

# Power Retouche Retouching Suite

## Master digital black and white conversion with our Photoshop plug-in

This Photoshop plug-in turns Photoshop into a digital darkroom for black and white. Use the light sensitivity of films (Tri-X, etc) for exact grayscale conversion and contrast editing. Multigrade, exposure stops and colored lens-filters have been copied in this digital darkroom.

- Windows version is for all versions of Photoshop, Elements, Fireworks, Paint Shop Pro, Corel Draw, Illustrator and other software that supports Photoshop plug-ins. See [list](#).
- Mac version is for all versions of Photoshop and Elements and all OS versions.



### Black & White Studio plug-in - Tutorial

#### Benefits of the plug-in

- A black and white photography digital darkroom.
- Light sensitivity of professional films (Kodak Tri-X, T-MAX, etc.) preset.
- Define your own light sensitivity curves - and save them for later.
- Color-filters (like camera-filters: yellow, orange, etc.).
- Multigrade range 00 to 5 - with an extra step at each end.
- Exposure equivalent to f-stops.
- Highlight and shadow control.
- Zone adjustments - three zones available with eyedroppers and zone width option
- Now also for color photos!

The Black & White Studio plug-in works with these image modes (Windows and Mac)...  
8 & 16 bit / channel: RGB, Grayscale, Duotone, CMYK

#### Black & White Studio controls

This is the Black and White Studio plug-ins control panel (Windows). The control panel and preview area can be changed by dragging the sides. Actually the plug-in has so many filter options, that we had to arrange them on two "pages" in the Windows version and on three in the Mac version You change "page" with a click.

The plug-in has four groups of filter-controls:  
Lens-filters = Colored lens filters, like yellow, orange, etc.  
Film = Film spectral sensitivity w. preset films.  
Print = Multigrade, exposure, contrast, etc.  
Zones = Three selectable and adjustable zones



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## Create Stunning Black and White Pictures



If you want to see the original color photo, [click here](#).

## Why a special plug-in for converting to B/W?

BW  
conversion in  
Photoshop vs.  
B/W Studio

We get this question often, so here's the answer through examples and a few words.

It took 5 seconds to create the B/W image below with our B/W Studio.

I have really done my best to create results with Photoshop that look as good as the B/W Studio result, but after fiddling with the Channel Mixer controls and the Black & White Adjustment controls for more than 15 minutes in each case, I gave up. In both cases it would take a lot more work in Photoshop to improve these results, but I don't have time for that and I assume you don't either.

And worse: None of the results look natural because the different colors do not have the same light and in addition mid tone variation vanishes. Please check this with the examples below.

Usually the best and fastest result, in Photoshop, is to convert to grayscale mode (or Desaturate) and then edit further, but that posterizes the image. And when converting to grayscale image mode (or using Desaturate) you don't have any control over the conversion.

In addition CS3's B/W Adjustment only works with RGB, not CMYK.

Photoshop's standard methods are:

1. CS3's Black & White adjustment.
2. Channel Mixer
3. Convert to grayscale image mode
4. Desaturate (in this case Desaturate produces the same result as converting to grayscale)

Anyone who has tried these methods knows what a time consuming and frustrating job it is and how poor the results are. Afterwards you have to adjust levels and contrast and you end up with a posterized histogram... and spending a lot of time back and forth.

You are welcome to download the original and give it a try yourself:

[Click here to get the original](#)



Original



B/W Studio. Time spent: 5 sec.



CS3's Black & White Adjustment



Photoshop: Channel Mixer

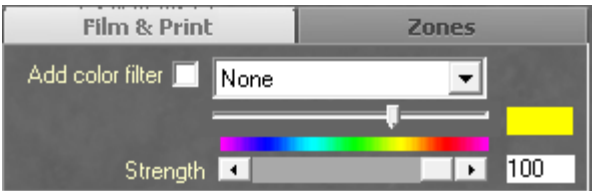


Photoshop: Grayscale/Desaturate

Black & White Studio plug-in - basic lay-out of the controls

Several "pages" of controls

This plug-in is very elaborate and it has a lot of controls. So many that we had to place them on several "pages". However they are arranged in four logical groups: **Lens color-filters**, **Film**, **Print** and **Zones**. You change between the control pages by selecting the group you want from the tabs at the top of the plug-ins control panel.



