

# **NOISEWARE 5**

**PLUG-IN**

**USER'S GUIDE**

**BY IMAGENOMIC**

**2012**

**Noiseware 5 Plug-in User's Guide**

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Contact Imagenomic at <http://www.imagenomic.com/contact>

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# INTRODUCTION

Noiseware™ is the highly-acclaimed, award-winning software tool from Imagenomic that is setting the standard for digital image noise reduction.

Noiseware leads the field for speed, quality and ease-of-use in restoring image fidelity by eliminating digital noise and unwanted artifacts introduced by high ISO photography and less than optimal environmental conditions. Unlike most image processing software techniques that utilize simple methods (such as median filters) to treat digital noise in images, Noiseware features a sophisticated yet fast noise filtering algorithm. Using the adaptive noise profile capability and sharpening function, Noiseware greatly reduces the visible noise while keeping the details in the images.

## TECHNICAL SUPPORT

Technical support for Noiseware products is available via Imagenomic's website at <http://www.imagenomic.com/support>

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# INSTALLATION

- REQUIREMENTS
- RUNNING NOISEWARE PLUG-IN
- INSTALLING LICENSE KEY

## REQUIREMENTS

Noiseware Plug-In works with both 8-bit and 16-bit\* images and is compatible with Adobe Photoshop CS4/CS5/CS6, Adobe Photoshop Elements 8/9/10.

The following are the minimum system requirements:

- Microsoft Windows® XP/Vista/7
- 1GB free RAM
- 100MB free hard drive space
- 1280x800 screen resolution
  
- Mac OS X 10.6.x/10.7.x
- 1GB free RAM
- 100MB free hard drive space
- 1024x768 screen resolution

## RUNNING NOISEWARE PLUG-IN

For Adobe Photoshop and Adobe Photoshop Elements click on the Filter menu and select Imagenomic > Noiseware

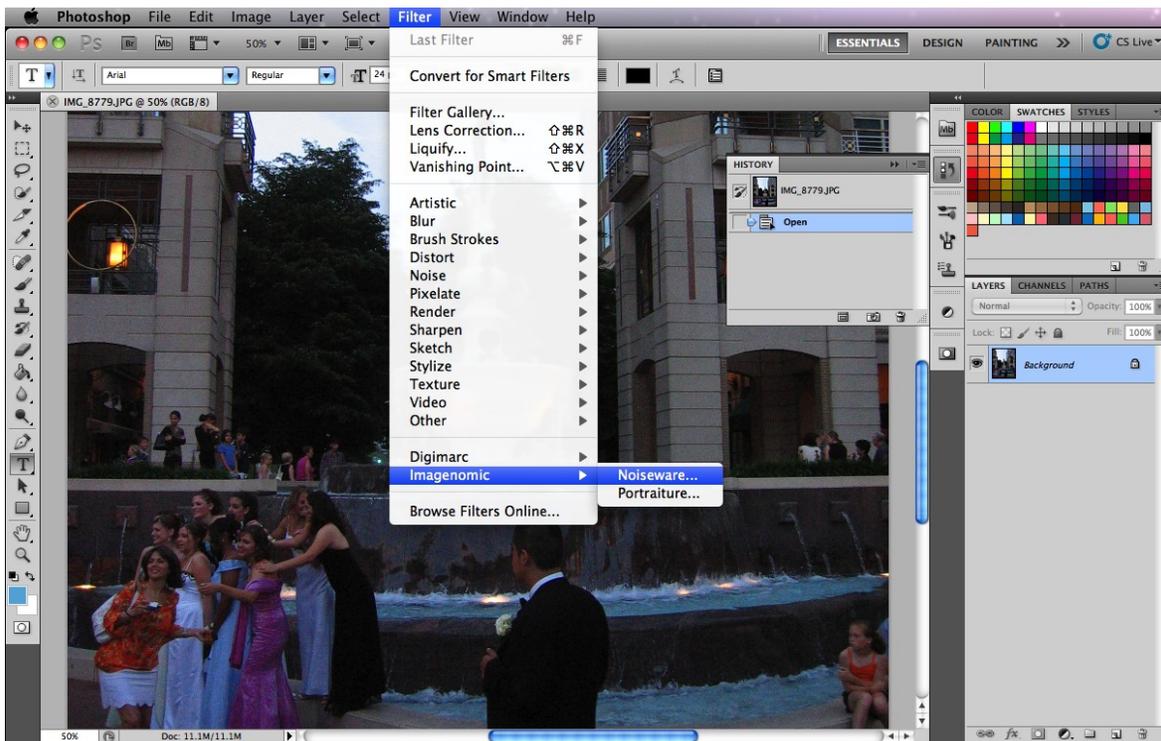
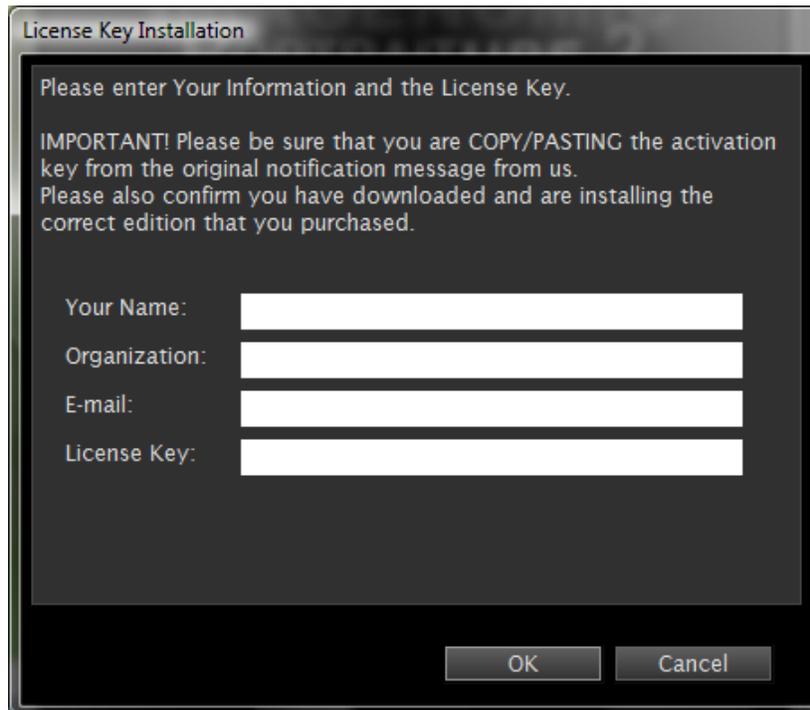


Figure 1: Running Noiseware Pug-in from Adobe Photoshop CS5

## INSTALLING LICENSE KEY

To install the license key open the "About Noiseware" window by clicking on the "About" button and click on the "Install License" button. The "License Key Installation" window will show where you can enter your license information.



