

FX



Image Control

EFFECTS

VOLUME 1

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IMAGE CONTROL

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Manual



Tutorial



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Effects

IMAGE CONTROL

Let us cast a critical eye over our image. Should it be brighter or have more contrast? How can other color nuances be added? Is the size okay? All these settings and adjustments can be made using Image Control.

Black & white settings, color changes and color contrasts can easily be realized with these effects. Moreover, there are many spectacular effects available, such as Inversion, Posterization and Solarization.

Additionally, common effects like Image Mixer and Cropping can also be found in this group.



HSB



This effect alters the hue, saturation and brightness of the colors of the image. In contrast to HLS, the details and highlights are clearly visible.

Parameter	Setting/Change	Range of Values
Hue	Rotations	-27777 to 27777
	Selection of hue	0° to 360°
Saturation	Color saturation	-100 to +100
Brightness	Brightness	-100 to +100

Hue

The **Hue** is adjusted using **Angle**. The values can be entered numerically using the keyboard or by using the graphic controls.

A **Rotation** of the slider results in a complete rotation around the entire color wheel. In general, settings of more than one rotation around the color wheel are not necessary for color correction but offer the possibility to continually change the colors in the animation over a long period of time.

Saturation

This parameter regulates the **Saturation** of the object colors. The higher the value, the richer the object colors become. The lower the value, the paler they become. At very low values the colors appear black and white.

Brightness

The **Brightness** of the object colors is determined using this parameter. At very low values the object appears black. The higher the value, the brighter the image becomes. At high values the black surfaces become gray. Depending on the original colors of the image, very few details may remain visible.



Hue changed to 135°.



Low saturation (-60) above, high saturation(50) below.



Saturation increased by 50.



HLS

This effect alters the hue, luminance and saturation of colors of the image.

Parameter	Setting/Change	Range of Values
Hue	Rotations Selection of hue	-27777 to 27777 0° to 360°
Luminance	Luminance	-100 to +100
Saturation	Color intensity	-100 to +100



Hue changed to 135°.



Hue

The **Hue** is adjusted using **Angle**. The values can be entered numerically using the keyboard or by using the graphic controls.

A **Rotation** of the slider results in a complete rotation around the entire color wheel. In general, settings of more than one rotation around the color wheel are not necessary for color correction but offers the possibility to continually change the colors in the animation over a long period of time.

Luminance

This parameter regulates the luminance of the object colors.



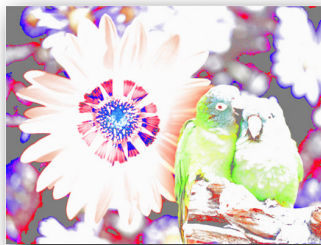
Luminance is different from **Brightness** (HSB) in that not all colors are uniformly lightened, but the lights become brighter. This brightening is similar to a slightly transparent object which is being lit from behind. Lights become lighter and shine much more. This is especially visible when combined with a high saturation. Although **Saturation** increases, the lights on the object continue to shine. Only the shadows become more colorful, whereas at a low luminance value, even the few lights are still very color intensive.



Low saturation (-60) above, high saturation (50) below.

Saturation

This parameter regulates the color saturation. At very low values the object appears black & white. The higher the setting, the more strongly the object colors shine.



Saturation increased by 50.



Brightness and Contrast



This effect adjusts the brightness and contrast, where the component values can be individually regulated.

Parameter	Setting/Change	Range of Values
Brightness		
Brightness	Brightness	-100 to 100
Red/Green/ Blue/Alpha	Brightness Components	-100 to 100
Contrast		
Contrast	Color & light /dark contrast	-100 to 100
Red/Green/ Blue/Alpha	Contrast Components	-100 to 100



Brightness alterations each 20.

Brightness

This parameter increases or decreases the **Brightness**. Negative values decrease the **Brightness**, while positive values increase it.

Red/Green/Blue/Alpha

These parameters increase and decrease the brightness of the **Red**, **Blue**, **Green** and **Alpha** values. The percentage of the respective color is either increased or decreased. Since the color white is made of red/green/blue combined, the object becomes brighter when the settings are increased. The alpha channel regulates the effect strength on the transparent areas.



RGB brightness alteration without and with contrast changes.

