

Power Retouche Retouching Suite

How to sharpen photos without creating halos

The Sharpness Editor plug in is the worlds first and only software, that gives you control over sharpness without the negative contours unsharp mask creates. You get several unique photo sharpening methods that all take sharpening beyond common unsharp mask. You also get anti-aliasing and our unique fade out to threshold plus controls to target sharpening or blur to specific colors, a brightness range, edges only or to be applied as a graduated effect.



■ Power Retouche Photoshop plug-ins are also for Paint Shop Pro, Corel Draw, Illustrator, Fireworks and other graphic software or photo software for photo editing, retouching and restoration (Mac & Win) see [list](#)

Sharpness Editor plugin - Tutorial

Benefits of the plugin

- Sharpen images without the defects of other sharpeners: negative edgelines.
- Sharpen images without noise enhancement.
- Three original sharpening methods.
- True optical blur.
- Selective sharpening - restrict to edges, surfaces, color or value.
- Anti-alias otherwise jagged edges.

The Sharpness Editor plugin filter works with these image modes (Windows and Mac)...
8 & 16 bit / channel: RGB, Grayscale, Duotone, Multichannel, Lab.

Sharpness Editor filter controls

This is the Sharpness Editor plug-ins control panel (Windows). Click to enlarge.

The filter has these sets of controls:

1. Sharpen methods
2. Anti-aliasing
3. Levels
4. Graduated Effect
5. Brightness range
6. Color-range



Example



Regular unsharp mask



Original photo



Our Sharpness Editor

The Sharpness Editor plugin is the only sharpener on the market that can sharpen without creating negative edge lines.



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The sharpening control set

The sharpening control set

These are the main sharpening controls.

Sharpen method. Select between four sharpening methods and a blur that emulates optical blur.

Luminance only. When on, only the luminance of the image will be sharpened.

Double pass. When on, the plug-in will filter the image twice.

Radius is similar to the radius of common unsharp mask found in Photoshop and other software.

Surfaces sharpens surfaces only - as found with the setting of the edge detection slider below.

Edges sharpens edges only - as found with the setting of the edge detection slider below.

Remove halos. Common unsharp mask produces halos along edges. This slider removes them by altering the sharpening algorithm so they are not produced in the first place.

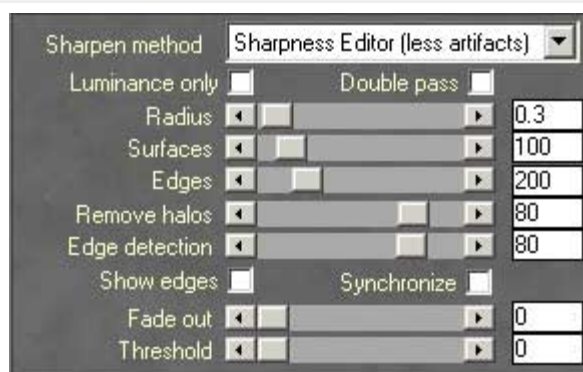
Edge detection determines what will be sharpened as surfaces or as edges.

Show edges. When on, the found edges are displayed in the preview as an aid to set the Edge detection slider.

Synchronize. When on, the two sliders Surfaces and Edges will be linked so you only have to move one and the other will follow.

Fade out fades out the sharpening effect below the contrast level set by the slider. It fades the effect out down to the level set by the Threshold slider, where the sharpening is off.

Threshold is the same as threshold found in regular unsharp mask. Anything below the contrast level set by the slider will not be sharpened.



Sharpening Methods

The plug-in offers four sharpening methods and a better blur.

Gentle Unsharp Mask: Built to sharpen evenly but without producing edge artifacts. Remove Halos is not so necessary with this method.

Sharpness Editor: Built to sharpen like regular USM but with less noise enhancement and slightly less halos. Designed to be used with the Remove Halos slider.

Enhanced Unsharp Mask: Regular unsharp mask, but with all the extra Power Retouche options added.

Contrast Adaptive USM: High contrast edges get sharpened the most while the effect fades out as contrast is reduced. This means surfaces are sharpened less than edges and noise is virtually untouched. Very good with Double Pass.

Blur (true de-focus): This blur emulates the optical blur of an out of focus lens. It is unlike gaussian blur.

Luminance only

Luminance only is equivalent to converting the image to Lab mode, sharpening the L-channel only, then converting back to RGB. It is twice as fast as sharpening RGB and can produce aesthetically more pleasing results.

