

10.1.8 Editors - Compositor Editor - Header - Add Menu - Color

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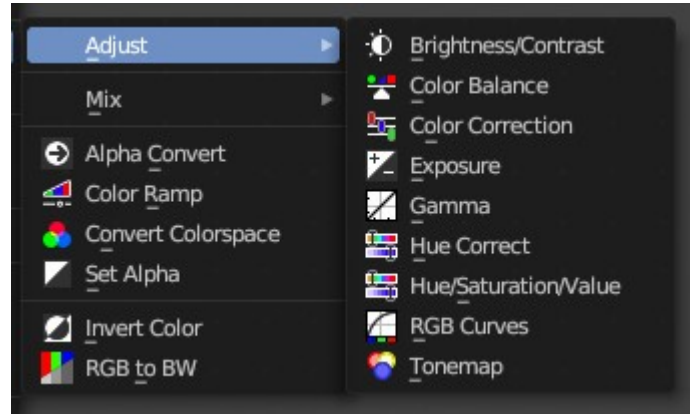
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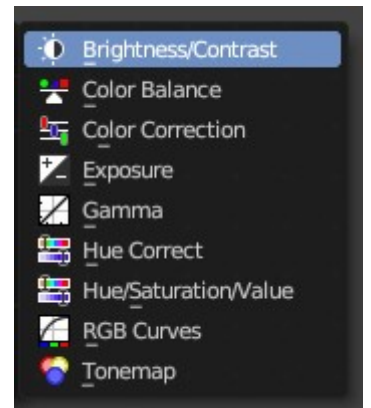
Add menu - Color

Here you find color related nodes.



Adjust – Sub Menu

The Adjust sub menu where you can find nodes that adjust color.



Bright/Contrast

Adjust the brightness and contrast.

Inputs

Color

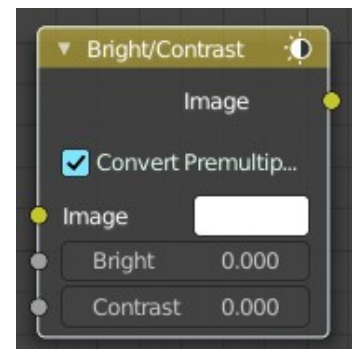
Standard input.

Brightness

An additive-type factor by which to increase the overall brightness of the image. Use a negative number to darken an image.

Contrast

A scaling type factor by which to make brighter pixels brighter, but keeping the darker pixels dark. Higher values make details stand out. Use a negative number to decrease the overall contrast in the image.



Properties

Convert Premultiplied

Converts foreground image to premultiplied alpha format.

The Alpha Over node is designed to work with premultiplied alpha color format. Use Convert Premul when you know that your image has straight alpha color values, to perform the correct over operation. Result will be still premultiplied alpha.

Outputs

Color

Standard output.

Note: *It is possible that this node will put out a value set that has values beyond the normal range, i.e. values greater than one and less than zero. If you will be using the output to mix with other images in the normal range, you should clamp the values using the Map Value node (with the Min and Max enabled), or put through a Color Ramp node (with all normal defaults).*

Color Balance

The Color Balance node can adjust the color and values of an image.

Inputs

Factor

Controls the amount of influence the node exerts on the output image.

Image

Standard image input.

Properties

Correction Formula

Two different correction formulas could be selected.

Lift/Gamma/Gain

Lift

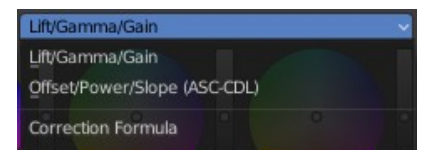
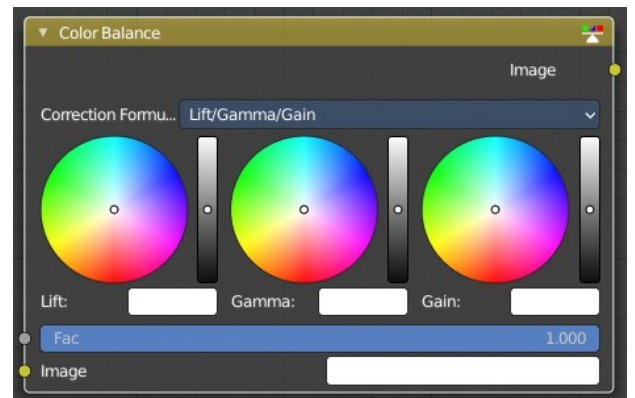
Increases the value of dark colors.