License Key Installation

Please enter Your Information and the License Key.

IMPORTANT! Please be sure that you are COPY/PASTING the activation key from the original notification message from us. Please also confirm you have downloaded and are installing the correct edition that you purchased.

Your Name:

Organization:

E-mail:

License Key:

OK Cancel

Figure 2: License Key Installation window

# KEY FEATURES

- INTELLIPROFILE™
- DETAILGUARD™
- ADVANCED FILTER CONTROLS

## **INTELLIPROFILE™ ENGINE**

IntelliProfile™ is a built-in expert system that supports operation of Noiseware's core noise suppression engine. It employs powerful Artificial Intelligence methods to analyze and recognize noise patterns and to enable effective noise detection.

## **DETAILGUARD™**

There is a fine balance between the effects of aggressive noise reduction and eliminating important image information contained in small details. DetailGuard™ provides greater control over filtering process to safeguard image details from excessive alteration. Additionally, it includes an advanced detail color protection to retain the color fidelity of the image.

## **ADVANCED FILTER CONTROLS**

Noiseware filter control sets provide wide range of fine-tuning depending on specific image requirements. The available controls include frequency, color and tonal range adjustment and noise reduction parameters as well as dedicated controls for luminance and color noise filtering. By varying these parameters you can fine-tune your custom filter configuration for optimal results.

# BASIC USE

- FILTERING NOISE
- FILTER PREVIEW
- NAVIGATOR WINDOW

## FILTERING NOISE

### Filtering at the Default Setting

Noiseware can operate in a fully automatic mode enabling a click-less workflow and optimal results in a matter of seconds. When you start Noiseware Plug-in, it automatically calculates the noise profile and processes the image. All you need to do in order to save the result is to click once the OK button.

When you start Noiseware Plug-in for the first time, the noise filter is set to the "Default" setting. The main preview window will automatically display a filtered copy of your image processed at the "Default" setting. You can examine a filtered sample by using the zoom, split-screen and panning tools as well as compare with the original by click&hold in the preview area. If you are satisfied with the result, all you need is to click the "OK" button.

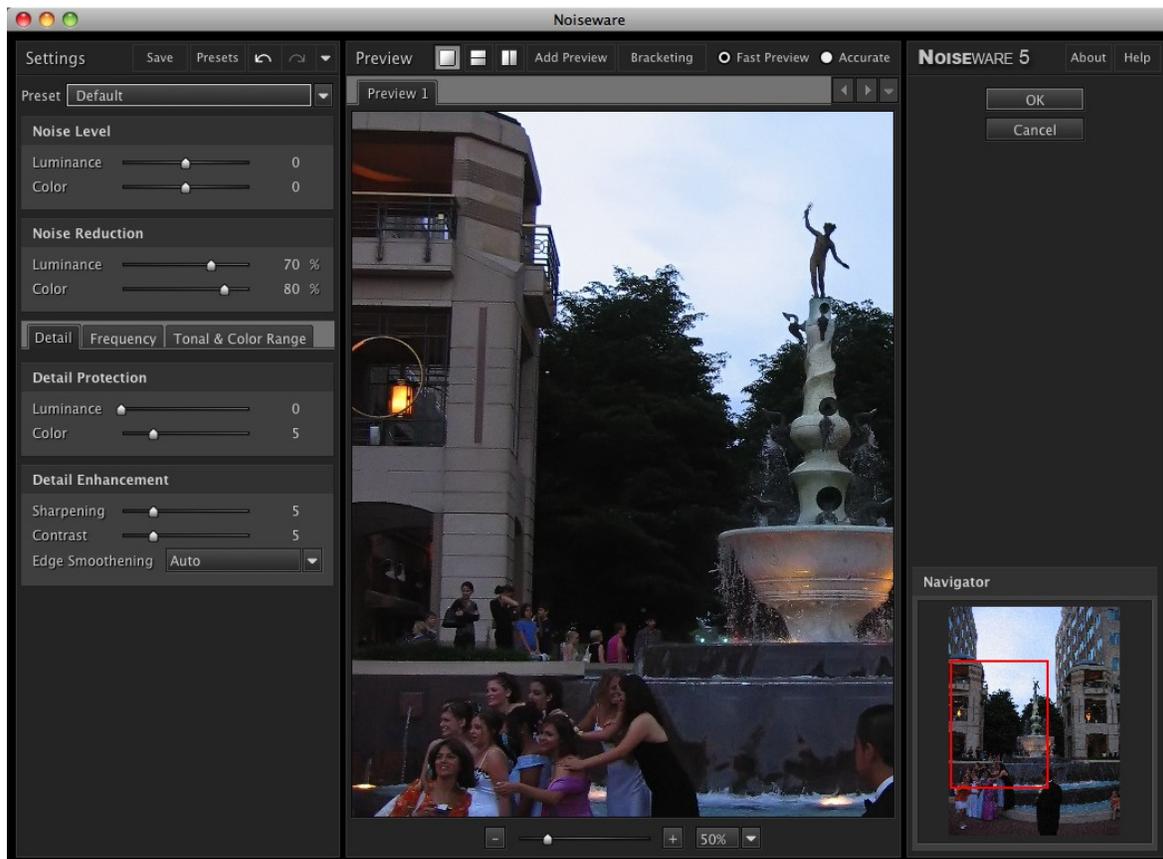


Figure 3: Noiseware at the "Default" setting

## Using Predefined Setting Presets

In addition to the "Default" setting, Noiseware provides 14 predefined setting presets fine-tuned for various images. Depending on the image type you would choose a corresponding preset. For example, for most of landscape-type shots, you would use the "Landscape" preset to produce the optimal result, such as smoother "skies" while preserving the detail-intensive areas of the image. Generally on start-up Noiseware will default to the last used filter settings.