Double pass

When Double pass is checked, the plug-in will filter the image twice. Double pass is four times as powerful so you can filter at much lower settings with less artifacts.

Radius

This slider is calibrated to Photoshop's unsharp mask and though we use optical blur rather than gaussian blur, the size is similar.

Remove halos

This is Power Retouche's unique invention. Regular unsharp mask creates negative edgelines along edges of relatively

	high contrast. Our "Remove halos" changes the sharpening algorithm so that such edges are not created. Regular unsharp mask also tends to enhance noise. Our "Remove halos" will also reduce or eliminate enhancement of noise. Settings around 80 or 90 should be optimal.
Edge detection Show edges	<p>The higher you set the Edge detection slider, the more edges will be included for filtering.</p> <p>Check Show edges to draw a mask over the image that shows all detected edges.</p> <p>Areas rendered black will be sharpened by the Surfaces slider. Edges rendered white or strongly colored will be sharpened by the Edges slider.</p> <p>If you only want to sharpen edges, use this together with Threshold to remove noise.</p>
Synchronize	Check Synchronize to make the two sliders Surfaces and Edges follow each other so you only have to move one of the two sliders to change both.
Fade out	Fade out will gradually reduce the amount of sharpening below the contrast level set by the slider. It fades out down to the level set by the Threshold slider just below. Common threshold will create a sharp distinction between sharpened and unsharpened areas in surfaces, which give an odd patchy result. Fade out does not do this.
Threshold	This slider sets a threshold below which no sharpening will be done. It is the same you will find with regular unsharp mask in most photo software.



The Anti-aliasing controls

Anti-aliasing	<p>"Anti-aliasing" is local softening of the jagged edges digital images may get along curves or oblique lines. When you sharpen such a curve or line, you might enhance the jaggies. If this is a problem, you can do anti-aliasing to remove the jaggies.</p> <p>There are two different means to do anti-aliasing. Level 2 is stronger than level 1.</p>
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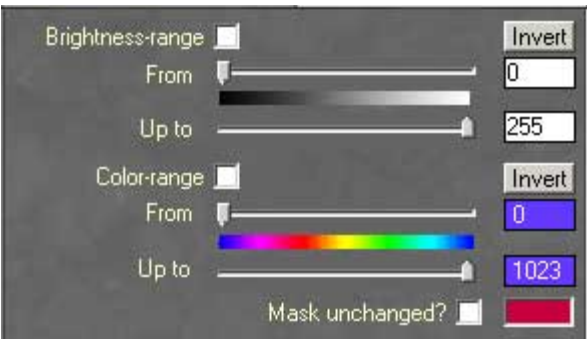
The range controls

	<p>The range controls are common to most of the Power Retouche filters. They let you restrict filtering to either a limited range of brightness levels or a range of colors (or both).</p> <p>Both sets of range controls have an Invert button that make the sliders swap place (select the inverse). Thus you can filter a specific range, f.ex. sharpen everything but the bright blue sky. Then rerun the filter, click inverse, then blur only the bright blue sky to either create depth or remove noise.</p>
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Retouch Levels	<p>Retouch Levels is common to many Powerretouche plugins. It will change the amount the sharpening is applied to various levels.</p>
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Brightness range	<p>Pixels to the right of the From slider and to the left of the Up to slider will be filtered.</p>
Color range	<p>Colors to the right of the From slider and to the left of the Up to slider will be filtered. This means if the top slider is to the left of the lower, then colors between the two sliders will be filtered. If the top slider is to the right of the lower slider, then colors in between will not be filtered. Thus any selection is possible.</p> <p>To make selection easier, you can turn on Mask Unchanged.</p>



Graduated effect

The graduated effect controls are common to many Powerretouche plugins.

Using graduated effect will apply full effect at one side and no effect at the other with a smooth graduated effect in between.

You can use this to sharpen f.ex. the foreground of a landscape and leave the background slightly blurred, or vice versa. This will create a greater sense of depth. See below examples.



Original image



Only foreground sharpened



Foreground sharpened and top blurred

Reviews

[Photoshop Online Reviews](#) Jan. 2006

Review of Sharpness Editor: Photoshop User Rating 4 out of 5 stars. "An outstanding collection of filters. Unique photo-sharpening plug in" - Dave Huss. [See the full review here](#) (The last star missing was because of a poor tutorial. This has been remedied).

[Digital Camera Magazine](#) May 2004.