Gamma

Will adjust mid tones.

Gain

Adjusts highlights.



Offset/Power/Slope (ASC-CDL)

Offset

Summand. (Adjusts the overall brightness.)

Basis

Additional offset, allows to specify a negative Offset value.

Power

Over-all exponent. (Adjusts the mid tones.)

Slope

Multiplier. (Adjusts the highlights.)

Outputs

Color

The output image.

Advanced

The Offset/Power/Slope Formula

$$\text{out} = (i \times s + o)^p$$

where:

out: The color graded pixel code value.

i: The input pixel code value (0 to 1) (black to white).

s: Slope (any number 0 or greater, nominal value is 1.0).

o: Offset (any number, the nominal value is 0).

p: Power (any number greater than 0, nominal value is 1.0).

Color Correction

With the Color Correction node you can adjust the color of an image. Separated in several tonal ranges (highlights, mid tones and shadows) and only affect the necessary RGB channels.

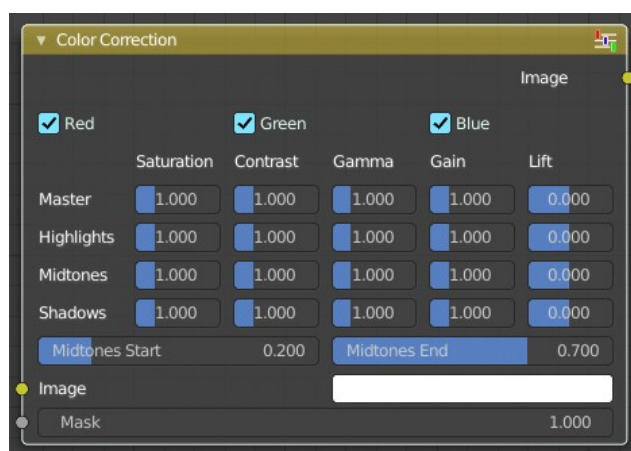
Input

Image

Image Input.

Mask

Input a mask to cover parts of the image so that they are affected.



Properties

Red, Green, Blue

Specifies which RGB channels will be affected by correction.

Correction Tools (Columns)

Saturation

Adjusts the image's saturation.

Contrast

Adjust image contrast.

Gamma

Exponential gamma correction, affecting the mid tones of the image. (Works like Power in the Color Balance node.)

Gain

Multiplier, stronger influence on the highlights. (Works like Slope in the Color Balance node.)

Lift

This value (can be negative) will be added (+), linear lightens or darkens the image. (Works like Offset in the Color Balance node.)

Tonal Ranges (Rows)

Master

These sliders affect the entire tonal range.

Highlights

These sliders only affect the highlights.

Mid tones

These sliders only affect the mid tones.

Shadows

Affects the dark tones of an image often affecting the shadows.

Mid tones Start, Mid tones End

Defines the start and the end of mid tones range, i.e. values where the whole tonal range is divided into the highlights, mid tones and shadows (there is also a smooth transition between the ranges of width 0.2 units).

Outputs

Color

The image output.

Exposure

The Exposure Node node allows you to make areas of an image brighter or dimmer.

Inputs

Image

Standard image input.

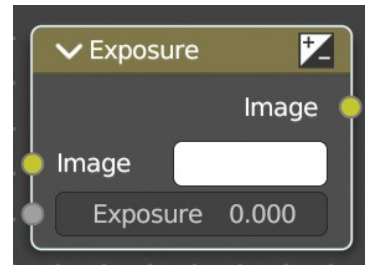
Exposure

The scalar factor to adjust the exposure of the image.