Contrast

This parameter increases or decreases the **Contrast**. Both the **light/darkness contrast** and the **color contrast** are altered. Negative settings reduce the contrast while positive settings increase it.

Red/Green/Blue/Alpha

These parameters alter the contrast of the **Red**, **Green**, **Blue** and **Alpha** values. The higher the setting, the more contrasts appear in the image.



Brightness and contrast variations.



Monochrome

This effect converts all the colors to one single color while retaining the dark/light values.



Left: original,
Right: monochrome display

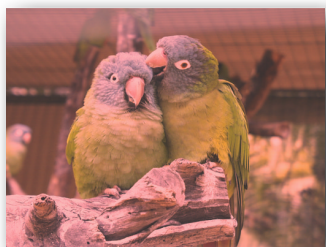
Parameter	Setting/Change	Range of Values
Color	Adjust object color	HSB / RGB Color Wheel Chromaticity Diagram
Mix with Original	Allows original colors to shine through.	0 to s100

Color

Depending on the setting, HSB or RGB, the colors can be precisely adjusted. Color adjustment is explained at the end of this chapter.

Mix with Original

This parameter determines how much the original colors influence the image. At a setting of zero, the original colors remain and at 100 they disappear completely.



Mixed display with red hue, Mix 50.



Monochrome display with low saturation and a blue hue.



Black & White



This effect reduces all colors to midtones.

Parameter	Setting/Change	Range of Values
Operation	Midtone	Maximum Midtone Minimum Red Green Blue Alpha

Operation

Maximum, Midtone, Minimum, Red, Blue, Green, Alpha, None

The midtones are selected using this parameter. If **None** is chosen, the effect is not applied. **Midtone** generates a medium midtone, **Minimum** generates a darker and **Maximum** a lighter midtone.

The **Red, Blue, Green, Alpha** commands are separation negatives which are displayed as midtones. The more of the selected color in the original, the brighter the result. Furthermore, the alpha channel is displayed as a half-tone image.

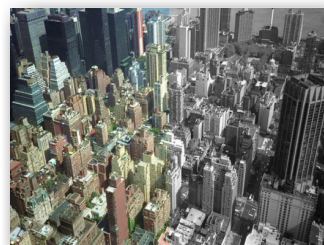
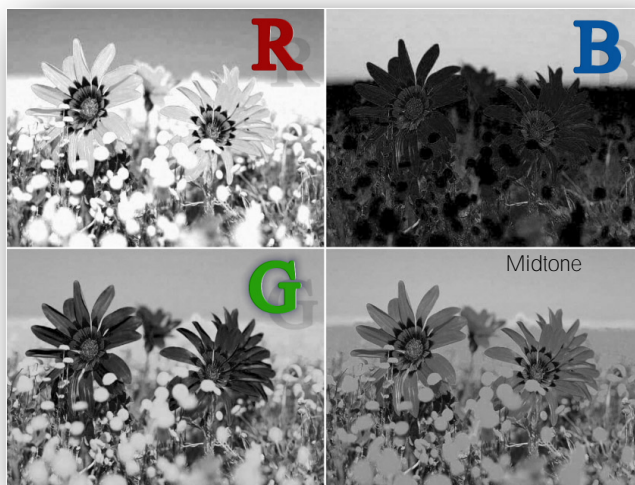
i White and black areas remain unchanged.



Left: original,
Right: monochrome display



Maximum Midtone Minimum



Left: original,
Right: monochrome display



Tint

This effect reduces all the colors of the image to two colors. Tint offers a separate color selection for all light and dark hues.

Parameter	Setting/Change	Range of Values
Amplitude	Strength of effect	0 to 100
Colors	Light Color Shadow Color	RGB or HSB RGB or HSB



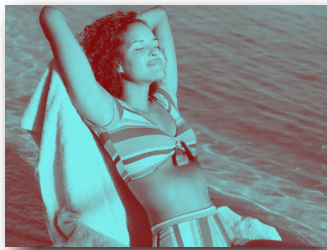
Small: original
Above: tint

Amplitude

This parameter determines the strength of the effect. The higher the value, the more obvious the effect. At lower values the original colors are still partly visible.

Colors

The **Light Color** and **Shadow Color** components determine both colors. The settings are described at the end of this chapter.