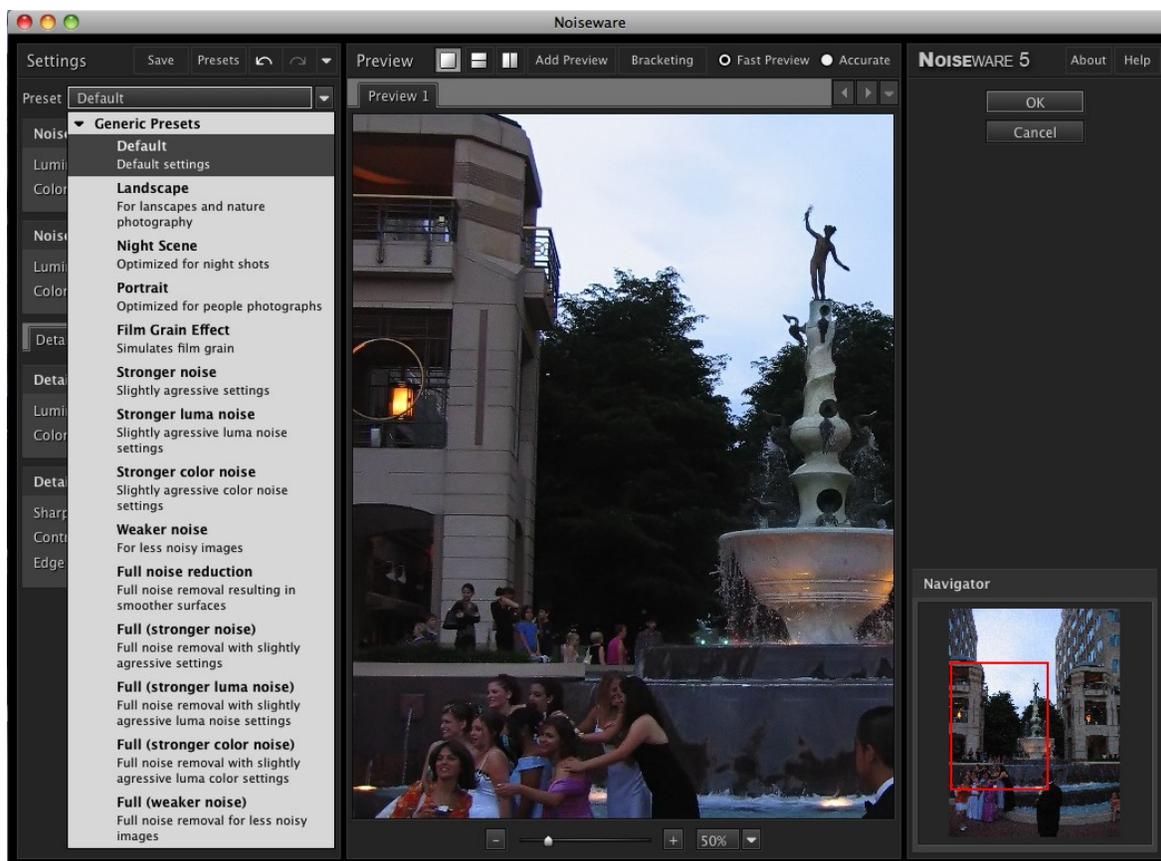


Figure 4: Noiseware predefined setting presets

## FILTER PREVIEW

The preview window displays a processed copy of the image. Noiseware updates the visible part of this preview in real-time when you apply a filter setting or modify any individual parameter. Once the filtering operation is completed you can click (and hold) on the processed image with the left mouse button to view the original image or to use panning. To zoom, you can use the [-]/[+] buttons. The zoom value can vary from 10% to 800%. In addition you can view the image in a horizontal or vertical split mode with original and processed copies both visible in the main window area. Analogous to the single view mode, you can click to pan or to see the original image.

In addition to mouse panning, you can use mouse wheel to scroll vertically and Ctrl-wheel to scroll horizontally. You can also zoom using the Alt-Wheel. Zoom-in can be also activated with Ctrl-click and zoom-out with Alt-click. Right-click on the preview image area will display context pop-up menu with zoom and display mode.

