oXYgen Scanning Application

User Guide

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1 Introduction

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About This Document

The User Guide contains the following chapters:

- 1-Introduction is an overview of the main operational features.
- 2-Preparation describes preparing and mounting originals on the scanner.
- 3-Tools & Palettes describes the user interface, including tools for controlling the foreground/background operations and tools for defining and editing an image.
- 4-Basic Scan introduces the basic scanning procedure for 16-bit DT files and for 8-bit CMYK/RGB files using ICC profiles.
- 5-DT Files in oXYgen Scan and Open introduces the new working environment of a split workflow, and the scanning procedure for opening DT files for editing, including setup and preview options, and for performing final scans.
- 6-Color Management describes different ICC workflows the scanning applications support, and opening and viewing scanned images in Photoshop.
- 7-Tone Reproduction includes End Points, for defining the effective density range and removing color cast, and Gradation, for further tonal adjustment and color balance.
- 8-Color Editing describes the color functions. Color Correction for HSL/CMYK Selective and Global changes; LS Curves for color corrections by modifying the luminance and saturation values; Color Correction Mask; Gray Control to modify the grays; Input Gray Levels to modify the RGB input values, and the Separation setup functions.
- 9-Sharpness describes the Sharpness function, editing the Sharpness controls and performing max detail prescan.
- 10-Special Workflows describes the scanning procedures used for special purposes and for originals other than color transparency, for example, 8-bit/16-bit direct scan, 16-bit B/W Mode, negatives, printed material, line-art, and optional procedures, such as Dot and scanning using the Oil Mounting kit.
- 11-Setup describes setup options and operation mode preferences, such as tone reproduction, densitometer and final file formats.

The *Image Correction Examples* booklet (*Catalog No. 399Z50389A*) illustrates the main functionality of the application in full color images. Throughout this user guide, specific references are given to relevant images in the booklet.

Overview

This chapter provides:

- Description of main operational features

The scanners are tabletop scanners for producing high quality color separations. The scanners are designed for maximum input flexibility, including:

- All types of originals: color transparencies and reflectives, positives, negatives, black and white, line-art and Glass-plate.
- High-resolution line-art scan, required for printers, packaging and Kanji script applications.
- A moiré elimination feature allows scanning printed material.
- Original size ranges from 35 mm up to 305 x 432 mm/ 12 in. x 17 in. or 13 in. x 18 in. (only in IQ3).
- Unlimited thickness of reflectives and up to 5 mm (3/16 in.) thickness of transparencies.

The *oXYgen Scan* application is for scanning and saving images in either 8-bit RGB/ CMYK or 16-bit RGB file with full ICC color management workflow capabilities. The *oXYgen Open* application introduces a new working environment of a split workflow that enables processing of DT files created by the *oXYgen Scan* application. A 16-bit image file can be opened in the *oXYgen Open* application for repurposing at any time from its location on a disk, or it can be retrieved from an FTP site (if sent from remote). This can be done offline without scanner or the celluloid transparency.

The *scanning* applications provide the user with professional editing tools essential for achieving top image quality and for repurposing the image for any need. The split workflow breaks the one-on-one connection between the scanner and the operator. You can have one scanner scanning at night shift and several color experts doing the processing later. Alternatively, you can have several scanners scanning high quality images, and one expert doing the processing.

oXYgen Open is available on a seat license basis, protected with a software access key. Customers requiring the *oXYgen Open* application can purchase one or more site licenses.

Main Features

The main application features are listed below.

Mounting originals

Originals can be mounted directly in the scanner, via specially designed masks, or using the optional oil mounting kit. A special slide holder is available for 35mm slides.

User interface

The *multi-level* user interface offers various tools for image editing, application control and preference setups. At the most basic level, an automatic workflow is possible, including cropping, selection of suitable tables and scanning. A more advanced level offers basic image editing, including color correction and sharpness tools.

The user interface includes elements such as *Layout display* for defining the scan area before preview, *Image display* window for interactive image editing, *Preview Browser* for controlling the operation stage, Queue Manager and palettes for selecting functions.

16-bit scan in DT mode

A DT (Digital Transparency) file is an exact reproduction of the original in a digital format. It enables you to scan the image once at the maximum quality, and save it as a 16-bit DT file that contains all the information in the original. You can later open the DT file offline for repurposing. Scanning files as 16-bit DT files is important when the final output device is not yet known.

ICC workflows

The scanning applications fully support the ICC workflows giving you better control over the quality of scanned images. The ICC workflows can be used with transparent positive RGB/CMYK images and with reflective RGB/CMYK images. When scanning with ICC workflows, you can use either input/output profiles or device link profiles. The scanning applications offer several ICC workflows to suit your scanning needs.

Direct Scan

Direct Scan allows you to define all the scanning parameters for a batch of images without performing preview or crop prescan, and send the images directly to scan.

Background/foreground operation

Image editing, including sharpness editing of max detail, may be performed in the foreground. At the same time, the scanner performs background prescans, max detail and final scans. The application handles a queue for the background operations, shown in the *Scanner Queue* window.

Multi-preview

To enhance scanner efficiency and productivity, several originals may be mounted, edited and scanned in a single run. Image editing can be done in the foreground, while other originals are processed in the background.

Multi-crop

Multi-crop enables defining and editing many crops on a single image. Each crop can be edited and prescanned separately.

Main editing functions

- **Tone Reproduction** functions for editing the tonal range of the image.
- **Color Correction** enables intuitive HSL as well as CMYK color corrections. The range of colors to be affected by your changes may be controlled.
- **LS Curves** enable you to perform color corrections in an image by modifying the luminance and the saturation values of a selected color.
- **Interactive sharpness** editing on the max detail image (in final scan resolution) saves post-processing and rescanning time.

Tools when editing preview

- **Image update** when applying changes in interactive functions.
- **Color Correction Mask** gives you control over the exact pixels in the image on which you want to make color corrections. It is convenient for interactive editing in allowing you to see the color corrections on the preview immediately, before applying the changes.
- **Split screen** to compare the before/after display after image update.
- **Floating densitometer** to measure the color at the pointer's position on the image.
- **Sample points** for measuring sample points.
- **(ICC) Soft Proofing** enables you to see on the screen what the image will look like when you use different ICC output profiles matching different output devices.

Output formats

The high-resolution final scan file is stored on the computer hard disk or scanned directly to a server. A wide range of file formats is available, such as TIFF for 16-bit files, TIFF, EPSF and JPEG. The format should suit the application you intend to use.

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Preparation

Mounting Originals 8

This chapter describes:

- Mounting originals in the scanner

Mounting Originals

This section describes the various methods for mounting originals in the scanner.

Methods for mounting originals:

- Supplied masks
  - ❒ mix format mask
  - ❒ 4x5 mask
  - ❒ 6x7 mask
  - ❒ 35-mm strip
  - ❒ slide holder
- User defined masks
- Mounting originals directly in the scanner

Note: Before mounting, make sure the Base glass, Top glass and originals are clean.

Working with the scanner is more convenient and productive with masks. Therefore, using masks is highly recommended.

The advantages of using masks include:

- Preparing the originals in advance on a different worktable, while the scanner is busy with other scans.
- Positioning the originals is easier using the mask grid lines.
- The *Base glass* is kept clean (no tape marks).
- Defining multi-preview custom made formats. The defined user formats will appear in the *Format* list of the application. After preview, each image is displayed as a separate preview.
- Prevents light penetration, therefore increasing the scan quality.

Supplied Masks

35-mm strip mask

This mask allows you to mount up to twelve 35-mm strips without a need to cut them into separate images.

Mix format mask

With this mask, you can mount up to 26 transparencies of different sizes, such as 35 mm, 6x7, or 4x5.

4x5 mask

With this mask, you can mount up to 6 transparencies slides.

6x7 mask

With this mask, you can mount up to 20 transparencies slides.

Slide Holder

The slide holder is designed for scanning up to twenty 35-mm slides (framed 35-mm transparencies). The holder has five (5) rows, each can hold four (4) slides. If necessary, a second holder can be used for scanning up to 40 slides.

To use the slide holder, perform the following:

1. To insert slides, hold the slide holder with the printed side facing you. Insert the first slide, emulsion side down and in the correct orientation, into the bottom row. Push it all the way to the end of the row.
2. Insert the other three slides in the same row.
3. When the first row is full, continue to the next row, and so on. Make sure each slide is in its correct orientation.

   Note: For efficient scanner work, it is recommended that the bottom row is filled first, and that each row is filled starting at the end of the row.

User Defined Mask

Your scanner is supplied with several identical *User defined* masks, suitable for transparency and reflective originals.

This section describes the following:

- Preparing the mask
- Defining user defined formats
- Using user defined formats

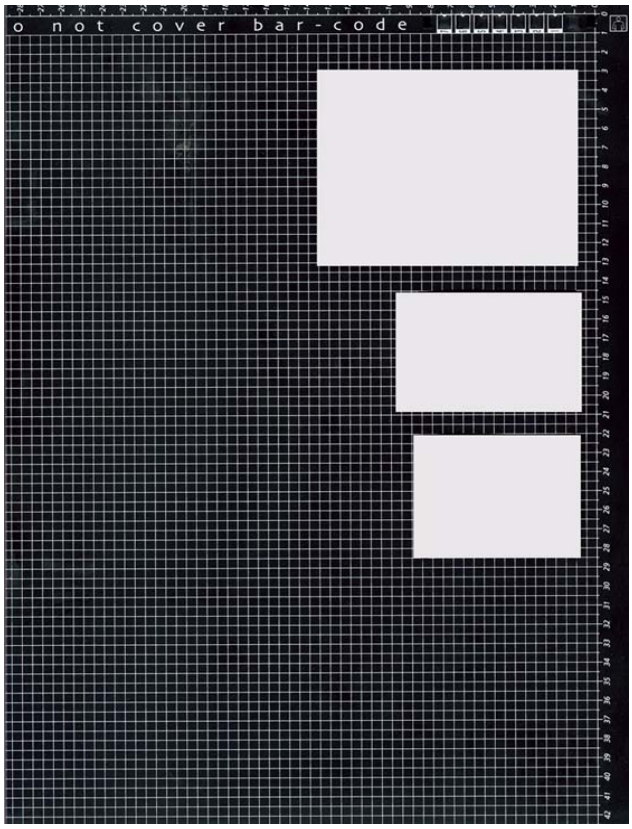
Preparing the mask

The *User defined* mask is an A3 (11 in. x 17 in.) opaque sheet; one side of the mask is for transparency, the other for reflective (as labeled on the mask). A set of barcode windows appears at one edge; the first and last barcode windows are always open. The other barcodes are not implemented in this version.

For transparency:

- Mark outlines of the originals on the *transparency* side of the mask, according to the format you want to define. The procedure for preparing the outlines should be similar to that for direct mounting in multi preview (see *Direct Mount* on page 11.). The first original outline should be near the 1,0 point at the lower right corner of the mask.
- Use a sharp knife to cut out a window for each original. Make sure not to cut the mask barcodes.

The following figure shows the user-defined mask with cut windows for five (5) transparencies.



- Mount the mask (without originals) in the scanner with the *transparency* side facing up; insert the mask's registration holes into the registration pins of the glass.

Note: The 0,0 corner of the mask is approximately above the 0,0 corner of the *Base glass*.

For reflective:

- Tape the reflectives to the *reflective* side of the mask, according to the format you want to define. Make sure the image side is up and in the correct orientation.

  The first original should be near the 0,0 point at the lower *left* corner of the mask. Taping the originals is similar to direct mounting in multi preview (see *Direct Mount* on page 11), but here you proceed from *left to right*. Make sure not to cover the barcode windows.

- To mount in the scanner, turn the mask over so that the *transparency* label of the mask faces up; insert the mask registration holes into the registration pins of the glass.

Note: The 0,0 corner of the mask is approximately above the 0,0 corner of the *Base glass*.

The following figure illustrates the prepared mask mounted for reflective scan.

Note: Since the reflective is taped to the other side of the mask, it is not shown in the figure.

Defining user defined format

The user-defined formats must be defined in the application before you can use them. With the mask you prepared previously mounted in the scanner, follow the procedure described below for transparency and reflective.

1. In the *Setup* dialog box, choose the All Board format.
2. Perform Preview.

   The *Preview display* window shows the entire mask. In transparency, the prepared windows are shown. In reflective, the taped originals are shown.
3. Crop each window/original in the *Preview display* window.

   Note: The system automatically adds 1.5 mm around your crops
4. From the *File* menu, choose Save User Defined. The *Save User Defined* menu appears.
5. From the *Save User Defined* menu, choose an option, depending on the format you want to define.
6. In the window that appears, enter the name of the new user defined format.

   If you define a new format under an existing format name, the new format replaces the previous one. To delete a user format, delete the format file from the *Tables* folder.

Using user defined formats

When using the mask for transparencies, make sure the originals are taped to their windows, emulsion side down.

After application restart, the user-defined formats appear in the *Format* options in the *Setup* dialog box. Select the desired format when scanning according to this format.

Direct Mount

Originals are mounted in the scanner by placing them directly on the Base glass. You can mount one original for single preview or several originals for multi-preview.

For single preview:

- Tape the original to the Base glass, placing the top right corner of the original near the 0,0 corner of the glass (lower right corner). Place transparencies with emulsion side down, and reflectives with image side down.
- It is recommended that if your original is a *non-standard* format, you should note the size of the original by checking the vertical and horizontal scales of the glass. This is important when using the *Layout display* window.

Tip: When scanning a thick reflective such as a book, it is possible to scan with the *Top door* open

Note: For high enlargements, we recommend you to use oil when mounting originals. For more information, refer to *Oil Mounting* on page 141.

For multi-preview:

In *multi-preview*, all originals are taped to the *Base glass* and scanned in a single run. The originals must be of the same type (transparency or reflective), but may be of different sizes and media (positive and negative).

- Tape the first original near the 0,0 corner of the glass, same as for *single preview* (see above).
- Tape the other originals proceeding toward the lower left corner of the Base glass, making sure the originals do not overlap. If necessary, continue to the next row. It is recommended to place the originals in an orderly way, and not spread them randomly all over the board.
- If you intend to use the *Layout display* window, you should note the total size of the area occupied by the originals by checking the vertical and horizontal scales of the glass.

For further details, refer to *Performing Basic Scan* on page 38.

3

Tools and Palettes

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Overview

In this chapter you will learn how to use the application tools and palettes. The keyboard controls and shortcuts appear at the end of the chapter.

The application tools controlling the foreground/background operations:

- Preview Browser
- Scanner Queue window
- Layout display
- Windows palette
- Scan palette

Refer to *Layout Display* on page 45 for a detailed description of the Layout display.

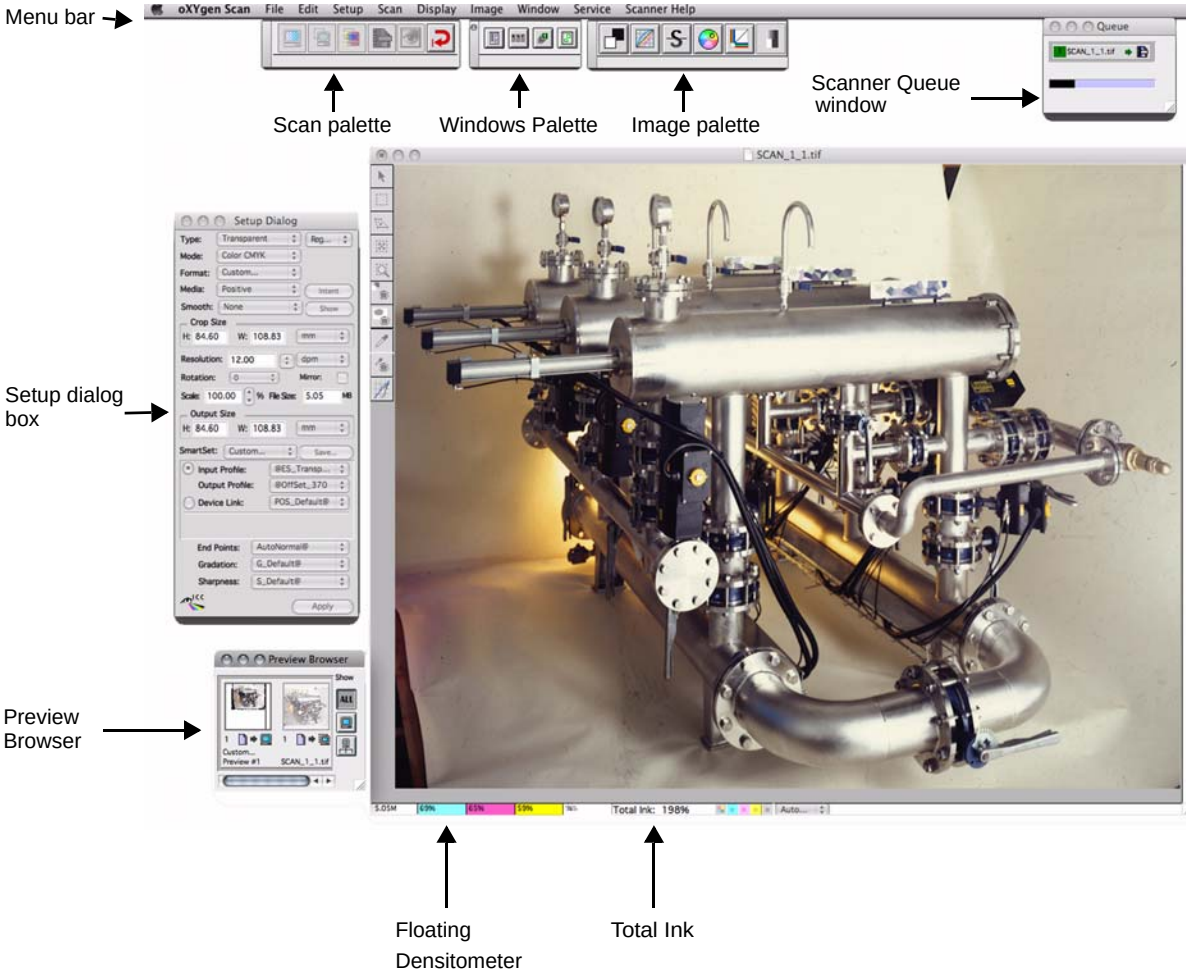
The application tools for defining and editing an image:

- Setup dialog box
- Image display window with its tools and display options
- Image palette

The *Setup* dialog box is described in *Setup Mode* on page 38.

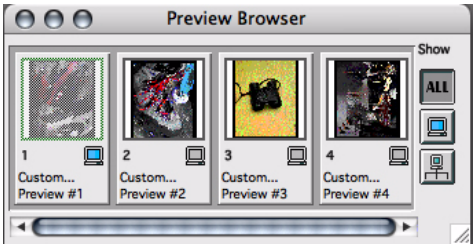
As with other Macintosh applications, the window must be active if you want to use it. Click the window to activate it. (The *Setup* dialog box and the palettes are always active).

The following figure is a schematic of your desktop, showing the various windows and tools.



Preview Browser

The *Preview Browser* controls the operational stage of the previews.
It also gives the status of each original in the scanner.



Each window in the *Preview Browser* represents an image. An empty gray window indicates that the image has not been previewed. After **Preview**, **Crop Prescan** or **Max Detail** an image thumbnail appears in the window.

Use the Preview Browser to control the following operations:

- To display an image in the *Image display* window, double-click its image thumbnail.
- Selecting images into the *Queue* window for preview or final scan For preview, click the empty gray window. For scan, click the image thumbnail (this is possible only if the *Image display* window is closed).

  Note: To select more than one image draw a box enclosing the images, or click each image while pressing Shift. To deselect an image, click while pressing Shift.

The Preview Browser provides the following status information:

- Format and number of originals in the scanner, and the file names of scanned images.
- Specific icons indicate if preview, crop prescan, max detail or final scan were performed. A blue icon and grey background means that the image is interactively modified.
- An arrow appears below the thumbnails of images currently in the queue waiting to be scanned.
- The thumbnail of an image currently displayed in the *Image display* window appears dimmed.

The three display options of the Preview Browser

Click the relevant icon to choose the display option:

Show All; expanded *Preview Browser*, showing all thumbnails (all previews, crop prescans and max details).

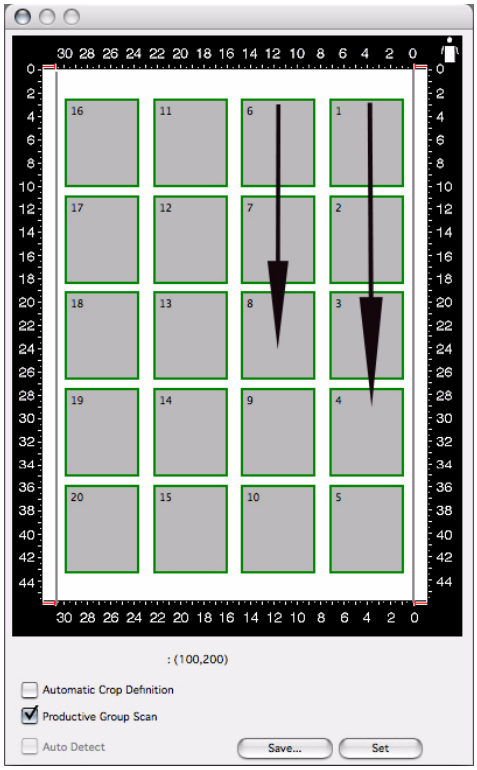
Show Previews; shows only Previews (one thumbnail per preview).

Show Preview family; shows one Preview and its crop prescans and max details .

Numbered Mask Display

Numbers appear on the mask display, indicating the order in which the images are scanned.

The recommended scanning order is to start from the upper end of each column down to the lower end, beginning with the column that is farthest to the right, as shown in the figure.



Scan Palette

The *Scan* palette is used to perform preview, crop prescan and final scan, and to restart the application. The *Scan* palette is always displayed on the desktop when the application is open. The echo line, at the bottom of the palette, describes the icon at the pointer's position. The active icons depend on the current mode of operation.

To select a function, click its icon. When an image is displayed in the *Image display* window, the selected function is performed on the image; when an image is not displayed, the function is performed on selected preview thumbnails in the *Preview Browser*.

The Scan palette includes:

Preview icon; active in Setup mode, when there is an image to be previewed.

Prescan icon; active in Preview mode, when a crop (not yet prescanned) is defined on the displayed Preview. To prescan all crops on the Preview, press the **<Option> key and click the multi-prescan icon that appears**.

Scan icon; active in *Preview* mode, when there is a preview or crop to be scanned. To scan all crops on the *Preview*, press the <**Option**> key and click the *multi-scan* icon that appears.

Fast Pre-Scan; shows the rotated crop in the same size as it was displayed in the original preview. Fast Pre-Scan is recommended when a crop is large enough for further editing.

Photoshop icon; allows you to open the scanned image in Photoshop with a single click.

Restart icon, to return the application to *Setup* mode.

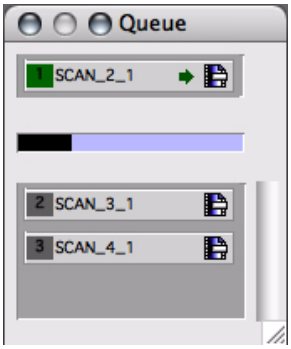
Note: The *Scan* palette functions can also be selected from the *Scan* menu in *Menu bar.*

Scanner Queue Window

The *Scanner Queue* window manages the background operation of the scanner, that is, manages your scanning requests.

Images selected from the *Preview Browser* for preview or scan, enter the *Scanner Queue* window. Crop prescan and max detail requests also enter the queue. The item is scanned when it reaches the top of the queue, and a *Progress indicator* appears below this item. You can edit the queue, as explained below.

Note: When you enter the application or after Restart, the queue is empty.



Scanner Queue window with: max detail currently being scanned, crop prescan group, one preview, and one final scan.

The queue order is according to a fixed priority. The priority order is (from high to low): max detail, preview, crop prescan, and final scan. When a max detail with defocus is requested, the queue is suspended. Within each priority group, items are arranged according to the order in which they entered the queue.

To minimize the *Scanner Queue* window, press the *zoom* box (upper right). The window then shows only the item currently being scanned and a *Progress indicator*. In the full *Scanner Queue* window, the scroll bar on the right side is used to scroll the window.

Each queue item has the following:

- Serial number, indicating position in the queue. The item currently being scanned is number 1 with an arrow, and colored green. Serial numbers are constantly updated, as items enter or leave the queue and/or you edit the queue.
- Image file name.
- An icon indicating if the item is waiting in the queue for preview, crop prescan, max detail or final scan.

Editing the queue:

- To rearrange the queue, select and drag the item to its new position. All other items are automatically rearranged.
  In **Prescan All** or **Scan All**, items belonging to the same *Preview* are grouped together (enclosed by a box). You cannot divide the group, or move a group item.

  Note: If grouped items are processed when a max detail enters the queue, the group is divided. The max detail enters the top of the queue and the unprocessed group items are scanned after the max detail

- To delete an item or a group waiting in the queue, select it and press the <**Delete**> key. You cannot delete items within the group.
- To delete an item currently being scanned (the top most item), select it and press <**Delete**>. The system prompts for one of two options: delete the item from the queue, or re-enter it into the queue. If you choose to re-enter, the item enters the queue according to its priority. For example, a preview is re-entered as the last item in the preview group.