Small: original
Above: tint



Small: original
Above: tint



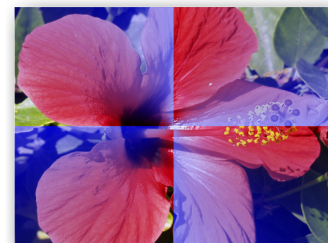
Tint by Mask



This effect colors the image with the help of a mask. Light and shadow colors can be selected as desired.

Parameter	Setting/Change	Range of Values
Amplitude	Strength of effect	0 to 100
	Invert	On/Off
	Equalize	On/Off
Colors	Light Color	HSB/RGB
	Shadow Color	

After selecting this effect a dialog box appears whence the **mask** can be selected. The light/dark contrast of the image should be taken into consideration. The lighter areas of the mask allow the underlying object to shine through, while darker areas restrict this to two colors.



Small: mask
Above: tint

Amplitude

This parameter determines the strength of the effect. The lower the value, the more the original object shines through.

Invert alternates between the light/dark areas of the mask.

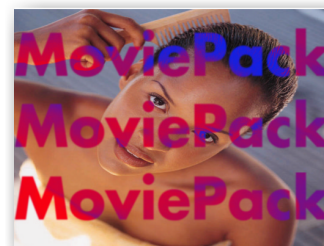
Equalize emphasizes the contrasts in the mask. This is also described under Equalization.

Colors

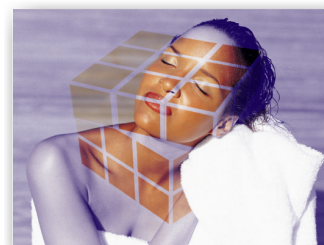
The **Light** and **Shadow colors** settings can be adjusted as described at the end of this chapter. If the same color is chosen for the light and the shadows the display will be monochrome. The original colors still shine through within the mask. Light colors for shadows and dark colors for light give a negative effect.

Mask

A new mask can be selected using the **Change** button. **Zoom** enlarges the view. Other settings are also available if the object has its own parameters such as Titler.



MoviePack Small: mask
MoviePack Above: tint
MoviePack



Small: mask
Above: tint



Inversion

This effect inverts the colors and lights of the object to give a photo negative appearance. The components can be individually adjusted.

Parameter	Setting/Change	Range of Values
Red/Green/ Blue/Alpha	Channel selection	On/Off



All colors are inverted.

Red/Green/Blue

This parameter represents the color channels. If for example the red switch is turned **On**, this color is included in the effect. If the switch is deactivated (**Off**), this channel is not included in the effect.

Alpha

If the alpha channel is inverted the transparent areas become solid and vice-versa. If an alpha mask is not used the entire image becomes transparent.



Red and green inverted.



Only red inverted.



Posterization

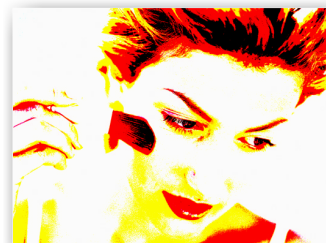


This effect reduces the number of object colors. The color gradient becomes sharper and more abrupt or does not exist at all, which results in two contrasting colors side-by-side. The colored areas become larger and the hues become stronger.

Parameter	Setting/Change	Range of Values
Amplitude	Strength of effect	0 to 100
Color Components	Red, Green, Blue	-100 to 100
Alpha	Alpha for objects with a mask	-100 to 100

Amplitude

This determines the strength of the effect. The higher the chosen value, the fewer colors are visible. Similar colors are reduced to one. If the amplitude is set to 100, images which have very little contrast in the original only have two very rich colors. At an amplitude of zero the effect is not applied.



Color Components

The red/green/blue values can be individually increased or decreased. If all color values are set to -100 the effect is not visible.

Alpha

Alpha is used for objects which have an alpha mask.



Red and green are posterized





Solarization

This effect partially reverses and blurs the color of the object, achieving a typical solarization effect, a mixture of positive and negative colors.



