Photomatix Essentials 4.1
User Manual

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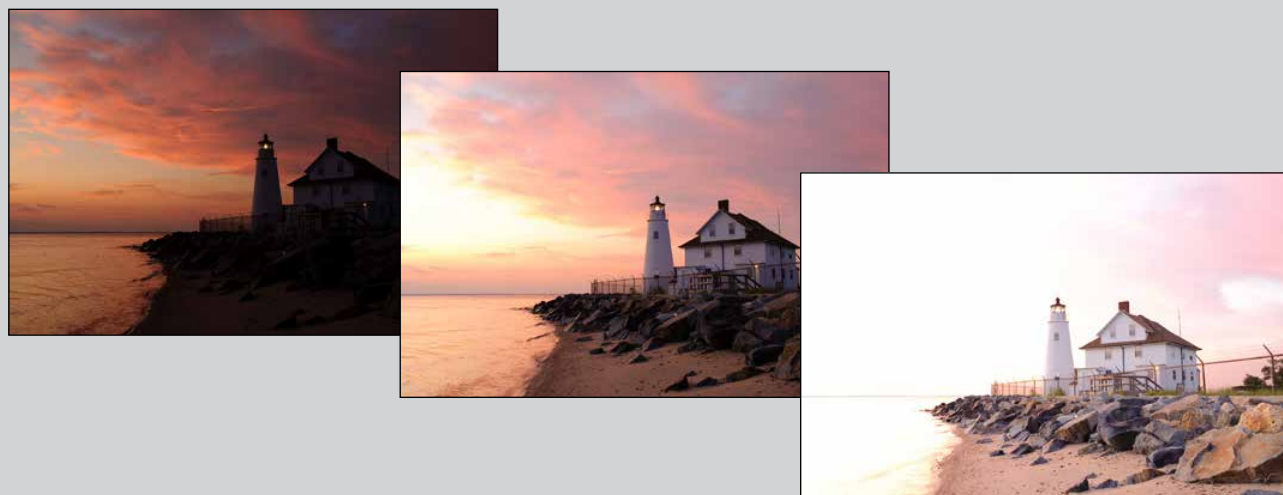
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Introduction

Photomatix Essentials works with photographs of the same scene taken under different exposure settings. These differently exposed images of the same scene are often called "bracketed" images, in reference to the auto-bracketing exposure functions available on many camera models.

This manual first explains the steps for capturing your own bracketed photo sets. The manual then guides you through the following 3 simple steps, which constitute the workflow of Photomatix Essentials:

Step 1- Load Photos: Load your bracketed photos into Photomatix Essentials.
Step 2- Adjust & Preview: Adjust the HDR image to get the results you want.
Step 3- Finish & Save: Add finishing touches, and save your image.

COVE POINT LIGHTHOUSE PHOTO © FERRELL MCCOLLOUGH

Section 1: HDR (High Dynamic Range) Photography

1.1   What Is HDR Photography?

The central premise of HDR photography is that there are few situations where a single photograph can capture the true dynamic range (the total range of light in a scene, from very dark to very light) of a scene accurately.

In other words, today's digital camera can't properly expose everything at the same time in scenes with even moderate contrast ratios. This results in two main problems (which sometimes happen together in the same photo):

- **Blown highlights**
  When the exposure is raised to make sure the foreground or subject is properly exposed, brighter areas of the scene suffer. They "blow out" and turn white because they have very little or no usable data in them.

- **Lost detail in the shadows**
  Conversely, when bright areas of a scene are protected (by lowering exposure), there is not enough light to register details on the camera's sensor in dark areas of the scene. These turn to shadow and blackness.

HDR photography solves these problems by taking enough photos (typically 3, separated by 2 EV steps) to contain the entire exposure range of a scene. With that data in hand, Photomatix Essentials can merge the different photos and process them to rescue details from shadows and keep highlights from blowing out.

For some photographers the key purpose and significance of HDR is its ability to increase photographic realism. HDR to this photographer is not an "effect", but is a remedy to the dynamic range limitation of camera image sensors. To some of these photographers, in fact, it is the standard photograph which is somewhat non-realistic, in that it does not accurately capture the full dynamic range of most photographed scenes

For many other photographers, HDR is approached more as a creative tool, one that affords great artistic latitude. From a practical point of view, however, every style of HDR photography is built on the same foundation, a well shot bracketed set.

The next section provides guidelines and best practices for properly capturing bracketed sets.

1.2   How to Take Photos for HDR Processing

Taking photos for HDR is easy. All it takes is a different mindset than for traditional photography, which emphasizes taking and editing a single photo, independent from any others.

Instead of taking a single exposure of a scene, for HDR you take at least 3 exposures: one optimized for midrange tones (as normal), plus one optimized for highlights and one optimized for shadows. This strategy for capturing more of a scene's true dynamic range, with exposures above and below a standard exposure, is called "exposure bracketing".

The resulting "bracketed set" of photos contains, as a group, more complete and true exposure information than any single image capture can possibly contain.   The purpose of HDR software like Photomatix Essentials is to artfully combine this bracketed set into a single image, to achieve **more faithful realism,** or **heightened realism**, or **artistic effect**.

But these artistic choices come later. The first step is capturing good bracketed sets.

1.3   Set Up Your Camera

HDR photography requires that you set up your camera a bit differently than normal:

* Set your camera to Aperture Priority ("A" setting) so that only the shutter speed varies between the exposures.
* Select a low ISO, such as ISO 100 or lower.
* Turn off the flash. The flash may try to balance the exposure of all the images, when the goal is a range of exposures.
* A tripod is typically recommended, but is not required, as Photomatix Essentials includes options to automatically align hand-held bracketed sets.

DSLR cameras and some compact digital cameras offer **Automatic Exposure Bracketing** (AEB). This enables you to automatically take three or more exposures in a row: one at the proper exposure, one or more underexposed, and one or more overexposed. Follow these steps if your camera offers an AEB mode:

Canon Rebel T2i/550D LCD showing AEB with +/- 2 EV increments selected

* Select the Continuous Shooting mode on the camera's drive setting. Consult your camera manual for model-specific instructions for using this setting.
* Set the camera to Auto Exposure Bracketing (AEB)
* If possible, use the camera's self-timer setting, a remote control or a cable release to minimize camera shake.
* Set the exposure increment to +/- 2 EV for optimal exposure range. If your camera does not offer +/- 2 EV exposure increments, select the maximum possible. Consult your camera's manual for model-specific instructions for choosing this setting.

You can find videos and screenshots on how to set up Automatic Exposure Bracketing (AEB) with various camera models on the page here:

http://www.hdrsoft.com/resources/camera-aeb-selection.html

AEB settings on a Nikon D7000 (3 frames, at +/- 2 EV)

1.4   Recommended EV Separation

Bracketing allows you to extend the dynamic range of your camera so it can capture the full range of light in a scene. Mechanically, you accomplish this by taking multiple photos with different exposure settings. Although there is no single method that is better than all others in every circumstance (indeed, cameras vary in their abilities), a good rule of thumb is to shoot three photos, separated by 2 EV using AEB. However, not all cameras have the same AEB capabilities. Some limit you to a 1 EV spacing or less.