Windows Palette

The *Windows* palette opens and activates the following application windows:

- Setup dialog box
- Preview Browser
- Scanner Queue window
- Layout display window

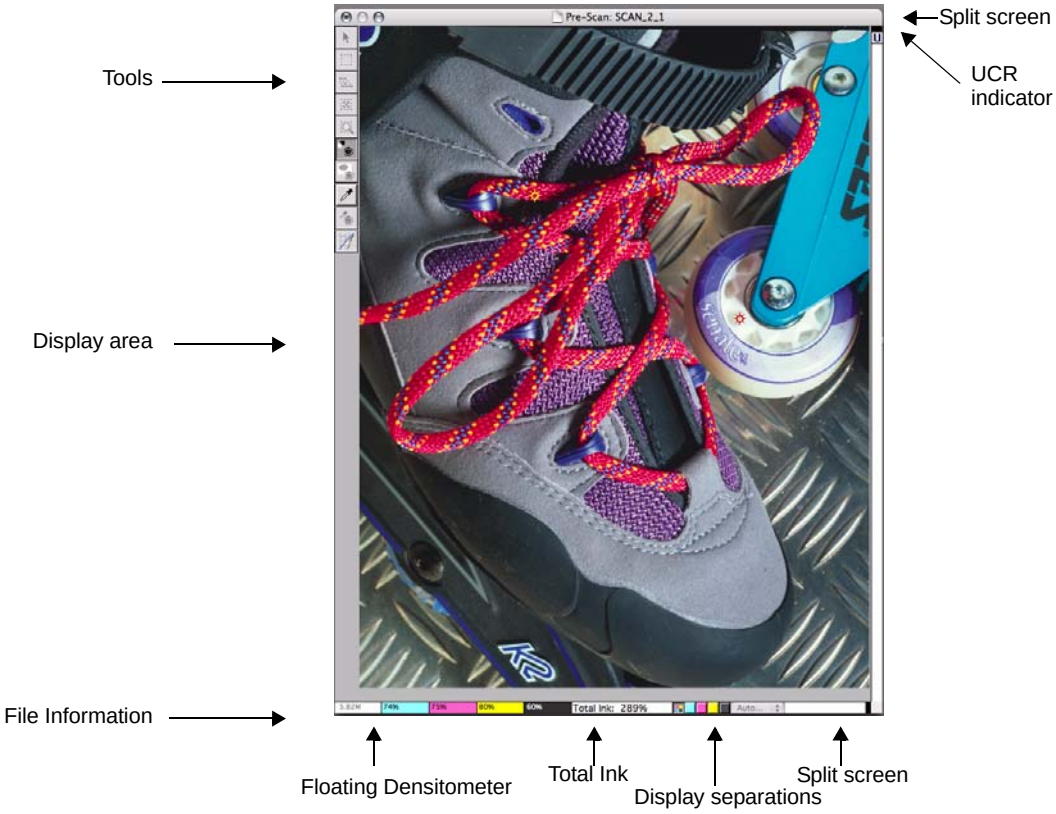
In the *Windows* palette, click the relevant icon to open the requested window (if it is closed) and activate it. This is also useful if the window is hidden by other windows.

If the *Windows* palette is not open or not shown, select **Windows palette** from the *Windows* menu in *Menu bar*.

To close the *Windows* palette, click its *close* box.

Image Display Window

The *Image display* window is used for interactive work with the image. The window includes the display area and various tools and display options that are arranged along the left and bottom sides of the display area. The following figure illustrates the *Image display* window.



Display Area

After *Preview*, the first *Preview* image is automatically displayed in the display area. To display a prescanned image, double click its image thumbnail in the *Preview Browser*.

For the displayed image you can:

- select an editing function; in interactive functions, you can view applied changes and compare the *before/after* display. See *Split Screen*, below. **Color Correction Mask** allows you to see the color corrections on the preview immediately, before applying the changes.
- select a cropping or sampling tool.
- choose a display option.

In addition, the letters U, G or A appear in the upper right side of the display area if UCR, GCR or UCA is active during preview.

For further details, refer to *Separation Setup* on page 112

Split Screen

Split screen is a convenient tool during interactive editing, for comparing the image before and after update. When you open an interactive function, two handles in the shape of black rectangles appear at the right side of the *Image display* window; the upper handle for *horizontal* split, the bottom handle for *vertical* split.

- Drag the *horizontal* (or *vertical*) handle to the location at which you want to split the image. In *horizontal* split, the area above the marker is **before Apply**, the area below the marker is **after Apply**. In *vertical* split, the area to the left is **before**, the area to the right is **after**.
- For comparison purposes, you might want to display the **same** image area in the two sections of the split window. Using the scroll bars, scroll the split image so that the same image area is shown in each section.
- Move the handle to reposition the marker; double click the handle to cancel the split screen and restore the full display.

  Note: The densitometer reading shows both the before and after values. Refer to *Floating Densitometer* on page 31.

Tools and Display Options

This section describes the cropping and sampling tools, and the display and information options that appear along the left and bottom sides of the display area. These are used when viewing the image and when performing interactive editing.

When the *Preview* is first displayed in the *Image display* window, a crop frame encloses the image. This is the *Full image* crop, set according to the selected format. The area enclosed by the crop frame is the final scan area. Using the cropping tools, you can change the crop size and position.

Note: The following elements are described in the order in which they are arranged, starting from the upper left corner.

System Default Pointer

This is the system default pointer, used to change the position and size of the crop frame.

1. Select the pointer and move it inside the crop frame.
2. When you press the mouse button, the pointer changes to a *Hand*. Drag the *Hand* to move the frame, and release the mouse to set the new position.

To change the crop size:

1. Move the pointer to a frame corner or to the center marker of one of its sides. The pointer changes to a set of arrows, pointing in the directions that you may move the frame.
2. Press the mouse button and drag the frame side or corner; release the mouse to set the frame size.

Cropping

To define and draw a new crop.

Select the tool and click a point in the image to mark the top left corner of the crop.

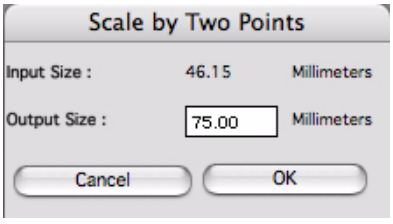
3. Press and drag the mouse button to the desired lower right corner. Release the mouse to set the crop.
4. To move or change the crop size, use the system default pointer (see previously).

   Note: To reset the crop to the Full image crop.

Scaling

To set the enlargement of the final scan, using the Two-point method. In the Two-point method, the system calculates the scale based on the input and output sizes. The input size is the actual distance between two points on the original; the output size is the distance between the two points in the final scan; the scale is the ratio between the output and input sizes.

1. Select the *Scaling* tool and click the first point in the image (do not release the mouse).
2. Drag the mouse to the second point and release. The *Scaling* dialog box opens. The *Input Size* is the original distance between the two marked points.



3. In the *Output Size* field, enter the output distance between the points (that is, the desired distance in the final scan).
4. Click **OK**. The system calculates the new value and updates the **Scale** value in the *Setup* dialog box.

Reset Crop

Click this tool to set the crop to the *Full image* crop.

Max Detail

To perform a max detail prescan. This option is useful for examining the results of sharpness, and/or edit the sharpness parameters.

For details, refer to *Performing Max Detail* on page 123

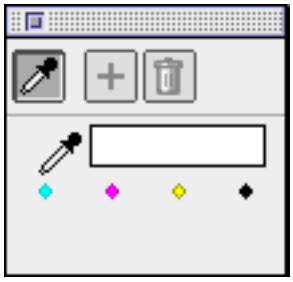
Sample Points

Sampling points from the image is possible when performing interactive image editing. Two tools are relevant to this function: **Sampler** and **Show/Hide Sample Points**. See the following description.

Sampler

The *Sampler* is active in interactive editing functions, such as **Gradation** and **End Points**. It is used to sample points from the image and see the effect of your changes.

1. When an edit dialog box is open, click the *Sampler* tool. The *Sample Points* dialog box appears.

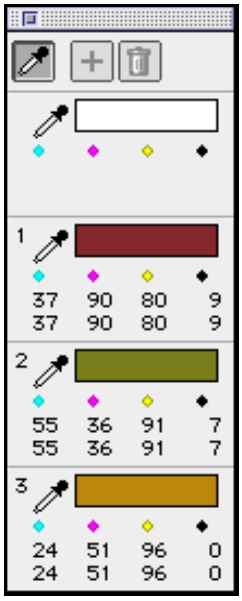


2. Using the *Sampler*, click a point on the image.

   Note: To sample points, the *Sampler* must be active. If inactive, click the *Sampler* at the upper left corner.

   The CMYK or RGB values and the color patch of the selected point are shown. This is a *floating* sample point, as it changes when you click the *Sampler* on other points.

3. If the sample points are not shown, click the icon to show the points on the image. To open the *Sample Points* dialog box or to add/delete points, you must select the *Sampler* tool.



4. If the sample points are shown, click the icon to temporarily hide them. The points are not deleted; if you click the icon again, they reappear.

   Note: The sample points are deleted when you exit the application.

Before image editing changes, the *After* colors of the sample points are identical to the *Before* ones. However, when using an editing function, such as Gradation, your changes are shown in the after colors.

1. To close the *Sample Points* dialog box, click its *Close* box. (In addition, the dialog box automatically closes when you exit the editing function.) The *fixed* sample points remain marked on the image when the *Sample Points* dialog box is closed.
2. To open the *Sample Points* dialog box, click the *Sampler* tool. The dialog box opens with the existing *fixed* sample points.

HSL

Click the *HSL* icon in the dialog box to display the HSL values of the sampled points. This is useful when using the Color Correction function.

Show/Hide Sample Points

Active after sample points are selected with the *Sampler.* This tool is used to temporarily show or hide the sample points on the image.

Line-art/B/W Display

Active only in *Line-art* mode, where two display options are available. Click the requested icon:

Line-art (for black and white pixels only)

B&W (for black, grays and white).

Note: In *B&W* mode, there are no display options.

Show/Hide End Points Markers

Active when the *Preview* window is shown. This tool is used to temporarily show or hide *End Points Markers*.

For details see *Show End Points*.

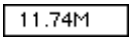
Show/Hide Sharp Effects

Active after **Max Detail**, and only if the max detail is displayed in the *Image display* window.

The results of sharpness editing can be viewed only in max detail and only if the sharp effects are shown. The max detail image is automatically displayed with the sharp effects on. Click the icon to show or hide these effects, as desired.

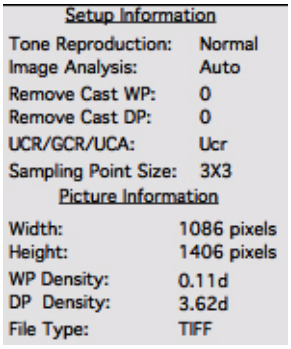
For details, refer to Max Detail in *Interactive Sharpness Editing* on page 123.

File Information



The file size appears at the bottom left corner of the *Image display* window. The file size in KB (thousands of bytes) is the size of the final scan file, based on current scan file settings.

- Click *File Information* at the bottom of the *Image display* window to open the *File Information* window.



Floating Densitometer

The floating densitometer, at the bottom of the *Image display* window, shows the values at the pointer's current location. The densitometer reading depends on the selected mode and on the defined densitometer setup.

For more information, refer to *Densitometer Setup* on page 152.

When using **split screen** in interactive editing, the densitometer reading shows both the before and after values for each separation.

Display Separations

Only for **CMY**K and **RGB Color** modes. The *Display separation* fields appear at the bottom of the *Image display* window, to the right of the floating densitometer.

The available display options are determined by the selected **Mode** in the *Setup dialog* box:

For **CMYK** color: **CMYK**, **Cyan**, **Magenta**, **Yellow**, **Black**

For **RGB** color: **RGB**, **Red**, **Green**, **Blue**

For the displayed image, click the icon of the separation you want to display. Choose all separations (CMYK or RGB) or a single separation.

When you change the **Mode**, the Display separation fields are updated accordingly.

Note: In B&W and Line-art modes, only the black separation is displayed.

Image Palette

The *Image* palette appears after *Preview* and if an image is displayed. Its icons represent the main image editing functions. The echo line at the bottom of the palette, describes the icon at the pointer's position. To select a function, click its icon. The function dialog box appears and the palette is disabled temporarily until you exit the dialog box.

Tip: Split screen is available for all interactive functions accessed in this palette (see *Split Screen* on page 25).

Image palette features:

- Active icons depend on the *Mode* and *Media* of the displayed image. For example, *Filmtype* is active only for color negatives.
- The icons are arranged, from left to right in the order in which it is recommended you should use the functions. *End Points* is the first icon since it is the first function you should use if image editing is necessary.

The Image palette icons (from left to right):

End Points, in the *Color* and *B&W* modes to adjust the *End Points*.

Gradation, in the *Color* and *B&W* modes to create/modify *Gradation* tables.

Sharpness to edit the *Sharpness* table.

Color Correction, only in the *Color* modes to edit the *Color* table.

LS Curves, to perform color corrections in an image by modifying the luminance and the saturation values of a selected color.

Line-art, only in the *Line-art* mode to set the *Line-art* controls.

Keyboard Controls

The following keyboard controls are available in the application.

Note: All keyboard controls are listed under *Help* in *Scanner Help.*

Control

To see *only* the crop area. Press the <**Control**> key to display the area outside the crop in white.

Option/Alt

Press the <**Option/Alt**> key to change the *Prescan* and *Scan* icons in *Scan* palette to *Prescan All* and *Scan All*.

Shift in Image display window

To maintain the crop proportions when changing the crop size. When you press <**Shift**>, the frame increases/decreases in size, but the height/width ratio does not change.

Shift in Preview Browser

To select multiple items in the *Preview Browser* window. Press <**Shift**> and click on the items.

Shift in Queue window

To select multiple items in the *Queue* window. Press <**Shift**> and click on the items.

Shift in Sample Points dialog box

To add fixed sample points. Press <**Shift**> and click on the sample points.

Shift in End Points dialog box

In **Set White (Dark) Pt**, if you press <**Shift**> while setting the White (Dark) point, the *Sampler* remains active.

Delete in Image display window

To delete the active crop.

Note: If the active crop is a *Full picture* crop, it cannot be deleted.

Delete in Setup dialog box

To delete the value in the active text field.

Delete in Queue window

To delete selected items from the queue.

Tab in Image display window

To cycle among the crops until the desired crop is active.

Tab in Setup dialog box

To move to the next text field.

Keyboard Shortcuts

The following keyboard shortcuts are available in the application.

Note: All keyboard shortcuts are listed under *Help* in *Scanner Help*.

<⌘>BB&W or Line-art display in Line-art mode

<⌘>DDuplicate Crop

<⌘>EOpen the End Points function

<⌘>FShow/Hide Sharp Effects

<⌘>GOpen the Gradation function

<⌘>HPerform Crop Analyze

<⌘>JOpen the Color Correction function

<⌘>KOpen the Operation Modes Preferences

<⌘>MOpen the Sharp function

<⌘>NOpen the Negative Balance function for Negatives

<⌘>PPerform Preview

<⌘>QQuit application

<⌘>RRestart application

<⌘>SSave Params for Scan

<⌘>TSet the Line-art threshold in *Line-art* mode

<⌘>UUnlock Crop

<⌘>WClose Window

<⌘>+ /-Increase/decrease the Max Detail area

<⌘>0Show All Separations

<⌘>1Show Cyan Separation

<⌘>2Show Magenta Separation

<⌘>3Show Yellow Separation

<⌘>4Show Black Separation

4 Basic Scan

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Overview

In this chapter, you will learn how to:

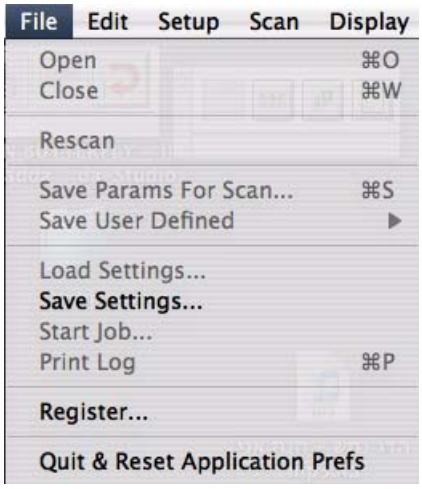
- perform a basic scan of a transparency/reflective in the *RGB/CMYK*, *B/W*, *Line-art* or *DT* mode
- use cropping and scaling tools, Smartset tables and different layout formats
- define setup parameters, and perform preview, prescan and final scan

Entering Application

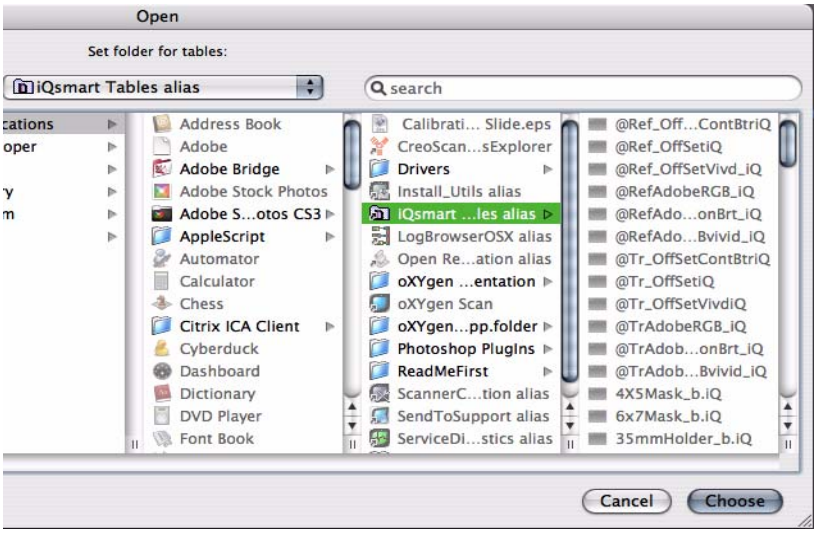
1. Make sure that your scanner is turned on.
2. Double click the scanner icon located in the *oXYgen* folder.

   The *oXYgen* opening display appears on screen for a few seconds, followed by the *Setup* dialog box and *Menu bar*.
   You have now entered the scanning application.

   Note: If the application cannot locate the *Tables* folder, a folder selection dialog box appears. In the dialog box, select the *Tables* folder and click Set.
3. To close the application, from the *File* menu in the *Menu* bar, select **Quit**
4. To close the application and return to the default parameters, from the *File* menu in the *Menu* bar, select **Quit&Reset Prefs**



When you re-launch the application you are prompted to relocate the *Table* folder.



Send to Support Feature

The Send to Support feature centralizes important log information as you work.

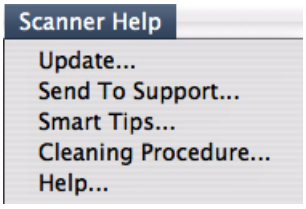
To activate Send to Support, use one of the following methods:

1. From the menu, select Help>Send to Support.
2. Open the oXYgen Scan folder, and then click the Send to Support icon.

   Log files containing important information are automatically generated and centralized in a Send to Support folder on the desktop.

To report log information:

➢ Send the contents of the Send to Support folder on the desktop directly to the Kodak Response Center or via your Kodak support representative.



Performing Basic Scan

This section describes how to perform a basic scan:

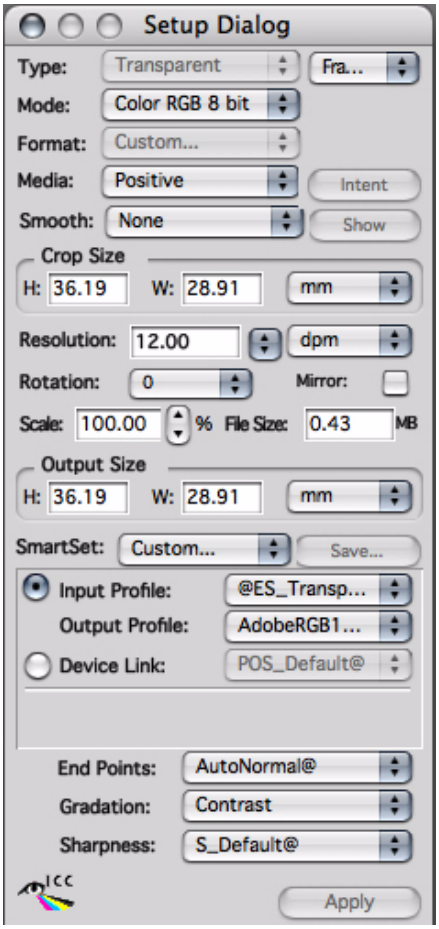
- in the *RGB/CMYK* mode using ICC profiles to achieve optimal color conversion and soft-proof the results on the screen.
- in the *B/W* or *Line-art* mode.

Note: ICC profiles (input, output, or display) store a map from the device-dependent color space (usually some form of RGB or CMYK) into a device-independent color space (the PCS). Such profiles are created by designated software packages. The Scanners are fully compatible with profiles built by any profiling applications on the market.

For more information about the ICC workflows, refer to *ICC Workflows* on page 74.

Setup Mode

The following figure illustrates the *Setup* dialog box in *Setup* mode, when you first enter the application.



Tip: Restart in the Scan palette can be used to re-enter the Setup mode

The *Setup* dialog box defines the various parameters to be used during the *Preview* process.

The Setup dialog box is divided into three sections:

- Original and format parameters
- Size and scale parameters
- Image adjustment parameters

Setup Parameters

Type

➢ From the *Type* list, choose **Transparent** or **Reflective**, according to the type of original.

➢ For **transparent**, choose one of the options:

- **Regular** - for masked or direct mount originals
- **Framed** - for framed originals
- **Mixed** - for mixed mask

➢ For **reflective**, choose one of the options:

- **Regular** - for reflectives with a smooth surface
- **Pasteup** - for reflectives that have something pasted on them, such as a label

Mode

➢ From the *Mode* list, choose **Color CMYK**, **Color RGB**, **B&W**, or **Line-art** depending on desired output.

- Choose **Color CMYK** for printing systems, and **Color RGB** for RGB printers and multi-media systems, such as presentations and Web.
- Choose **B&W** to create a B&W file from a color image taking into consideration all the image colors, or to create a B&W file from a B&W image. One separation is created in the final scan.
- Choose **Line-art** for a *Line-art* scan, where the created image is in black and white only.

  B&W, and Line-art scans are described in *B&W Mode* on page 137 and *Line-art Mode* on page 138

  Note: CopyDOT and Descreen are available only if you have purchased the *CopyDOT* application.
- Choose **DT File** for scanning 16-bit images.

  For more information, refer to *Scanning DT Files in oXygen Scan* on page 68

Format

The application is supplied with standard layout formats according to the selected mode. The layout format options for Color RGB/CMYK and B&W modes are shown on page *137*. Line-art mode is discussed in *Line-art Mode* on page 138. In addition to the standard layout formats, user defined formats that you have created are also listed. The various formats are detailed further on.

Creating user layout formats with the user defined mask is described in *User Defined Mask* on page 9

➢ From the *Format* list, choose your layout format; if your format is not listed, use the *Layout display* to modify the scan area (see *Layout Display* on page 45) or choose a layout format closest to your format and modify it after *Preview*.

Note: All standard layout formats are defined starting at the 0,0 corner of the *Base glass*.

The *Preview Browser* is set according to your selection, and the layout format name appears in the *Preview Browser.* In single preview layout formats (such as **35mm**), a single preview window is shown. In multi-preview layout formats, the number of windows depends on the number of previews.

Note: When you first enter the application, the *Format* and *Preview Browser* are set according to the previous run.

Strip 80 mm (transparency)

This option is used to scan many originals of a width up to 80 mm in a shorter scanning period. The originals are placed along a 80-mm wide strip starting at the 0,0 lower right corner, and extending the entire length of the *Base glass*. The scanner prescans the entire strip and displays the originals as a *single preview*.

35 mm, 6x6, 6x7, 4x5, 8x10H/V (transparency)

Single preview formats for originals that correspond to the format size.

All Board (transparency/reflective)

In **All Board**, the entire board is scanned, and the originals are displayed as a *single preview*.

35-mm slide holder / 2 x 35-mm slide holder

Multi-preview formats for 35-mm slides that are mounted in the scanner using a specially designed slide holder.

Note: The 2x35-mm slide holder is only available in the Eversmart family

See *Mounting Originals* on page 8 for details on using the holder.

35 mm strip/mix format supplied masks

For details on these formats, refer to *Supplied Masks* on page 8.

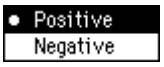
When you need to scan strips of 35 mm, or originals of various sizes, choose the format that represents the mask you use.

User defined formats

User defined formats are custom-made transparency and reflective formats. User defined formats for masked originals are described in *User Defined Mask* on page 9. User defined formats for unmasked originals are described further on in the *Layout display*.

Note: Custom format appears if you modify the scan area in the *Layout display* in the current run without using save (see *Layout Display* on page 45).

Media



From the *Media* list, choose **Positive** or **Negative**, according to your original. In *multi-preview*, if you have positive and negative originals, choose the option that is relevant to most of the originals. After *Preview*, choose the correct option for each preview.

Smooth

In some cases, a certain amount of smoothening is required:

- The dot pattern might be visible in printed material. **Descreening** blurs the dot pattern without degrading the image.
- Lines might appear with jagged edges. **Anti-alias** minimizes the pixel contrast at the edges, causing them to be smoother and blend in the background. It can also remove unwanted moiré.