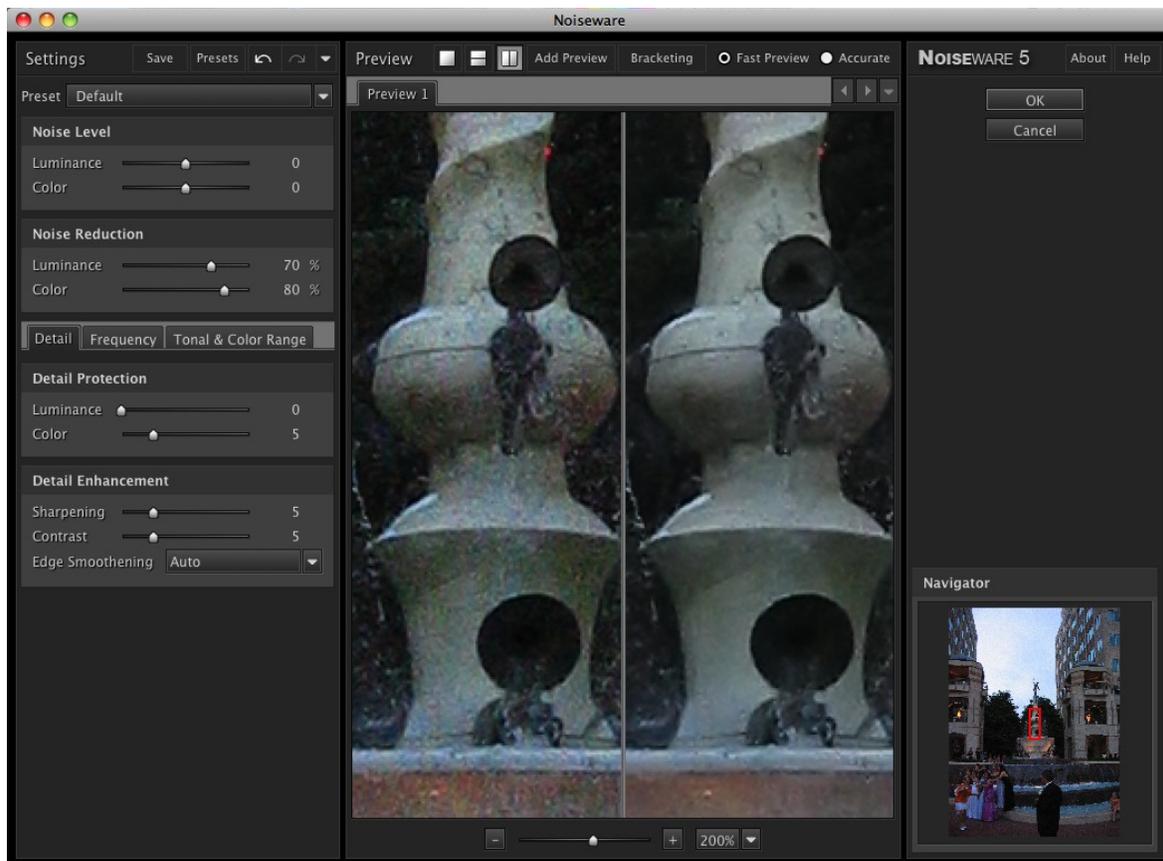


Figure 5: Filter Preview in vertical split mode zoomed at 200%

## NAVIGATOR WINDOW

The Navigator window allows navigating the image by dragging the red square cursor or by clicking on a different area of the image. The corresponding area of the image is then displayed in the main preview window.



*Figure 6: Navigator window*

# ADVANCED USE

- FINE-TUNING
- PRESETS
- MULTIPLE PREVIEWS AND BRACKETING
- PREFERENCES
- PHOTOSHOP ACTION AND SCRIPTING SUPPORT
- KEYBOARD AND MOUSE CONTROLS

## FINE-TUNING

### Filter controls

Noiseware filter control sets provide wide range of fine-tuning depending on specific image requirements. In addition to the default and other presets that come predefined with Noiseware, you can adjust any of the controls to fine-tune your custom filter configuration for optimal results. The controls are grouped into five functional sets to enable effective workflow. Each set is explained in more detail in the following sections.

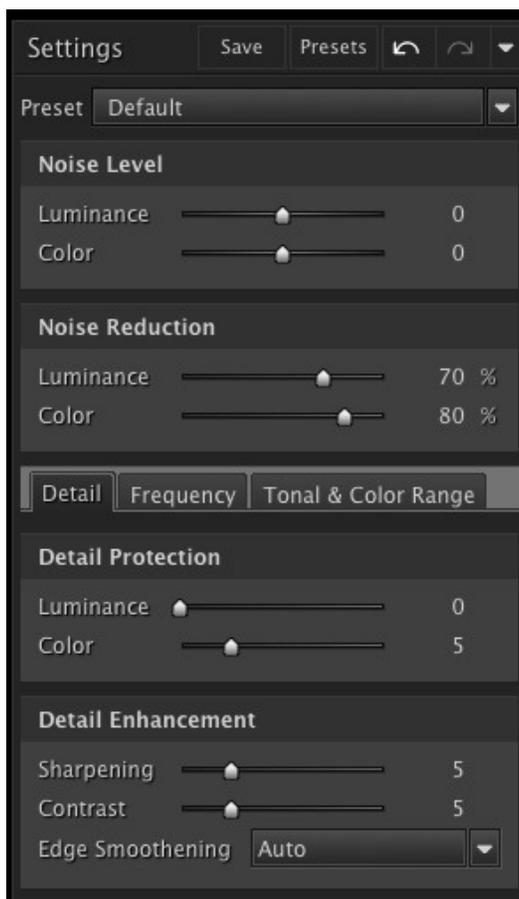


Figure 7: Noiseware control panel

## Noise Level Adjustment

You can adjust the noise level detected by Noiseware by operating the corresponding sliders in the Noise Level section. The adjusted values can vary from -20 to +20 of the noise profile. A negative value instructs Noiseware that the image contains less noise than detected by the noise profiler. A positive value means the actual noise level is more than the detected noise level.

## Noise Reduction

You can set the noise reduction level by operating the corresponding sliders in the Noise Reduction section. The values can vary from 0% to 100%. The less the noise reduction value, the more of the original image is included in the output. The more the noise reduction value, the more of the filtered image per each filtering parameter is included in the output.

## Luminance and Color Noise controls

You can adjust the noise level and respective noise reduction amounts for Luminance and Color Channels. For most cases, the optimal values for these settings have been found to be around 60%-70% and 80%-90% for Luminance and Color noise reduction amounts respectively. The adjustment settings can be normally left unchanged since Noiseware profiling mechanism calculates the optimal noise level as represented by the "0" adjustment setting. In certain cases such as when the image detail and image noise are difficult to distinguish, the profiling mechanism may slightly under- or overestimate the noise levels for either channel. In these situations, the adjustment controls can be effectively applied to correct the detected noise levels. You can further fine-tune the noise level adjustment and noise reduction amount by operating specialized Noiseware controls for frequency, tonal and color ranges.

## Noise Frequency

Noiseware provides respective noise level adjustment and noise reduction controls for four progressive frequency ranges.

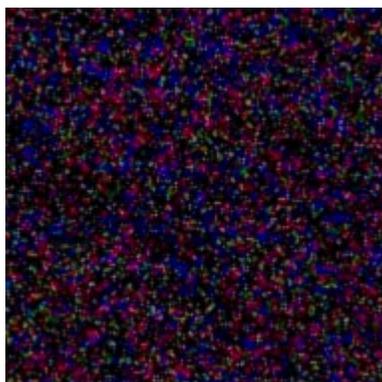
The concept of noise frequency can be said to describe the different components or types of the visual noise present in a given image which affect it in different ways. These noise types can be characterized into following basic categories: a spatially smaller noise also known as a high-frequency noise, which is contained in individual pixels and affects the appearance of the fine details of the image and a spatially larger noise signal (a lower frequency noise) as represented by a group of pixels rather than a single pixel. These larger noise artifacts interfere with the appearance of larger image elements as collectively represented by those pixels. In other words, higher frequency noise represents finer or pixel level noise while lower frequency range corresponds to larger artifacts including color banding and blotches.