Parameter	Setting/Change	Range of Values
-----------	----------------	-----------------

Threshold

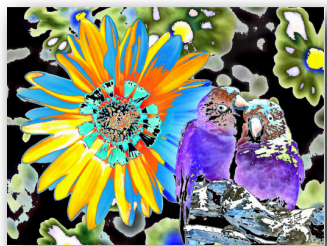
Threshold	Strength of effect	0 to 100
Operation	Channel / Luma	Wechsel
Threshold Components	Red, Green, Blue	-255 to 255

Color

HSB	Hue Saturation, Brightness	0 to 100
RGB	Red, Green, Blue	0 to 255
Pipette	Selection from the original	

Threshold

This parameter determines the strength of the effect. The higher the value, the larger the solarized areas of the object.



Under **Operation** it is possible to switch between **Channel** and **Luma**. The three primary colors can be individually adjusted using **Channel**. If **Luma** is selected, the settings in the channels have no effect.

Threshold (under channels)

The values for red/green/blue can be individually increased or decreased using this parameter. Depending on the threshold value, colors will be emphasized or moved to other areas of the object.



Color

This parameter only works in conjunction with **Threshold**. Here the color to be solarized is selected. A high threshold value inverts all similar colors as well. By moving the mouse over the small original image a color can be selected using the pipette. Zoom enlarges the image. The color can be numerically entered or via the color wheel or chromaticity diagram.



Equalization

This effect accentuates the light and dark values. Dull images become full of contrast again without becoming too harsh. The effect analyses the tonal range and enlarges it. In many cases it can enlarge and improve the entire vitality of an image.

Parameter	Setting/Change	Range of Values
Amplitude	Strength of effect	0 to 100
Threshold	% of black and white	0 to 100

Amplitude

This parameter defines the strength of the effect. At a setting of 0 the effect is not applied.

Threshold

The two sliders in **Threshold** determine what percentage of the image is to be completely black (left slider) or completely white (right slider). The closer the two sliders are to one another, the more dynamic the image becomes, as the midtones slowly disappear.



Despite the source being from a badly lit video, brilliant pictures result.



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Effects



Backdrop

This effect provides images with a backdrop. This can be an image, clip or any other object. The background is only visible if the image is partly transparent or cropped (for example with a keyer or a transparency mask).



Parameter	Setting/Change	Range of Values
Amplitude	Strength of effect	0 to 100

After selecting the effect a dialog box opens and the background can be chosen from clips, scenes or still images. As in the Browser you can search through your own files. **Open** shows the selected image or clip in a small preview.

Depending on the background, other parameters can be adjusted under **Image**, for example if the background selected is the Clouds object. These parameters only affect the chosen background and have nothing to do with the effect itself. A new background can be selected using **Change**. **Zoom** gives a closeup of the image.

Amplitude determines how visible the background is or how transparent it should be.



The examples on the left serve to explain the effect better. Here, an image (Beach) has been inserted into the video track below the Brush image. A mountainous countryside image has been selected as the background for the brush. This is then made smaller so that the Beach also remains visible.

The background (Mountains) is completely solid at a high **Amplitude**. It becomes gradually more transparent with decreasing values until only the underlying video track (Beach) is visible.



Cropping

The **Cropping** effect cuts away sections of the image at the edges. This effect is very useful if only part of the image is to be trimmed or if borders need to be cut off.

Parameter	Setting/Change	Range of Values
Zone	Transparency	-1 to +1

This effect is interesting if only sections of the image are needed. The sections cut away are transparent and any underlying object becomes visible.

Zone

This effect can be adjusted numerically or by using the graphic controls. The 'cutting' slider on the graphic control highlights the visible sections of the image. The cuts can also be enlarged or reduced using the Transformations.

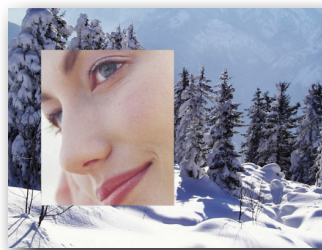
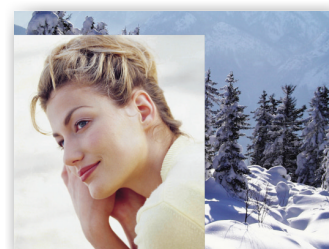
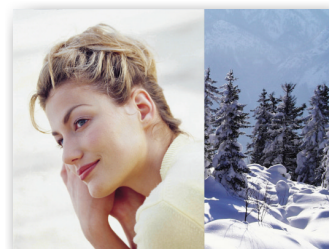
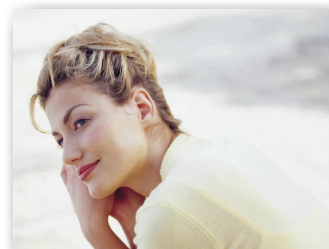