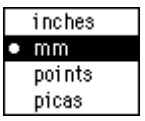
Smooth options include:

- **None**; no smoothening effect.
- **Descreen1** to **Descreen10**; descreening levels for printed material.

  For more information, refer to *Printed Material* on page 135
- **Anti-alias normal, Anti-alias strong**; two levels of anti-alias for lines.

  Note: The effect of smooth can be seen in the final scan or in max detail. For further details, refer to *Interactive Sharpness Editing* on page 123.

Unit of Measurement



Choose inches, mm, points or picas as the unit of measurement for the *Crop Height/Width* and *Scan Height/Width* fields.

Scale

Sets the enlargement by which the scanner scans the original. A scale of 100% indicates that the scanned file is the same size as the original.

Mirror

Check the **Mirror** box to create a mirrored image of the scanned original.

Note: When mounting a duplicate, place it emulsion side down and use Mirror to obtain a correct image.

The Mirror option is available only before previewing the images.

Resolution

Resolution specifies the number of dots (pixels) per millimeter or inch of the final image, and is related to the halftone screen.

When setting the resolution, you should consider the screen. For higher or finer screens, the resolution value should be higher to capture the additional information. The minimum output resolution is 2 DPM (51 DPI). **Resolution** and **Scale** are related, as explained in *Scale* on page 43.

A rule of thumb formula, commonly used to determine the average input resolution, is as follows:

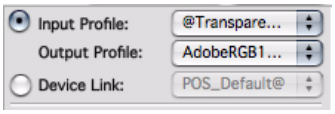
Halftone screen per inch (or per mm) x 2.0 = resolution in dots per inch (DPI) or per mm (DPM).

For example, an image to be output as an 150 LPI halftone is calculated: 150 x 2.0 = 300 DPI. Therefore, the resolution is set at 300 DPI.

- Choose **DPM** (dots per millimeter) or **DPI** (dots per inch) as the resolution unit of measurement, and enter the requested resolution value.

Image Adjustment Parameters

ICC Profiles



For scanning with ICC profiles, select as an input profile your scanner profile that reflects the type of your original (transparent, or reflective). As an output profile, select your output device profile. Alternatively, you can select a device link profile.

A *Device Link* profile is a combined input and output profile - a link between the scanner and a specific output device. It allows you to fine tune the transformation and improves your color quality control.

End Points, Gradation and Sharpness

Make sure to set the End Point, Gradation and Sharpness parameters according to your scanning needs.

SmartSet

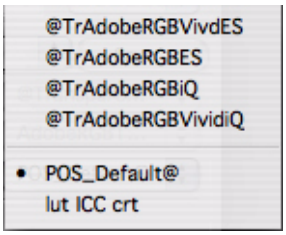
The Smart Set feature automatically adjusts the scanning parameters of an image according to preset input categories, allowing you to achieve print-ready quality with a single keystroke.

You can choose from among several, pre-defined *SmartSet* tables that are related to certain subjects, such as people, jewelry, or outdoor scenes, and can be applied to scans. Each *SmartSet* table is constructed to accommodate a broad range of variables within a general subject matter. Every *SmartSet* table is comprised of several different tables that normally would have to be loaded manually.

SmartSet Tables are used in the following functions:

- Device Link
- End Points
- Gradation
- Sharpness

Make your selection in *SmartSet* according to the main subject of your scan. The application loads an appropriate group of tables.



Note: In the SmartSet list, you have two kinds of SmartSet tables: the tables above the line contain a device link profile; the tables below the line contain the old color tables (LUTs).

You can define a new *SmartSet* by loading different tables. The *SmartSet* name changes to Custom, and then you can save the new *SmartSet* with a name you choose.

You can also customize additional tables that you define according to your own requirements and can save for later use. To save a *SmartSet* custom table, you must save any table that is labeled *Custom with* a new name. In other words, you cannot save a *SmartSet* with a table labeled *Custom*.

The *SmartSet* tables can incorporate any of the application features that are described in *Chapters 6-8*.

Layout Display

The *Layout display* reflects the selected *Format* option (see *Format* on page 40). You can use the *Layout display* to modify the scan area before *Preview*. In some cases, this can reduce the scan time, and the displayed preview image is larger. The *Layout display* is useful in the following cases:

- When the mounted originals are not according to pre-defined formats, which include the *standard* application formats and created *user defined* formats.
- In multi-preview formats, when you want to scan only some of the originals.

To use the Layout display

1. After selecting a *Format* option, the *Layout display* shows the *Base glass* and a window(s) representing the selected layout format.

   Note: The *Layout display* automatically appears if you check Open Layout Display after Restart in *Operation Modes*, under the *Setup* menu.

2. In *single preview* layout formats, you can change the scan area size in one of the following ways:

- Click and drag one of the window corners (marked by an arrow), then release to define a new window. The window marks the effective scan area;
  or
- Change the scan area location by clicking inside the window and moving it to the desired location.

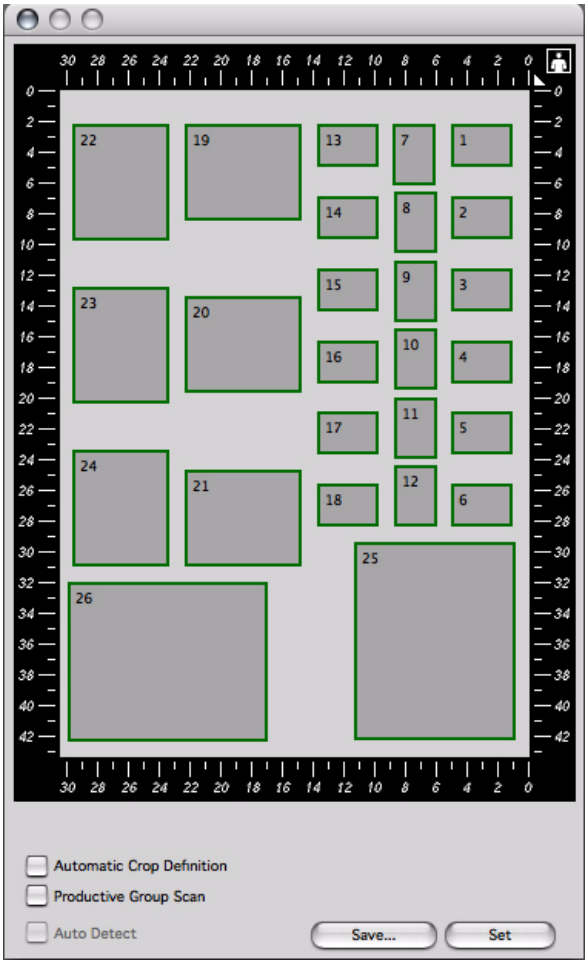
  Note: Since the *Layout display* does not show the mounted originals, it is helpful to note the size and location when mounting the originals in the scanner (for more information, refer to *Mounting Originals* on page 8).

3. In *multi-preview* layout formats, e.g., mix format mask, select the windows you want to scan by drawing a rectangle enclosing the requested windows, or press Shift and click on each window.

   Note: Using the *Layout display* is more accurate than selecting from the *Preview Browser*, because the *Layout display* shows an accurate mapping of the slide holder, thus making it easier to select the exact windows for scan

4. Click the *Preview* icon in the *Scan* palette to send the defined window(s) to the *Scanner Queue* window for preview.

The following figure illustrates the *Layout display* representing the mix format mask.



To update or save the format:

In *single preview*, format in the *Setup* dialog box automatically becomes **custom** when you modify the scan area in the *Layout display*, and the *Preview Browser* is updated accordingly.

- In *multi-preview* layout formats, click Set in the *Layout display* to update the *Format* and *Preview Browser*. The *Format* and *Preview Browser* become **custom**.
- In *single* and *multi-preview* layout formats, you can **save** the modified format. To do so, click **Save** in the *Layout display* and enter the new layout format name in the window that appears.
  The *Format* and *Preview Browser* are updated with the new name. The new format is not deleted when you exit the application, and is available for future use.

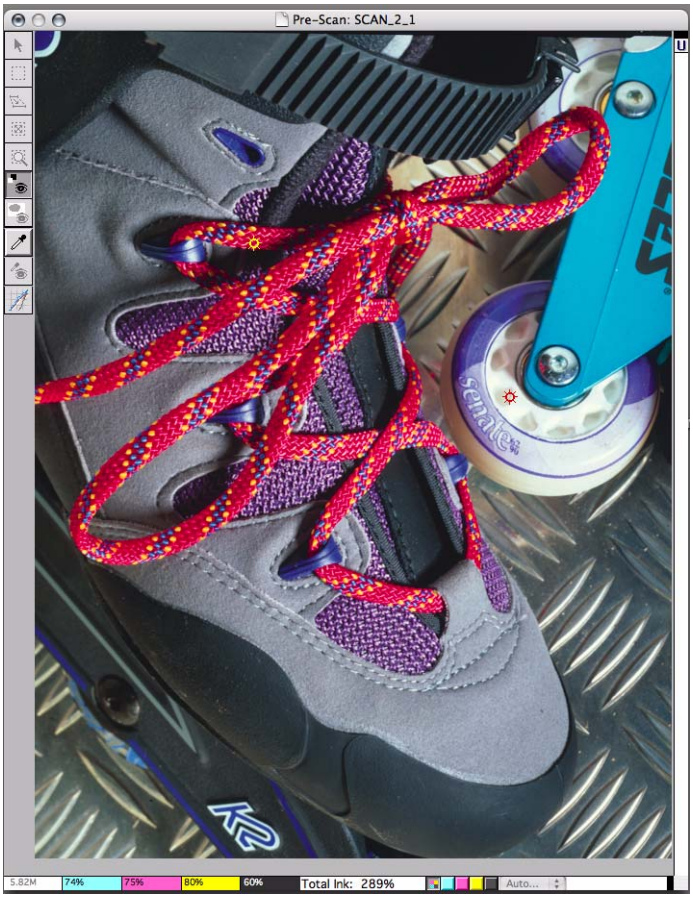
Performing Preview

After setting the necessary parameters in the *Setup* dialog box, you can preview the originals. *Preview* creates a low-resolution scan of the image.

➢ Click the *Preview* icon in the *Scan* palette, or choose **Preview** from the *Scan* menu in *Menu bar*.

All originals in the scanner are sent to the queue for preview. If you modified the effective scan area using the *Layout display,* only originals within this area will be previewed. In the *Preview Browser,*
a *Preview* icon with an arrow indicates that the item is in the queue.
A *Progress Indicator* is displayed during the preview process.

When the preview is completed, the first original appears in the *Image display* window (shown below). You are now in *Preview* mode, described in the next section.



Preview Mode

This section describes how to prepare the *Preview* for final scan, including:

- *Setup* dialog box options
- Preview cropping and multi-crop
- Saving user defined formats
- Performing **Crop prescan**
- Performing final scan

In the Preview mode, the following items appear on the desktop:

- A low resolution image of the first original is shown in the *Image display* window.
- The *Setup* dialog box is set to the displayed *Preview*.
- An image thumbnail of each *Preview* appears in the *Preview Browser*, with the *Preview* name and the *Preview* icon.
  The thumbnail of the displayed *Preview* appears dimmed.
- The *Scan* and *Image* palettes with the relevant active tools.

Setup Dialog Box in Preview Mode

In the *Setup* dialog box - *Preview* mode, you can perform the following:

- In **Color** or **B&W** modes, you can switch between **Color RGB/CMYK** and **B&W** modes (you cannot choose *Line-art*).
- In multi-preview with positive and negative originals, the selected *Media* might not be correct for the displayed *Preview*. In this case, choose the correct option, **Positive** or **Negative**.

  Note: The image thumbnail in the Preview Browser does not change after you change the Mode or Media options.
- You can change the *Scale* value, by entering a new value or image size, or using the *Scaling* tool (on left side of display area).
- You can change the input/output profile, and the End Points, Gradation, Sharpness and device link values.

Whenever the image can be updated, **Apply** becomes active. For example, after defining a crop, **Apply** performs a crop analysis and selects new end points, or after changing color profiles, **Apply** updates the image with the new table.

Crop and Multi-Crop

When the *Preview* is first displayed, the *Full image* crop is defined, enclosing the entire image. The system assigns a default name *Scan_X_1* to this crop, where *X* is the *Preview* number. You can modify this crop and create additional crops.

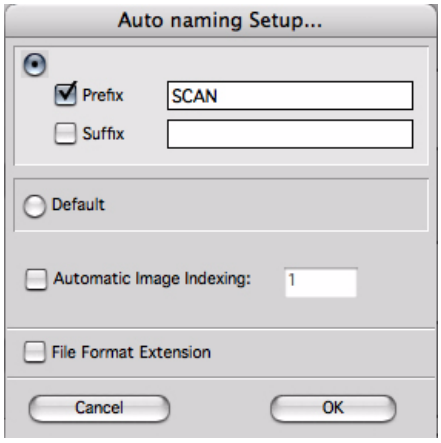
Note: The first crop cancels the automatic crop.

Auto Naming for Final Scans

Auto Naming for Final Scans allows you to automatically set the scan name by using the *Prefix/Suffix Setting* option. You can select the option to add a prefix/suffix according to the file formats. The suffix will be added before sending the crops to the final scan.

To use Prefix/Suffix Settings function:

1. From the *Setup* menu, choose **AutoNaming Setup** to open the *Prefix/Suffix Settings* dialog box.



   The system adds *Scan*-prefix to the final scan name by default.

2. To edit or delete the prefix, or to add a suffix, check the *Prefix* and/or *Suffix* option and enter the prefix/suffix you want in the text box.
3. To use the default name (e.g., *Scan_ 1_1*), select **Default**.
4. To add a file format suffix to the name, check the *File Format Suffix* option. You can apply this option only when scanning in the *Color* or *BW* mode.

Cropping the Preview

- You can modify the *Full image* crop, decrease its size.
- To define a new crop, use the cropping tool.

  For more information, refer to *Tools and Display Options* on page 25.

Note: The *Full image* crop no longer exists after it is modified or a new crop is created.

If you change the *Crop Height/Width* proportionally using the Shift key, the *Scale* value changes, but the *Scan Height/Width* remain constant.

Once you choose Reset Crop button the image returns to the original file size

If you change *Scale,* the *Crop Height/Width* or *Scan Height/Width* changes accordingly, depending on which is modified last.

A *Warning* icon appears in the *Setup* dialog box if the scan cannot be performed according to the defined settings, because these settings exceed the scanner limitations. For example:

- Crop is too small (less than 65 pixels in the output width).
- Resolution is less than 2 DPM (51 DPI).
- When the entire image is scanned in maximum scale and with a scan margin.

➢ You may define the final scan parameters by selecting **Save Params for Scan** from the *File* menu in the *Menu bar*. Define the scan parameters in the *Scan* dialog box.

➢ **To define a second crop**, repeat the procedure used for the first crop. You can also use the **Duplicate Crop** option in the *Edit* menu, or the keyboard shortcut <⌘D>. The active crop is duplicated and positioned at a fixed offset from the previous crop. The new crop becomes the active crop, and may be edited (as explained for the first crop).

➢ Repeat the procedure for as many crops as you wish to define on the *Preview*. The following figure shows an example of two crops defined on a single *Preview*.

Multi-Crop Features

- Each crop has a complete set of parameters as if it were a single crop.
- Crop analysis is performed for each crop, and the *White/Dark* points are selected according to the image data of the crop.
- A crop must be **active** for you to edit or change it. To activate a crop, use the <**Tab**> key to cycle among the crops until the desired crop is active, or click inside the crop area.
- Only one crop can be active at a given time. An **active crop** is indicated by the following features:
  - ❒ The crop parameters are shown in *Setup* dialog box.
  - ❒ In the *Preview display* window, the crop name, crop handles and *Top left indicator* is displayed.

  Note: If a crop is enclosed by a larger crop and you want to activate the smaller crop, press the <Tab> key until the smaller crop is active. If two crops overlap, click inside the area that does not overlap.
- If you edit the crop and **Apply** changes, the changes are applied to the entire *Preview* display. However in the final scan, these changes are effective only for the specific crop.

Crop Parameters

Some crop parameters must be identical for all the *Preview* crops, and some may be changed for specific crops. When defined, the new crop inherits the parameters of the active crop, excluding the *Crop Height/Width* and *Scan Height/Width*. In **Duplicate Crop**, the *Crop Height/Width* and *Scan Height/ Width* are also inherited.

Note: A Custom table is not inherited. The new crop inherits the table on which the Custom table was based.

You may change the following crop parameters: **Media**, **Mode**, **Scale** and **Resolution**, **Crop H/W** and **Scan H/W**, and final scan format.
You may also choose other **Input/Output profiles**, **End Points**, **Gradation**, and **Sharpness** tables (and **Filmtype** for negatives).

To delete crops:

1. Make sure the *Preview display* window is active.
2. Activate the crop you want to delete.
3. From the *Edit* menu, choose **Delete Crop**, or press the <**Delete**> key.

   Note: If the *Setup* dialog box is active instead of the *Preview display* window and you use the Delete key, the value in the active text field in the *Setup* dialog box is deleted.

If the crop to be deleted is currently in the queue, a message is displayed and the crop is not deleted. If a **Crop Prescan** or **Max Detail** has been performed, a message is displayed and the crop is deleted only after **OK**.

After the crop is deleted, the next crop becomes active. If there are no other crops, the *Full image* crop becomes active.

Save User Defined Formats

After *Preview*, you can save the preview crops as *user defined* formats.

To save a preview crop as a user defined format, perform the following:

1. Define the necessary crops on the *Preview*.
2. From the *File* menu, choose **Save User Defined**. The *Save User Defined* menu appears.
3. From *Save User Defined* menu choose an option, depending on the format you want to define.
4. In the window that appears, enter the name of the new format.
   The format name will appear in the *Format* list after scan restart.

Crop Prescan

Crop Prescan is recommended if the crop size is smaller than one third (1/3) the size of the *Preview*. Using **Crop Prescan**, a more accurate image analysis is obtained for the crop. The low resolution crop image is displayed in the *Crop Prescan* display window, showing more details and/or colors of the crop.

To perform Crop Prescan, perform the following:

1. Activate the crop for which you want to use **Crop Prescan**.
2. Click the *Prescan* icon in the *Scan* palette. Press the **Option** key while clicking the icon, to send all crops on the *Preview* to the *Queue* window for prescan.

   After **Crop Prescan**, an image thumbnail of each crop prescan appears in the *Preview Browser* with the file name and the *Prescan* icon.
3. To display the *Crop Prescan* image, double click its image thumbnail.

The *Crop prescan* image is displayed and the *Setup* dialog box is set accordingly. The following figure shows the *Crop Prescan* window.

4. If required, you may edit the crop as explained in the previous section. But you cannot change its size after **Crop Prescan**.

Performing Scan

The **Scan** function scans the image to the disk, resulting in a high-resolution image. The scan is performed according to the *Setup* dialog box settings and defined scan parameters.

For details on opening scanned images in Photoshop, refer to *Opening Scanned Images in Photoshop* on page 76.

In the basic workflow described in this chapter, a scan is performed after cropping the *Preview* and setting the necessary parameters in the *Setup* dialog box.

Note: You should postpone the final scan if further image editing is necessary.

To scan the preview, perform the following:

1. In the *Scan* palette, click the *Scan* icon,

   or
   From the *Scan* menu in *Menu bar* choose **Scan**, point to **Scan All**, and then select **Active crop**.
2. In multi-crop, press **Option** while clicking the *Scan* icon to scan all crops on the *Preview*,
   or
   Choose **Scan All** from the *Scan All* menu.
3. Use **Save Params for Scan** under *File* in *Menu bar* for defining the scan parameters when editing the crop and before selecting **Scan**. If you did not define parameters for all the crops you are sending for scan, the *Scan* dialog box is displayed.
4. If the scan parameters have not been defined, the *Scan* dialog box appears for all crops that do not have defined scan parameters
   (see *Scan dialog box* on page 56).

The selected items are sent to the *Scanner Queue* window for scan.
In the *Preview Browser*, a *Scan* icon with an arrow appears below the image thumbnail of the *Preview* (the arrow disappears after the scan). In multi-crop, all crops enter the *Scanner Queue* window as a group, and the *Preview display* window closes.

While the scan is performed, you can display and edit other crops or previews (that are not in the *Scanner Queue* window).

If the **Beep** option in *Operation Modes Preferences* (under *Setup* in *Menu bar*) is selected, the scanner beeps three times when each scan
is completed.

To scan the crop prescan:

To scan the crop prescan, the *Crop Prescan* image *must* be displayed in the *Image display* window. The scan process is the same as for *Previews*.

1. To select scan items from Preview Browser, perform the following:
2. Make sure the *Image display* window is closed.
3. In the *Preview Browser*, press **Shift** and select the *Previews* that you want to scan.

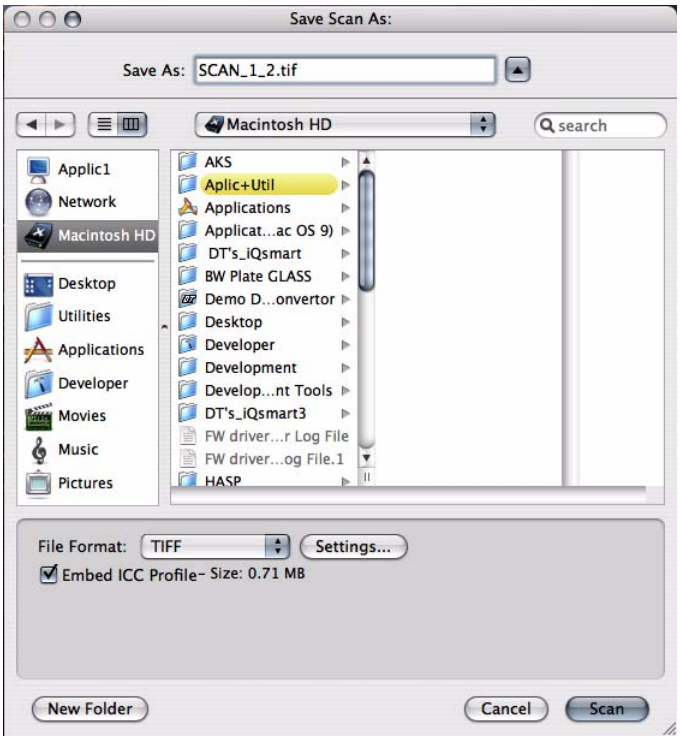
4. Click the *Scan* icon in the *Scan* palette, or choose **Scan** from the *Scan* menu.

If scan parameters have been defined for all selected items, the items enter the *Scanner Queue* window for scan. If the preview has crop prescans, these also enter the queue. The scan process is the same as for single *Preview*.

If scan parameters have not been defined, the *Scan* dialog box appears for all undefined previews and crops.

Scan dialog box

The parameters in the *Scan* dialog box must be defined before the scan is performed.



Note: When you enter the *Scan* dialog box, the listed file format is the format used in the previous scan of the current mode.

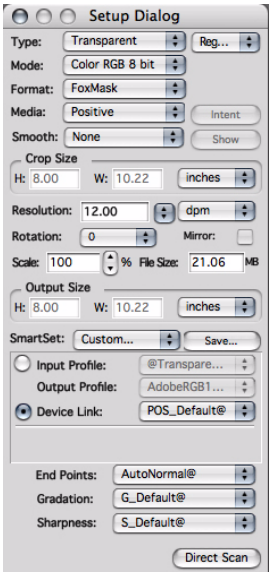
In the Scan dialog box, do the following:

1. Enter the scan file name in the '*Save Scan as*' field. You can either use the default name, or enter a new name.
2. Choose the file format. Available formats depend on the selected **Mode**. The selected format should be according to the application you intend to use with the scanned file.

When you scan using ICC profiles, and you want to embed the profile, select either **TIFF** or **EPSF** format. Then, click **Embed ICC Profile-Size**.

3. Set the destination folder of the scanned image.
4. Click **OK** to send the item to the *Scanner Queue* window for scan.

File Formats



The following file formats are available:

- **EPSF** (Encapsulated PostScript File)
  PICT preview is available. Output is four separations (CMYK)
  32 bits/pixel, three separations (RGB) 24-bit/pixel, a DCS 5 file format, or an ICS 5 file format.
- **TIFF** (Tagged Image File Format)
  Output is one RGB file 24 bits/pixel, or one CMYK file
  32 bits/pixel, or CMY file 24 bits/pixel. PICT preview is not available.
- **JPEG** (Joint Photographic Experts Group)

This format is commonly used to display continuous-tone images. When saving in JPEG format, you can specify the image quality and compression level. A higher level of compression results in lower image quality, and a lower level of compression results in better image quality.