The high-frequency noise is prevalent in luminance channel which can range from fine grain to more distinct speckle noise. Most of the time, this type of noise doesn't affect the image quality significantly and can be left untreated. On the other hand

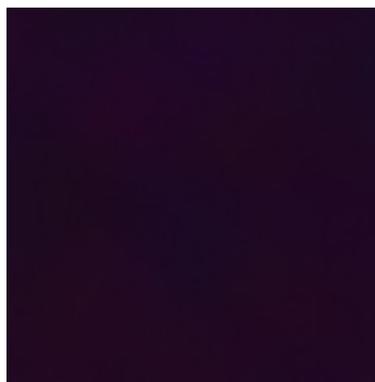
the lower frequency noise is present in both luminance and color channels and can significantly degrade the image quality.

Noiseware intelligently detects the respective effects of each noise type and applies adaptive treatment to achieve optimal noise suppression for each noise category.

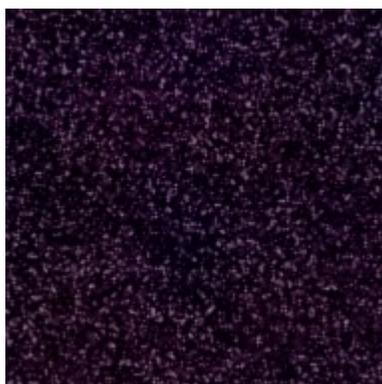
The illustrations below show the noise in Luminance and Color channels, as well noise in all four frequencies. As you can see, the lower frequency the more of color noise is visible.



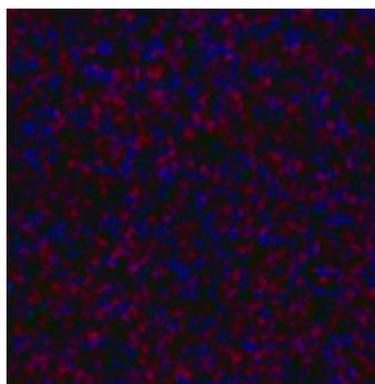
*Figure 8: Original image crop*



*Figure 9: Noise removed with Noiseware*



*Figure 10: Luminance noise*



*Figure 11: Color noise*

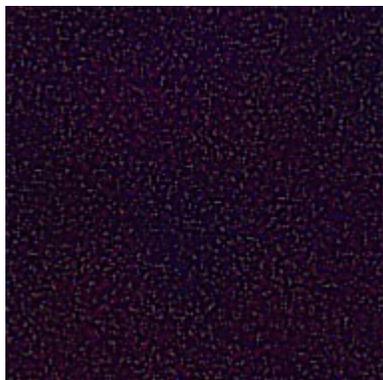


Figure 12: High frequency noise

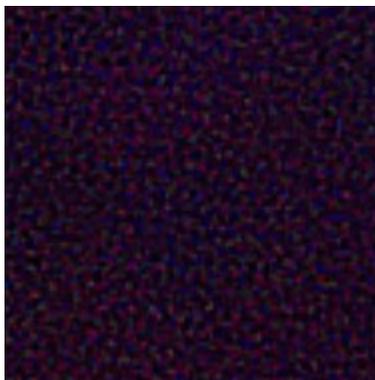


Figure 13: Mid frequency noise



Figure 14: Low frequency noise



Figure 15: Very low frequency noise

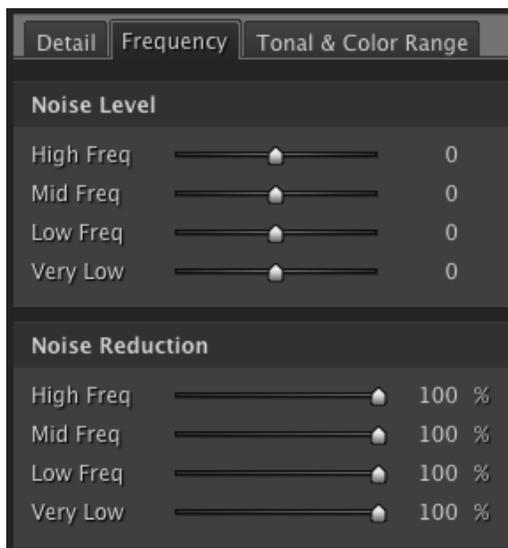


Figure 16: Frequency controls

The Frequency controls set the noise level and the noise reduction amount for four different frequencies: High, Mid, Low and Very Low. The values can vary from -20 to +20 of the noise profile for the adjustment and from 0% to +100% for the noise reduction settings.

## Tonal & Color Range

The Tonal Range controls set the noise level and the noise reduction amount in shadows, mid-tones and highlights. The values can vary from -20 to +20 of the noise profile for the adjustment and from 0% to +100% for the noise reduction settings.

The Color Range controls set the noise level and the noise reduction amount for seven color ranges: Reds, Yellows, Greens, Cyans, Blues, Magentas and Neutrals. The values can vary from -20 to +20 of the noise profile for the adjustment and from 0% to +100% for the noise reduction settings.

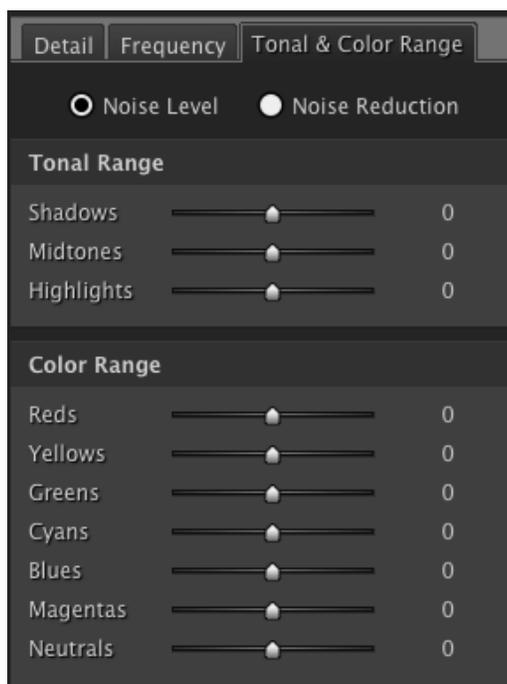


Figure 17: Tonal Range controls

## Detail Protection with DetailGuard™

DetailGuard™ provides greater control over filtering process by setting the detail protection levels for luminance and color channels. The values can vary from 0 to 20.