For many outdoors scenes, 3 exposures spaced one or two EVs apart is usually sufficient. However, this won't be sufficient for an interior with an outside view on a sunny day, for instance.

An EV (Exposure Value) increment is also referred to as a "stop" or "f-stop". One EV increment corresponds to a doubling of the amount of light hitting the camera's sensors. For instance, this means that you can capture a range of 8 EV steps, by using exposures ranging from 1/250 to 1 second (assuming a fixed aperture and ISO setting). If you use +/-1EV step increments, you will need 9 frames to capture 8 EV of dynamic range. If you set it to +/-2EV, you will need just 5 frames to capture 8 EV of dynamic range. Photomatix Essentials can process bracketed sets of up to 5 images, so 2 EV spacing would be preferable in this example.

| Under-exposure (-2 EV): Captures highlight detail | Well-balanced exposure (0 EV): Captures mid-range detail | Over-exposure (+2 EV): Captures shadow detail |

Section 2: Installing Photomatix Essentials

Photomatix Essentials is available as a standalone application, and as a plugin compatible with Photoshop Elements (version 6 or later).

The plugin and standalone editions of Photomatix Essentials are functionally identical, except for how the application is started and how images are loaded, due to the desktop versus the plugin context.

There are also minor differences in how the two versions are installed, as described in the following two sections.

2.1   Install Standalone Edition

To install Photomatix Essentials as a **standalone application**, download the installer from the HDRsoft **download page**. Once downloaded, use the installer as you would normally to install the application.
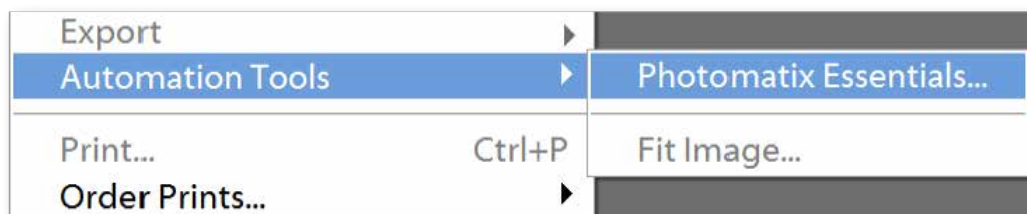
Once installed, access the application from your Start menu (Windows) Launchpad (Mac).

2.2   Install Plugin Edition

To install Photomatix Essentials as a **plugin** for Photoshop Elements, download the installer from the HDRsoft **download page**. Once downloaded, use the installer as you would normally, to install the plugin.

Once installed, to access the Plug-In in Photoshop Elements:

1. Start or restart Photoshop Elements.

2. Choose File > Automation Tools > Photomatix Essentials

Note: In Photoshop Elements 11 or higher, the Plug-In is only available in Expert mode. To switch to Expert mode, click on the "Expert" tab below the main top menu.
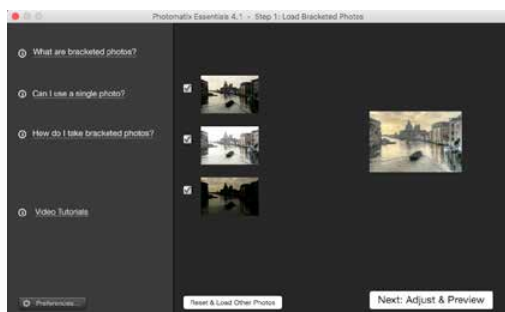
Section 3: Using Photomatix Essentials

3.1   Three Essential Steps

The Photomatix Essentials workflow is comprised of three main steps:

Step 1.   Load a bracketed photo set (or a single photo) into Photomatix Essentials.

Step 2.   Adjust the Preview of the combined image to your liking.

Step 3.   Add optional finishing adjustments to the image, and then save it.

Once your image is saved at the completion of **Step 3,** you are returned to **Step 1** ready to load your next photos.

The Step 1 window: Load Photos

The Step 2 window: Adjust & Preview

The Step 3 window: Finish & Save

3.2   Step 1: Load Bracketed Photos

3.2.1   Load Photos into the Standalone Edition

To use Photomatix Essentials, first load a bracketed photo set, or a single photo that you wish to process. There are two ways to do this:

- **Drag and drop:** Drag the photos from a folder on your computer and drop them onto Photomatix Essentials.

- **Browse:** Use the Open dialog box to navigate to the source photos and load them into Photomatix Essentials.

NOTE: It is possible to select a single photo if you like. Click on the **Can I use a single photo?** link for details.

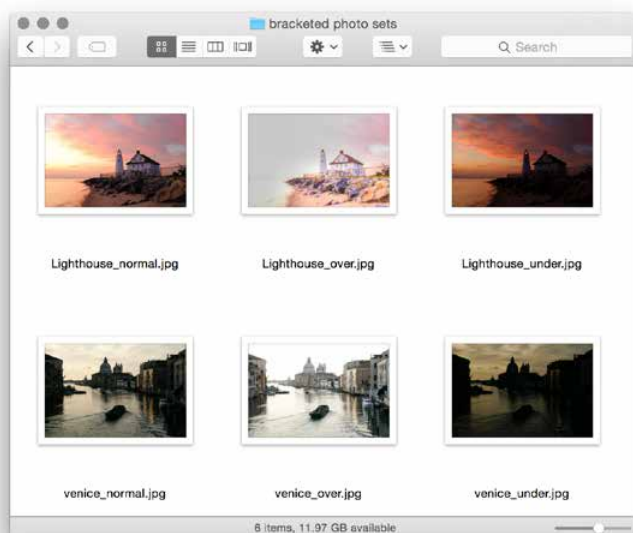### 3.2.2   Load Photos into the Plugin Edition

To use the Photomatix Essentials plugin edition, first select the photo or photo set that you wish to use, and load them into the plugin. There are four ways to do this:

- **Drag and drop from the Desktop:** Select and drag the photos from a folder on your computer, and drop them onto the Photomatix Essentials Step 1 window.

- **Use the "Browse..." button:** The **Browse...** button invokes a file selection dialog window, allowing you to locate, select bracketed sets of photos and open them into Photomatix Essentials Step 1 window.

- **Drag and drop from the Photoshop Elements Organizer:** Select and drag the photos from the Photoshop Elements Organizer window, and drop them on the Photomatix Essentials Step 1 window.

