Modify** window.



4. Set the **Modify** pop-up menu to match the scope in which you wish to apply the modification you are about to define. The following options are available:
 - **Selection Only**: applies your modification settings only to the images that were selected when you opened the **Modify** window.

- **All:** applies your modifications to all of the images currently open in the **Thumbnails** window (i.e., to all 3f images in the current folder).
 - **Approved:** applies your modification settings to all images marked as approved, regardless of which images were selected when you opened the **Modify** window.
5. Mark the top check box in the **Modify** window; this enables the setup-modification options.
 6. If all of the setup-modification settings are not visible, then click on the triangle next to the check box to expose them.
 7. Use the first pop-up menu to control how the new setup should be applied to each file in your scope. Choose one of the following:
 - **Add Setup:** will add your new setup to the history, but will keep the current default without changing it.
 - **Add Default Setup:** will add your new setup to the history and make this new history entry the default. The current default will still be in the history and will remain otherwise unchanged.
 - **Update Default Setup:** will completely replace the default setup with the new setup. The old default will no longer be available in the history.
 8. Use the second pop-up menu to choose the setup to apply to each file in your scope. Choose one of the following:
 - **Current:** uses all of the settings applied to the preview image currently displayed in the main **FlexColor** window.
 - **Standard:** all of the standard setups included with FlexColor are listed, grouped into negative and positive setups.
 - **User defined:** At the bottom of the menu is listed each custom setup that you have saved.
 9. If you also want to change the name and/or IPTC information for your images, you can also do that now by checking the appropriate boxes and making settings as described elsewhere in this section. Clear one or both of these boxes to prevent these changes from being made.
 10. Click on **Modify** to apply your settings.
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