## Sharpening and Contrast

Sharpening and Contrast control provides 20 level adjustment (0 to 20) and uses unsharp mask with predefined parameters and over-sharpening control.

## Edge Smoothing

You can choose between four different Edge Smoothing settings (Auto, High, Normal, Low). The effect of the Edge Smoothing settings is most noticeable if you select full suppression, and if the amount of noise is rather high. It essentially sets the level of smoothing of the edges and lines. So, if you feel that the image does not look natural - i.e. it looks over-processed - you can change the Edge Smoothing to a lower setting.

"Low" setting should be used when you want to preserve more details - i.e. landscape shots with many small and tiny details, and the "High" setting should be used when a smoother image is more desirable - i.e. portraits.

In the Auto mode, Noiseware automatically decides what setting to apply depending on the amount of noise detected at each frequency and channel.



Figure 18: Detail Protection and Detail Enhancement Settings

## PRESETS

### Saving settings to create new filter presets

You can create your own custom presets by using the "Save" button. You can choose to save the custom settings from each or any combination of the three control sets. Custom Presets can be saved in Groups (e.g. For specific clients or assignments) and can be annotated with additional details.

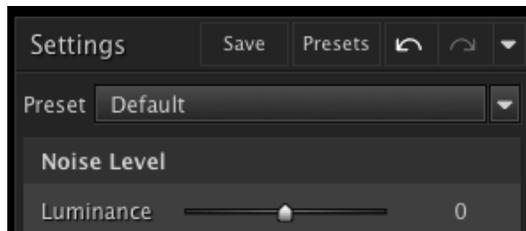


Figure 19: Save, Delete, Undo and Redo buttons

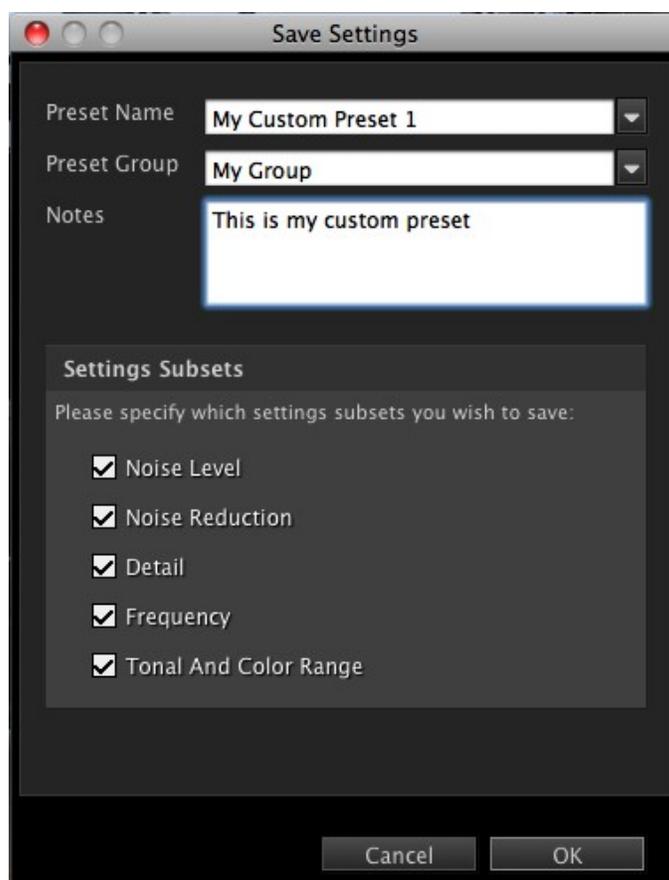


Figure 20: Save Custom Filter Settings window

## Managing Presets

The Preset Manager window, which is accessible by clicking on the “Presets” button to the right of the “Save” button, allows for the renaming, deleting and exporting/importing of presets. The location for saving presets can also be designated, e.g. In a specific folder on a local drive or on a network drive for sharing between multiple users.



Figure 21: Preset Manager

## Undo/Redo (History)

You can revert or re-apply the last settings used by clicking the “Undo...” and “Redo...” button controls next to the preset combo-box or by using CTRL+Z or CTRL+Y keyboard combinations respectively. These controls can be also accessed by right-clicking on a slider control.

Undo/Redo will apply to setting changes made at least half a second apart from each other.

## MULTIPLE PREVIEWS AND BRACKETING

### Multiple Previews

Noiseware preview feature provides mechanism for opening multiple preview windows, up to 100 for the same image file. This allows to compare different filter settings by simply switching between preview tabs. The filter settings will be automatically set to their respective values for each preview. To create a preview click on the button next to the "Preview" and select "Add Preview". To close a preview select "Close Preview" and the current preview will be closed. You can also "Close Other Previews" which will close all other previews and keep current preview.