- **Use the "Add opened photos" button:** When a photo or a bracketed set of photos is already open in tabs in Photoshop Elements, the images be added to Photomatix Essentials by clicking the **Add opened photos** button.
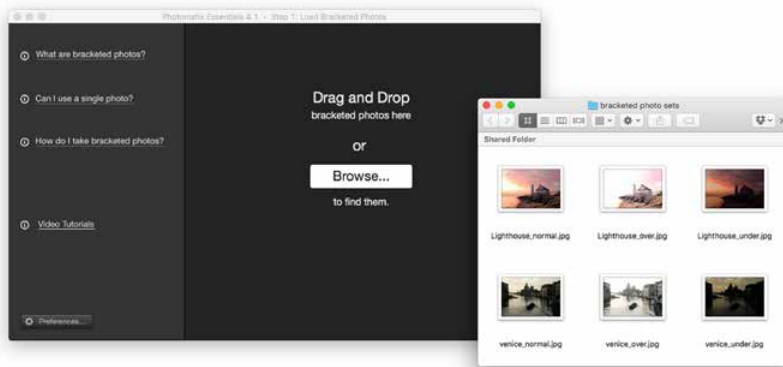
3.2.3   Drag and Drop Photos

To drag and drop one or more photos into Photomatix Essentials, follow these steps:
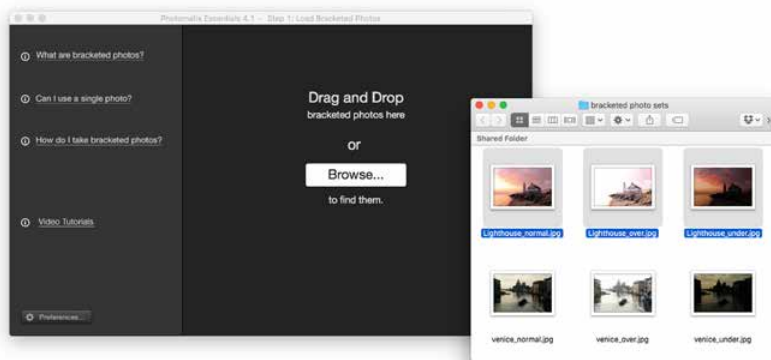
1. Launch Photomatix Essentials.

2. Open the folder on your computer that contains the photo or photos you want to work with.
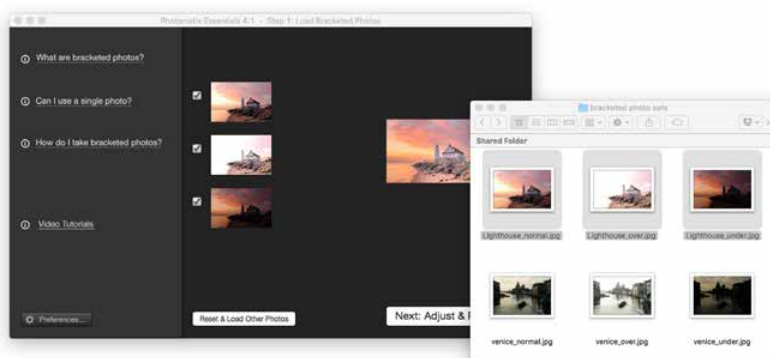
3. Arrange the folder and Photomatix Essentials so you can drag files from the folder and drop them onto the Photomatix Essentials Step 1 window.
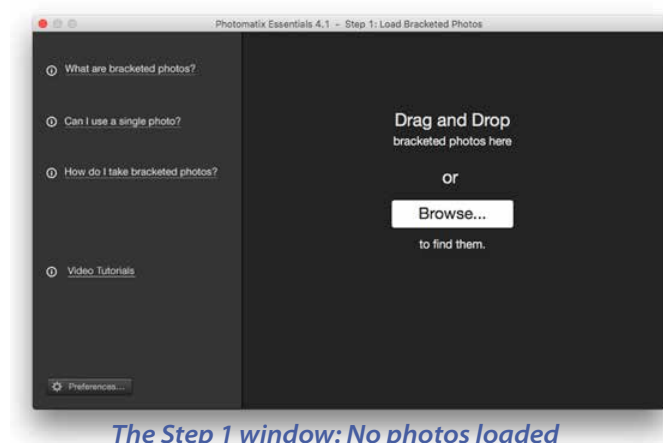

4. Select the files as you would normally.

5. Drag and drop the photos onto the Photomatix Essentials Step 1 window.
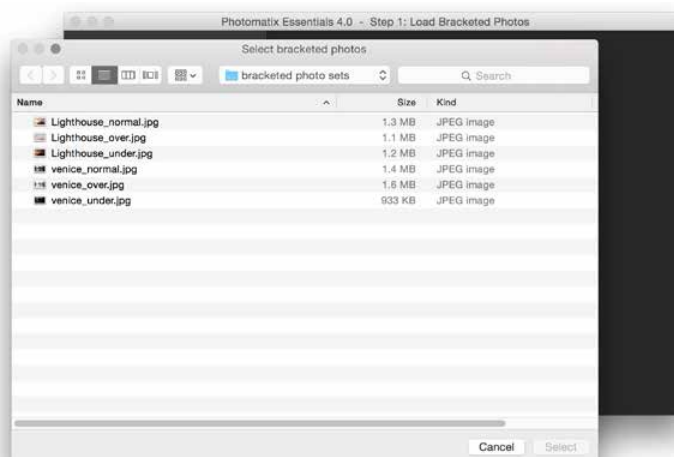   You can drag and drop files individually or in groups.

3.2.4   Browse for Photos

To browse for one or more photos using a file selection dialog box, follow these steps:
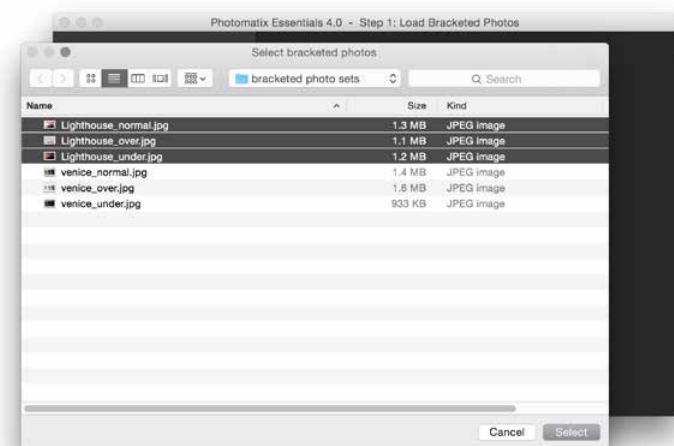
1. Launch Photomatix Essentials.