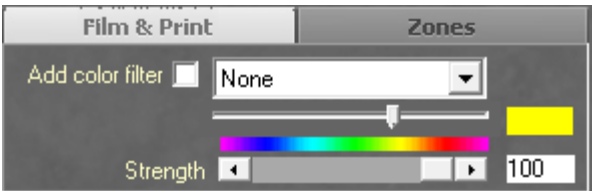
Color

If you check this box, the filter does not convert to black and white, but instead let's you see and edit the original color mage. The black & white film emulations do of course not make sense as such in color-mode, but you can still use the film sensitivity sliders to control how bright you want the individual colors.

The Lens Color Filters

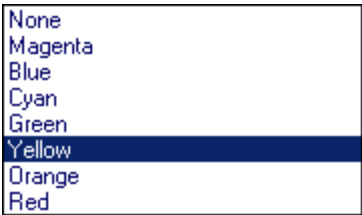
Lens color filter

The Film page also houses the color filters.



The Color Filters popup menu has the seven primary colors preset.

Strength will set the saturation of the color-filter. The selected color and strength will be displayed in the colored rectangle. You can set the filter-color to any of about 1000 different colors with the slider. After you have clicked on the slider, you can move it with the left/right arrow keys on the keyboard for accuracy (this keyboard adjustment is possible with all sliders).



Lens color filter examples

The following examples show the seven preset filter-colors at their full strength. They were all converted with the neutral Perceptual Luminance method.



Original photo



No color-filter



Magenta filter



Blue filter



Cyan filter



Green filter





Yellow filter



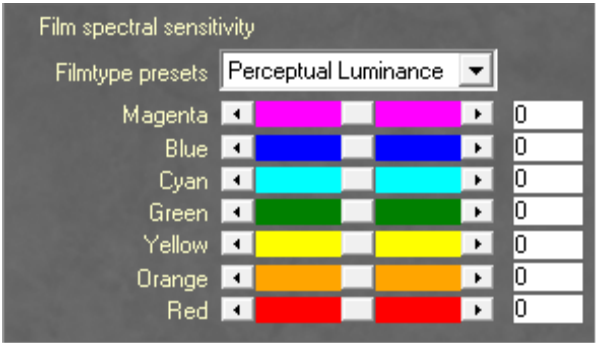
Orange filter



Red filter

## Film Spectral Sensitivity

These seven sliders let you determine the sensitivity to the range of light wavelengths centered round the the specified color. The wavelengths specified represent the pure color at the center. Magenta is not a pure wavelength, hence its value (400) is in brackets. In color theory one operates with the term "purple line" to handle the purple colors that appear as unique colors to the human eye, but in reality are a mixture of the red and blue ends of the spectrum. Since they are a mixture, there is no wavelength to represent them. We placed magenta at the ultraviolet end of the spectrum since it's more akin to visible violet than invisible infrared.



The Film type presets lets you quickly set the seven sliders to an equivalent of some popular professional films.

In addition we have added orthochromatic, panchromatic and perceptual luminance. Perceptual luminance is calculated according to the CIE Luv norm and is considered a neutral conversion. Orthochromatic and Panchromatic are based on generic spectral sensitivity charts from Kodak, Ilford etc.

Please see examples below.

- Fomapan 100 Classic
- Fuji Acros
- Fuji Neopan
- Ilford Delta 100
- Ilford FP4+
- Ilford HP5+
- Ilford Ortho+
- Ilford PAN F+
- Ilford SFX
- Ilford XP2 S
- IR Generic
- IR Konika
- IR Maco
- IR Rollei
- Kodak HIE
- Kodak PLUS X
- Kodak PORTRA
- Kodak T400CN
- Kodak TMAX 100TMX
- Kodak TRI-X 400TX
- Maco PD
- Orthochromatic
- Panchromatic
- Perceptual Luminance
- Polaroid 54
- Polaroid 55
- Rollei Ortho
- Rollei R3
- Rollei Retro
- User defined