Image Arithmetic

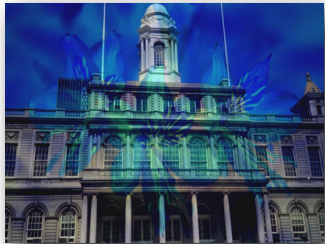
Image Arithmetic allows a second object to be applied to an object; this then melts into the original image and the final colors and brightness are calculated according to the formulae selected.



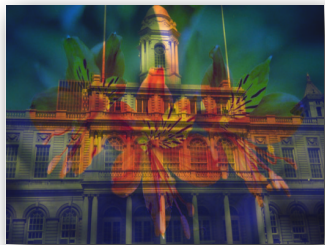
Addition of colors.



Subtraction (A-B), Blue is deactivated.



Subtraction (B-A).



Multiplication, Blue is deactivated.

Parameter	Setting/Change	Range of Values
Operation	Choice of calculation formula	10 Formulae
Scale	Percentage of transition with original object	0 to 1
Red/Green/Blue/Alpha	Activate/deactivate the individual channels	On/Off
Image	Zoom/Change	

A dialog box appears after selecting this effect and the second object to be applied to the first can be selected from here, in a similar way to choosing objects in the Browser.

Operation

The calculation formula is selected using this parameter. There are 10 different formulae for image mixing available from a submenu.

Scale

The visible section of the second object can be adjusted using this parameter. The lower the value, the more transparent the second object becomes.

Red/Green/Blue/Alpha

The individual color channels or the alpha channel can be activated (**On**) or deactivated (**Off**). The components will have different effects on the image mixing depending on the formula selected.

Image

The parameters of the second object can be adjusted here if, for example, a Procedural Image is used. If a simple still image or clip is selected, **Zoom** and **Change** (to select another object) are the only options available.



The individual formulae have the following effects:

Add: Colors are added together. Both objects keep their original colors while the image becomes brighter and the hue changes slightly.

Subtract (A-B): The second object is subtracted from the first. Its colors are reversed (negative effect) while the first object remains in original form.

Subtract (B-A): The first object is subtracted from the second. Its colors are reversed (negative effect) while the second object remains in original form.

Multiply: Both objects keep their original colors and merge with each other. The entire image becomes darker.

Difference: The colors of both objects are inverted. This mix can produce amazing results depending on the objects selected.

Blend: Both images, with their original colors, are mixed. However the results are not brighter and the original hues remain.

Max: With this formula the maximum color values from both images are displayed per channel (Red, Green, Blue). Lighter areas in the original remain unaffected, darker areas become lighter by being overlaid with the lighter areas of the second image. Midtones are overlaid by bright colors. The results can vary depending on the object selected.

Min: The minimum color values (per channel) are used for this effect and give the opposite effect to Max, above. Darker areas are more dominant than the lighter areas. The colors are also altered here and appear much brighter than in the original.

Lighter: The lighter areas are always more dominant than the darker areas with this formula. This effect is particularly spectacular when used on images which have a lot of contrast.

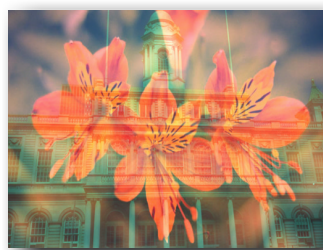
Darker: Vice-versa - this formula emphasizes the darker area of both the objects.



Difference, without green and blue.



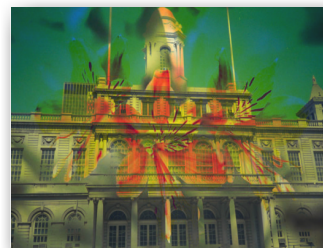
Simple blend.



Blend, red is deactivated.



Above: maximum, below minimum.



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Effects



Blend

Blend inserts a second image and mixes it with the original according to the settings. This effect is clearly seen if one or both of the objects already has an alpha mask.



Composite over.



Composite in.



Composite in (Exchange Images: On).



Composite out.