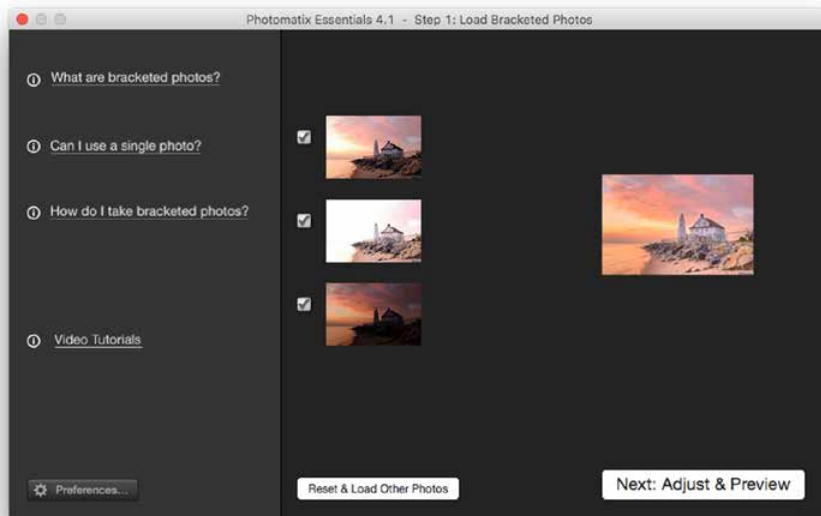*The Step 1 window: No photos loaded*

2. Click **Browse** and navigate to the folder on your system where the photo(s) are stored.

3. Select the files as you would normally.
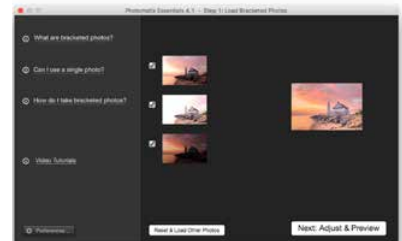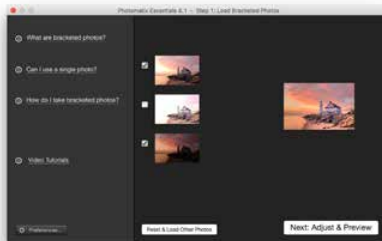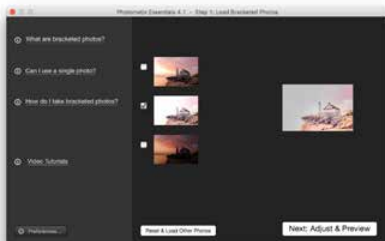

4. Choose **Select**.

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The Step 1 window, with a 3-photo bracketed set loaded

3.2.5   Select / Deselect Loaded Photos

Once you load your photos into Photomatix Essentials, you should notice a few things in the interface:

- Each photo is displayed as a thumbnail. This makes it easy to verify that the photos are of the same subject and see their relative exposure compared to their bracketed companions.

- There is a larger combined thumbnail that shows a preview of the result of processing the photos using default settings.

- There is a checkbox beside each photo's thumbnail (this is checked by default unless you have loaded only one photo). A checked box signifies that the photo will be included in subsequent processing. Uncheck a photo to take it out of the process. You'll see the larger thumbnail update to show the processing preview using just the currently checked photos. Re-check the photo to put it back into the mix.

Unchecking alternate source photos gives a different merged image result, as shown in the large preview thumbnail.

3.2.6   Load Other Photos

To start over, select **Reset & Load Other Photos**. You'll jump back to a clean interface, ready to select new photos.

To continue to Step 2 with the currently loaded and selected photos, select **Next: Adjust & Preview**.

3.2.7 Alignment and Deghosting Options

If you loaded a bracketed photo set, the **Alignment and Deghosting Options** dialog appears after you click **Next: Adjust & Preview** in the Step 1 window. Note that you can set an option in **Preferences** to skip this dialog.

The Alignment and Deghosting Options dialog

Because bracketed photos are always misaligned when shot hand held, image alignment is an essential feature of HDR processing. Photos are often slightly misaligned even when shot using a tripod, due to wind or other sources of minor camera disturbances. The **Align bracketed photos** option therefore is on by default in Photomatix Essentials.

> **NOTE:** There are cases when images should not be aligned. One example is when you have derived the different exposures from a single RAW file, by adjusting the Exposure setting of your RAW converter. Another example is when you are processing stitched panoramas.

The **Crop aligned images** option removes the unneeded borders resulting from alignment adjustments. Unchecking it disables this, so that the resulting image has exactly the same width and height as the source images, but may have white areas around the edges.

Ghost removal addresses the problem of artifacts that appear when combining bracketed images of a scene with some moving elements. For example, if pedestrians are moving through a scene while you capture your bracketed photos, multiple faint images of the people will appear in the combined image, as if they were "ghosts".

To reduce these artifacts, select **Remove ghosts** and set a Deghosting strength. There are 5 levels of deghosting strength, from **Very Mild** to **Very Strong**. Since deghosting lowers image quality, always choose the most mild deghosting setting possible.

If some ghosting remain visible in the Step 2 Preview, you may close the Step 2 window to return to Step 1. Now, you can click again **Next: Adjust & Preview**, to re-merge your source images. Once you are back in the Alignment and Deghosting Options dialog, choose a higher deghosting setting than you had previously

You may repeat this process, if any ghosting still remains. Some image sets will contain ghosting artifacts that cannot be fully remedied automatically
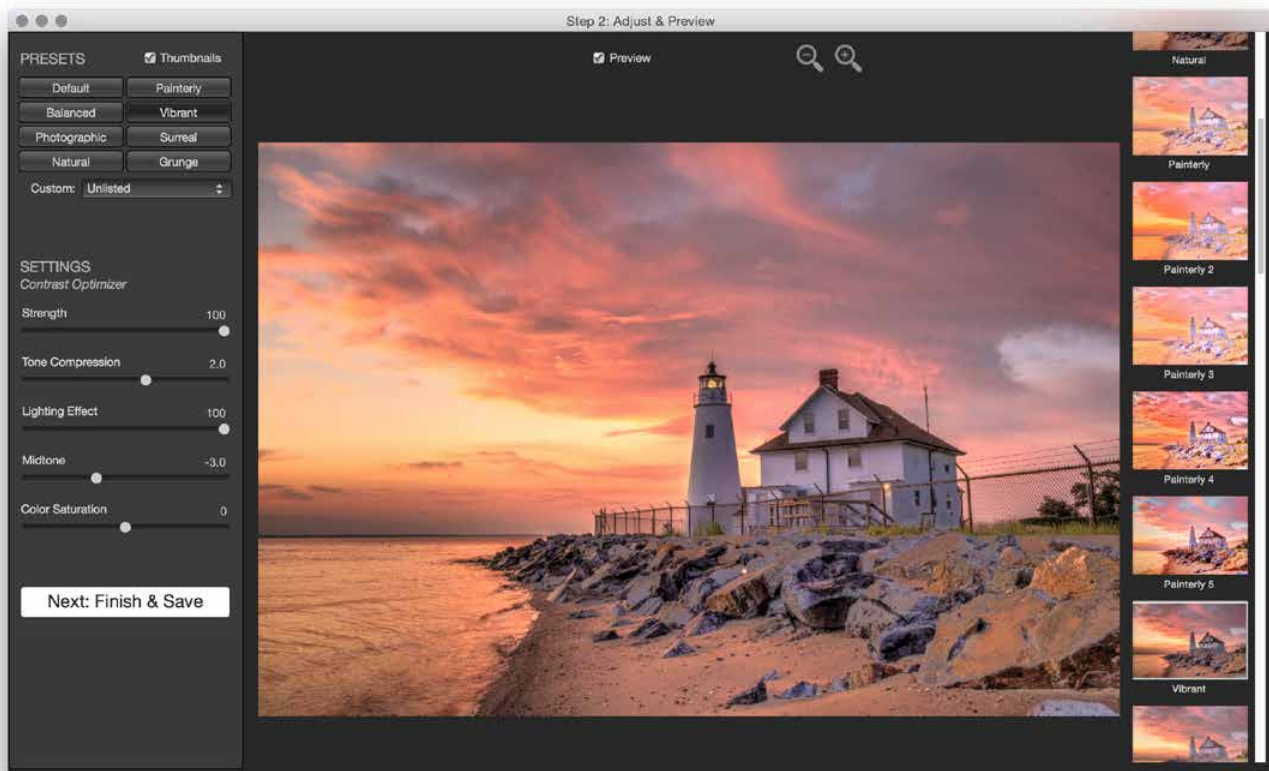
3.3   Step 2: Adjust & Preview