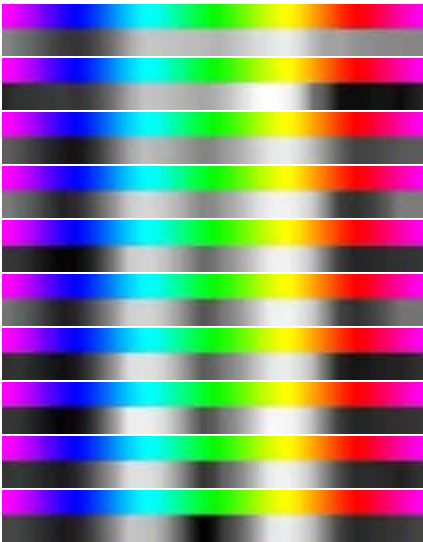
When we chose the films to emulate, we were guided by a wish to cover the large variations in sensitivity to green and red. Where the green sensitivity was the same, like with TRI-X and APX100, they were selected to cover the range of different sensitivity to blue and red. You will notice Tri-X is slightly less sensitive to green than APX, so Tri-X ought to be placed after APX. But the difference in green sensitivity is small (5 %) and we wanted to group those with low sensitivity to red and blue together, so APX belongs together with HP5, DELTA 100 and PAN F. T400CN should also be in this group, but its sensitivity to green made us place it above Tri-X. This way we also managed to keep the film-brands together (TMAX,

Examples of  
converting a  
digital  
spectrum

T400CN and TRI-X are from Kodak, APX is from Agfa and the rest are from Ilford).

- Film
- Panchromatic
  - Orthochromatic
  - Perceptual
  - TMAX
  - T400CN
  - TRI-X
  - APX 100
  - HP5+
  - DELTA 100
  - PAN F+

Filtered digital spectrum



Examples of  
converting a  
photo

Here is a nice image showing a full range of colors.

In the following examples we filtered it with the plug-in's different film presets.

In all cases the other settings were set to default (off).



Panchromatic



Orthochromatic



Perceptual luminance



TMAX



T400CN



TRI-X



APX 100



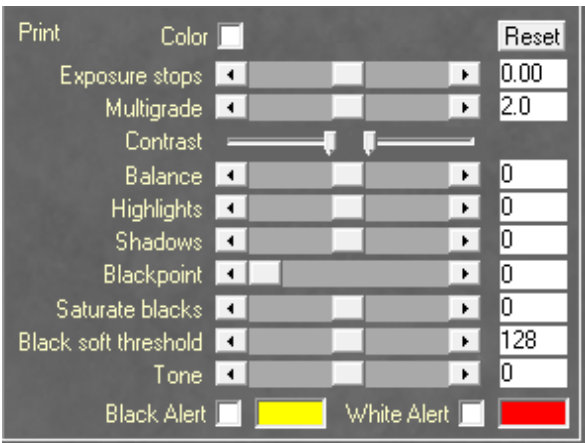
HP5+



The plug-ins "Print" controls

**Print controls** Grouped under the heading "Print" you will find all the classic darkroom print techniques such as multigrade, exposure, highlight correction, shadow correction, etc. Plus a few extra.

As you will see from the examples below, the multigrade levels and exposure stops are extremely truthful.



**Multigrade** The plug-in can do all the multigrade levels. Traditional multigrade paper ranges from 00 to 5. The plug-in has these levels and even an extra one in either end. Since the slider can't display 00 (or our extra 000), we have decided to designate 000 as -2 and 00 as -1. Level 2 and 3 are the normal levels suited for most images.

**Examples of the plug-ins multigrade filtering** In the following examples of how the plug-in does multigrade, we filtered the photo using the neutral method Perceptual Luminance and only changed the multigrade settings.

Please observe that both the high degree of tonal variation as well as the delicate grays typical of paper multigrade are preserved throughout, even at the the extreme ends.



- 2 (our 000)



- 1 (00)



0



1



2



3





4



5



6

Exposure

The Exposure slider is carefully calibrated to do the same as regular exposure stops (see examples below). The slider allows from minus 1 1/3 to plus 1 1/3 stops. The exposure slider designates steps of 1/3 with the value 0.33, 2/3 with 0.66 etc.

Examples of exposure filtering compared to Fuji standards

The Fuji chart is mainly concerned with push processing, but third column illustrates normal exposure bracketing and is used for the following. See the full size chart [here](#) if you want to verify these examples for yourself. [Scanned from: *Fuji Pro-Value*, August 2001, vol. 6].

Exposure	Fuji standard	Fuji's color standards (left) converted to gray with Perceptual Luminance	Normal exposure color photo (see below) corrected with the plug-in
+ 2/3			
+ 1/3			

Normal exposure



<<< This is the color photo used for our exposure corrections. To distinguish the plug-in versions from the "real" versions, observe the fold.

- 1/3



- 2/3



- 1



Contrast

Contrast is somewhat similar to multigrade, but multigrade has more focus on hardness and softness than contrast as such.

Darks & Lights

The plug-in lets you adjust darks and lights independently.



Original



Perceptual Luminance only.