Available formats according to the selected Mode option:

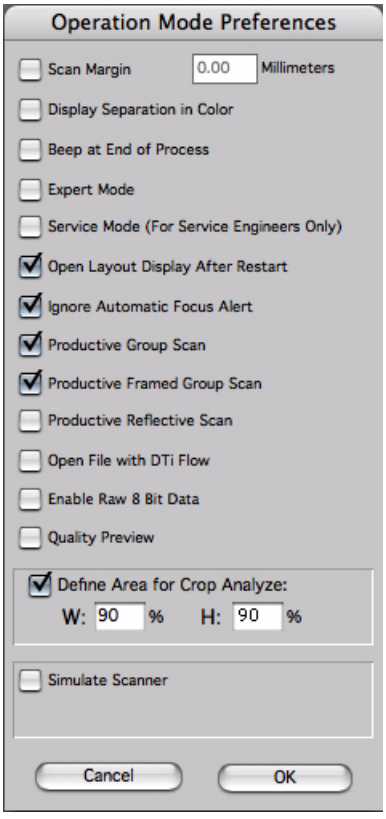
Format	CMYK	RGB 8/ 16bit	B&W	Line-art	DT File
EPSF	yes	yes	yes	yes	no
TIFF	yes	yes	yes	yes	yes
JPEG	yes	yes	yes	no	no

Defining a Crop Area for Analysis

The Crop Analysis tool has been improved to enable you to specify the width and height of the crop area.

Note: Selecting a parameter enables you to preview the area you want to crop.

1. Select **Setup>Operations Modes** , or on the keyboard, press CMD+K.
2. In the Operation Mode Preferences dialog box, select the **Define Area for Crop Analyze** check box.
3. 3. In the **W** box (width, or x-axis) and in the **H** box (height, or y-axis), type a value from 40% to 100%



4. With the Preview window open, press SHIFT to display the image area designated for crop analysis.

5. If you need to adjust the area for the crop analysis, press and hold the SHIFT key while pressing the up and down arrow keys.

6. In the Setup dialog box, click **Apply** to perform the crop analysis.

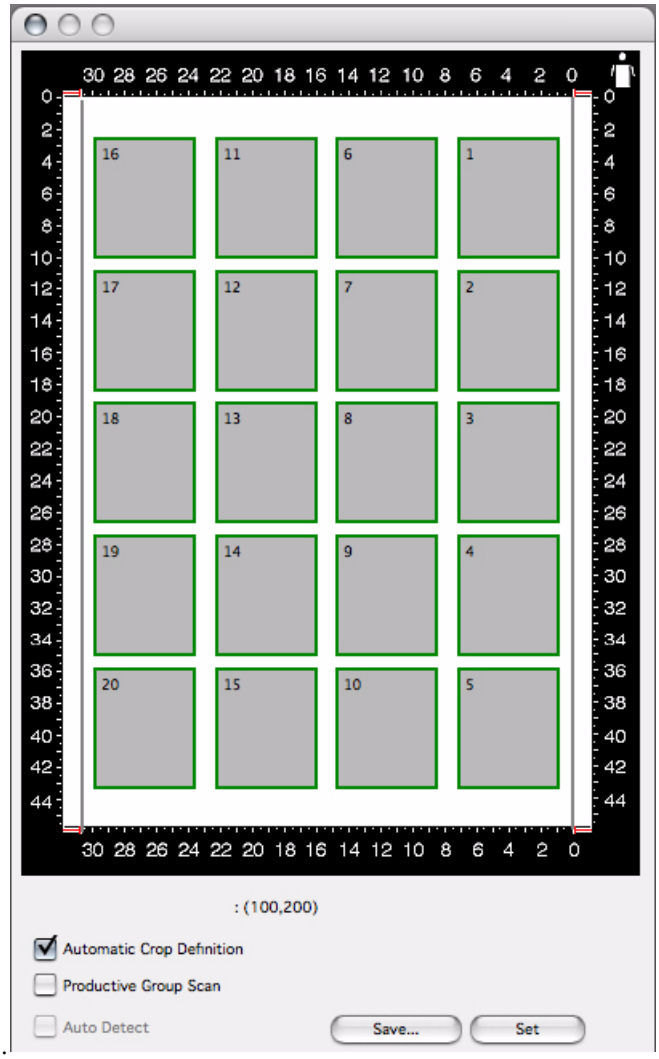
Automatic Crop Definition

Use the automatic crop definition option to automatically crop an area inside the the scan.

Working with automatic crop definition enables you to improve your scan workflow and also provides you with an automatic cropped area for use with the save preview feature and scan.

To enable automatic crop definition:

➢ In the operation mode layout display window, select Automatic Crop Definition.



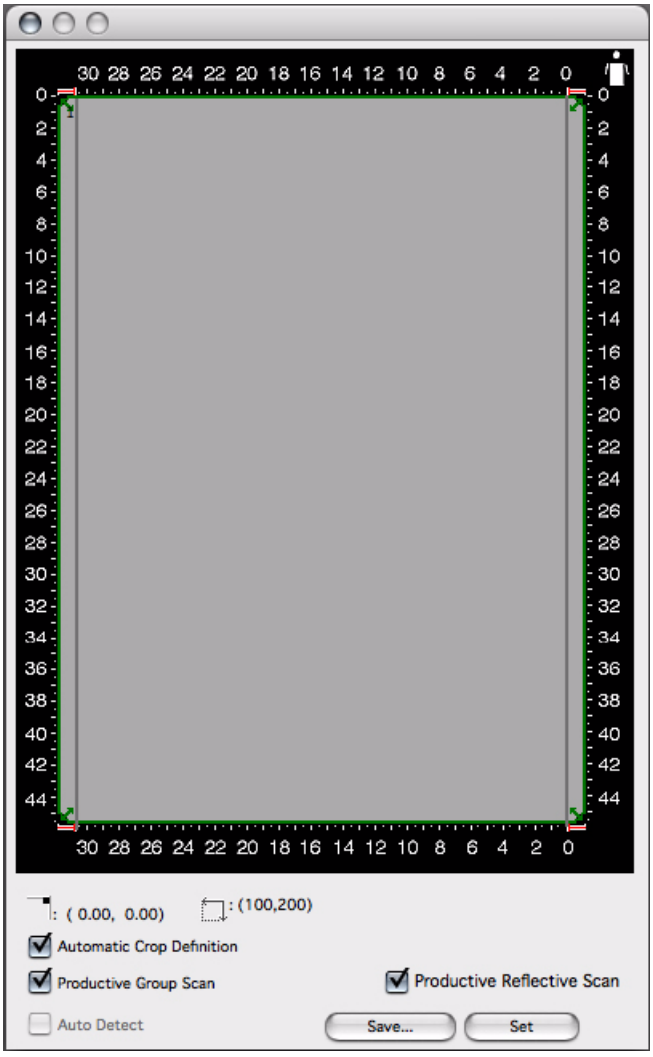
Productive Reflective Scan

Note: This feature is only available for iQsmart 2 and 3.

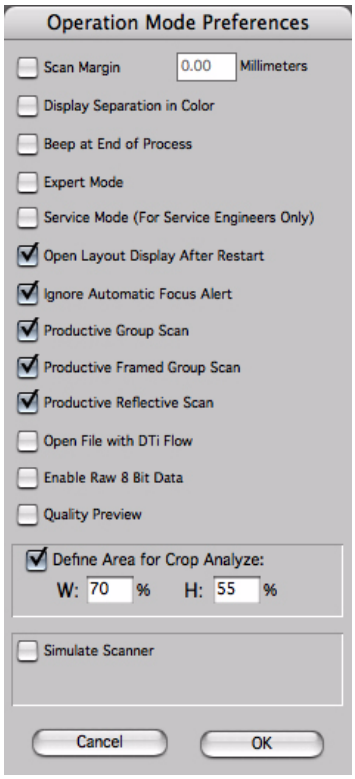
The productive reflective scan feature enables you to scan many originals with the same scanning parameters, such as enlargement, resolution, colors, and so on. In this workflow you can place several reflective originals on the scanning board, scan them as one image, and then subsequently scan additional sets of originals.

This workflow improves the scanning productivity.

1. Place your scan on the glass.
2. In the layout display, select Productive Reflective Scan.



You can also enable the productive reflective scan by pressing ..+K and selecting Productive Reflective Scan.



3. In the layout display, define the desire scan area to be used for all your scans.

   Notes:

   - The cropped area size will be applied to all scans in your workflow. You cannot change the cropped area after preview.
   - If you place several originals on the scanning board, crop them after scanning using another application.

4. On the scan palette, click the Preview icon.
5. Set the desired parameters for the scan in the Setup dialog box. If desired, save the settings for future use.

   Important: When saving the setup settings, ensure that none of the parameters are saved as Custom.

6. On the scan palette, click the Scan icon.
   The scan is performed.
7. Remove the image or set of images from the glass and replace with another image or set of images.
8. Scan the images using the same the scan parameters. No preview is available for subsequent images (or sets of images) scanned using the same parameters.
9. Repeat steps 7-8 for subsequent images in your workflow.

The scanner is calibrated for the first scan, and this calibration is then used for all other scans, until you close the application.

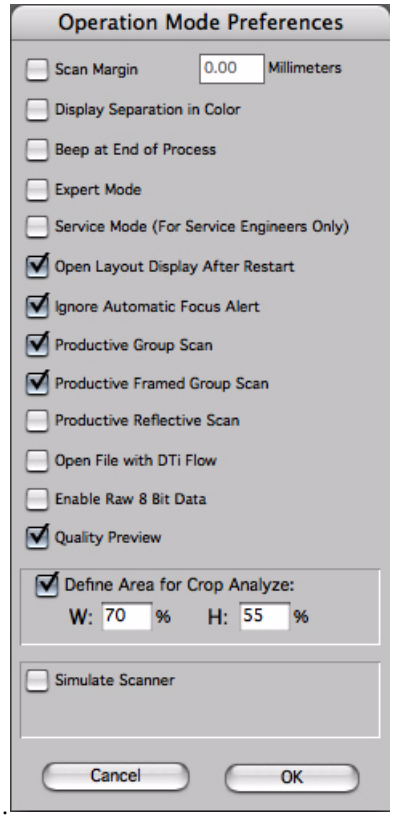
Tip: To work with different settings—for example, scan size, resolution—use saved settings.

Quality Preview Option

In some cases the image in a preview can appear misaligned. To prevent this from happening, in the Operation Mode Preferences dialog box, select Quality Preview.

Note: This option slows down the performance speed.

Note: This option is only available in the iQsmart family.



5

DT Files in oXYgen Scan and Open

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Overview

SOOM - Scan Once Output Many. With SOOM you can scan an original once in the *oXYgen Scan* application capturing all the detail in a pure 16-bit digital transparency file (DT file). This DT file becomes your digital transparency, which you can open from your disk in the *oXYgen Open* application, offline, and repurpose it for any use with all the professional image editing tools using the ICC workflow.

The *oXYgen* applications optimize scanning by maximizing the scanner's potential. The applications are designed with strong emphasis on flexibility, quality, productivity and exact color reproduction. They provide a host of professional image editing and proofing tools with a highly intuitive, icon based, workflow-oriented interface.

When scanning pure 16-bit RGB DT files, you can select one of the two workflows:

- **Split workflow**

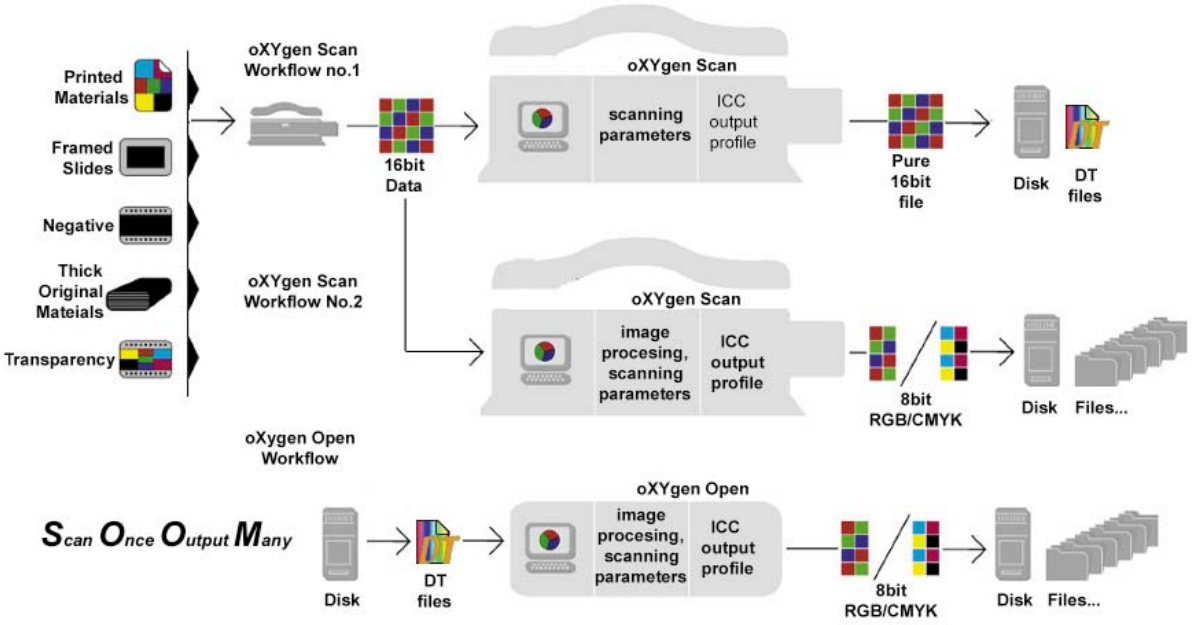
  The first stage in this workflow is to scan the images in the oXYgen Scan application to accurate file sizes without image manipulation. The second stage, image editing, is performed in the oXYgen Open application offline on one or more workstations. After editing, the images are saved as RGB Internet, RGB printer, or CMYK Printer files.

- **Digital Archiving workflow**

  In this workflow, you capture the originals with maximum information and archive the images in the *oXYgen Scan* application. The archiving of the images as pure 16-bit RGB DT files is done by determining a file size according to the future use of the image. Then, you 'scan' the images using the ICC workflow in the *oXYgen Open* application.

  Note: In the *oXYgen Open* application, when you 'scan' the image, you process the high-resolution DT file and save it as an RGB or a CMYK file.

The following diagram illustrates the *oXYgen* workflow.



Scanning DT Files in oXygen Scan

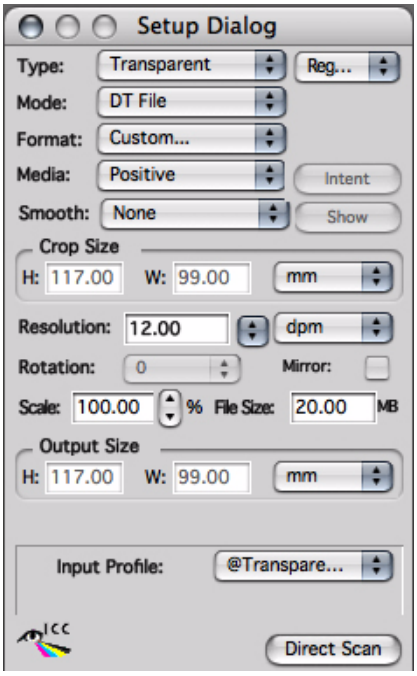
When scanning DT files in the *oXYgen Scan* application, follow the sequence described in the following sections.

Setup Parameters

When scanning DT files, you can set all the crop, scale and resolution parameters. Additionally, you should embed a proper scanner profile to scan the image.

To improve the productivity, you can use the *Direct Scan* option, especially when archiving.

The following figure illustrates the *Setup* dialog box in the *DT File* mode.



Layout Display

➢ In the *Layout Display*, select the images you want to send to preview.

For more information on Layout Display, refer to *Layout Display* on page 45.

Performing Preview

➢ To perform a preview, click the *Preview* icon in the *Scan* palette.

For details on performing preview, refer to *Performing Preview* on page 48.

Setup Dialog Box

After *Preview*, you can perform the following in the *Setup* dialog box:

1. Change the *Scale* value by entering a new value or using the *Scaling* tool.
2. In multi-preview with positive and negative originals, the selected *Media* might not be correct for the displayed *Preview*. In that case, choose the correct option, **Positive** or **Negative**.

Whenever the image can be updated, **Apply** becomes active. For example, after defining a crop, **Apply** performs a crop analysis and automatically selects new end points.

Note: In the DT mode, the system performs analysis on each crop for preview purposes only. The analysis has no effect on the final scan.

Crop and Multi-Crop

➢ Use the cropping tool to define a new crop.

For details on crop and multi-crop, refer to *Crop and Multi-Crop* on page 69

Scan

The **Scan** function scans the image to the disk, resulting in a high-resolution image. The scan is performed according to the *Setup* dialog box settings and defined scan parameters. To view the scanned image, use the *oXYgen Open* application.

Note: Saving a DT file creates one high resolution and one low resolution file for preview.

To scan the preview:

➢ In the *Scan* palette, click the *Scan* icon.

The selected items are sent to the Scanner Queue window for scan. In the Preview Browser, a Scan icon with an arrow appears below the image thumbnail of the Preview (the arrow disappears after the scan). In multi-crop, all crops enter the Scanner Queue window as a group, and the Preview display window closes.

File Formats

When scanning DT files, the available file formats are **TIFF.**

To embed the input profile in the file, click **Embed ICC Profile** in the *Scan* dialog box, and check the *With ICC Profile* option.

Retouching DT files

If you want to have a clean DT file, before opening the file in the *oXYgen Open* application, you need to retouch the original (master) file in Photoshop. To do that, you should have the DTFormat plug-in installed.

To retouch DT files, perform the following:

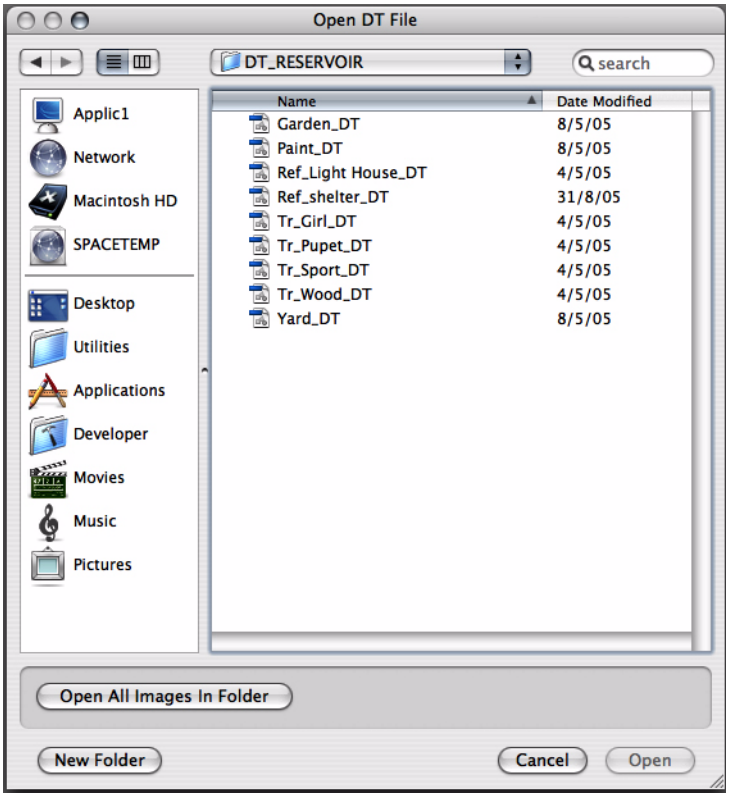
1. Make sure the DTFormat plug-in is installed in the Photoshop Plug-ins folder.
2. From the *File* menu, select **Open**. The *Open* dialog box is displayed.
3. Browse for the original you want to retouch.
4. In the *File Format* box, select **DTFormat plug-in** and click **Open**.
5. In the *Profile Mismatch* dialog box that is displayed, click **Don't Convert** to open the original.
6. Retouch the original, and click **Save**.

Working With DT Files in oXYgen Open

The *oXYgen Open* application enables offline reprocessing of DT files without a scanner. You can open the pure 16-bit RGB DT file and edit it using the ICC capabilities to produce a number of 8-bit and 16-bit files. In the *oXYgen Open* application, you can open all the files in your current job folder very fast. This feature enables you to start working on the images without delay.

To open a DT file, perform the following:

1. Enter the application, or restart it.
2. From the *File* menu, select **Open**. The *Open DT File* dialog box is displayed.
3. Browse for the folder where the images that you want to open are saved.
4. Select all the files you want to open, and click **Open**. All the selected images are sent to queue, and the previously scanned low-resolution previews are displayed. Each preview is displayed with the parameters it was scanned with.



To edit a DT file, perform the following:

1. Select one of the available modes: **RGB, CMYK**, **B&W**, **color RGB 16 bit** and **B&W 16 bit**.
2. Define the size, scale, and resolution parameters.

   Note: When you are scaling the image that has already been scanned, to maintain high quality, it is not recommended to enlarge the image more than twice its original size.

3. From the *Profiles* list, select an input and output profile, or a device link.

   Note: Your list of available profiles depends on the mode you chose. For example, if you chose CMYK, it will show you only CMYK-type output profiles.

4. From the *Setup* dialog box, select an *End Points*, *Gradation*, and *Sharpness* table, or define your own parameters by clicking the relevant icon in the *Image* palette.

5. When you have defined scanning parameters for all the selected files, they enter the *Scanner Queue* window for scan, and the *Scan* dialog box is displayed.

In the Scan dialog box, do the following:

1. Enter the scan file name in the *Save Scan as* field. You can either use the default name or enter a new name.

2. Choose the file format. Available formats depend on the selected **Mode**. The selected format should be according to the application you intend to use with the scanned file.

3. When you scan using ICC profiles, and you want to embed the profile, select either **TIFF** or **EPSF** format. Then, click **Settings** in the *Scan* dialog box, and check the *With ICC Profile* option.

4. Set the destination folder of the 'scanned' image.

5. Click **Scan** to send the item to the *Scanner Queue* window for 'scan'.

   Note: In the *oXYgen Open* application, when you 'scan' the image, you process the high-resolution DT file and save it as an RGB or a CMYK file.

6 Color Management

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Overview

This chapter is about color management, including:

- Using ICC workflows

ICC Workflows

The *Scanning* applications support ICC workflows giving you better control over the quality of the scanned images. ICC workflows can be used with transparent positive and negative
CMYK/RGB images, and with reflective RGB/CMYK images. You can work with negative images only in the *Device link* mode.

When scanning with ICC workflows, you can use either input/output profiles or device link profiles. There are several ICC workflows to suit your scanning needs. Following is a description of the available workflows.

Scanning Images in RGB Mode Using Input/Output Profiles

Scanner RGB

Input profile: scanner profile; **Output profile**: NONE.

Select the input profile according to the selected image type (transparency/ reflective).

This mode preserves the color space of your scanner and allows you to view an accurate representation of the scanned originals on your monitor. Use this workflow when you want the image you are scanning to be printed on several output devices.

When you save the file in the **TIFF** or **EPSF** format, you can select to embed the scanner profile in the saved file. The scanner profile then becomes part of the digital file. Opening the image on any application will assure that you see an accurate representation of the scanner's color space.

RGB Color Space

Input profile: scanner profile; **Output profile**: RGB Color Space.

In this mode, you can scan images to one of the standard RGB color spaces. This workflow enables you to see what the image will look like when opened in another application that supports the ICC color management.

When you save the file in the TIFF format, you can select to embed the RGB color space, such as Adobe RGB, in the scanned file. Opening the image on any application that supports ICC workflow will assure that you see an accurate representation of the colors.

Printer RGB

Input profile: scanner profile; **Output profile**: RGB printer.

In this mode, you can scan images to be printed on specific RGB printers. You can embed the RGB printer profile in the file, which enables you to soft proof the image on your screen. That is, you will see on the screen what the image will look like when printed. Use this workflow when working with a specific device.

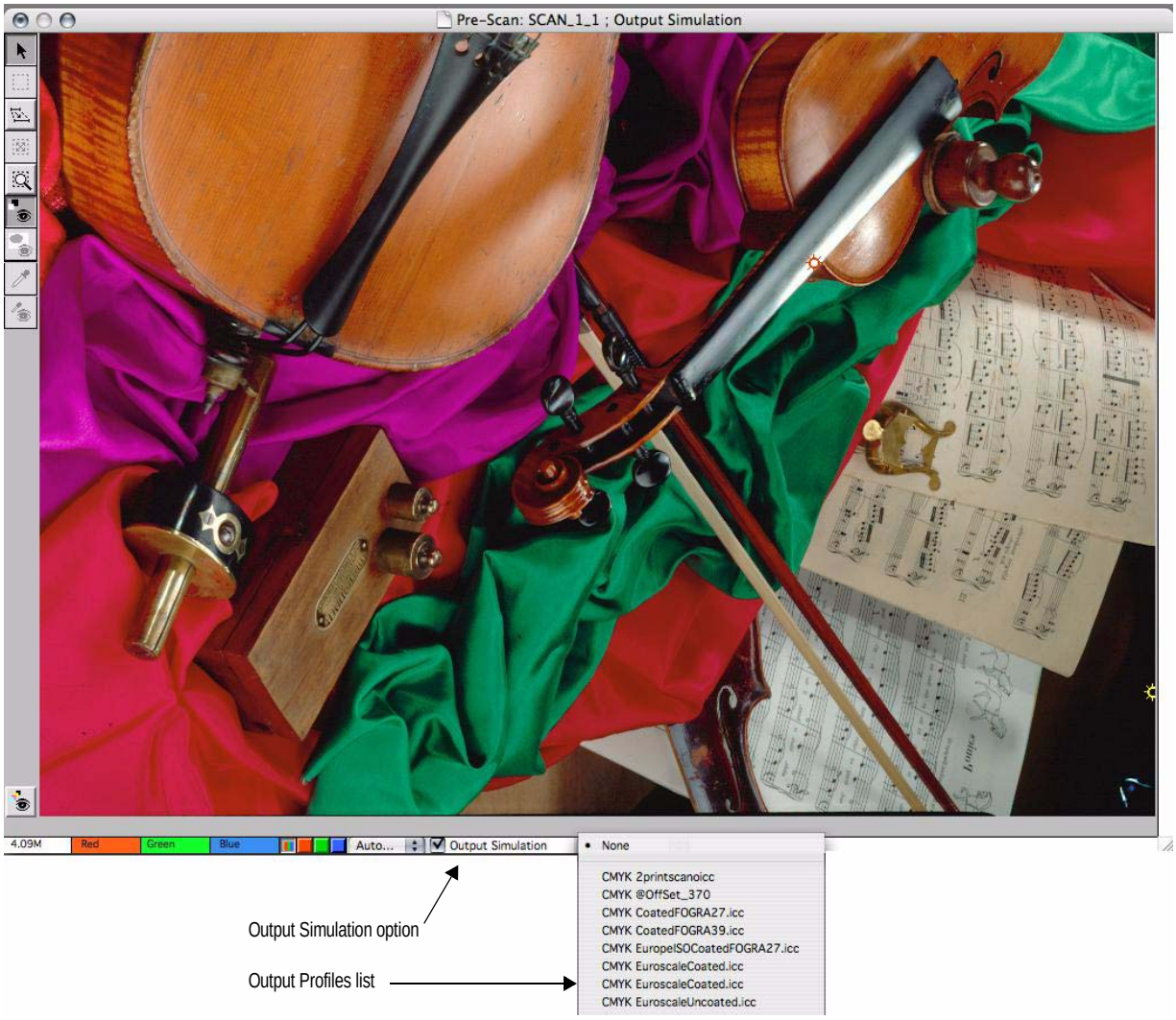
When you save the file in the TIFF file format, you can select to embed the RGB printer profile in the scanned file.