Parameter	Setting/Change	Range of Values
Alpha 1	Transparency of 1st image	0 to 100
Alpha 2	Transparency of 2nd image	0 to 100
Exchange Images	Exchange of image 1 and 2 as well as from Alpha 1 and 2	On/Off
Operation	Composite over Composite in Composite out Composite atop Composite xor Composite plus	

Alpha 1 determines the transparency of the original image.

Alpha 2 determines the transparency of the second object. At 0 the image is completely transparent, at 100 it is solid.

Exchange Images alternates between the two images and also between the two alpha channels.

Operation

There are six different methods available for image mixing. The results depend on the chosen images. Brightness, transparency and colors play an important role. Different mixes result depending on the alpha setting. If there are two solid images only Composite over, atop and plus can be used.

Composite over lays the first image over the second. The colors in the overlapping area will become darker.

Composite in lays the pattern of the first image (eyes in our example) on the solid area of the second image (text). All other areas allow the background to shine through. If the alpha channel of the first image is set to 0 only the background (mountains in our example) is visible.



Composite out makes the solid part of the second image (text in our example) which overlaps with the first object transparent, so that the background is visible. If the first image (eyes) becomes completely transparent (Alpha 1 = 0) only the background is visible.

Composite atop is similar to Composite in. The solid area of the second image (text) is overlaid with the pattern of the first image (eyes), but if the alpha 1 is set to zero the second image is visible in its original colors.

Composite xor is similar to Composite out. The solid area of the second image (text) which overlaps with the first (eyes) becomes transparent. If the alpha 1 is set to zero the second image retains its original colors.

Composite plus adds both images together so that the image becomes brighter where they both overlap.



Composite atop



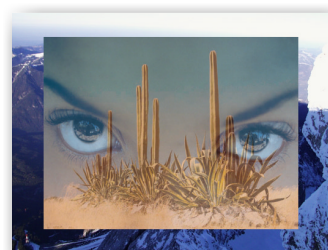
Composite atop.



Composite xor.



Above: Composite plus.





Channel Arithmetics

Channel Arithmetics changes the settings of the red, green, blue and alpha values. Very subtle changes can be made to correct undesired colors. The colors can also be completely altered.




Parameter	Setting/Change	Range of Values
Red	Scale/Red/Green/Blue/Alpha	0 to 100
Green	Scale/Red/Green/Blue/Alpha	0 to 100
Blue	Scale/Red/Green/Blue/Alpha	0 to 100
Alpha	Scale/Red/Green/Blue/Alpha	0 to 100

These parameters change the color values of the object. For each of the **Red/Green/Blue** and **Alpha** tabs the same parameters are available: **Scale** and the individual channels.



Each of the color tabs show the original color value of the object and can be adjusted as desired.

-  To return to the original image: set the channel color and scale it to 100 and the other three values to 0.



Channel Changer



It is possible to interchange individual color channels with each other using this effect. For example, all red values can be changed into green values etc.

Parameter	Setting/Change	Range of Values
Red	Change red to	Red
Green	Change green to	Green
Blue	Change blue to	Blue
Alpha	Change alpha to	Alpha Black White Midtone



Blue to green.

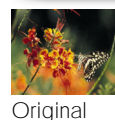
This effect lends itself well to experimentation. One of the benefits is that images for two color printing can be transformed so that they look lively and authentic, to some extent.

Red/Green/Blue/Alpha change to...

For every color and the alpha channel there are the primary colors as well as black/white/alpha and a midtone.



Green to blue.



Original

Red becomes alpha, in the transparent red areas the underlying object is visible.



Gamma

This effect alters the gamma value of the object. The object is either lightened or darkened, without substantially altering the shadows or the lights. The brightness of the midtones (mid gray tones) are altered while the black and white areas remain unchanged, as long as the beginning and the end of the gamma curve is not changed.



Original.



Lightened slightly.



Darkened slightly.



Brightness adjusted on the figure.

Parameter	Setting/Change	Range of Values
Gamma	Gamma value top/bottom/left/right	0,01 to 100 0 to 255
Alpha	Deactivate/activate the alpha channel	On/Off

Gamma

The beginning and end of the gamma curve represent black and white. The curve itself represents the gradient of the midtones. The gamma value is moved about on a scale with 1 being neutral. The gradient is linear. Lower gamma values darken the image while higher values lighten it. Only the midtones are altered and the lightest and darkest areas remain unchanged.

left/right/bottom/top

The slope of the gamma curve, and thereby the contrast and brightness of the object, are altered either numerically or by using the graphic sliders. Right/left settings affect the contrast. Top/bottom settings determine the maximum or minimum brightness of the image.