Dark Contrast max.



Dark and Light Contrast max.

Balance

Balance changes the ratio between the amount of light and the amount of dark in the image.



60



128



170

Highlights & Shadows

These two sliders let you change the brightness of highlights and/or shadows.

These examples were all converted with Perceptual Luminance, -1/3 ev. and cyan filter at full strength.

All settings were identical except for the specified single

change.

Very charming results can be achieved by lowering the shadows and raising the highlights since this will raise contrast and improve modeling, while leaving all the mid tones unchanged.

In the example to the right we used these settings:  
Highlights +70, Shadows -100.



Highlights +100



Highlights -100





Shadows +70



Shadows -100

Highlight alert  
& Black alert

These will mark clipping with a contrast color in the preview.

Saturate  
Blacks &  
Black Soft  
Threshold

Saturate blacks is a modified (monochrome adapted) version the Power Retouche Black Definition plug-in. In effect it will darken or brighten the shades darker than Black Soft Threshold.



plain



100 %, thresh. 64



100 %, thresh. 128



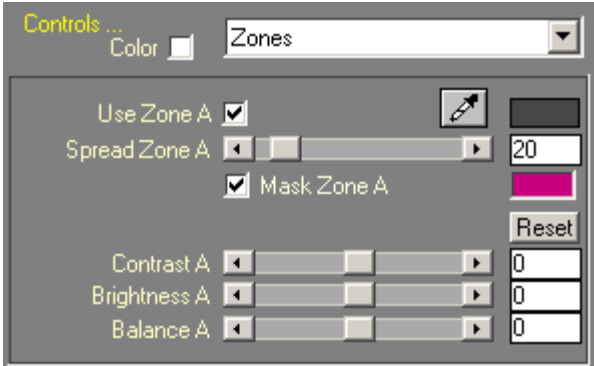
100 %, thresh. 192

### The Zone Controls

The Zones

Selecting the Zones controls-page will change the control panel. to a page that gives you three selectable zones (A,B and C) like the one shown here. The three zones are independent.

You select the eyedropper tool (click on the icon) to pick the zones main value in the preview window. When the zone is selected by clicking in the preview with the eyedropper, the eyedropper tool will revert to the hand, and a colored cross will be placed where you clicked.



Zone markers

The crosses will reflect the color of the little rectangle next to "Mask Zone". If you select Mask Zone, then all areas within the zone will be colored (in the preview only). This is an aid in setting the spread of the zone. "Spread Zone" will widen the zone inclusion an equal number of value levels on either side of the selected point, so make sure you select the mid value of the zone.



Zone A = I  
Zone B = II  
Zone C = III

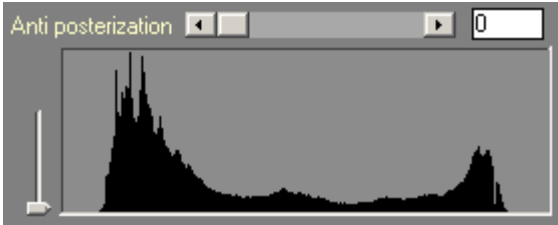
Contrast, Brightness and Balance operate exactly as the same controls do in the general Studio group of controls, but do so within the limits of the zone.

Balance and Brightness might seem to do the same at first, but they don't. Brightness raises or lowers the overall value. Balance shifts the midpoint of the zone to a value that's either brighter (hence darkening the zone) or darker (hence brightening the zone).

The Histogram and Anti-posterization

These controls are common to most of the Power Retouche plug-ins. The displayed histogram will be for the area in the preview.

Anti-posterization should be set as low as possible. In most cases leave it off (at 0) in order to speed up processing time.



CMYK or RGB? Important note!

Important difference between processing RGB vs CMYK images

You will usually get different results if you filter an RGB image or a CMYK image. This is because we made the B/W Studio take advantage of CMYK's K channel (used for black definition and contrast) to enhance texture and detail.



CMYK



RGB

This is particularly useful in portraits, where the texture of the skin plays an important part. But it will be very good in all images of medium saturation. You should be aware, though, that RGB images of high saturation may not look good when converted to CMYK and that this will also influence the result of the B/W Studio. But if your RGB photo is within the range RGB and CMYK have in common (medium saturation), then converting the RGB image to CMYK before using the B/W Studio will really improve the texture and detail of the output.

**Photo credits** The japanese girl with the hat is from Fuji's information folder: *Fuji Pro-Value*, August 2001, vol. 6

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