Note: The most suitable output RGB profiles are AdobeRGB1998 and ProPhoto RGB.icc

Output Simulation

In the *Color RGB* mode, the *Output Simulation* option is available at the bottom of the *Image display* window. By selecting the *Output Simulation* option and an output profile from the *Output Profiles* list (to the right of the *Output Simulation* option), you can see how the file will be seen after printing by a specific printer. Also, you can see what the image will look like when printed on a selected output device.

The following figure illustrates the *Image display* window in the *Color RGB* mode when the *Output Simulation* option is selected.



Scanning in the CMYK Mode Using Input/Output Profiles

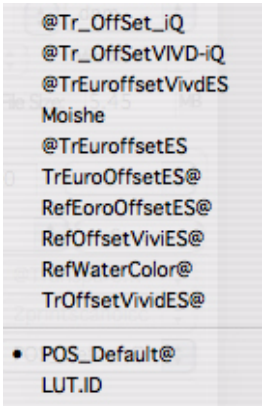
Input profile: scanner profile; **Output profile**: CMYK printer.

In this mode, you scan the images to the CMYK color space of a CMYK printer. You can see on the screen what the image will look like when printed. This workflow is recommended when you are working with a known CMYK offset standard, such as USSheetfedCoated, or a specific CMYK device having a specific output profile.

When you save the file in the TIFF format, you can select to embed the CMYK printer profile in the saved file.

Scanning Images Using Device Link Profiles

A *Device Link* profile is a combined input and output profile from the scanner to a specific output device. It enables you to fine tune the transformation and improves your color quality control.



To create a device link profile:

- Select the appropriate input and output profiles and edit the profiles by using one of the editin.g tools (Color Correction, LS Curves, etc.). Then, save the combined profile as a new device link profile.

The *Device Link* list contains device link profiles and color tables. In the *Device Link* list, the profiles above the line are device link profiles; the color tables are below the line.

Note: When you select a device link profile, it is displayed using the active ICC monitor profile. When you select a color table, it is displayed using the old Screen Match method.

If you want to use old color tables, you can add them to the *Color Table* list by dragging them from the *Old ColorTables* folder to the *Tables* folder.

Device Links in Scanning Negatives

When scanning positives, you can achieve a good representation of your original in the output device you are using by applying an ICC workflow. When scanning negatives, in order to get the inversion of your original, you should choose a proper device link and film type table in the *Setup* dialog box. Any device link used for positives can be used also for negatives.

- In the *Setup* dialog box, select **Negative** under **Media**. Then choose a filmtype table that best suits your film type, and a device link that is a link between the color space of your scanner and output device.

7

Tone Reproduction

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Toning Feature 92

Overview

This chapter is about tone reproduction and performing tonal changes in image, including:

- Changing the White and *Dark Points*
- Adjusting exposure
- Removing unwanted color cast
- Adjusting contrast
- Adjusting brightness
- Adjusting color balance

The Tone Reproduction function includes two main functions:

- **End Points**, for defining the effective density range of the original and removing color cast.
- **Gradation**, for further tonal adjustment (brightness and contrast) and for color balance.

End Points

This section describes the **End Points** function. During *Preview*, the scanner performs an image analysis of each crop and automatically selects the White and *Dark Points*. The White point is the whitest neutral point in the image with detail; the Dark point is the darkest neutral point in the image with detail. End points editing can be performed after *Preview*.

Show End Points

You can now have a visual indicator (end point marker) for white points and dark points selections with *Show End Points*. A yellow and a red icon appear when you activate *Show End Points*. These correspond to the lightest and darkest points respectively. In addition,
a black circle icon might be displayed if a white point exists in the preview. The black circle icon represents the white point picked up by the system.

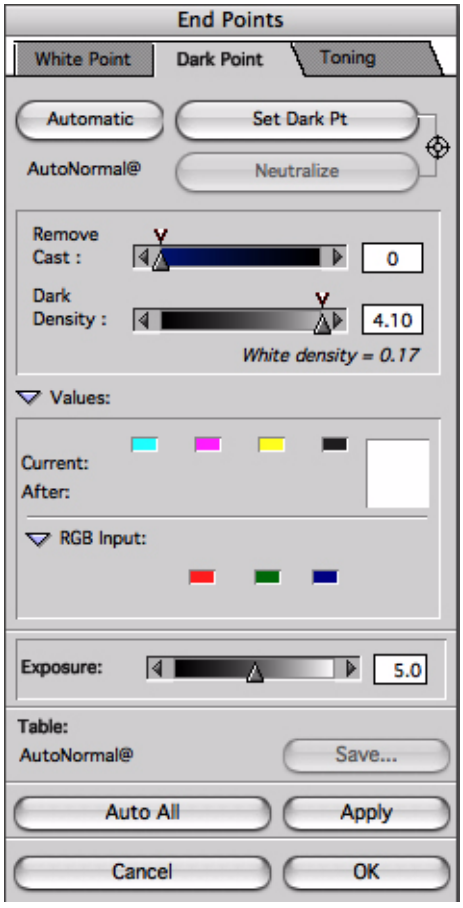
If you manually set the white point, a different icon appears at the point you select. You can activate or deactivate this feature by clicking the *Show End Points* icon on the *Preview* window.

Editing End Points

End Points editing is performed after *Preview* and after cropping.

Note: If you intend to use Crop Prescan, edit end points only after the Crop Prescan.

➢ After *Preview*, click the *End Point* icon in the *Image* palette (or choose **End Points** from the *Image* menu in *Menu bar*). The *End Points* dialog box appears.



➢ End Points editing is performed separately for White and *Dark Points*. In the dialog box, choose the *White* or *Dark Point* tab, depending on which point you want to edit.

White/Dark point controls

Note: This section describes White point editing, but it applies to Dark point editing as well.

- You can manually select a new White point by marking it on the image, or by defining its density value.
- For White point only, you can use **Neutralize** to change the image color balance.
- You can adjust the **Cast Removal** and **Exposure**.

The above options are detailed below.

Set White Pt

Set White Pt adjusts the brightness and color balance of the image.

See *Image Correction Examples, Fig. 6: Removed cast & increased brightness*.

- Click the Set White Pt button. Using the *picker*, mark the White point on the image. You can view the values of the point in the Values section (see *Values* further on). If you want to choose another point, click the button again and mark a point.

Note: If you press the Shift key, you can pick several different points.

White Density

White Density changes the image brightness, without affecting the color balance.

See *Image Correction Examples, Figs. 1 & 2: Brighter highlights & increased contrast*.

The top indicator in the *White Density* slider marks the density of the White point, according to the image analysis. The density value appears to the right of the slider.

See *Image Correction Examples, Fig. 4: Brighter highlights, color balance unchanged.*

- To change the density, move the slider or enter a new density value. The higher the White point density value, the lighter the highlights become. This may cause some details to be lost in the highlight areas.

Note: The Dark point density listed below the slider is informative only.

Neutralize (for White point only)

Neutralize changes the color balance without affecting the brightness.

See *Image Correction Examples, Fig. 5: Remove cast without affecting brightness*.

Click the **Neutralize** button. Using the *picker*, mark the point that you wish to use as a reference point for neutralizing the image. You can view the values of the point in the **Values** section (see *Values* below).
If you want to choose another point, click the button again and mark a point.

Remove Cast

The top indicator in the *Remove Cast* slider is set to the system preference, used during *Preview*. For *more* cast removal, move the indicator to the *right*; for *less* cast removal, move the indicator to
the *left*.

Automatic

Click **Automatic** to reset the White point to the automatic selection of the scanner. Previous changes, including neutralize and remove cast, are canceled.

Automatic overrides the active End Points table.
Use the Sampler tool and Sample Points function to view your changes on selected reference points.

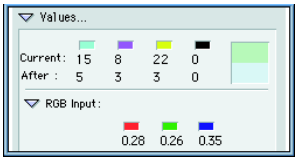
Values

Relevant when using **Set White Pt** and **Neutralize** (not relevant in **Automatic**). Press the *Down* arrow to open the **Values** section.
The following values appear for the selected point:

- *Current* CMYK values (RGB values for **Color RGB** mode)
- *After* CMYK values, based on the active LUT

The color patch shows the *Current/After* colors.

Relevant when CMYK values are shown in the **Values** section. Press the *Down* arrow to open the **RGB Input** section. This section lists the density values of the original, as if measured by a standard densitometer.



Exposure control

Exposure is used to change the image brightness after *Preview*. When you enter the **End Points** function, the slider is set at 5.0 for positives; the slider setting may be different for negatives.

If the image is too bright, move the indicator to the left to darken the image, or enter a value lower than 5.0.

If the image is too dark, move the indicator to the right to lighten the image, or enter a value higher than 5.0.

For further corrections, use the Gradation controls. See *Gradation on page 87*.

Option buttons in End Points:

Apply	Active after each change, to update the image.
OK	Updates the current setting of White/*Dark Points*, saves changes and exits the function. The *End Points* field in the *Setup* dialog box is updated accordingly. See *Selecting End Points Tables* (previously in this chapter) for details.
Reset All	Resets the White/*Dark Points* to **Automatic**, the **Exposure** to default 5, and **Remove Cast** to the set default.
Save	Saves the White/*Dark Points* density values in a table, taking into account exposure and cast corrections. This option is useful to override the image analysis or for rescan purposes. The application will add the prefix **fixed_** to the entered name.
Cancel	Cancels applied changes.

Tip: Use the split screen feature to view the image before/after changes.

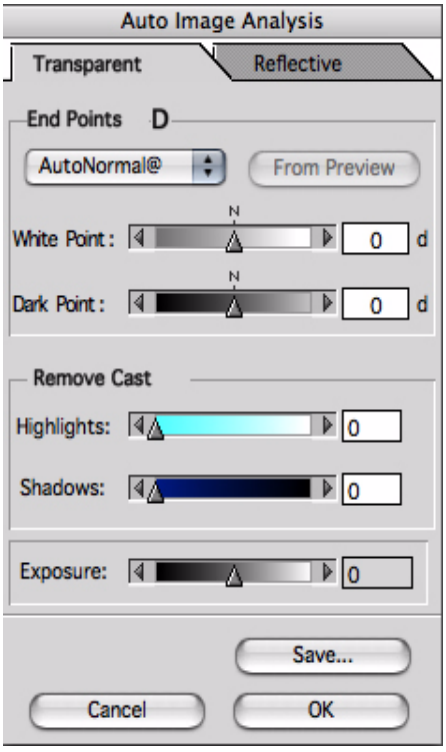
Auto Image Analysis

Auto Image Analysis is used to adjust the image analysis results so that they suit your preferences. You can also change the default value for **Remove Cast**.

This is an *Expert* mode option. It can be accessed only if you have checked the **Expert mode** option in the *Operation modes* dialog box under *General Preferences, Setup* menu.

Refer to *Setup* on page 147 for more information.

➢ From the *Expert Preferences* menu under *Setup*, choose **Auto Image Analysis**. The following dialog box is displayed.



The dialog box contains two sections: **End Points** (for Reflective and Transparent) and **Remove Cast**. See the following description.

End Points

Use End Points to adjust the automatic selection of the end points. That is, your changes are offsets from the normal automatic selection.

1. Press the requested tab: *Transparent* or *Reflective*.
2. Choose one of the *End Points* tables from the pop-up list. The selected table provides values optimized for the subject.

White/Dark Point Sliders

To customize the automatic selection by defining density values, which will consistently offset the values obtained from the image analysis. The N on the slider indicates the **Normal** (automatic) setting. You can move the slider, or enter the offset value (in density) relative to **Normal** in the input field to the right of the slider. The *End Points* field in the *Auto Image Analysis* dialog box becomes **Custom**.

From Preview (active after *Preview* in current run)

To customize the automatic end points selection based on a reference *Preview,* to be used for future scans.

1. Preview the image you want to use as a reference. In *Preview* mode, select the **End Points** function.
2. In the *End Points* dialog box, manually select the end points or define their density values. For details, see *Editing End Points* in previous section.
3. Click **OK** to save and exit.
4. In the *Auto Image Analysis* dialog box, click the **From Preview** button. The sliders are set according to the end points setting in the reference *Preview*, and the offset values (relative to the **Normal** option) appear. The *End Points* field in *Image Analysis setup* dialog box becomes **Custom**.

Note: In the *Setup* dialog box, the *End Points* field shows AutoNormal if *End Points* in *Image Analysis* is Normal, and AutoCustom in all other cases.

Remove Cast

Sets the color cast removal preference. To change the default settings, set the sliders for transparent and reflective, for the highlights and shadows separately, or enter a value in the input field to the right of the slider. The value 0 means no cast removal; 100 is maximum cast removal.

Saving End Points Tables

Use **Save** to save all of the changes you make in **Auto Image Analysis**. Every table saved here will have an **Auto_** prefix. The tables can be used in the *Setup* dialog box in the *End Points* table.

Gradation

Gradation is used for brightness, contrast and color balance adjustments, throughout the tone range of the entire image or in specific tone ranges. **Gradation** changes are performed after *Preview* and after end points editing.

Gradation Tables

Gradation in the *Setup* dialog box lists the name of the active Gradation table or **Custom**.

You may apply another Gradation table, or edit the active table and save your changes. **Gradation** is an *interactive* function; that is.

The gradation **Save** option is used to create tables. The default table is **G_Default@**. You can modify the default table and save it under a new name, but you cannot overwrite it.

Custom is listed when gradation changes are not saved under a new table name, and is available only for the current run.

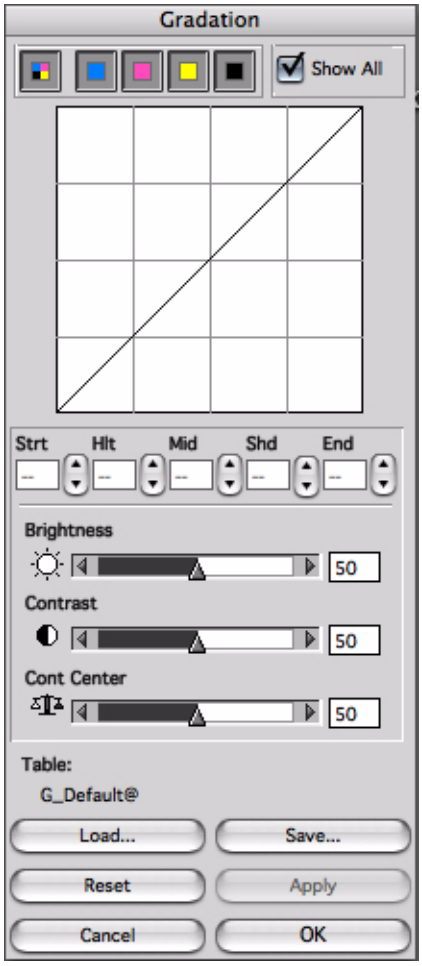
To apply another Gradation table:

1. In the *Setup* dialog box, press on the *Gradation* field to display the list of available Gradation tables.
2. Choose a table from the *Gradation* list.
3. Click **Apply** to update the image.

Editing Gradation

You can edit the active Gradation table, listed in the *Setup* dialog box (you cannot edit **G_Default@**).

➢ Click the *Gradation* icon in *Image* palette, or choose **Gradation** from *Image* menu in *Menu bar*. The *Gradation* dialog box appears.



Gradation Graph

The horizontal axis represents the tone values of the image before gradation changes. The vertical axis represents the tone values of the image after gradation changes. All four separations (CMYK) are shown, but if they have identical curves, the graphs appear as if there is only one curve.

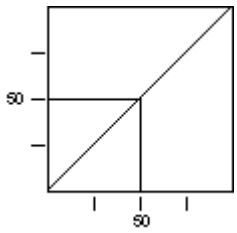
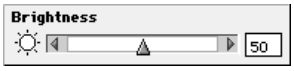


Figure 1: Default curve: Input equals Output

Note: In *Black/White* mode, only the black separation curve appears.

Brightness



Brightens or darkens the image. Increasing brightness brightens the image and results in a concave brightness curve. Decreasing brightness darkens the image and results in a convex brightness curve.

Set the *Brightness* slider to the right to increase brightness or to the left to decrease brightness,
or
Use the right nudge button to increase brightness by 1 unit, or the left nudge button to decrease brightness by 1 unit.

See *Image Correction Examples, Fig.8: Brightness change*.

The brightness value appears to right of the *Brightness* slider
(values 0 - 100).

Contrast

Increases the image contrast, by making the highlights lighter and the shadows darker, or decreases the contrast by making the highlights darker and the shadows lighter.

- Set the *Contrast* slider to the right to increase contrast (S shaped curve), or to the left to decrease contrast (inverted S shaped curve), or use the right nudge button to increase contrast, or the left nudge button to decrease contrast.

The contrast value appears to the right of the *Contrast* slider
(values 0 - 100).

See *Image Correction Examples, Fig. 9*: *Contrast Change.*

Cont Center

Contrast increases the image contrast mainly in the midtones. Using Cont Center, you can adjust where the contrast is mainly increased. To enhance contrast in highlights, the contrast center is shifted toward the highlights; to enhance contrast in shadows, the contrast center is shifted toward the shadows.

1. First set the image contrast, by adjusting the *Contrast* slider (see above).
2. Then use **Cont Center** to adjust *where* the contrast is mainly increased: set the *Cont Center* slider to the right to enhance contrast in highlights, or to the left to enhance contrast in shadows, **or**
   Use the right nudge button to enhance contrast in highlights. Use the left nudge button to enhance contrast in shadows.

   Your change affects the gradation graph by moving the point where the curve changes from convex to concave.

Separation Controls

Specify the active separations, which means the separations affected by gradation editing. Choose one, more or all separations. Choosing a specific separation and a specific gradation control enables changing the color balance for a specific tonal range.

See *Image Correction Examples, Fig. 10: Single separation change*

Show All

Check this box to display all the separation curves in the gradation graph, and not just the selected ones.

Gradation Controls

The gradation controls are used to adjust brightness in specific tone ranges. The five gradation controls are: **Strt, Hlt, Mid, Shd, End**. The *Up/Down* nudge buttons increase/decrease the graph value of the active separation(s) for a specified section.

If only one separation is active, the gradation (tone) value is listed, ranging from 0 to 99. Otherwise, "—" is displayed.

Strt (Start)

Moves the point of origin of the curve at the highlight end along the horizontal or vertical axis.

Up button	All points between 0 and 15 might increase. Increments become smaller as the points progress toward shadows. Highlights are darker, reducing global contrast.
Down button	All points between 0 and 15 might decrease. Changes become smaller as the points progress toward the shadows. Highlights are lighter, increasing global contrast.

Hlt (Highlight) (1/4 tone)

Changes brightness mainly in the highlights.

Up button	Darkens highlights, resulting in a convex curve.
Down button	Lightens highlights, resulting in a concave curve.

Mid (Midtones)

Changes brightness mainly in the midtones.

Up button	Darkens the image, resulting in a convex curve. Brightness increases from highlights to midtones; decreases from midtones to shadows.
Down button	Lightens the image, resulting in a concave curve. Brightness decreases from highlights to midtones; increases from midtones to shadows.

Shd (Shadows) (3/4 tone)

Changes brightness mainly in the shadows.

Up button	Darkens image, resulting in a convex curve.
Down button	Lightens image, results in a concave curve.

End

Moves the endpoint of the curve at the shadow end along the horizontal or vertical axis.

Up button	All points between 100 and 85 might increase. Increments become smaller as points progress toward highlights. Shadows are darker, increasing global brightness.
Down button	All points between 100 and 85 might decrease. Changes become smaller as points progress toward highlights. Shadows are lighter, reducing global brightness.

Option buttons in Gradation dialog box:

Save	Saves the Gradation settings in a table. You should save the table in the default *tables* folder.
Reset Sep	Resets the *Gradation* dialog box settings. The gradation curves are displayed in a straight 45° line, and the **Brightness, Contrast** and **Cont Center** values are 50.
OK	Updates the current Gradation table and exit the function. The Gradation table, listed in the *Setup* dialog box, becomes **Custom**.

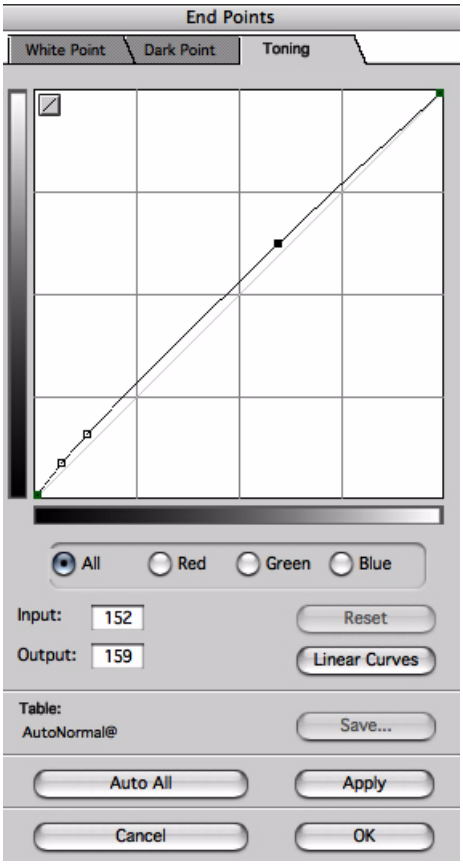
Toning Feature

Toning enables you to manipulate image tone according to your specific requirements. On the **Toning** tab of the End Points dialog box, you can save tone corrections together with **White Point** and **Dark Point** changes as an **End Points** table. You can make changes to each of the R,G, and B channels separately, or simultaneously to all.

Recommended Workflow

1. Preview the image you want to change.
2. Click the **End Points** button.
3. In the End Points dialog box, on the **White Point** tab, click the **Set White Pt** button.
4. Click the point on the image where you want to set the white point.
5. Click **Apply**.
6. On the **Dark Point** tab, click the **Set Dark Pt** button.
7. Click a point on the image where you want to set the dark point.
8. Click **Apply**.

Adjusting the Tone Curve



To adjust image tone, use one of the following methods:

1. Drag the tone curve according to your requirements.
2. In the Preview window, click the image in the area you want to change, and then drag the tone curve or enter a new Output value.

To view your changes in the Preview window:

1. Click **Apply**.
2. If you want to save changes in an End Points table, click **Save**.
3. Click **OK**.

Note: It is recommended that you make only a minor change to the position of the point.

Note: This feature is only available in Positive Mode.

Options for Reverting Tone Curve Changes

- Reset: All separation curves are reset to the position they were in when you last opened the Toning tab.
- Linear Curve: Select Red, Green, or Blue, and then click Linear Curve to reset the curve of the selected separation to a straight line at a 45 degree angle.
- Auto All: The AutoNormal@ table appears in the Setup dialog box. Automatic analysis of the image is made according to this table, and then toning changes are applied.

  Important: Drastic toning changes may damage the image file. Keep changes to a minimum.

8

Color Editing

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This chapter is about the color and gray controls, including:

- Selecting and applying **Color profile/Device link**.
- **Color Correction**; includes intuitive HSL and CMYK controls for performing color corrections. You can control the range of colors that will be affected.
- **LS Curves**; performs color corrections in an image by modifying the luminance and the saturation values of a selected color.
- **Color Correction Mask**; for interactive editing, allows you to see the color corrections on the preview.
- **Gray Control**; modifies the gray balance by changing the CMYK values of the grays.
- **Input Gray Levels**; modifies the RGB values of the White/Dark points and midtone of the Color profile/Device link, thus changing its contrast.
- **Separation setup**; includes the UCR/GCR/UCA functions.

Color Correction

The **Color Correction** function enables you to change the colors of an image. The requested color is selected and changed using the HSL and CMYK controls. When one of the controls (HSL, CMYK or RGB) is modified, the other control is automatically updated. In addition, you can control the range of your color correction.