3.3.1   Step 2 Overview

The heart of Photomatix Essentials is **Step 2**. In **Step 2**, you can choose one of the **built-in Presets**, or a **Custom Preset** that you created during an earlier work session. Once a **Preset** is applied, you can optimize individual parameters to best suit the current image. If your parameter adjustments produce a new attractive effect, you may save these settings as a new **Custom Preset** for future use.

Follow these steps when you enter **Step 2**:

1. Click on the thumbnails on the right side to select a preset that gives you the result you prefer. (Refer to "3.3.2 Working with Presets" on page 13 for details.)

2. If desired, adjust the **Settings** on the left to refine, overhaul or experiment with the effect.

3. Once you are satisfied with your result, select **Next: Finish & Save**.

The Step 2 window: Adjust & Preview

3.3.2 Working with Presets

Photomatix Essentials displays presets as thumbnails on the right side of the **Step 2** window. Each thumbnail is a small preview of the effect of that preset on your image. When you click a thumbnail, that preset is selected and applied to the main preview. The parameters at the left of the screen are also updated to reflect the settings contained in a clicked preset.

These built-in thumbnail presets are "factory" presets that are provided with the software. Photomatix Essentials offers 31 built-in presets when you are working with bracketed photo sets, 26 presets when you load just a single photo.

The built-in presets use a range of different settings combinations that provide pleasing results with a wide variety of image types. Built-in presets are a good starting point for exploring your own custom settings, fine-tuned to your specific image.

Different combinations of settings produce a wide range of image effects and styles. When you find a new settings combination that works well for a given type of image, you may wish to save this settings combination for future use with similar images. To save your own "**Custom Preset**" for convenient access later, in the Presets drop-down list:
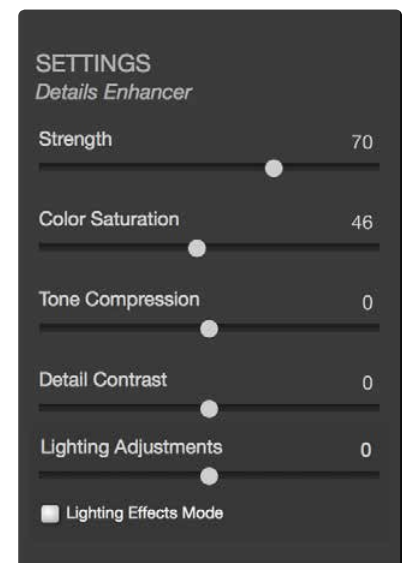
1. Click the Presets drop-down list.

2. Select **Save Preset** from the list.

3. Enter a name for the preset in the File name field and click **Save**.

If you save the preset in the default location (which is also the Presets folder used by the Photomatix Pro application), the preset is automatically added to the Presets combo-box list. If you save it in another location, you can access it by clicking on the **Presets** drop-down list and selecting **Load Preset** from the list.
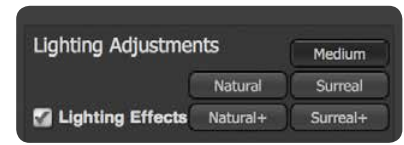
3.3.3 Details Enhancer Settings

The following settings belong to the **Details Enhancer method**, which is used by these Presets: *Default, Painterly, Painterly 2, Painterly 3, Painterly 4, Enhanced, Surreal, Grunge, Grunge 2, Creative, Creative 2, Creative 3, Soft 2, Soft 3, Smooth, Smooth 2, Monochrome, Monochrome 2, B&W Artistic.*

- **Strength:** Affects the amount of enhancement given to contrast and detail in the image. A value of 100 gives the greatest enhancement. Moving the slider to the left gives a more natural effect. The default value is 70.

- **Saturation:** Adjusts the color saturation of the image. The greater the saturation, the more intense the color. Setting the slider to its lowest value (0) produces a grayscale image. The default value is 46.

- **Tone Compression:** Adjusts the dynamic range of the tone mapped image. Moving the slider to the right decreases the dynamic range, brightening the shadows and darkening the highlights. Moving to the left has the opposite effect, giving a more 'natural' look.

- **Detail Contrast:** Controls the amount of contrast applied to detail in the image. Moving the slider to the right increases the contrast of details and gives a sharper look to the image, but also has a darkening effect. Moving to the left decreases the contrast of details and brightens the image.

- **Lighting Adjustments slider:** Affects the overall 'look', controlling the extent to which the image looks natural or surreal.

- **Lighting Effects Mode checkbox:** Lighting Effects Mode lets you switch between two modes for the Lighting Adjustments setting, where each mode produces slightly different results. Checking the box tends to produce results with a type of 'Magic Light' effect. Note that finer control is not possible in this mode.
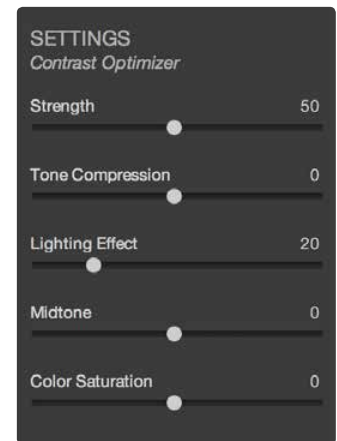

Details Enhancer –
Lighting Adjustment Settings

3.3.4 Contrast Optimizer Settings

The following settings belong to the **Contrast Optimizer method**, which is used by these Presets: *Balanced, Vibrant, Enhanced 2, Soft, Monochrome 3.*

- **Strength:** Affects the amount of enhancement given to contrast and detail in the image. A value of 100 gives the greatest enhancement. Moving the slider to the left gives a more natural effect. The default value is 50.