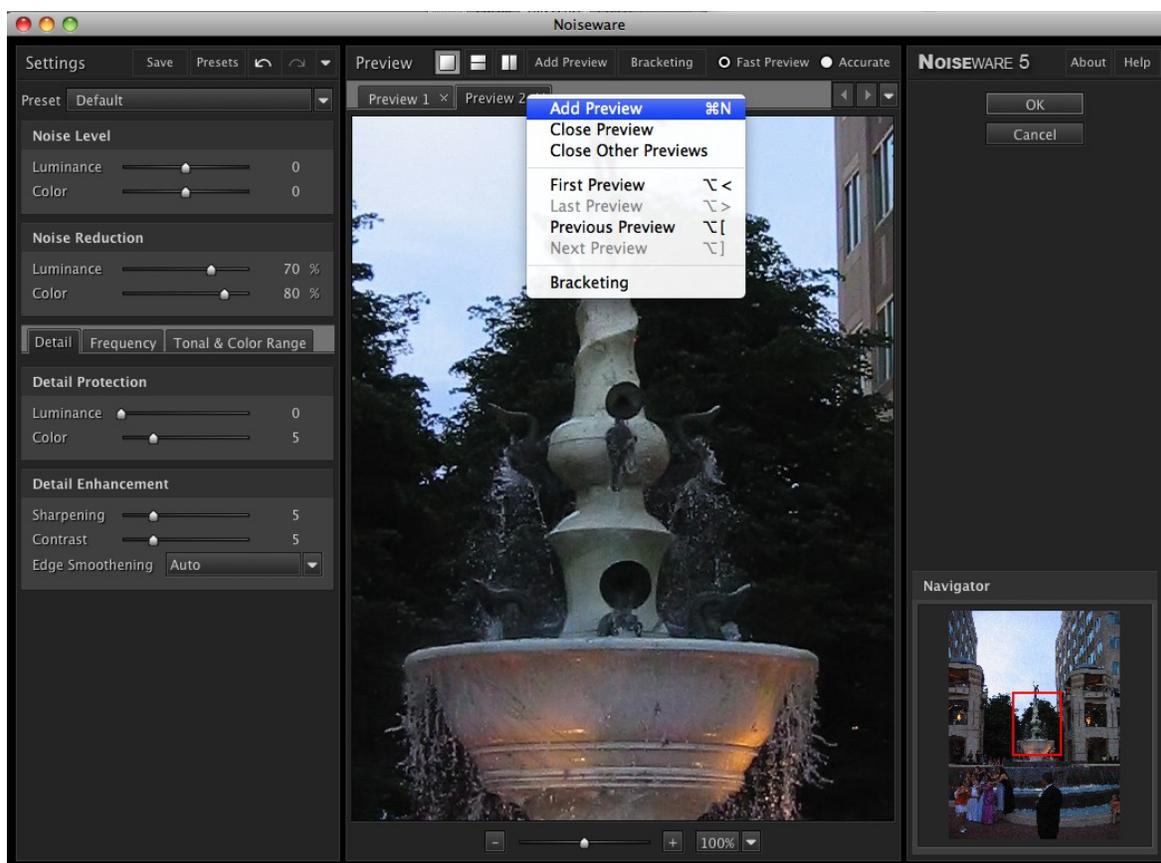


Figure 22: Preview pop up menu

Alternatively, you can add a new preview by clicking on the "Add New Preview" button on the top of the preview window.

## Bracketing

In addition to creating custom multiple previews, Noiseware provides an automated bracketing feature for quickly generating preset series of previews for noise reduction and noise level filter settings. For each original setting, the bracketing creates three previews with 20% bracketing interval. Furthermore, you can specify additional parameters along with the number of the bracketing previews (3/5/7) and the bracketing interval (5%-30% for noise reduction and 2-10 for noise level). To bracket or to set up a bracketing preset, click on the button next to the "Preview" and select "Parameter Bracketing..." item. Once the preset is created, it will appear in the same menu selection. When using bracketing, you can view the name of the respective bracketing parameter and its absolute value on the preview tabs. A tab will also reflect custom changes made to the bracketing parameters values for a given preview. In addition the mouse roll-over any inactive preview tab it would display a tool tip that would specify the parameter value differences relative to the parameter values of the currently open preview. Bracketing can be also activated by right-clicking on respective slider controls in the Filter section.