"This filter is superb and delivers everything it promises... Amazing value. 95% VALUE.

[See the review here.](#)

Sharpness Editor vs. regular Unsharp Mask

Two tests

Two tests were performed. The first to see how edges are treated and determine to what degree specular edge phenomena are generated. The second to show how single-pixel variations on a low level are treated and determine the degree such low level variations have their contrast altered so they end up standing out as noise instead of integrated variation of a monochrome hue.

It was found that...

1. Sharpness Editor does produce minor edge phenomena at Fix Edge settings below 80%. At 80% and above they are eliminated.
2. Fix Edges also handles unwanted enhancement of small pixel variations so they don't appear as speckled noise. Also 80% seems to be the borderline setting.
3. From both tests combined it appears that Photoshop's Unsharp Mask has detrimental side effects no matter how low or gentle the settings.
4. Photoshop's rescaling of the unsharp mask effect to 0-500% instead of the actual 0-100% is sound in the sense that the detrimental side effects of regular unsharp mask become too apparent above 100% to be disguised by the already present pixel variations.

Test 1- Contour & Edge line Artifacts

Test for edge phenomena

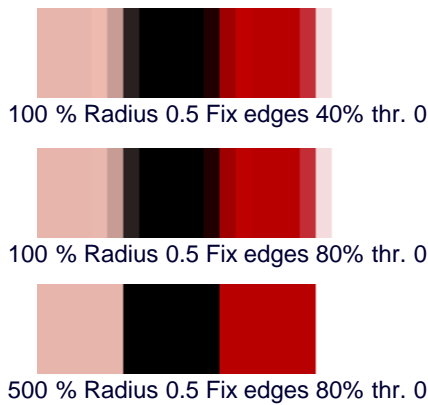


Original image enlarged 800%

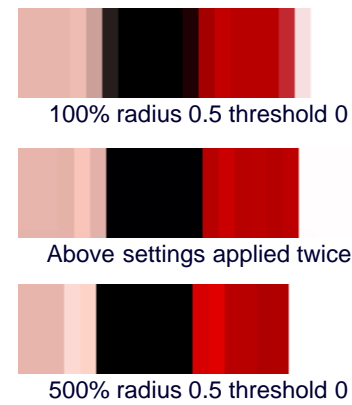
Left image blurred radius 0.5

The original image above was blurred with a gaussian blur (to be fair) at radius 0.5. We then tested to see if the image could be sharpened without leaving any traces of edge-artifacts. All the images have been enlarged 800% for the sake of clarity.

Sharpness Editor

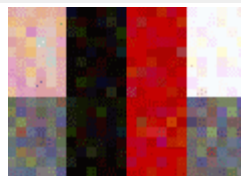


Photoshop Unsharp Mask

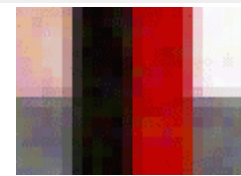


Observe there are no negative edge lines produced with Power Retouche.

Test 2: Reduced noise enhancement



Original with noise
Enlarged 500%



Blurred test image

It was found that neither sharpener could regenerate lost texture on a single pixel level of low contrast variations.

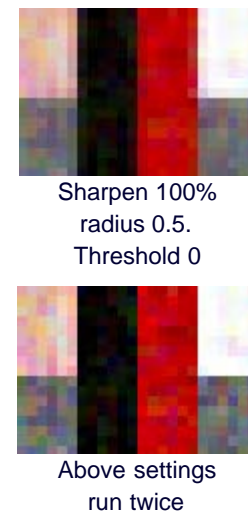
Regular unsharp mask produced a marked effect of contrast exaggeration rendering the surface structure as noise.

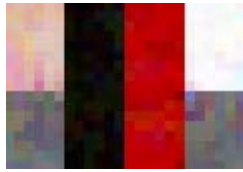
Sharpness Editor performs best with the Fix Edges less than 100% when it comes to regenerating surface texture.

Sharpness Editor

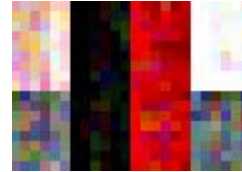


Photoshop Unsharp Mask





Sharpen 500 %
Fix edges 100%
Threshold 0



Sharpen 500%
radius 0.5.
Thr. 0

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P A B B B C C D D E E G G I L L N P P P S S S S S T T W W x A B B B C C D D E E G I L N P S S S T T W x P P F I P A P P P P P x x x