- **Tone Compression:** Alters the dynamic range of the tone mapped image. Moving the slider to the right decreases the dynamic range, brightening the shadows and darkening the highlights. Moving to the left has the opposite effect, giving a more 'natural' look to the image.

- **Lighting Effect:** Controls the prominence of the shadows, affecting the overall look of the image. Moving the slider to the right brightens the shadows, giving a more vibrant or surreal look. A value of zero disables the effect, leaving the shadows unaffected. The default value is 20.

- **Midtone:** Adjusts the brightness of the midtones, which also has an impact on the overall contrast. Moving the slider to the right brightens the midtones and decreases contrast. Moving to the left darkens the midtones and increases contrast.

Contrast Optimizer settings

- **Color Saturation:** Adjusts the color saturation of the image. The greater the saturation, the more intense the color. Setting the slider to its lowest value (-10) produces a grayscale image.

3.3.5 Tone Compressor Settings

The following settings belong to the **Tone Compressor** method, which is used by these Presets: *Photographic, Deep, B&W Photographic.*

- **Brightness:** Adjusts the overall brightness of the tone mapped image. The default value is 0.

- **Compression:** Controls the compression of the tonal range. Moving the slider to the right has the effect of shifting both shadows and highlights toward the midtones.

- **Contrast Adaptation:** Adjusts the contrast in relation to the average brightness. Moving the slider to the right tends to decrease contrast and give more 'pronounced' colors. Moving to the left tends to increase contrast and give a more 'natural' look.

Tone Compressor settings

- **Color Saturation:** Adjusts the color saturation of the image. The greater the saturation, the more intense the color. Setting the slider to its lowest value (-10) produces a grayscale image.
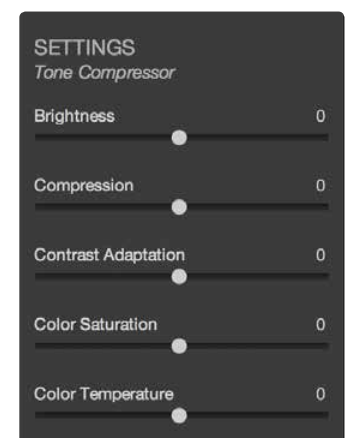
- **Color Temperature:** Adjusts the color temperature of the tone mapped image relative to the temperature of the HDR source image. Move the slider to the right for a warmer, more yellow-orange colored look. Move it to the left for a colder, more bluish look. A value of 0 (default) preserves the original color temperature of the HDR source image.

3.3.6 Exposure Fusion/Natural Settings

The following settings belong to the **Exposure Fusion method,** which is used by these Presets: *Natural, Painterly 5, Surreal 2, Soft 4, B&W Natural*.

- **Strength**: Sets by how much local contrast is accentuated. Moving the slider to the right tends to brighten the shadows and to show more details in the highlights. Moving to the left produces a more 'natural' effect.

- **Brightness**: Controls the brightness of the fused image by adjusting the influence each of the input photos has on the final result. Moving the slider to the right gives the overexposed photos more influence, resulting in a brighter result. Moving to the left darkens the result by giving the underexposed photos more influence.

- **Local Contrast**: Increases the contrast and sharpness of details in the image. Increasing local contrast may have the side effect of making noise more visible and of creating thin halo effects around strong luminosity edges. Values near the maximum tend to give a surreal look to the image. The default value is 2.

- **Color Saturation**: Adjusts the color saturation of the image. The greater the saturation, the more intense the color. Setting the slider to its lowest value (-10) produces a grayscale image.
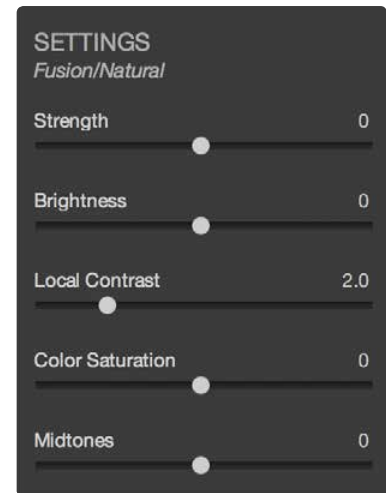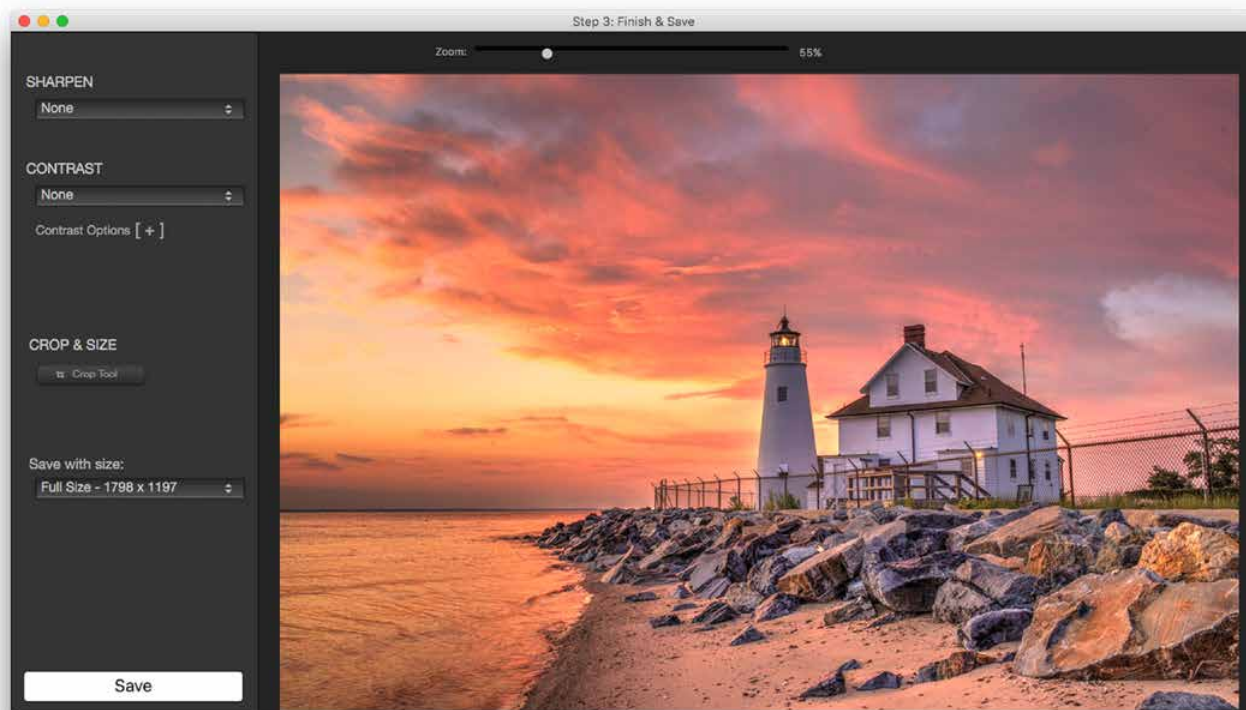
- **Midtones**: Adjusts the brightness of the midtones, which also has an impact on the overall contrast. Moving the slider to the right brightens the midtones and decreases contrast. Moving to the left darkens the midtones and increases contrast.