1. Click the *Color Correction* icon in the *Image* palette, or choose **Color Correction** from the *Image* menu in *Menu bar*. The *Color Correction* dialog box is displayed.

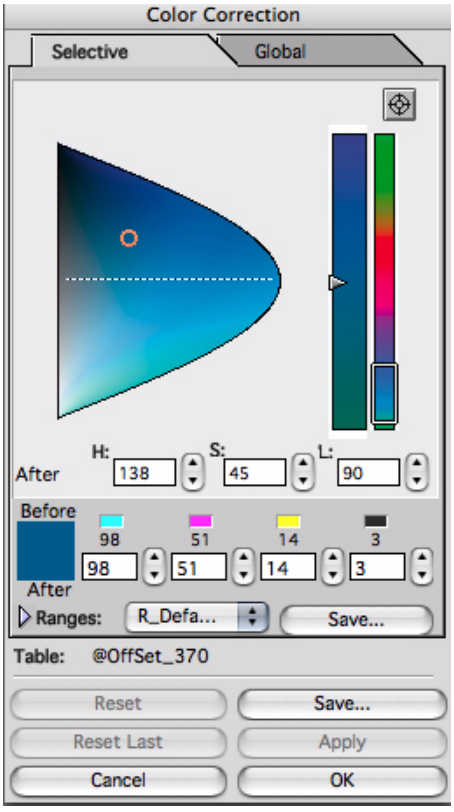
Note: The HSL color palette in the dialog box is empty until you select a color.

The *Color Correction* dialog box has two tabs: **Selective** and **Global***:*

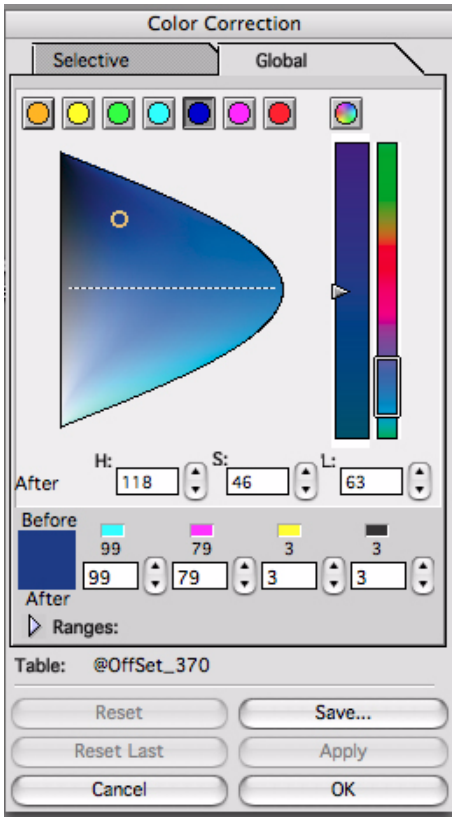
- **Selective** provides a good solution for most situations. You can pick and choose specific colors from the image that you can change in a highly selective manner.
- **Global** offers a choice of preset color ranges that are depicted by color-coded buttons. Each of the buttons represents a specific color group. For example, if you press the *green* button and you make a change, all the greens will be affected. *Global* is used to correct color in a broad and general way.

2. Select the tab(s) that most suit(s) the method with which you would like to effect color correction. If you intend to use both *Selective* and *Global*, to achieve optimum results, always use *Global* first.

3. *For Selective,* using the *picker,* select a color from the image.
The dialog box is updated with the selected color, as shown in the following figure.



➢ *For Global,* using the cursor, select the color coded button that represents the range of colors you want to correct. The dialog box is updated with the selected color.



Note: The Table field in the Color Correction dialog box lists the name of the active Color table.

The controls of the *Color Correction* dialog box are described further on.

HSL color palette

This section includes the **HSL color corrections** (from right to left):

- *Basic hue* control. The white frame marks the area with the hues that are closest to the selected color; this area is enlarged in the *Fine hue* control. The selected color is located in the middle of the frame area. The colors shown in this slider reflect only hue changes (saturation and luminance are fixed). This control is used for major interactive hue changes.
- *Fine hue* control is a magnification of the hue area of the selected color (the area framed in the *Basic hue* control). The colors in this control reflect hue, saturation and luminance changes. This control is used for fine interactive hue changes.
- *H, S, L numeric input* fields show the selected color values. This control is used for fine numeric hue, saturation and luminance changes.
- *Luminance/Saturation* control, where the luminance is the vertical axis and the saturation is the horizontal axis. The small circle marks the selected color. This control is used for interactive saturation and luminance changes.

CMYK Controls

- *CMYK before/after* values. This control is used for fine numeric CMYK changes. These changes affect the *HSL controls*.
- *CMYK before/after* color patches of the selected color (before changes the *before/after* are identical). These patches reflect any color change you perform.

The colors shown in the *HSL* and *CMYK* controls represent the colors of the active profile. Color corrections are performed by modifying the above controls.

To perform Color corrections, perform the following:

1. Select **Color Correction** to open the *Color Correction* dialog box.
2. Select either the *Selective* or the *Global* tab.
3. In *Selective*, pick a color from the image; in *Global*, click one of the color buttons.
4. Change HSL values visually with the *Basic hue, Fine hue* and *Luminance/ Saturation* controls.

   See *Image Correction Examples, Figs.12, 13 & 14: Color corrections with default range*.
5. Change HSL values numerically with the *HSL numeric input* fields.
6. Change CMYK values with the *CMYK controls*.

   In some cases, a combination of the above controls is required to achieve the desired result. When the *HSL* or *CMYK* controls are modified, the other controls are updated accordingly.
7. To perform major hue changes, move the frame of the *Basic hue* control.
8. To perform fine hue changes, move the marker of the *Fine hue* control.
9. To perform saturation and luminance changes, move the circle of the *Luminance/Saturation* controls. Moving toward the right increases saturation; moving downward increases luminance.

Tip: To view changes before Apply, click the *After* box. When you move to the *display* window, a patch in the *After* color is displayed. Place the patch to view the color change.

Tip: For fine saturation/luminance changes use the numeric input fields.

Alternatively, or in addition, you can enter new values in the *HSL numeric input* fields. This method might be more suitable for fine changes. Value ranges are:

- **Hue**: 1 - 360
- **Saturation**: 1 - 128
- **Luminance**: 1 - 255

10. To change the *CMYK values*, enter new values in the *After* fields or use the *CMYK* nudge buttons. The *After* color patch is updated accordingly.

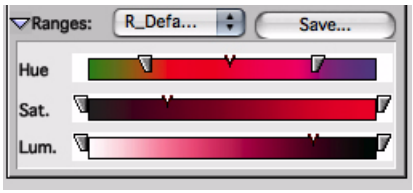
You can use a combination of the above controls. You can also change the *Range* option (as described below) while performing your color corrections.

Tip: Use the Sample points function to view you changes.

Range

The *Range* control defines, in HSL values, the effective range of your color changes. In other words, it defines which hues, saturation/luminance levels will be affected by your change. R_Default@ is the default *Range* setting; additional settings are supplied for other changes.

1. To change the default range setting, choose one of the supplied settings from the *Range* pop-up list.
2. You can also create custom-made ranges by setting the *Range* controls. Press the *Range* arrow to display the *Range* controls.



The *Range* controls include the *Hue*, *Sat* and *Lum* sliders (modifying one slider does not affect the other sliders). The marker on each slider indicates the selected color.

To create custom made ranges:

If you cannot achieve the desired effect with the existing ranges, you can create your own range settings. Since range is independent, changing its controls does not affect the *HSL/CMYK controls*.

1. Set the *Hue*, *Sat* and/or *Lum* sliders, by moving one or both controls of each slider you want to modify. When the two slider controls are set *closer* together, the range effect is more limited.

   See *Image Correction Examples, Figs.16, 17 & 18: By adjusting the Range controls, you can adjust the specific blues that will be affected.*

Note: As you modify the *HSL* sliders, the Range field becomes Custom

2. Use the range **Save** button to save custom *Range* settings. The saved file contains the offset values relative to the current selected color. When a new color is selected, the saved relative offsets are loaded and applied to the new color.

The effect of applied color changes depends on the scope of the change and on the *Range*. For example, if you perform a major change, but the *Range* is very limited, then your change will mainly affect the selected color, but hardly affect other colors.

Option buttons in Color Correction:

Note: Each of the option buttons effects changes in both tabs, Selective and Global.

Apply	Active after each change, to update the image.
OK	Updates the current image and exits the function.
Reset Last	Cancels the last **Apply**, that is, the most recent change that was applied to the image.
Save	Saves color changes as a Device link profile.
Reset	**Cancels all changes**.
Cancel	Cancels all changes and exits the function.

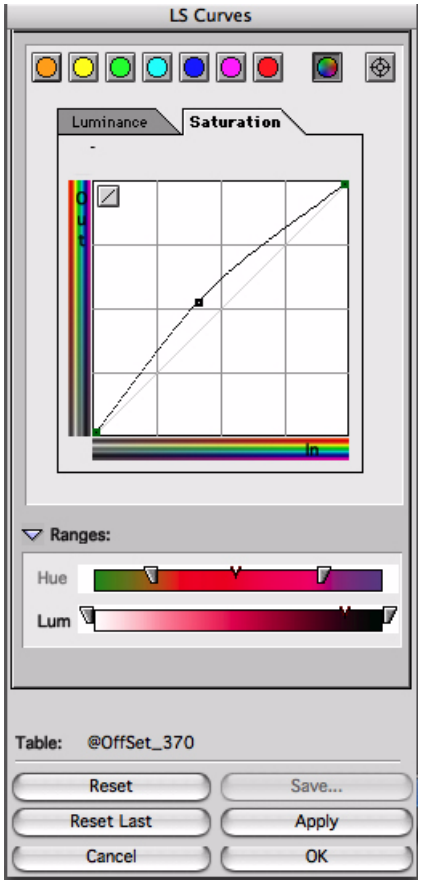
Tip: Use the split screen feature to view the image before/after changes

LS Curves

The *LS Curves* function enables you to perform color corrections in an image by modifying the luminance and the saturation values of a selected color.

➢ Click the *LS Curves* icon in the *Image* palette or select LS Curves from the *Image* menu.

The LS Curves dialog box is displayed.



Color palette

Use the *Color palette* icons for global color changes for each color (separately).

All Colors

Use the *All Colors* icon for global color changes for all colors.

Picker

Use the picker to select a color/to mark a reference point in an image.

Luminance/Saturation controls

The *LS Curves* dialog box has two tabs, **Luminanc**e and **Saturation**. Select **Luminance** when you want interactively to brighten or darken the image along the luminance axis. Select **Saturation** when you want to change the colorfulness of the image, i.e. to neutralize the colors in the image or make them more colorful.

Include Grays

Use the *Include Grays* option to apply the color changes also to gray colors. This option is available only when making color corrections to all colors.

Reset

The *Reset* icon, at the top left corner of the *LS Curves Graph* dialog box, cancels changes applied to the curve. The *Reset* button, at the bottom of the dialog box, cancels all the changes made in the *LS Curves* dialog box. The *Reset Last* button cancels the last change made in the *LS Curve* dialog box.

LS Curves Graph

The horizontal axis represents the luminance/saturation values of the image before the color changes (input). The vertical axis represents the luminance/saturation values of the image after the color changes (output). When the Luminance tab is selected, the more you drag the anchor point(s) upwards, the brighter the image becomes. When the *Saturation* tab is selected, the more you drag the anchor point(s) upwards, the more saturated the image becomes.

Ranges control

The *Ranges* control includes the *Hue* and *Luminance/Saturation* sliders. Each slider has a marker that indicates the selected color.

Ranges control for Luminance

The *Ranges* control for luminance defines, in hue and saturation values, the effective range of your color changes. In other words,
it defines which hues and saturation levels will be affected by your change.

Ranges control for Saturation

The *Ranges* control for saturation defines, in hue and luminance values, the effective range of your color changes. In other words,
it defines which hues and luminance levels will be affected by your change.

Color Correction Mask

Color correction mask gives you control over the exact pixels in the image on which you want to make color corrections. This tool is convenient for interactive editing, i.e. it allows you to see the color corrections on the preview immediately, before applying the changes.

Color Correction Mask icon appears on the toolbar along the left side of the *Image display* window.

- Perform your color corrections, then click the *Color Correction Mask* icon.

  The pixels in the image that were affected appear in the complementary color. If no additional color correction is needed, click **Apply** to update the changes.

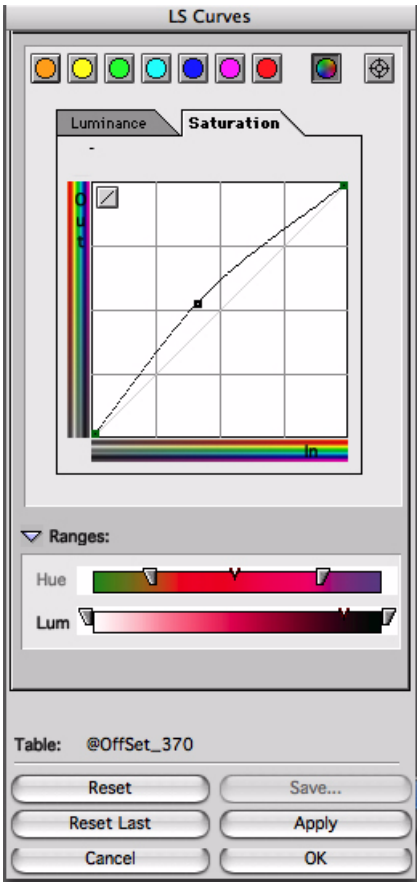
- To switch between the mask view and the regular view, click *Color Correction Mask* icon again.

Performing Color Corrections

The *Color Correction* and the *LS Curves* function used together with the *Color Correction Mask* tool offer you an interactive tool for color editing. It gives you full control over the exact colors to which you want to apply the change.

To perform color corrections in an image:

1. Select a color from the image using the picker; an anchor point is displayed in the curve.
2. Drag the anchor point(s) upward if you want to brighten the image, or make it more saturated. Drag the anchor point(s) down if you want to darken the image or make it more neutral.



3. Click the *Color Correction Mask* icon in the *Image display* window to view the pixels that were affected by the change you made.

Note: You can use split screen to view the image with or without the mask.

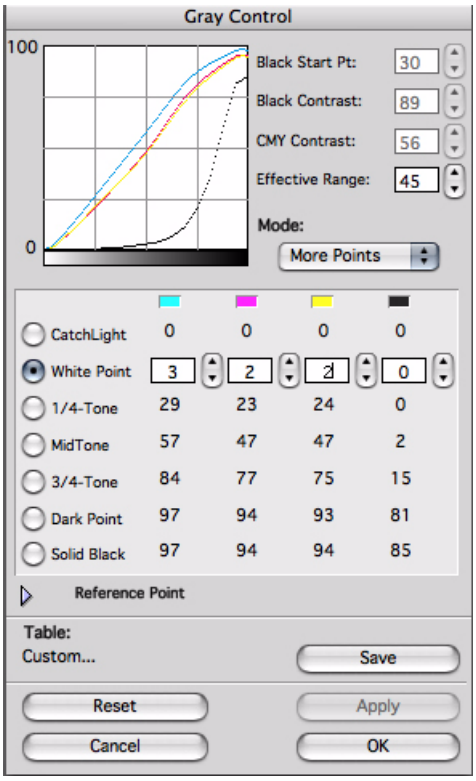
4. Use the *Ranges* control (*Hue* and *Luminance/Saturation* sliders) to limit the effect only to the exact colors you want to change. Set the *Hue* and/or the *Luminance* or *Saturation* sliders by moving one or both controls of each slider you want to modify to broaden or limit the range effect.

Gray Control

Gray balance is important for obtaining good printing results. It is necessary that the gray balance of the Color profile/Device link matches the gray balance of your printing system. **Gray Control** modifies the gray balance of the Color profile/Device link by changing the CMY (output) values for the grays. The values and shape of the black (K) curve are also controlled. Changes affect the grays and unsaturated colors.

The grays are defined by several *Control* points, three main points and four secondary ones. It is recommended to have the values of the *Control* points of your printing system when using **Gray Control**.

➢ From the *Image* menu, choose **Gray Control**. The *Gray Control* dialog box is displayed.



Note: This feature is only available in CMYK mode.

Gray Control includes the following:

- **Separation curves** of C, M, Y and K values along the gray axis of the Color profile/Device link. These curves change interactively as you edit the **Gray Control** parameters.
- **Mode** determines the number of *Control* points you wish to edit. Choose one of the following:
  - ❒ **3-Points** includes three main points (White point, Dark point and midtone).

    Note: Black Start Pt, Black Contrast and CMY Contrast are available only in this mode.
  - ❒ **More Points** includes the three main points (White point, Dark point and midtone) and four secondary points (CatchLight, 1/4 Tone, 3/4 Tone and Solid Black).

In **3-Points**, the curves are always smooth; in **More Points**, the curves may be unsmooth. When changing to **3-Points**, the curves become smooth without affecting the White/ Dark points and midtone values.

- **Black Start Pt** [0 - 90]

  In **3-Points** only, this parameter sets the cyan value from which black appears. For example, if **Black Start Pt** = 20, then for any gray point with cyan value above 20, the black value is above 0.

- **Black Contrast** [-100, 100]

  In **3-Points** only, this parameter sets the rate of change of the black separation along the gray axis. Positive/negative values indicate an increasing/decreasing rate of change.

- **CMY Contrast** [-100, 100]

  In **3-Points** only, this parameter sets the rate of change of the CMY separations along the gray axis. High/low values indicate an increasing/decreasing rate of change.

- **Effective Range** [0 - 100]

  Determines the effect of changes on other colors of the Color profile/Device link. The higher the range value, the more saturated colors are affected. For range = 0 (min.), only the grays are affected. For range = 100 (max.), all colors are affected.

- **CMYK values of Control points**

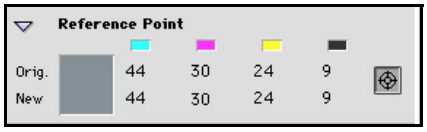
  The number of active *Control* points depends on selected **Mode** option. The CMYK values of the control point affects the gray control curves.

Using Gray Control:

1. From the *Mode* pop-up list, choose **3-Points** or **More Points**, depending on the number of *Control* points you wish to edit.
2. Check the requested CMYK values of the *Control* point and edit them. For a correct gray balance, you should enter the values of your printing system.
3. Select and edit additional *Control* points, as necessary.

   Tip: Use the Sampler tool and Sample Points function to view your changes on selected reference points.

4. Verify the **Effective Range** value.
5. For 3-Points only, you can define the **Black Start Pt** value and edit the **CMY/ Black Contrast** values of the CMY and black separations.
6. To use a reference point while performing changes, click the *Reference point* arrow. The following window is displayed.



7. Using the *picker*, mark a reference point on the image. You can now evaluate changes before Apply, by viewing the *CMYK Orig/New* values and color patches.

   Tip: To view changes before Apply, click the *New* box. When you move the pointer to the *Image display* window, it drags a patch in the New color.

Option buttons in Gray Control:

Apply	Active after each change, to update the image.
OK	Updates the current image and exits the function.
Reset	Cancels all applied changes.
Save	Saves color changes as a device link profile.
Cancel	Cancels all changes and exit.

Note: Use the split screen feature to view the image before/after changes.

Input Gray Levels

Input Gray Levels controls the number of gray levels below and above the White and Dark points, and affects the Color profile/Device link contrast.

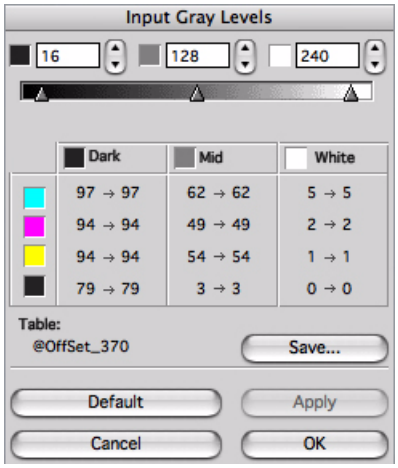
The grays are arranged on the RGB axis, ranging from 0 to 255. Editing the RGB values of the White and Dark points changes their position on this axis, thus affecting the number of gray levels below the White point and above the Dark point.

The range between the White and Dark points is divided by the midtone into highlights and shadows. Therefore, changing the RGB value of the midtone affects the Color profile/Device link contrast.

This function is useful in special cases, when the required amount of gray levels beyond the end points is non-standard.

For example, reflectives that do not have values brighter than the paper base, where the current White point values are 3%C, 2%M, 2%Y and 0%K. You can move the White point slider until the values in the White point *After* fields are 0,0,0,0.

➢ From the *Image* menu, choose **Input Gray Levels**. The *Input Gray Levels* dialog box is displayed.



RGB slider

The *RGB slider* (top of the dialog box) shows the RGB values of the White point (at the right end), Midtone (in the middle) and Dark point (at the left end).

The permitted range of RGB values for each point:

- **Dark point** range is 0 - 75. Default is 16.
- **Midtone** range is 90 - 165. Default is 128.
- **White point** range of 180 to 255. Default is 240.

  Note: Increasing the RGB values of the points makes the picture brighter; decreasing the values makes the picture darker.

CMYK Before/After values

The *CMYK Before/After* values of the Dark point, Midtone and White point appear below the *RGB slider*. Within each point, and for each separation, the number on the left is the *before* value; the number on the right is the *after* value.

- In most cases, you should verify that the RGB values of the White/Dark points and midtone are set to their defaults.
- If you need to edit the RGB values, use the controls of the *RGB slider*: move the indicator, use the nudge buttons or enter the value in the input field. The *CMYK After* values change interactively.

  Tip: Use the Sample Points function to view your changes on selected reference points.

Option buttons in Input Gray Levels:

Apply	Active after each change, to update the image.
OK	Updates the current image and exits the function.
Reset	Cancels all applied changes.
Save	Saves color changes as a device link.
Default	Resets RGB values to their default values (listed previously). The CMYK values are also set to their defaults. Click **Apply** to apply the defaults.
Cancel	Cancels all changes and exit.

Tip: Use the split screen feature to view the image before/after changes.

Separation Setup

Separation Setup includes the **UCR, GCR** and **UCA** functions.

When cyan, magenta and yellow separations are printed, the two *significant* colors of CMY determine the hue, that is, the basic color, such as red, blue, etc. The *least significant* color of CMY determines the saturation or grayness; it does not add color. In other words, at certain values of CMY, the cyan, magenta and yellow separations contain gray. Therefore, we can substitute percentages of black for the three process colors.

The **UCR/GCR/UCA** functions are *non-interactive*, that is, you can see the results only in the final scan, not on display. However, the densitometer values reflect these functions.

UCR (Under Color Removal)

UCR replaces a certain amount of CMY with black, and affects mainly the neutral (gray) colors of the Color profile/Device link.

GCR (Gray Component Replacement)

GCR performs the same function as **UCR**, but affects most of the colors (neutrals and colors) of the Color profile/Device link. Saturated colors are not affected.

The gray component in all colors is calculated and replaced with black. That is, a certain amount of the process color (C, M or Y) that has the gray component is replaced with black. As a result, although all three process inks are used, lower values of CMY and higher value of black are required.

UCA (Under Color Addition)

Using **UCR/GCR** can cause some loss of density and contrast in the shadows. **UCA** compensates for this loss by adding some of the color that was removed in UCR or GCR.

UCA can also be used to change the color balance in the shadows.

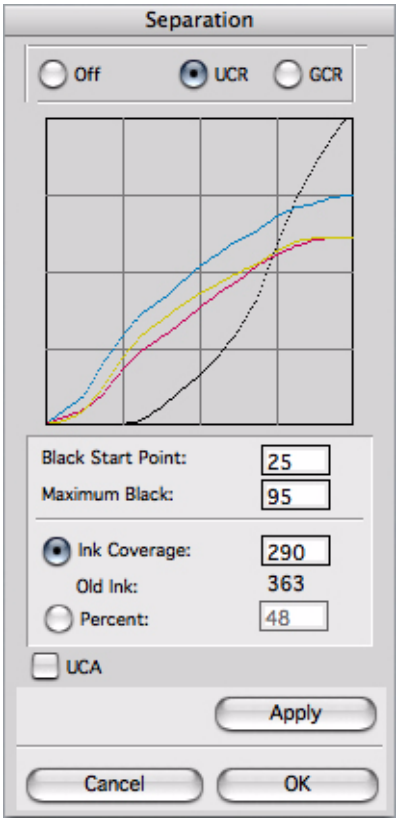
Note: If UCR, GCR and/or UCA is selected, a U or G and/or A is displayed in the Image display window.

UCR/GCR Advantages

- Better color saturation
- Sharper reproduction due to detail in black separation
- Vivid colors even on poor quality paper
- Reduction in the consumption of expensive CMY inks
- Shorter drying and make-ready time on press
- Fewer ink trapping problems
- Higher stability of neutral tones (grays)

Using UCR/GCR

1. From the Setup menu in Menu bar, choose **Separation Setup**. The Separation Setup dialog box is displayed.



2. Depending on your choice, choose **UCR** or **GCR**. To scan without **UCR** or **GCR**, choose **Off**.

Separation curves

The CMYK curves along the gray scale of the active Color profile/Device link are shown. These curves change interactively as you edit the parameters described below (the densitometer values also reflect these parameters).

