Mat Transformation Notes
J. Sachs
9-Mar-2013

Introduction

The Mat transformation creates a result image that shows how an image will look when matted and framed and displayed in a given environment. Key features include:

Image border - you can optionally surround the image with a border or any solid color and specify the border widths.

Mats - you can specify no mat, single matting or double matting. Each mat can have specified widths, thickness, bevel, and bevel color. Mats may be any solid color, a textured color, or a repeating pattern. If you need more than two mats, you can create the first two and then add more by running the Mat transformation again on the output image.

Frame - you can specify a variety of frames with specified widths, colors, shapes, or custom images.

Wall - you can display a background color behind the frame to simulate hanging the framed photograph on a colored wall. You can also simulate different lighting color temperatures and intensities.

Interface Elements

Input Image

This control selects the input image that will have a mat and frame placed around it to form the output image.

If the input image is not in the current working color space, a version of the input image converted to the working color space is used in its place so as to ensure color consistency since the output image is always created in the working color space.

Cropping Rectangle

A cropping rectangle is displayed over the input image window to allow part of the input image to be cropped out. The cropping rectangle may be adjusted by dragging its corners, edges or interior. Depending on the *Base Size On* setting (see below), the proportions of the cropping rectangle may be constrained to match those of the innermost mat opening.

Tool Bar

This control contains 4 buttons than can be raised or depressed independently. Each button activates or deactivates one component of the output image:

I	Inner mat
O	Outer mat
F	Frame
W	Wall displayed behind the framed image

If a toolbar button is depressed, the corresponding element is incorporated into the output image. If the toolbar button is raised, the corresponding element is suppressed although all of its settings are retained should you re-enable it.

Units

This control selects the units in which image, mat and frame sizes are entered and displayed.

Image Tab

This tab selects a set of controls that adjust image size and borders.

Base Size On

The Base Size On control is very important and should be set before adjusting mat and frame widths. It determines how the dimensions of the various elements in the output image are computed, giving you the flexibility to deal with a variety of situations.

Image Size

This setting uses the dimensions of the input image (computed from its size in pixels and dpi setting) to fix the size of the image. The output image is then built out from the input image by adding mats, frame and wall of specified widths. Use this setting when you need the input image to be reproduced at a specific size.

Fixed Image Width/Height

This setting scales the image width (or height) to a fixed value and computes the image height (or width) based on the proportions of the input image cropping rectangle so as to preserve the image aspect ratio. Use this setting when you need the image to be a specific width or height (e.g. 8") and you want to preserve the proportions of the image.

Mat Opening Size

This setting fixes the dimensions of the innermost mat opening. The image dimensions are computed by subtracting the image border widths from the mat opening size. Use this setting when you need to place an image inside a frame with a given mat opening, for example when using a prefabricated frame and mat with an 8"x10" opening. This setting will cause the input image to be cropped as necessary to fit the mat opening.

Frame Opening Size

This fixes the dimensions of the frame opening. The image dimensions are computed by subtracting the mat and image border widths from the frame opening size. Use this setting when you want to place an image inside a frame with given inside dimensions, for example when the final framed image needs to fit into a prefabricated frame (frames are generally sold based on the size of the opening). This setting will cause the input image to be cropped as necessary to fit the mat opening.

Frame Outside Size

This fixes the dimensions of the outside of the frame. The image dimensions are computed by subtracting the frame, mat and image border widths from the frame outside dimensions. Use this setting when you want to place an image inside a frame with given outside dimensions, for example when the final framed image needs to fit into a particular space on the wall. This setting will cause the input image to be cropped as necessary to fit the mat opening.

Width/Height/Resolution

These controls let you specify the desired image size as selected by the *Base Size On* setting (see above). The width, height or both may be grayed out if they are computed automatically from other data and cannot be modified. The *Resolution* setting determines the resolution of the output image. The number of pixels in the output image is in turn determined by the physical dimensions of the output image divided by its resolution. All elements of the image are resampled as necessary to create an output image of the desired resolution.

Snap

The Snap setting determines the increments in which width and height settings are modified when dragging frame, mat, border or image widths/heights in the preview image (see below).

Borders/Left/Right/Top/Bottom/Color

The *Borders* setting determines whether the image borders will all be equal, will be equal except for the bottom border or will be unequal.

The *Left/Right/Top/Bottom* controls let you enter the desired border widths using the current units. To frame an image without borders, set all four border widths to zero.