Fusion/Natural Settings

3.4   Step 3: Finish & Save

The Step 3 window: Finish & Save

3.4.1   Step 3 Overview

The settings that you chose in Step 2 have now been applied to the bracketed set source image files, and the resulting full resolution processed image is shown in Step 3.

If you wish to adjust the image again using different settings or a different Preset, then close the Step 3 window to return to Step 2.

The primary purposes of Step 3 are to allow you to apply any finishing touches you may wish, and to save your file before returning you to Step 1.

3.4.2   Apply Finishing Touches

Before saving, you may wish to adjust sharpening or contrast. Sharpening is available in three presets. You may wish to use the **Zoom** slider to view the effect of Sharpening on your image. Contrast adjustment is available in four presets, as well as the option to directly adjust tone levels using sliders.

3.4.3   Cropping your Image *(standalone edition)*

The crop tool allows you to trim away material from the edges to show a smaller area. You can do this by clicking on the **Crop Tool button**, then holding down the mouse button while dragging the mouse to select the area you want to keep, then click the **Apply button**.

When the **Constrain to original ratio box** is checked, the crop rectangle you select while dragging your mouse is drawn with the aspect ratio of your original image (i.e. the aspect ratio of your source photos). If it is unchecked, then you can freely adjust the height and width of the crop rectangle regardless of the aspect ratio.
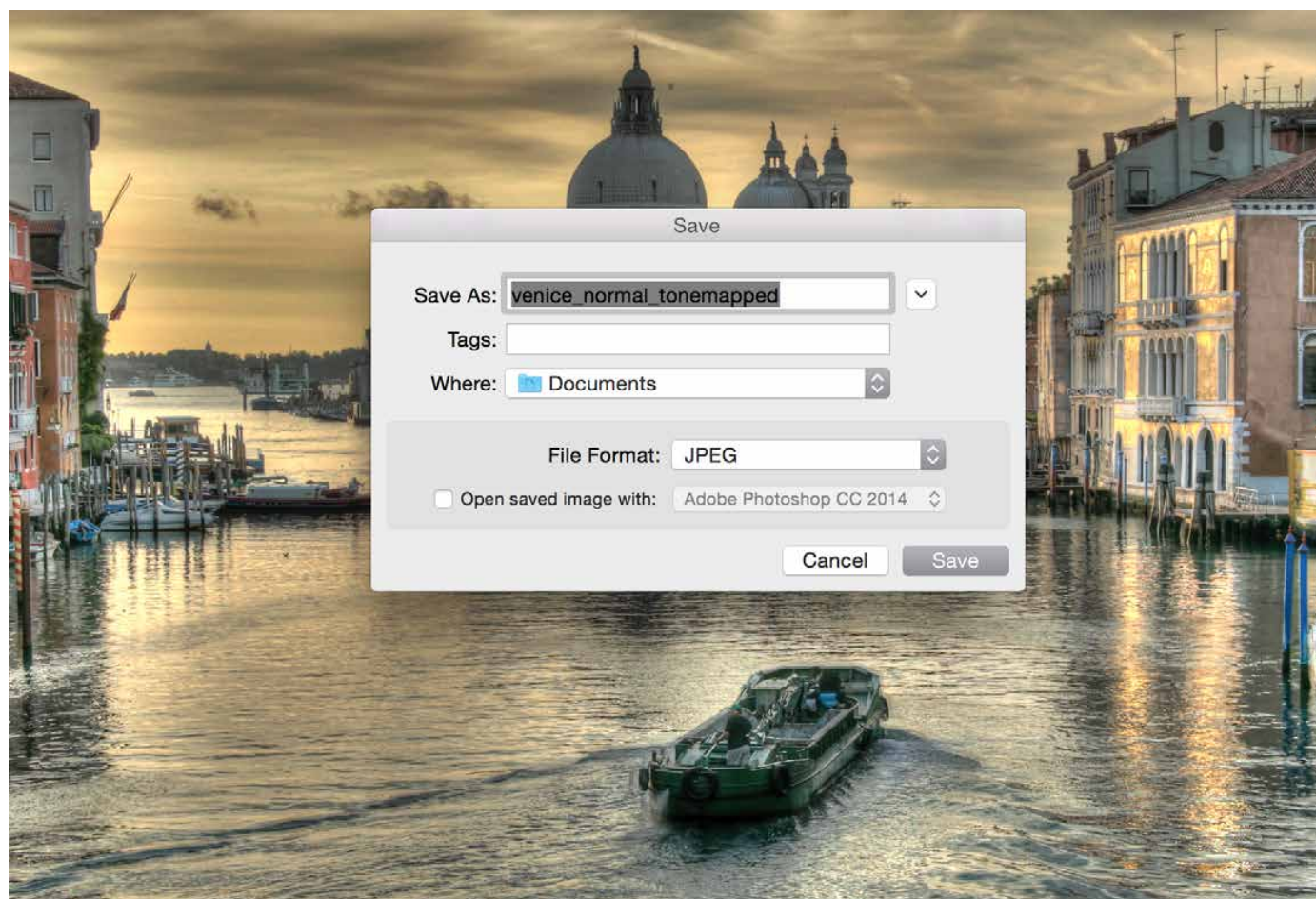
If you wish to undo the cropping, you can do that by clicking the **Undo Crop button**.

3.4.4   Save, and Return to Step 1 *(standalone edition)*

Once you are happy with your image, when using the standalone edition of Photomatix Essentials, follow these steps to save the image:

1.   If you want to resize the image to a lower resolution, then click on the pull-down menu under **Save with size** and select the size you want.

2.   Click on the **'Save' button**.

3.   Enter a new file name or navigate to a new save location, if desired, and select a file type:

•   **JPEG:** JPEG is best if you want to go straight to the Web or other medium with no further processing.

4.   **TIFF 16-bit:** This is the highest quality output available and is the best format if you plan on processing the image further in an image editor.

5.   If you want to automatically open the processed image in an image editor, select **Open saved image with**, then choose an image editor.

6.   Choose **Save**.

Your image is saved to disk, and you are returned to Step 1, ready to load and process the next bracketed set or single image.