Outputs

Image

Standard image output.



Gamma

Use this node to apply a gamma correction.

Inputs

Image

Image input.

Gamma

An exponential brightness factor.

Outputs

Image

Image output.



Hue Correct

With the Hue Correct Node you can adjust the Hue, Saturation, and Value of an image with an input curve.

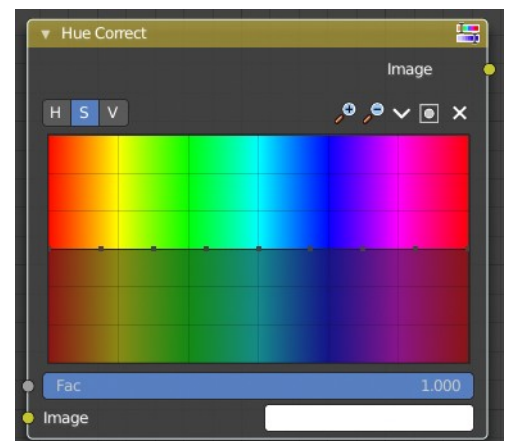
Inputs

Factor

Controls the amount of influence the node exerts on the output image.

Image

Standard image input.



Properties

Level

H (Hue), S (Saturation), V (Value). Choose which curve you want to modify.

Navigation elements

The navigation elements at the top are described from left to right.



Zoom in and out

The two buttons with the magnifying glass at it zooms in and out in the curve window.

Hue/Saturation/Value

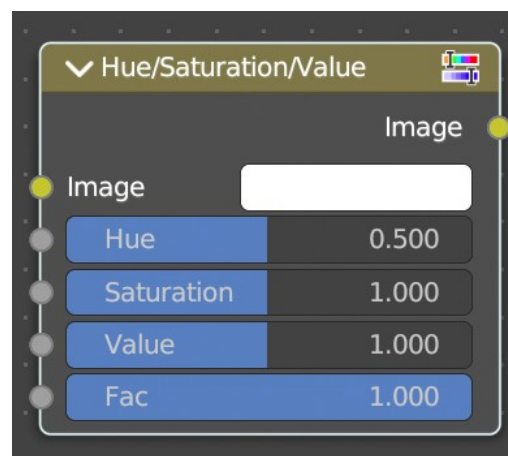
The Hue Saturation Node applies a color transformation in the HSV color space. Called “Hue Saturation Value” in shader and texture context.

Inputs / Properties

The inputs also works as properties when nothing is connected.

Image

Plug in an image.



Hue

Specifies the hue rotation of the image. 360° are mapped to (0 to 1). The hue shifts of 0 (-180°) and 1 (+180°) have the same result.

Saturation

A saturation of 0 removes hues from the image, resulting in a gray scale image. A shift greater than 1.0 increases saturation.

Value

Value is the overall brightness of the image. De/Increasing values shift an image darker/lighter.

Factor

Controls the amount of influence the node exerts on the output image.

Image

Standard input.

Outputs

Image

Standard output.

Hue/Saturation Tips

Some things to keep in mind that might help you use this node better:

Hues are vice versa

A blue image, with a Hue setting at either end of the spectrum (0 or 1), is output as yellow (recall that white, minus blue, equals yellow). A yellow image, with a Hue setting at 0 or 1, is blue.

Hue and Saturation work together.

So, a Hue of 0.5 keeps the blues the same shade of blue, but Saturation can deepen or lighten the intensity of that color.

Gray & White are neutral hues

A gray image, where the RGB values are equal, has no hue. Therefore, this node can only affect it with Value. This applies to all shades of gray, from black to white; wherever the values are equal.

Changing the effect over time

The Hue and Saturation values can be animated with a Time Node or by animating the property.

RGB Curves

The RGB Curves Node allows color corrections for each color channel and levels adjustments in the compositing context.

Inputs

Factor

Controls the amount of influence the node exerts on the output image.

Image

Standard image input.

Black Level

Defines the input color that is (linear) mapped to black.