The *Color* control lets you set the color of the image borders.

Inner/Outer Tabs

This tab selects the properties of the inner (or outer) mat.

Opening

This control determines the shape of the mat opening. The options are *Rectangular* or *Oval* (elliptical).

Bevel

This control determines the angle at which the mat is cut. The options are 45, 60 or 90 degrees. The bevel angle determines how much of the mat interior is visible around the mat opening.

Thickness

This control sets thickness of the mat in the current units. A typical 6-ply mat is about 0.05" (1.6 mm.) thick. To eliminate the bevel and its drop shadow entirely, set *Thickness* to 0.0.

Borders/Left/Right/Top/Bottom

The *Borders* setting determines whether mat widths will all be equal, will be equal except for the bottom border or will be unequal.

The *Left/Right/Top/Bottom* controls let you enter the desired mat widths using the current units.

Color/Image

The Color/Image setting determines the color or pattern of the mat. There are several options depending on what you select:

If a *solid color* is selected (which you specify using the standard color picker), then you have the option of applying a texture that is applied to mat. If a texture is specified, you also have the option of adjusting its scale factor so as to vary the granularity of the texture

If a *color image* is selected, then that image is tiled to cover the entire mat and you have the option of adjusting the scale factor of the image.

If a *black and white image* is selected, then that image is tinted with a color you specify and then tiled to cover the entire mat and you have the option of adjusting the scale factor of the image so as to vary the granularity of the image.

Bevel Color

The Bevel Color setting determines the color or pattern of the mat bevel. This can match the mat color or be a different color (e.g. some mats are black inside).

Frame Tab

This tab selects the properties of the frame.

Width

This control lets you set the frame width in the current units. The frame width must be the same for all four sides.

Inside/Outside Thickness

These controls set the inside (or outside) thickness of the frame in the current units. The frame thickness is used to display drop shadows on the mat (wall).

Profile

The *Profile* setting lets you select from a built-in set of frame shapes.

Color/Image

The *Color/Image* setting determines the color or pattern of the frame. There are several options depending on what you select:

If a *solid color* is selected, then you get a solid color frame of the specified color and profile.

If a *color image* is selected, then that image is tiled to cover the entire frame and you have the option of adjusting the scale factor of the image one of two ways.

If a *black and white image* is selected, then that image is tinted and tiled to cover the entire frame and you have the option of adjusting the scale factor of the image one of two ways.

If a color or black and white image is specified, it is taken to be a repeating section of the left edge of the frame. This image is then tiled vertically as necessary to create the entire left edge of the frame. The tiled image is then rotated and reflected as necessary to generate images for the other three edges of the frame. Although it is not required, when an image is used, the profile should normally be set to *Flat* to avoid undesired shading effects.

Scale to Fit/Tile

If you select *Scale to Fit*, the frame image is scaled so that its width exactly fills the width of the frame.

If you select *Tile*, the frame image is tiled as necessary (with an adjustable scale) to fill the entire frame.

Wall Tab

This tab selects the properties of the wall displayed behind the frame and the lighting conditions.

Width

This control determines how the dimensions width of wall area displayed behind the frame.

Color

This control determines the wall color.

Lighting Type

This control lets you adjust the color temperature of simulated lighting.

Lighting Intensity

This control lets you adjust the brightness of simulated lighting.

Preview

The right side of the Mat dialog box is occupied by a preview of the result image. Clicking on an element of the preview image selects the corresponding tab (image/inner/outer/frame/wall).

In addition, the width of the current element can be adjusted by dragging it, subject to the *Snap* setting (see above).

The size of the preview area may be adjusted by resizing the Mat dialog window.

Options

The *Opt* button lets you apply various options:

Reset All
Reset Cropping Rectangle Only

These options reset all the mat parameters to their defaults (or just reset the cropping rectangle).

Show Rulers

This toggles the display of rulers around the outside of the frame.

Load/Save As...

These options let you load or save mat settings in a file.

Print Specifications...

This option lets you load print the current mat specifications.

A Few Examples

A simple frame with a flat profile and single mat - no image borders

A simple frame with a round beveled profile and double mat - 1/8" white image borders. Outer mat has zero thickness and applies a tiled image of Japanese paper.

Similar to above with a frame created from a custom image and no outer mat.

No frame, single mat using a tiled stone image.