Note: These parameters are inactive if OFF is selected.

Black Start Point [0 - 90]

UCR/GCR is applied only if the black value that will replace the gray component is above the **Black Start Point**. The higher this value is, the less effect UCR/GCR will have.

Maximum Black [0 - 100]

The maximum percentage of black in the Dark point.

Old Ink

Informative only. Displays the C+M+Y+K values of the Dark point in the Color profile/Device link, before performing UCR/GCR.

See *Image Correction Examples, Figs. 20 & 21*: *Two examples of GCR*.

Ink Coverage [100 - Old Ink value]

The desired amount of ink coverage (that is, C+M+Y+K values) of the darkest point in the Color profile/Device link after performing UCR/GCR.

Percent [0 - 100]

The percentage of the gray component that is reduced from CMY.
In UCR, if Percent = 100 then all gray values are replaced by black.

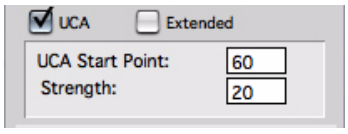
Note: Percent and Ink Coverage are related; if one is defined, there is no need to define the other. Ink Coverage is usually used in UCR, and Percent in GCR.

Using UCA

After performing **UCR/GCR**, you may use **UCA** to increase the density and contrast in the shadows that were affected by the **UCR/GCR** function.

UCA may also be used as a stand-alone function without **UCR/GCR**, when you want to change the color balance in the shadows.

1. Select the **UCA** option to display the UCA basic parameters.



2. Set the **UCA** parameters, as described below.

UCA Start Point

Determines the starting point for **UCA**; this should be a point in the shadows. The area from this point toward the shadows will be affected by the **UCA** function.

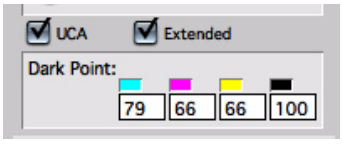
Strength

The strength of the **UCA** effect. If set at 100, **UCA** has maximum effect, thus canceling the entire effect of **UCR/GCR**. For low values of strength, **UCA** has minimal effect.

See *Image Correction Examples, Fig. 22: Using GCR with UCA*.

Extended

Check the **Extended** option, if further fine-tuning is required (in addition to the **Strength** value).



In the *UCA Extended* field, set the CMYK values of the Dark point.

Note: UCA is defined for a particular setting of UCR/GCR, so the UCR/ GCR parameters are grayed when UCA is used. To modify UCR/GCR, you must first uncheck UCA.

- After setting the **UCR/GCR/UCA** functions, click **OK**. The settings will be applied to the device link in the final scan.

9

Sharpness

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Overview

This chapter describes:

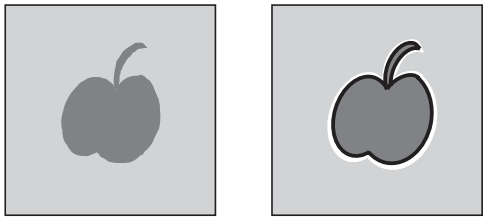
- the Sharpness function
- the Sharpness controls
- editing Sharpness

During the scanning and printing processes, the picture sharpness is decreased. The **Sharpness** function compensates for this sharpness loss. Sharpness is applied automatically by the scanner, and can also be adjusted by the user.

The scanner increases the picture sharpness by comparing the light intensity of each pixel to the light intensity of its surrounding area:

- If the pixel is darker than the surrounding pixels, the scanner darkens it more to achieve a sharper contrast.
- If the pixel is lighter than the surrounding pixels, the scanner lightens it more to achieve a sharper contrast.
- If the light intensity of the pixel is the same as that of the surrounding pixels, no action is taken.

Sharpening affects the borders between adjoining areas of different brightness. After sharpening, a thin outline (contour) composed of a light and dark strip emphasizes the border between the lighter and darker areas. The following figure illustrates the results of sharpening.



Before **After**

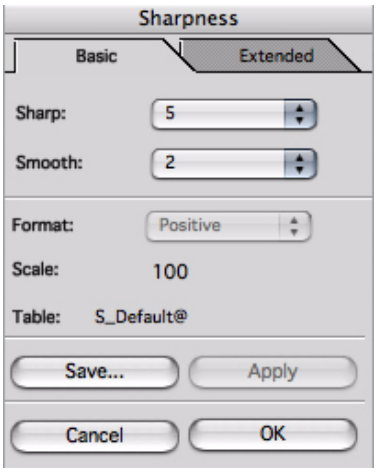
Sharpness Controls

The **Sharpness** function includes several controls that may be edited. The controls are located in the *Sharp* dialog box and include:

- Basic controls
- Extended controls

Basic Controls

The *Basic* controls determine the global sharpness level. To access the basic controls, click the *Basic* tab in the *Sharp* dialog box.



Format and Scale are described in *Sharp Setup on page 125*

Sharp

The **Sharp** control defines the strength of the contours produced by the **Sharpness** function, relative to the background. **Sharp** ranges from 0 (no sharp) to 10 (max sharp).

See *Image Correction Examples, Figs. 23 & 24: Changing the Sharp control*.

Smooth

The **Smooth** control defines the degree of smoothness for the selected **Sharp** level. **Smooth** ranges from 0 (no smooth) to 10 (max smooth).

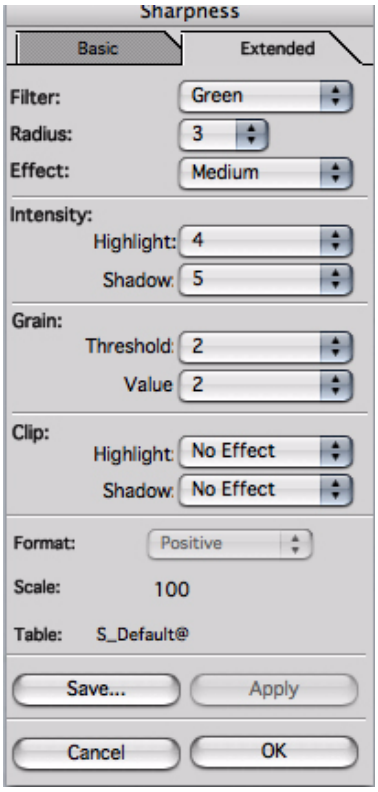
See *Image Correction Examples, Figs 25 & 26: Changing the Smooth control.*

Extended Controls

The *Extended* controls include controls that define the global sharp level. Editing these controls requires advanced knowledge about the sharpness function, and is recommended for experienced users.

Note: The Basic and Extended controls affect each other.

To access the extended controls, press the *Extended* tab in the *Sharpness* dialog box.



Filter

Filter defines the color channel used as a reference for image sharpening. In single color filters, the RGB channels are sharpened according to the brightness variation of the single channel. Therefore, the colors are not sharpened in the same degree.

In **Green**, sharpening is according to the green channel variations; the red and blue channels are modified accordingly.

In **Red-Green**, the red and green channels are sharpened, each according to its variation, and the blue channel is sharpened according to the green channel.

In **All**, all colors are sharpened in a balanced form, since each channel is sharpened according to its brightness variation.

See *Image Correction Examples, Figs. 27 & 28: Changing the Filter control*.

Radius

Radius defines the thickness of the contour produced by sharpness. The higher the radius, the thicker the contour. **Radius** ranges from 2 for thin contours to 13 for thick contours. The selected **Radius** affects the active **Effect** options (see *Effect* below).

See *Image Correction Examples, Figs. 29 & 30: Changing the Radius control*.

Effect

Defines the sharpening effect on the texture. There are a total of five **Effect** levels, but the active options depend on the **Radius** selected previously.

In **Harsh**, the sharpening enhances small texture details. In **Smooth**, the sharpening shows only large details. Intermediate options are **Harsh-Med**, **Medium** and **Med-Smooth**.

Intensity

Determines the extent of the contours, produced by the **Sharpness** function, relative to the background. **Intensity** is set separately for the highlights and the shadows:

- **Hlt** for white contour
- **Shd** for dark contour

Intensity ranges from 0 - No Sharp to 10 - Max Sharp. The higher the value, the stronger the contour. That is, a larger difference between the contour and background. In Hlt = 0 and Shd = 0 there is no sharpening.

Grain

Grain is seen in the image when the emulsion particles of the film are visible at certain enlargements. The **Grain** control reduces the grain sharpness, that is, pixels within the grain are sharpened less than the rest of the picture. The surface then appears smoother and more even. **Grain** includes two separate controls, each ranging from 0 to 10:

Threshold	Amount of pixel variation in the background, below which the effect is considered grain, and above which is considered texture or edge. The higher the threshold, the larger the differences that are considered grain.
Value	Amount of sharpness reduction performed on the area that is considered grain, relative to the background. The higher the value, the more reduction performed.

Note: A high Grain value might decrease the global sharpness.

Clip

A certain combination of two colors, such as blue and brown and a particular **Filter**, can create a noticeable contour. **Clip** can reduce these contours. In other words, **Clip** limits the extreme levels of brightness or darkness of contours produced in strong levels of **Intensity**. The extent of clipping is set separately for the highlights and shadows, thereby enabling independent reduction of the bright and dark contours.

Clip ranges from 0 - No Effect to 10 - Full Effect (no sharpening).

See *Image Correction Examples, Figs. 31 & 32: Changing the Clip control*.

Editing Current Scan

Editing Sharpness in current scan is one of the methods for editing Sharpness (**Sharp Setup** is the second method, see further on).

Editing sharpness for current scan includes:

- Applying *Sharpness* tables
- Interactive Sharpness editing

Applying Sharpness tables

Sharpness is applied to the image using *Sharpness* tables. Several such tables are supplied with the application and **S_Default@** is the default table. Additional tables, based on the default table, provide different effects. For example, smoother or sharper effects.

To apply another Sharpness table to the active displayed crop:

1. In the *Setup* dialog box, open the *Sharpness* pop-up list and choose one of the listed tables. If you do not create *Sharpness* tables, only the supplied ones are available.
2. Click **Apply** to update the image.

Interactive Sharpness Editing

After *Preview*, you can edit the active *Sharpness* table. Changes apply to current scan only, that is, to the current *Format*, *Media* and *Scale*. Interactive sharpness editing is possible only in **Max Detail**, so you should first perform a max detail prescan. In addition, you can see the effects of smoothening (descreening and anti-alias) on the max detail display.

Performing Max Detail

Max Detail is a prescan of a limited image area in the final scan resolution. This option is useful when you wish to examine the results of Sharpness, and/or interactively edit the sharpness controls. You can apply sharpness changes to the max detail image, and evaluate the results.

1. In the *Preview* mode, when the *Preview* or *Crop Prescan* image is displayed, click the *Max detail* icon in the toolbar.

2. Move the pointer to the *Image display* window.

   The *Max detail* pointer is surrounded by a frame that marks the area that will be scanned in **Max Detail**. The frame size depends on the **Scale** and **Resolution** values defined in the *Setup* dialog box.

3. Position the *Max detail* pointer on the image area that you wish to see in maximum detail.

4. You can slightly modify the frame size and thereby the size of the **Max Detai**l area. To increase or decrease the frame size, press the <⌘> key together with the <+> or <-> key.

5. Double click to activate **Max Detail** on the defined area.

   The max detail request is sent to the *Scanner Queue* window. It enters the top of queue and is performed when the current scan is completed.

   The scanner performs a high-resolution scan of the frame area, using the final scan resolution and focus. When completed, an image thumbnail of the max detail appears in the *Preview Browser*, with the *Preview* or *Crop Prescan* name and the *Max detail* icon.

   Note: There can be only one max detail per crop. The first max detail is deleted if you request another one.

6. To display the *Max detail* image, double click its thumbnail in the *Preview Browser*. The *Max Details* window is displayed.

   Note: The cropping tools are inactive.

   Note: Use Split Screen to view the before/after changes.

Effects of Smooth

In some cases, when a certain amount of digital descreening is required, Smooth may be used. The jagged edges of lines are smoothened, and the dot pattern in printed material is blurred. The unwanted effects of moiré are also reduced.

The effects of smooth can be viewed on the max detail image. Printed material is described in *Chapter 8, Special Workflows*. The following describes the use of smooth for jagged edges in lines.

1. If required, choose **Anti-alias norm** or **Anti-alias strong** from the *Smooth* pop-up list in the *Setup* dialog box.
2. Perform a max detail prescan, as described in previous section.

The max detail automatically shows the effects of smooth and the queue is *suspended*. If the results are unsatisfactory, you can immediately repeat the max detail:

1. Choose another value from the *Smooth* list.
2. Click Show in the *Setup* dialog box to repeat the max detail.

The system rescans the max detail area with the new smooth value, and the new max detail *replaces* the previous one.

Sharpness Editing in Max Detail

The max detail image is automatically displayed with **Sharp Effects** active, so you can examine and edit the sharpness.

1. In the *Image* palette, click the *Sharp* icon. The *Sharp* dialog box is displayed.

2. Click the *Basic* or the *Extended* tab, depending on the scope of editing you wish to perform.

   Refer to *Sharpness Controls on page 119*
3. Edit the *Sharpness* controls.
4. **Click Apply** to update the image and view results.
5. Click **OK** to update the active table. The changes affect the current scan only and are not saved. The table becomes *Custom*.
6. Click **Save** to save changes in a new table for future use.

   Note: To overwrite the S_Default@ table, you must first save it under a new name.
7. Click the *Hide Sharp Effects* tool to hide the sharp results.

Note: This tool is active only in Max detail.

Sharp Setup

Sharp Setup is another method for sharpness editing, and is used for extensive editing of the *Sharpness* tables. **Sharp Setup** enables you to create and modify *Sharpness* tables for all **Format** and **Scale** categories. Changes are saved in the table for future use.

Format options include:

- Positive
- Negative
- Reflective
- Reflective Descreen

Each **Format/Scale** category contains a specific setting of the *Sharpness* controls: Intensity, Grain, Radius, Filter, Effect and Clip (described previously in *Sharpness Controls on page 119*).

1. From the *Setup* menu, point to **Sharp Setup**, then select **General**. The *Line-art* option is selected in the *Line-art* mode.

   Refer to *Line-art Mode* on page 138.
2. In the *Sharpness* dialog box, click the *Basic* or *Extended* tab, depending on the scope of editing you wish to perform.
3. From the *Format* list, choose the option you wish to edit. **Format** specifies the format and media of the original.
4. From the *Scale* list, choose the option that you wish to edit. (The sharpness performed on an image depends on the scale of the image).
5. For the selected **Format/Scale** category, edit the *Sharpness* controls. Refer to *Sharpness Controls on page 119*.
6. Edit the *Sharpness* controls for as many **Format/Scale** categories of the *Sharpness* table as needed.
7. After editing, click **Save** to save changes in the *Sharpness* table. You can enter a new table name, or overwrite the existing table. The new/modified table includes all settings for all **Format** and **Scale** categories.

10 Special Workflows

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While previous chapters focused mainly on color transparencies, this chapter describes other types of originals. The basic scan procedure is described in *Basic Scan* on page 35 and the image editing functions are described in *Chapters 5-9*. However, additional scan modes are available for special purposes and other types of originals.

Note: Use Save Settings when defining special workflows. Then use Load Settings when you want to use one of these workflows.

Refer to *Save/Load Setting* on page 155 for more information.

16-bit/8-bit Direct Scan

Scanning images in the *Direct Scan* workflow accelerates scanning time by allowing you to send images to final scan without the need to crop them. Therefore, the whole area around the transparencies is scanned. By defining the *Direct Scan* margin, you can eliminate the black frame for the purpose of image analysis only.

To scan images in the Direct Scan workflow, do the following:

1. From the *Setup* menu, point to **General Preferences**, and select **Operation Modes**.
2. In the *Operation Modes Preferences* dialog box, enter a value in the *Direct Scan Margin* box, and click **OK**.
3. In the *Layout* display, select the location of the images you want to scan.
4. Define the scanning parameters in the *Setup* dialog box, and click **Direct Scan**. An inner blue frame is displayed on those windows that you selected in the *Layout* display.
5. In the *Layout* display, select the windows you want to scan, and click the *Scan* icon in the *Windows* palette.

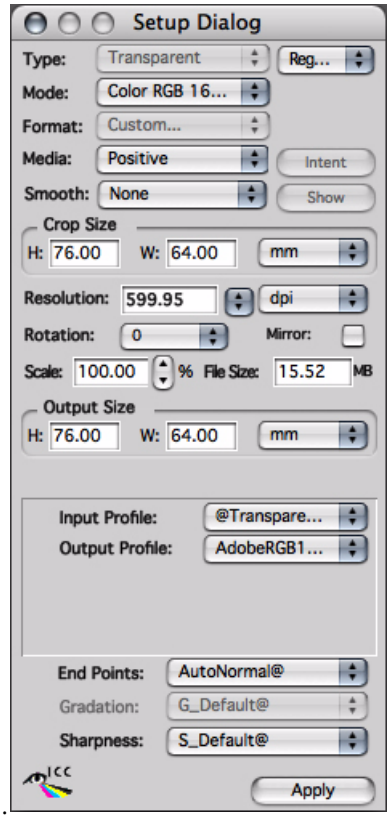
In the Save Scan As window that is displayed, specify the folder where you want to save the files, enter a file name, and select a file format.

Note: Use the Prefix/Suffix option to set the file name in advance.

Note: In the Scan dialog box, when scanning more than one file, you enter a file name, and the application automatically adds a sequential numbering to each final scan. For example, if you enter a name 'Job', the final scans will be saved as follows: Job_1 Job_2 Job_3, etc.

16-bit RGB

Color RGB 16-bit mode enables you to output an RGB color space such as Adobe 1998 and ProFoto.



If you select this mode, the color correction and LS curve options are unavailable.

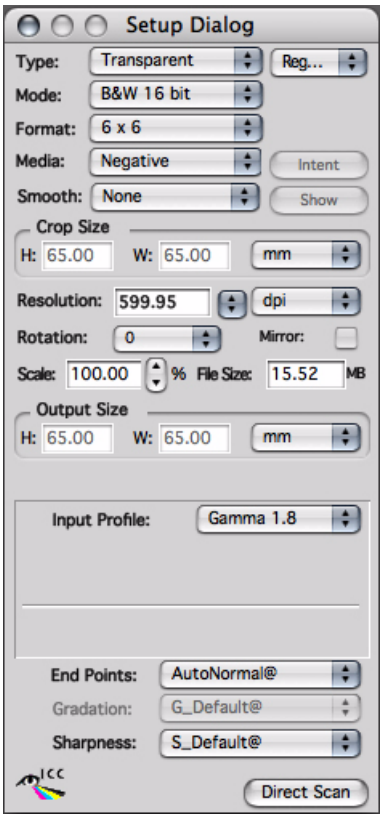
To perform color corrections in this mode:

1. In the **Input Profile** box, select the profile **@Transparency_iQsmart.**
2. In the **Output Profile** box, select **None**.
3. Make the color corrections and then save the new input profile.
4. Select the output profile.

16-bit B/W Mode

16-bit B/W is a new scanning mode for scanning B/W images, as well as RGB images, that addresses the ever-increasing need for archival of analog images as digital media. Many analog originals are historical black-and-white negative images. To ensure that these images are preserved digitally, the maximum amount of image information must be captured in digital form.

1. From the **Mode** list, select **B&W 16 bit**.



2. From the **Input Profile** list, select **Gamma 1.8** or **Gamma 2.2**..

Color Negatives

Scanning negative originals requires special considerations because negatives have a built-in orange color layer, and the tones and colors are reversed. For example, light areas appear dark and red appears cyan.

When scanning positives, you can achieve a good representation of your original. When scanning negatives, by choosing a proper device link and a film type table in the *Setup* dialog box, you can achieve, on the screen, a good representation of what the image will look like when printed in an RGB/CMYK device. Any device link used for positives can be used also for negatives.

- In the *Setup* dialog box, select **Negative** under *Media*. Then choose a filmtype table that best suits your film type, and a device link that is a link between the color space of your scanner and output device.

Negative Balance is a function designed specifically for color negatives. During preview or final scan, the scanner automatically adjusts the color balancing according to the film type. See details below.

Using Negative Balance

In the *Setup* dialog box in *Setup* mode, when *Media* is set to **Negative**, *Filmtype* appears in the dialog box with the default Filmtype table **N_Default@**. The application is supplied with additional tables, suited for various types of film.

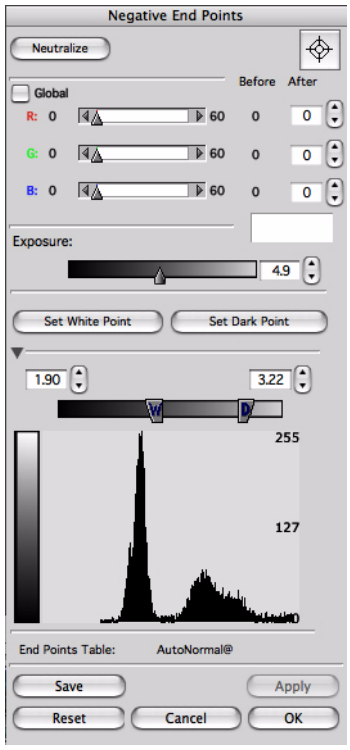
1. In the *Setup* dialog box, choose the *Filmtype* table suitable for your film type. If your film type is unknown or does not exist in the *Filmtype* list, choose **N_Default@**. Then click **Apply**.
2. If necessary, edit the end points using the **End Points** function (see *End Points* on page 81).

   Note: In the *End Points* dialog box, Neutralize and Remove Cast are inactive.

   Note: End Points editing should be performed after applying the Filmtype table. See *Filmtype and End Points* on page 134.

Under standard conditions, applying the correct *Filmtype* table is sufficient. However, for non-standard conditions, you might need to manually balance the image, as described below.

1. Click the End Point icon in the *Image* palette. The *Negative Balance* dialog box is displayed.



2. Using the *picker*, mark a reference point on the image. For example, mark a point that should be neutral. The *Before* color and CMY values are shown.
3. From the *Adjust* pop-up list, choose **Global, Highlight, Midtone** or **Shadow**, depending on the scope of your change:

- Choose **Global** if you want to change the entire image (**Neutralize** is active), **or**
- Choose **Highlight**, **Midtone** or **Shadow** to limit the change to a selected tone range (**Neutralize** is inactive).

See *Image Correction Examples, Figs. 35 & 36: Using Neutralize.*

4. For Global change:

- Click **Neutralize** to neutralize the image according to the reference point, **or**
- Modify the CMY values of the reference point using the CMY sliders. Maximum range is -30 to +30 of current value; each point has a specific range for each separation.

See Image Correction Examples, Figs. 37 & 38: Modifying skintone

5. To change a selected tone range (Highlight, Midtone or Shadow), change the values of the relevant reference point using the CMY sliders (same as for Global, see above).

   Note: To obtain the desired results in local changes, the reference point and *Adjust* option must correspond. For example, choose the Highlight option if the reference point is in the highlights.

   Tip: Use the Sampler tool and Sample Points function to see the effect of your changes.

Option buttons in Negative Balance:

Apply	Active after each change, to update the image.
OK	Updates the current image and exit the function. The Filmtype table becomes *Custom*.
Reset Last	Cancels the last **Apply**, that is, the last change that was applied to the image.
Save	Saves color balance in a Filmtype table.
Cancel	Cancels applied changes.

Tip: Use the split screen feature to view the image before/after changes.

If additional changes are required, use other functions such as **Gradation** and **Color Correction**.

See relevant sections in Tone Reproduction on page 79 *and* **Color Editing** on page 95**.**

Filmtype and End Points

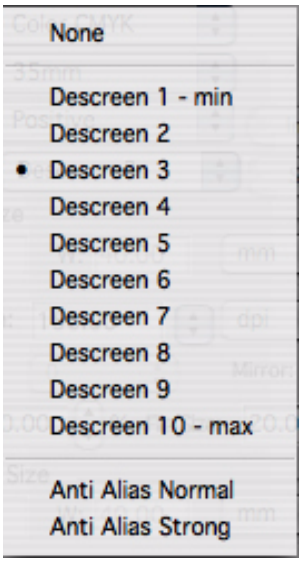
Although *End Points* and *Filmtype* are independent functions, they are related. *End Points* editing is performed on the active *Filmtype* table, so you should apply the *Filmtype* table before editing the *End Points*. If you try to apply another *Filmtype* table *after* editing the *End Points*, the system prompts that *End Points* changes will be lost. However, you can edit the *Filmtype* table, without canceling the end points editing. In addition, when you save a *Filmtype* table, it includes the *End Point* balance.

Printed Material

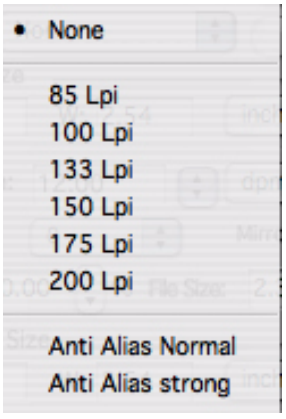
When you scan printed material, the printing dot pattern is sharpened thus creating unwanted effects called moiré. A slight amount of optical descreening can solve this problem by forcing the optics to move away from the focal plane, thus blurring the dot pattern without degrading the image.

Smooth - Descreening

Using descreening, controls the level of defocus to be effective during the scan. The results can be viewed in max detail prescan or in the final scan.