If the vertical bars are positioned on the left-hand side the image appears lighter, on the right-hand side it would appear darker. The steeper the curve, the more contrast. A flat curve at the top reduces the contrast and makes the image lighter while flattening the curve at the bottom darkens the image.

The **On/Off** buttons activate or deactivate the **Alpha** channels.

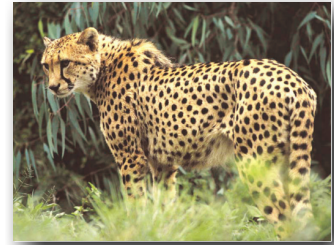


Color Correction

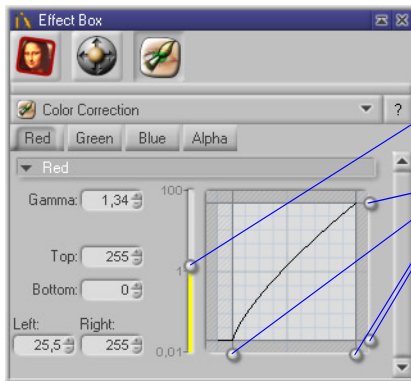


This effect corrects the color values of an object. The settings work like those in the Gamma effect except that each color channel can be adjusted individually.

Parameter	Setting/Change	Range of Values
Red	Gamma value and slope	0,01 to 100
Green	Gamma value and slope	
Blue	Gamma value and slope	
Alpha	Gamma value and slope	

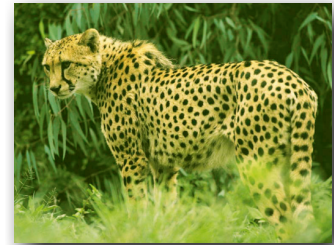


All channels are optimally adjusted.



Slider for the gamma value or for the gamma curve

Sliders for setting the beginning and end points of the gamma curve



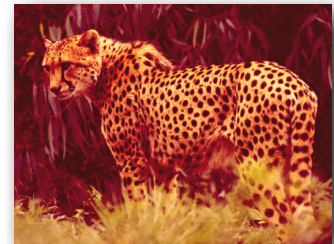
Green is emphasized.

Gamma

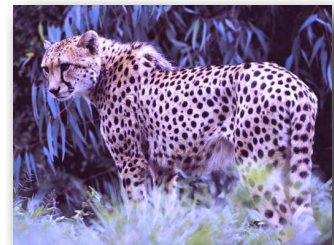
Gamma can be adjusted for every color and alpha. At 1 the gamma value is neutral. Values lower than 1 mean that the respective share of the color disappears and the complimentary color dominates. Values above 1 mean that the respective share of the color increases.

In addition, the gradient of the gamma curve can be manipulated using the sliders.

In our examples the effect is shown in the extreme. The corrections which would normally be made with this effect are essentially more subtle. In the case where you have made an artificial light film outdoors, a slight gamma correction is normally enough to eliminate the color errors.



Red is emphasized.



Blue is emphasized.



Image Mixer

A second object can be applied to and mixed with the first object using this effect. After selecting this effect a dialog box appears from which the second object can be selected.



Mix with alpha mask.



Mix without alpha mask.



Mix (60) without alpha mask.



Orig-

Parameter	Setting/Change	Range of Values
Mix Value	% of second images mixed with first image	0 to 100
Mix alpha channel	Activate/Deactivate the alpha mask	On/Off

Mix Value

This parameter adjusts the mix between the two images. The higher the value, the more visible the second image becomes.

Alpha is intended for images with an alpha mask. **Off** means the transparent area remains unchanged and **On** means the transparent area is mixed with the image.

Image

Zoom enlarges the second image and **Change** allows another object to be selected.



Image Mixer by Mask



A second image is applied to the first image and then mixed according to the light-dark contrast of a third image (mask). After selecting the effect a dialog box opens and the second image can be selected here. Then the mask (which should have as much contrast as possible) is selected.