White level

Defines the input color that is (linear) mapped to white.

Properties

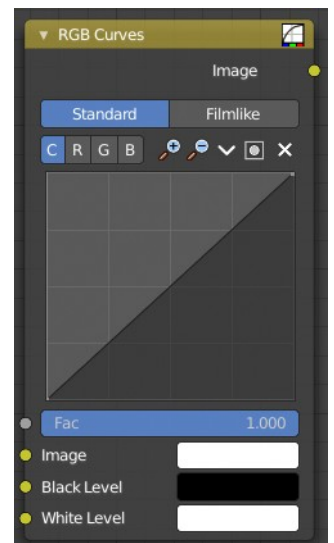
Tone

What tone mapping to use. Standard or Film like.

Curve Field

Channel buttons

Clicking on one of the channels displays the curve for each.



C (Combined RGB), R (Red), G (Green), B (Blue).

Navigation elements

They are described from left to right.

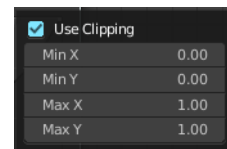


Zoom in and out

The two buttons with the magnifying glass at it zooms in and out in the curve window.

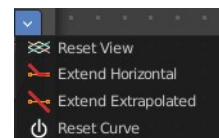
Use Clipping

Clipping options. Set up clipping for the stroke.



Tools

Tools is a menu where you can find some curve related tools.



Reset View

Resets the curve windows zoom.

Extend horizontal

Extends the curve before the first curve point and behind the last curve point horizontally.

Extend extrapolated

Extends the curve before the first curve point and behind the last curve point extrapolated.

Reset Curve

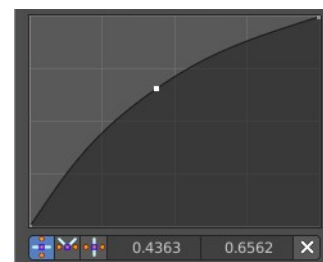
Resets the curve to the initial shape.

Curve edit field

Create and tweak a Bezier curve that varies the input levels (X axis) to produce an output level (Y axis).

Selecting Points

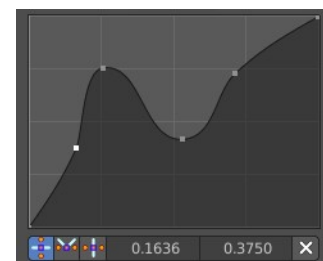
You can select curve points. This reveals two edit boxes for the x and y coordinate of this point.



Selected points can be moved around. Left click at them, hold the mouse button down and move them to a new location.

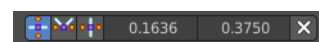
Adding Points

You can add new curve points by simply left clicking at the curve. Move the mouse to position them where you need it.



Curve point settings

When you have a point selected then you will reveal further settings at the bottom.



Vector Handle

Set handle type to Vector.

Auto Handle

Set handle type to Auto.

Auto Clamped Handle

Set handle type to Auto Clamped.

Outputs

Color

Standard output.

Tonemap

Tone mapping is a technique used in image processing and computer graphics to map one set of colors to another in order to approximate the appearance of high dynamic range images in a medium that has a more limited dynamic range.

Tone mapping addresses the problem of strong contrast reduction from the scene values (radiance) to the displayable range, while preserving the image details and color appearance. This is important to appreciate the original scene content.

Inputs

Image

Plug in the HDR image.

Properties

Type

There are two methods of tone mapping. Rh Simple and R/D Photo receptor.

Rh Simple

Key

The value the average luminance is mapped to.

Offset

Normally always 1, but can be used as an extra control to alter the brightness curve.