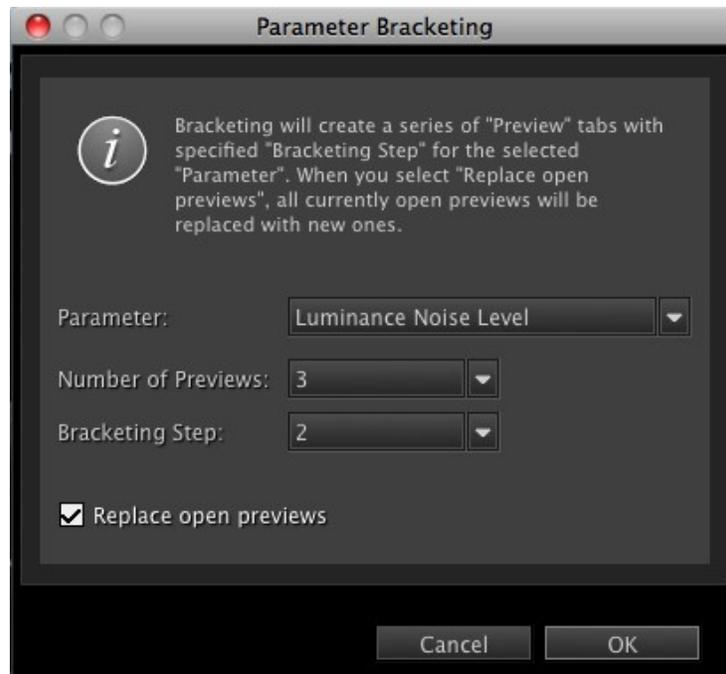


Figure 23: Parameter Bracketing window

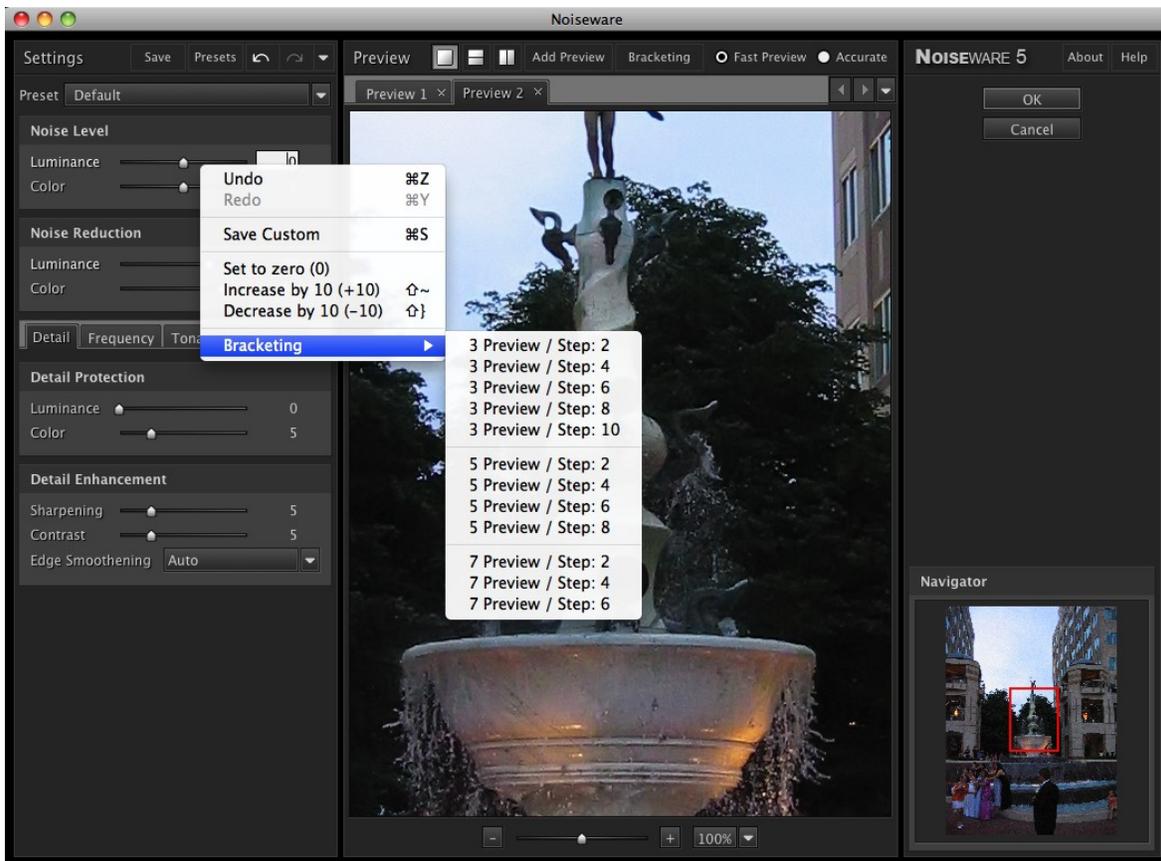


Figure 24: Right-click pop up menu with bracketing options

## PREFERENCES

The Preferences window is accessible from the “About” window by clicking on the “Preferences” button. There are two sections - “Interface” and “Performance”. The “Interface” section is for changing the foreground and background colors of the plugin dialog window. The Performance section allows for the manual selection or automatic detection and use of multiple CPUs on the host system.

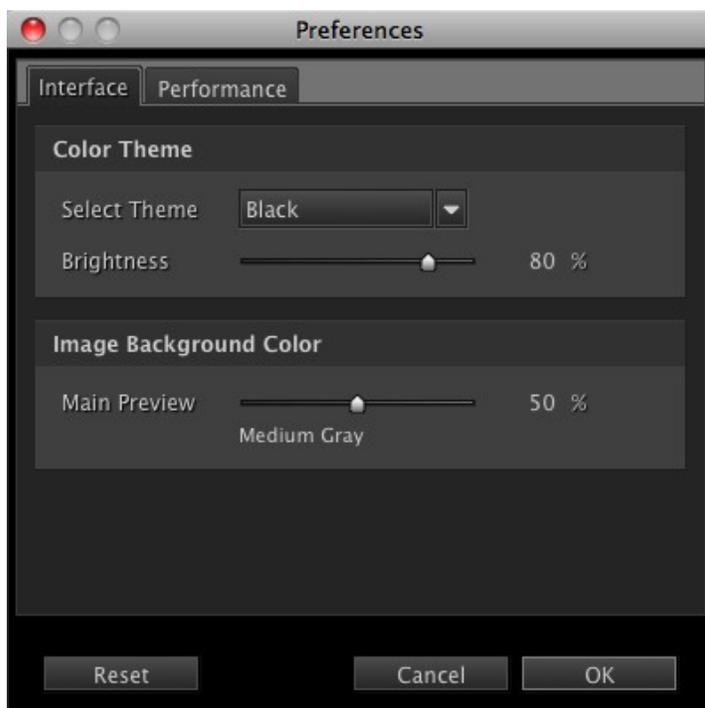


Figure 25: Preferences window

## **PHOTOSHOP ACTION AND SCRIPTING SUPPORT**

Noiseware Plug-in provides full action and scripting support within Photoshop. The recorded actions contain all Noiseware Plug-in adjustable parameters including noise level adjustment, noise reduction, detail protection and detail enhancement values as well as manual profile data.

## KEYBOARD AND MOUSE CONTROLS

Section	Windows	Mac	Description	
Preview window	Space+Click	Space+Click	Panning	
	CTRL+Click	Command+Click	Zoom in	
	ALT+Click	Option+Click	Zoom out	
	Ctrl + Plus	Command +Plus	Zoom In	
	Ctrl + Minus	Command +Minus	Zoom Out	
	Ctrl + 0	Command +0	Zoom to 10%	
	Ctrl+Alt + 0	Command +Option+0	Zoom to 100%	
	Mouse wheel	Mouse wheel	Vertical scroll	
	Ctrl+Mouse wheel	Command+Mouse wheel	Horizontal scroll	
	Alt+Mouse wheel	Option+Mouse wheel	Zoom	
	Right Click	Right Click	Context menu	
	Ctrl+N	Command+N	New Preview	
	Alt + [	Option + [	Previous Preview	
	Alt + ]	Option + ]	Next Preview	
	Alt + <	Option + <	First Preview	
	Alt + >	Option + >	Last Preview	
		Ctrl+Alt+F	Command+Option+F	Full Preview mode
Ctrl+Alt+V		Command+Option+V	Vertical split preview mode	
Ctrl+Alt+H		Command+Option+R	Horizontal split preview	
Sliders		Up/Down keys	Up/Down keys	Increase/Decrease by 1
		Shift+Up/Down keys	Shift+Up/Down keys	Increase/Decrease by 10
	Tab/Shift+Tab	Tab/Shift+Tab	Change sliders	
	Right Click	Right Click	Context menu	
	Mouse wheel	Mouse wheel	Increase/Decrease by 1	
	Shift + Mouse wheel	Shift + Mouse wheel	Increase/Decrease by 10	
	Ctrl+Z	Command+Z	Undo	
Ctrl+Y	Command+Y	Redo		
	Ctrl+S	Command+S	Save Current Settings	
Plug-in window	Alt	Option	Switch between Cancel and Reset	