Saving the processed image

Save, and Return to Photoshop Elements *(plugin edition)*

Once you are happy with your image, when using the plugin edition, click **OK** in the Step 3 window**.**

Your processed image will then open in Photoshop Elements. You can now save the image as you normally would.
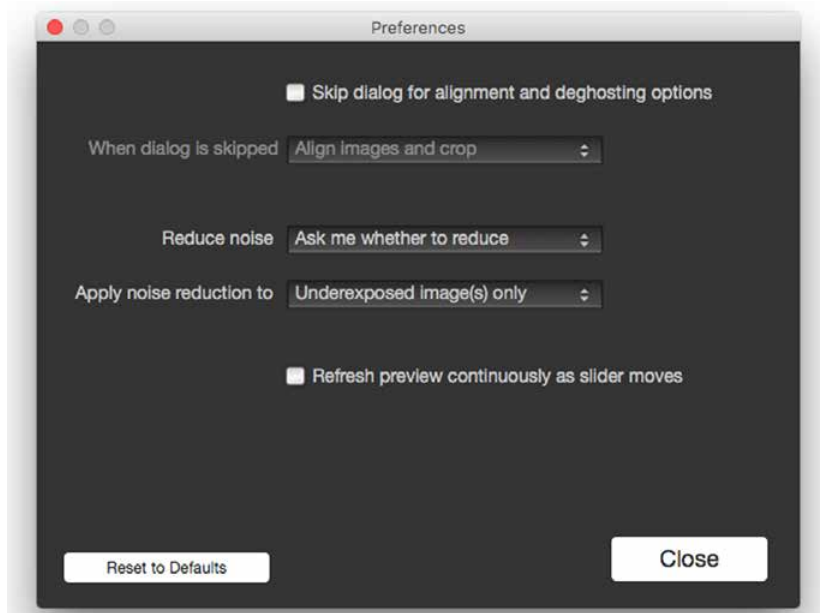
Section 4: Preferences

Photomatix Essentials offers a few options that you can adjust in the Preferences window.

To access Preferences, click the **Preferences…** button located at the bottom left of the **Step 1** window.

4.1   Skip Merge Dialog

When **Skip dialog for alignment and deghosting options** is selected, alignment and cropping defaults are set here in **Preferences**. When it is not selected, you will have the opportunity to set alignment options individually for each bracketed set as you process it, using the Alignment and Deghosting dialog which appears just before **Step 2**. Refer to the **Alignment and Deghosting Dialog** section on page 10.

The Preferences window

4.2   Noise Reduction Options

Noise Reduction is often useful when using presets such as Painterly, Surreal or Grunge, because these presets enhance local detail, which has the drawback of accentuating noise. Noise reduction is particularly recommended when you have loaded RAW files directly into the photomatix Essentials application, or when processing just one photo instead of a bracketed set, especially when this photo is underexposed.

You can turn **Noise Reduction** on or off, using the **Reduce noise** menu options, or you can be prompted after **Step 2** whether or not to apply it. Noise reduction is most helpful when applied to the darkest images in a bracketed set. Since reducing noise takes time, you can choose to process just a subset of your source images with noise reduction by adjusting the **Apply noise reduction to** option.

4.3   Refresh Preview Continuously *(standalone edition)*

Normally, when you adjust a parameter slider in Step 2, the image Preview is adjusted to the new setting immediately after you release the slider thumb. Not before.

If you select the **Refresh Preview continuously as slider moves** option, the image Preview is adjusted every time a slider is moved. Image adjustment feedback is thus more immediate, but a powerful computer is required to take good advantage of this feature.

Glossary

AEB mode
(Automatic Exposure Bracketing). DSLR cameras and some compact digital cameras offer this feature. It enables you to automatically take three or more exposures in a row: one at the proper exposure, one or more underexposed, and one or more overexposed.

Aperture priority
In Aperture Priority mode, you select the aperture and the camera determines the correct shutter speed for the available light. The shutter speed also depends on ISO sensitivity. This is the right mode for shooting bracketed shots for HDR (refer to Section 1 for more information).

Bit
Bits represent digital data in computers. Digital Images are made of bits. A bit depth corresponds to 2^(Bit Depth) levels (e.g. 256 levels for 8-bit).

Bit depth
The number of bits a file type uses to represent a pixel's color at a given location in an image.

Bracketed images
A group of photos taken with the Automatic Exposure Bracketing function of a camera, resulting in photos of the same scene taken with different exposures.

dSLR
Digital Single Lens Reflex camera.

Dynamic range
In the context of HDR photography, the total range of light intensity in a scene, from the deepest shadows to the brightest highlights.

Exposure
The amount of light that enters a camera for the length of time the shutter is open. Exposure depends on aperture and shutter speed, as well as the camera's sensitivity to light (controlled by the ISO). "Exposure" is also shorthand for a photograph or frame (a frame of film).

Exposure fusion
Combination of photos of the same scene taken under different exposure settings in such a way that highlight details are taken from the underexposed photos and shadow details from the overexposed ones.

EV (Exposure Value)
A measure of exposure which is the equivalent of a stop. In the absolute sense, EV is defined as the exposure from a photo taken at 1 second, f/1, and ISO 100. In the relative sense, the correct exposure is normally 0 EV and any deviation is measured in positive or negative EV from that mark.

HDR
High Dynamic Range.

HDR image
Strictly speaking, an HDR image is an intermediary image with 32 bits per color channel (96 bits per pixel). An HDR image is the result of merging photos of the same scene taken under different exposure settings and stored in special HDR image format. The 32-bit intermediary HDR image must be processed with tone mapping for proper display on standard monitors and prints. It has become very common to define "HDR image" as the result of processing the 32-bit HDR image with tone mapping, i.e. the tone mapped output, but this is not technically correct.

JPEG	A common image file format with two primary strengths – a relatively small file size and universal compatibility. JPEGs use a lossy compression scheme and should not be edited and re-saved.
Noise	Statistical variations inherent in the sensor system cause noise. Noise is always present, but higher sensitivities and smaller sensors usually generate more noise.
Pixel	Digital pictures consist of pixels, the smallest units. Each pixel has a color that can be represented by 8 or 16 bits or as a floating-point number (32-bit HDR).
PPI	Pixels per Inch. Can be used to describe the actual pixels per inch of a print. Often confused with DPI (Dots per Inch), used by color printers to print an image.
RAW file	A file containing the raw data from the camera sensor. RAW files do not have a color profile or other stylistic preferences permanently applied.
TIFF	A comprehensive image format that offers lossless compression schemes for smaller file sizes with higher quality. This format is suitable for editing and printing but not publishing on the Web.
Tone mapping	Processing a 32-bit HDR image into an image that can be properly viewed on monitors and in prints.

Learning More and Getting Help

The Photomatix FAQ on the HDRsoft.com website offers several tips, as well as general information.

If you cannot find the answer to your question in the FAQs, you are welcome to contact us.
Please refer to the Photomatix Support page for contact information.

Additionally, the resources page at www.hdrsoft.com/resources lists Internet tutorials, books and DVDs on the subject of HDR photography.

www.HDRsoft.com