1. Choose a value from the *Smooth* pop-up list: **Screen1** (very weak blurring) to **Screen10** (very strong blurring). In **None**, descreening is inactive.
2. The required screening is a function of the screen ruling of the original. For low screen ruling (such as 80 LPI), more descreening is required (value 6 or 7). For high screen ruling (such as 150 LPI), less descreening is required (value 3 or 4).



3. Perform a max detail prescan.

   For more information about Max detail, refer to *Interactive Sharpness Editing* on page 123.

4. When a max detail prescan **with descreening** is completed, the queue is *suspended*. This enables you to immediately repeat the max detail with a new screening value, if so required.
5. To repeat the max detail, click **Show** in the *Setup* dialog box (**Show** is available after changing the screening value).

   Refer to *Image Correction Examples,* Figs. 33 & 34: *The dot pattern is blurred when using descreening*

   The system rescans the same max detail area, using the new screening value, and the new max detail display *replaces* the previous one.

B&W Mode

If your image is in B&W, choose the **B&W** mode to create a B&W file. You can also create a B&W file from a color image, where all the image colors are taken into consideration. The final B&W file has only one separation.

Options specific to B&W mode

- Only B&W Device Links are available; default is **BW_Default@**.
- The black separation is the only display option.
- In **Gradation**, only the black separation control is active.
- **Color Correction** is inactive.

Final scan formats in B&W mode

- EPSF
- TIFF
- JPEG

The settings for the above formats are as in the color modes.

Line-art Mode

In the **Line-art** mode, you can perform a high resolution line-art scan, where the created image has either black or white pixels.

Line-art options in Setup mode

1. In the *Setup* dialog box, select **Line-art.**

   Note: You cannot change to the Line-art mode after preview.

2. From the *Format* pop-up list, choose your format:

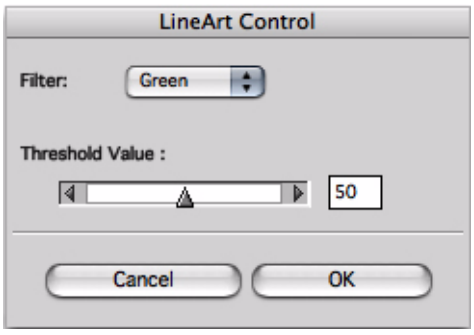
- for **transparency**, choose 8x10H, 8x18V, or All board.
- for **reflective**, choose A4H, A4V, or All board-A3.

Line-art controls include:

- *Threshold* value; based on the crop analysis, the application automatically defines the *Threshold* value and sets it at 50. The *Threshold* sets the distinction between the line-art image and its background. You can change the *Threshold* value, as described below (it is recommended to set the threshold in *Max Detail*).
- *Filter*; choose the filter to be used in the scan. For *B&W* originals, choose the green filter. For *Color* originals, choose the filter according to the colors you want to eliminate or emphasize. To eliminate a color, choose that filter (for example, to eliminate blue grids, choose the blue filter). To emphasize a color, choose another filter (for example, to emphasize red, choose the green or blue filter).

1. Click the *Line-art* icon in the *Image* palette,

or choose **Line Art Threshold** from the *Image* menu. The *LineArt Control* dialog box is displayed.



2. From the *Filter* menu, choose the **Red**, **Green** or **Blue** filter, according to the above guidelines.
3. Set the *Threshold* slider or enter a new value in the input box.
   The image changes interactively.

Line-art display options

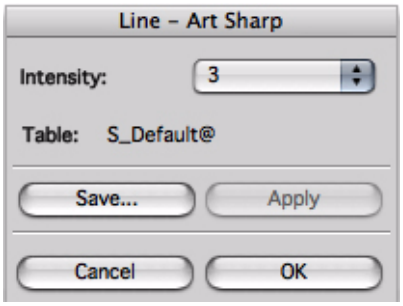
Line-art display (for black and white pixels only).

B&W display (black, white and grays). This is useful when you want to see more details, for example, when cropping.

➢ To choose the display option, click the **Line-art** or **B&W** icon on the left side of the *Image display* window.

Sharpness

Using **Sharpness** improves the resolution of the fine details in the final high resolution line-art scan. Sharpness editing is similar to the methods used in color modes (described in *Sharpness* on page 117). However, the *Sharpness* table in line-art contains only one format - **Line-art** for the entire scale range, and only one sharpness control may be edited (see *Intensity*, below).



Note: This dialog box is accessed from Sharp Setup - Line-art.

Intensity

Intensity is the single sharpness control in **Line-art** mode. It determines the extent of sharpness produced by the **Sharpness** function, relative to the background. **Intensity** ranges from **0** - No Sharp to **10** - Max Sharp. The recommended initial value is **4** for a normal good quality original.

Final scan formats in line-art

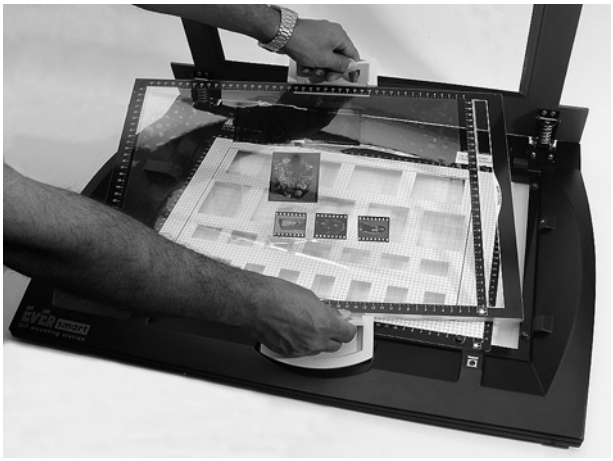
- TIFF
- EPSF

Note: The DCS, ICS, Include HalfTone Screens and Include Transfer Function options are not active. The Preview Pict options are 1 Bit or None.

Oil Mounting

The oil mounting station (Kodac patent pending) is a device for oil mounting of transparencies in flatbed scanning. In scanning transparencies, dust, scratched slide surface and other imperfections, such as Newton rings, lower the quality of the scans. Post-scanning correction of these imperfections (retouching) is an expensive and time-consuming process. In attempt to avoid correcting the imperfections post-scanning, oil mounting method is used. Oil fills the scratches and other surface imperfections in the transparencies providing a smooth surface and thus a better quality scan. For high quality scans, the oil mounting should be used in the following cases:

- with enlargements above 600% in which case “craters” that normally exist on the slide surface appear as noise
- when the slide is scratched
- when you have Newton rings despite the special glass treated to eliminate Newton rings



Transparencies can be mounted directly on the scanner or using a transparency mounting mask. The mask is used to block the passage of light in areas that are not to be scanned. The mask also defines fixed positions for the transparencies enabling the scanning software to locate and, depending on the software, memorize the positions of the transparencies. The mask has pre-cut windows of various sizes to match the relevant transparencies. These windows allow the transparencies to be positioned at right angles.

The station for oil mounting of transparencies is designed to eliminate the drawbacks of the traditional oil mounting method by providing:

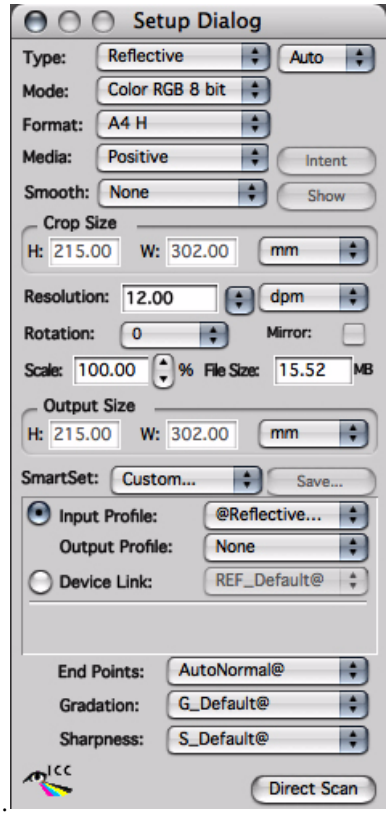
- clean and aesthetic oil mounting
- pre-scanning corrections
- maximum accuracy in positioning transparencies (station base grid lines or mask)
- high productivity by using additional base glass

Automatic Focusing of Reflective Scans

This feature improves the focus of originals that are not entirely flat, such as 3D objects. When this feature is selected, the scanner automatically detects the areas of the object located above the base glass and adjusts the focus accordingly.

To automatically focus a reflective scan:

➢ In the Setup Dialog box, in the **Type** box, select **Reflective** and **Auto**.



Producing a Gray Image From a Black-and-White or Color Original

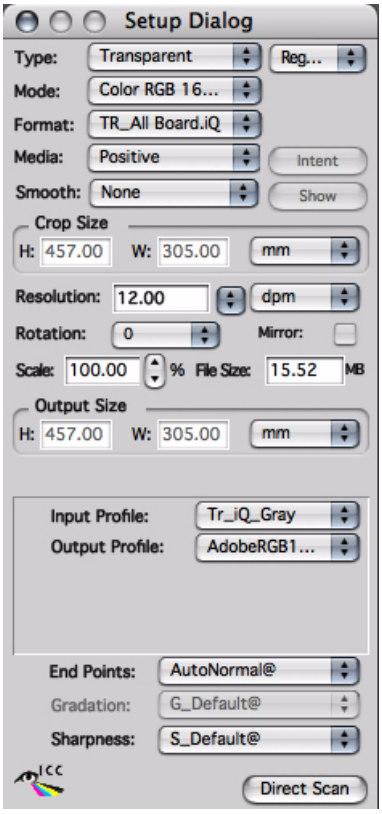
To produce a gray image from a black-and-white or color original, you can use either of the following input profiles:

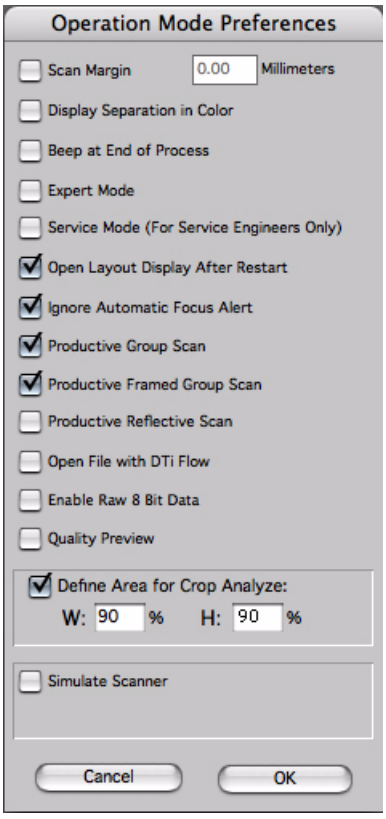
- **Tr_iQ_Gray**: For use with transparent originals
- **Ref_iQ_Gray**: For use with reflective originals

add:/Tr_Es_Gray

add:/Ref_ES_Gray

Note: If you do not specify an output profile the RGB values will not be equal.



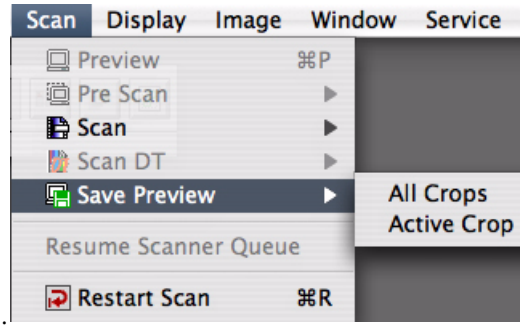


Save Preview

The save preview feature enables you to save the preview of your scan as a low resolution image for archiving or for use on the web. Any color definitions that you set in the preview are saved in the low resolution preview.

1. Use the cropping tool to crop an area of the preview.
2. From the Scan menu, select **Save Preview > Active Crop**.

   The cropped area is saved as a low resolution image. The image is the size of the cropped area.



Recommended Workflow:

1. Preview all the required images.
2. In the Setup Dialog box, set the color mode parameters. For example:

- Mode: **Color RGB 8 bit**
- Output Profile: **AdobeRGB1998.icc**

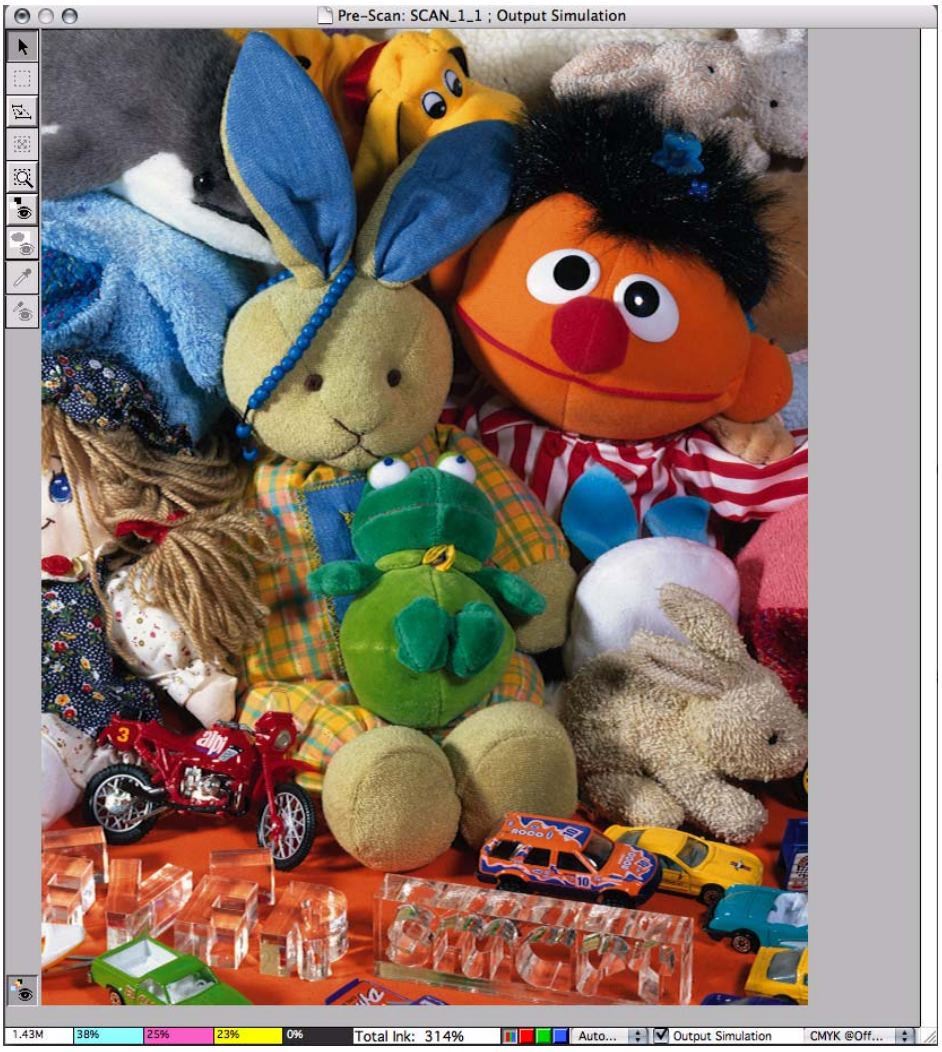
3. Set the desired crop for each image.
4. Close the Preview window.
5. In the Preview Browser, select all the images for which you want to save a low resolution image.
6. From the Scan menu, select **Save Preview > All Crops**.
7. Give each preview a name and click **Save**.

   A cropped area of each preview is saved as a low-resolution image..

Note: When working with the save preview feature, do not perform any other action such as pre-scan, max details, or final scan.

Output Simulation with CMYK Values

The output simulation feature now enables you to view the RGB or CMYK values in the selected CMYK or RGB profile while working in RGB mode. You can change RGB values and see your changes in CMYK. This addition to the output simulation feature is designed for working with CMYK



To view the CMYK values:

1. Select the Output Simulation check box.
2. In the output profiles list, select the desired output profile.
3. Click  .
4. The CMYK values are displayed.

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Scanning Modes

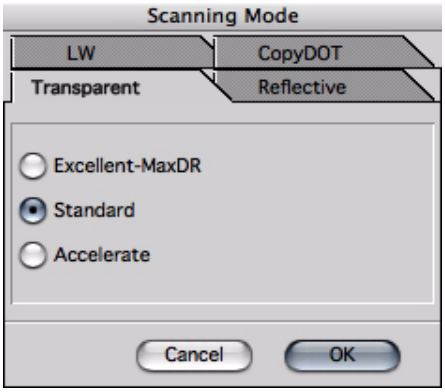
Scanning modes offer you a choice among varying scanning combinations based on a balance between quality and speed.

This feature is only available in ES Supreme.

The available modes are:

- *Accelerated* for rapid scans.
- *Standard* produces an optimum balance between speed and quality.
- *Excellent* achieves the best image results. *Excellent* is further subdivided into *High* and *Very High* (quality) levels to give you full control.

From the *General Preferences* menu, choose **Scanning Mode**.
The **Scanning Mode** dialog box is displayed.



With scanning modes you can control the balance between speed and quality. In the *Standard* mode, quality and speed are automatically optimized. By choosing *Accelerated*, you can increase the scan speed up to 30% with a minimum loss of quality. However, when the quality of the final image is very important, you can choose the *Excellent Mode*. The scan takes longer, but, because you reproduce more shadow detail and the scanned image has a larger dynamic range, you achieve optimum results.

You can use a different scanning mode for each crop or review.

Scan Margin

To ensure proper picture placement in your page-makeup application, you can add a scan margin to the scan size. The margin is then added to the final scan area. When the margin is set to 0, only the crop area is scanned.

➢ Check the **Scan Margin** box, and enter a number in millimeters only. If you enter an inappropriate number, an error message is displayed.

Note: A Warning icon appears when you scan the entire image in maximum scale and with a scan margin.

Display separation in color

Check this box to display the different separations in color. **For example**, to see the cyan separation in cyan or in B/W. If the box is checked, the cyan separation is shown in cyan. If not, it is shown
in B/W.

Beep at end of process

The application beeps three times at the end of each preview, prescan and scan.

Expert Mode

Check this option if you want to access the options under *Expert* mode. See *Expert Preferences on page 150*.

Service Mode

Intended for service engineers only.

Open Layout Display after Restart

Check this option if you want the *Layout display* to automatically open upon application restart. The *Layout display* is described in *Layout Display* on page 45.

Ignore Automatic Focus Alert

When you scan 35-mm framed slides, the scanners automatically focuses on the transparencies. Sometimes, due to the details in the transparencies, the scanner fails to find the focus, and a message is displayed prompting you to ignore the automatic focus and use the default parameter. Check this option to ignore the message and to continue scanning with the default parameter.

Direct Scan Margin

In the *Direct Scan Margin* box, you can define the size of the margin you want the application to ignore when performing image analysis.

For more details, refer to *16-bit/8-bit Direct Scan* on page 129.

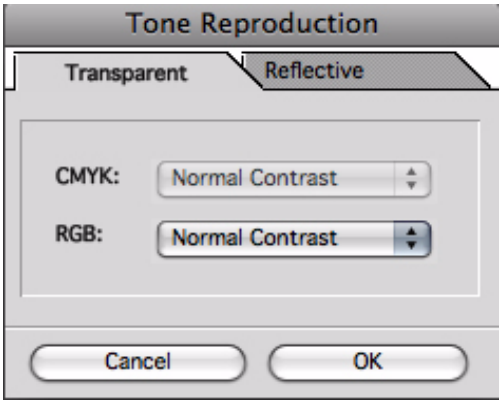
Expert Preferences

The options under the *Expert* mode have wide-range effects. Therefore, they are recommended for site-management level only.

1. To access the *Expert* mode options, check the **Expert Mode** box in the *Operation Modes* dialog box, under the *General Preferences* (see *Scan Margin on page 149*).
2. From the *Setup* menu, choose **Expert Preferences**, which is now active. The *Expert* mode options are described below.

Tone Reproduction

Tone Reproduction sets your preference for the contrast of the *Tone Reproduction* curve, for transparency/reflective and for the *CMYK/RGB* color modes.



➢ Choose **Normal contrast** or **High contrast**.

For **CMYK**, only **Normal contrast** is available.

For RGB, it is usually recommended to use **High contrast**. But if you intend to transform RGB to CMYK using the *ResoLUT PS (PS/W)* application, choose **Normal contrast**.

Note: The Color tables are based on normal contrast. Different tables are required for high contrast.

Auto Image Analysis

Auto Image Analysis is used to adjust the image analysis results before *Preview*, so that they suit your preferences. You can also change the default value for **Remove Cast**.

For further details, refer to *Auto Image Analysis* on page 151.

Interpolation Mode

Interpolation mode is an improvement for scanning originals of smooth, soft backgrounds.

To access the Interpolation mode:

- Select **Interpolation Mode**.
- Check the **Smooth** box (system default is **Normal**).

Sharp Setup

For extensive editing of *Sharpness* tables, refer to *Sharp Setup* on page 125.

Separation Setup

To access the UCR, GCR and UCA functions.

Densitometer Setup

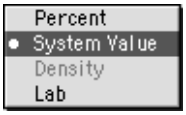
The densitometer measures the color at the pointer's current position on the displayed image, and displays its values in the *Densitometer* field, at the bottom left corner of the *Image display* window.

➢ From the *Setup* menu, choose **Densitometer Setup**.
The *Densitometer Settings* dialog box is displayed.

Densitometer mode: Input/Output

Click **Input** if you want the densitometer to measure input values, or click **Output** if you want the densitometer to measure output results.

Units



For the selected densitometer mode, choose the units of measurement:

- For **Input**, choose **Density** or **SysValues**.
- For **Output**, choose **SysValues, Percent**, or **Lab**.

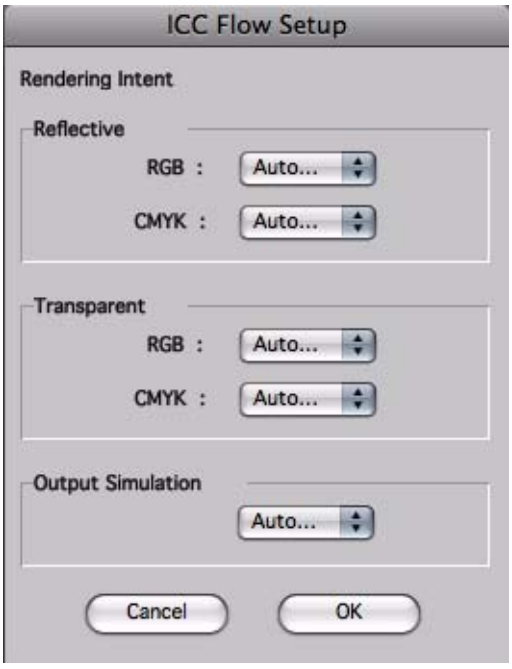
Note: For output, in the RGB Color mode, only Sys Values and Lab are available.

Sample Size

The sample size that the densitometer measures around the pointer. Default is **3x3**, that is, the densitometer averages the density of nine pixels, three in height by three in width, around the pointer. Other size options: **1x1** and **5x5**.

ICC Flow Setup

When you use ICC profiles, select **ICC Flow Setu**p from the *Setup* menu to display the *Rendering Intent* dialog box. You can set a different rendering intent for reflectives and transparencies in RGB and CMYK modes.



The rendering intent determines how the color conversion is done from one color space to another. You can set a different rendering intent for reflective and transparent images both in RGB and CMYK.

For details on ICC workflow, refer to *ICC Workflows* on page 74.

The four (4) Rendering Intent options are:

- **Perceptual;** the most common rendering intent used to achieve a good reproduction of the original; preserves the visual relationship between colors by shrinking the entire color space and by shifting all colors.
- **Saturation;** reproduces the saturated colors of an image into the color gamut of the output device.
- **Relative Colorimetric;** maps the colors that are out of gamut to the closest possible color within the gamut of the target color space, without effecting the colors that were inside the color space, those will remain as they were.
- **Absolute Colorimetric;** matches color exactly with no adjustment made for white point or black point that would alter the image's brightness.
- **Automatic;** uses the default color translation included in the profile.

➢ Clicking **OK** preserves the selected Rendering Intent, while clicking **Cancel** turns the application to its default, as in the *Perceptual* mode.

Additional Settings

This section describes additional setting options in the *Menu bar*, that are not available in the *Setup* menu.

Save/Load Setting

A *Setting* file contains the parameter setting of the *Setup* dialog box and the setup options in the *Menu bar*. The saved *Setting* file can be loaded and used in a specific run. In this case, the *Setup* dialog box and setup options are set according to the loaded *Setting* file.

To save a *Custom* table you must first save it under a different name.

To create a Setting file

1. From the *File* menu in *Menu bar*, choose **Save Settings**.
2. In the dialog box that appears, assign a name to the file and click **Save**.

To load a Setting file

1. From the *File* menu in *Menu bar*, choose **Load Settings**.
2. In the dialog box that appears, choose the file and click **Open**.

Windows Arrangement

The *Window* menu in *Menu bar* contains two options that can be used for arranging the various application windows and tools on your desktop.

Arrange Windows

When you choose **Arrange Windows** from the *Window* menu in *Menu* bar, the application rearranges the elements on your desktop according to a default system arrangement, or according to a saved arrangement.

Save Arrangement

This option is useful when you want to arrange the application elements according to your preferences, and save this arrangement. Choose **Save Arrangement** from the *Window* menu in *Menu bar* to save the current arrangement.

Note: To restore the saved arrangement, choose Arrange Windows.

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