Parameter	Setting/Change	Range of Values
Amplitude	Strength of effect	0 to 100
Invert	Invert light and dark	On/Off
Equalize	Emphasize contrast in mask	On/Off

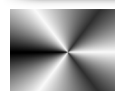
Amplitude

Amplitude determines the strength of the effect. At 0 the original image remains unchanged and at 100 the second image is visible but only at the light areas of the mask.

Normally light colors allow the original image to shine through, dark colors hide the original. **Invert** reverses this effect.

Equalize alters the contrast of the second mask (third image). This is similar to the Equalization effect.Mask

The first mask is the mixed image, the second mask controls the transparency of the image using its brightness values.



Small image: second mask.



Mix with Invert On.

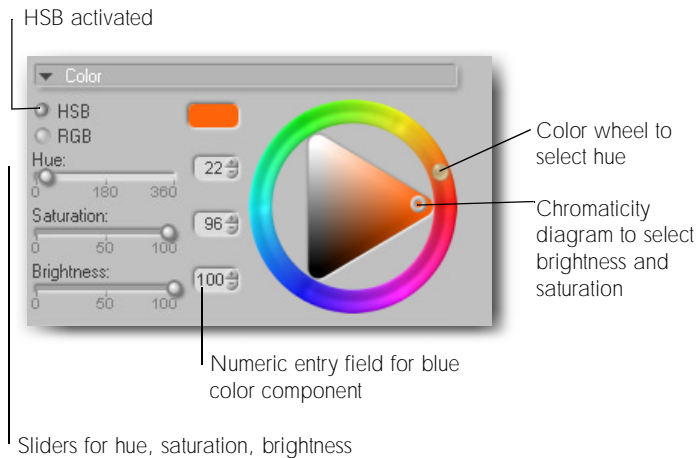
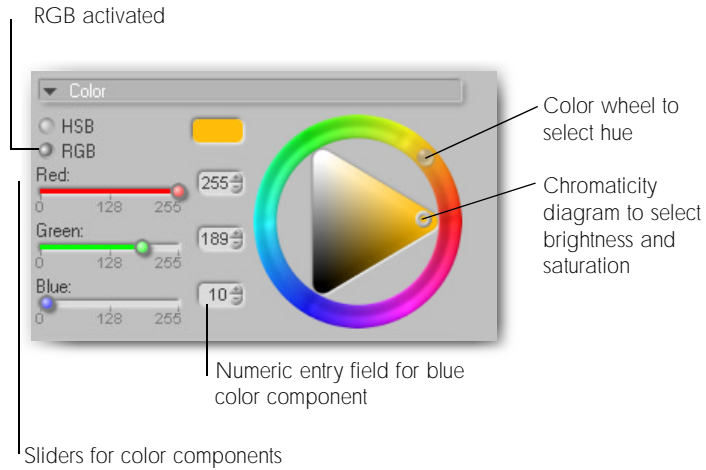


Amplitude 60.

Mask.

Color Settings

MoviePack has a color selection system which is used for all color settings. This includes the numerous effects and objects such as procedural images or titler. Also the background color of the Canvas and its borders, the Safe Zones, object borders, the background of the Browser and other elements can be determined using the color selection system.



There are two different formats available for color selection: **RGB** (Red-Green-Blue) and **HSB** (Hue-Saturation-Brightness).

The color wheel and the chromaticity diagram are clear and easy-to-use. The **Chromaticity Diagram** controls the **Brightness** and **Saturation**, the **Color Wheel** controls the **hue**.

The slider on the color wheel is set to the desired color and the brightness and saturation can then be adjusted on the chromaticity diagram. More exact settings can be entered numerically or by using the plus and minus buttons.

The sliders will automatically change to correspond with the numeric value entered or vice-versa.

RGB is a technical term for colors and those users who are familiar with the primary colors **RGB** (Red-Green-Blue) and with TV monitors will be able to avoid the usual problems with 'pure' red. The colors can be mixed using the sliders or numerically.

HSB (hue-saturation-brightness) offers the advantage that the hue, saturation and brightness are always visible as numeric values. The slider for saturation determines how bright or pale the color will be. Brightness regulates the mix with black or white pigments.



Manual



Tutorial



Reference



Effects



Manual



Tutorial



Reference



Effects



Manual



Tutorial



Reference



Effects