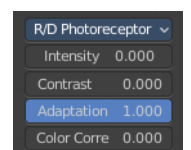
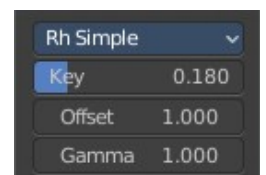
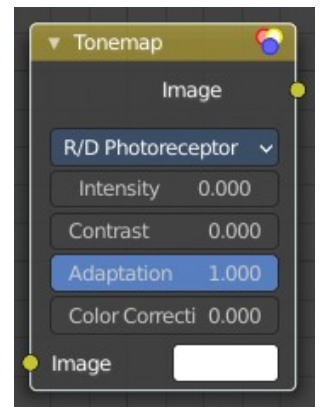
Gamma

If not used, set to 1.

R/D Photo receptor

Intensity

A value smaller than zero darkens image. A value greater than zero makes it brighter.



Contrast

Set to 0 to use estimate from input image.

Adaptation

If 0, global; if 1, based on pixel intensity.

Color Correction

If 0, same for all channels; if 1, each independent.

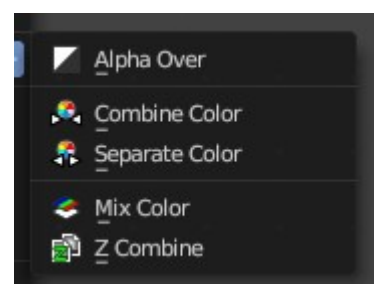
Outputs

Image

The Image output.

Mix – Sub Menu

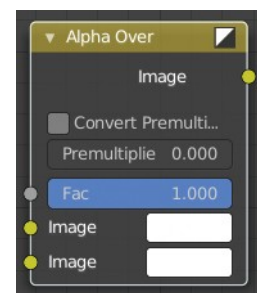
The Mix sub menu is where you can find nodes for mixing colors.



Alpha Over

The Alpha Over node is used to layer images with an alpha channel on top of one another.

Where the foreground image pixels have an alpha greater than 0, the background image will be overlaid.



Inputs

Factor

Controls the amount of foreground image. A factor less than 1 will make the foreground more transparent.

Image

Input for the background image.

Image

Input for the foreground image.

Properties

Convert Premultiplied

Converts foreground image to premultiplied alpha format.

The Alpha Over node is designed to work with premultiplied alpha color format. Use Convert Premul when you

know that your image has straight alpha color values, to perform the correct over operation. Result will be still premultiplied alpha.

Premultiply

The Premul slider allows to mix between the using premultiplied or non premultiplied alpha.

When set to 1, the foreground color values will be multiplied by alpha, i.e. premultiplied. This is equivalent to enabling the Convert Premul option. When set to 0, color values does not change.

If Premultiply is not zero, Convert Premul will be ignored.

Note that this is a legacy option.

Outputs

Image

The image output.

Tools

Tools is a menu where you can find some curve related tools.

Reset View

Resets the curve windows zoom.

Vector Handle

Set handle type to Vector.

Auto Handle

Set handle type to Auto.

Auto Clamped Handle

Set handle type to Auto Clamped.

Extend horizontal

Extends the curve before the first curve point and behind the last curve point horizontally.

Extend extrapolated

Extends the curve before the first curve point and behind the last curve point extrapolated.

Reset Curve

Resets the curve to the initial shape.

Use Clipping

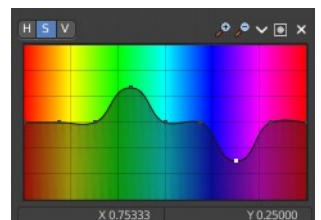
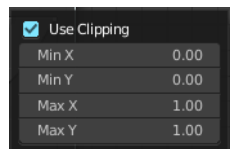
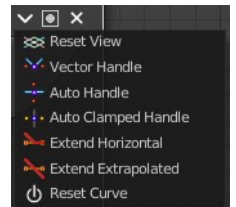
Clipping options. Set up clipping for the stroke.

Delete Points

Deletes selected curve points.

Curve

By default, the curve is a straight line, meaning there is no change. The spectrum allows you to raise or lower HSV levels for each range of pixel colors. To change an



H, S, or V level, move the curve points up or down. Pixels with hue values each point in the horizontal position of the graph will be changed depending on the shape of the curve.

X / Y

The x y position of the currently selected curve point.

Outputs

Image

Image output.

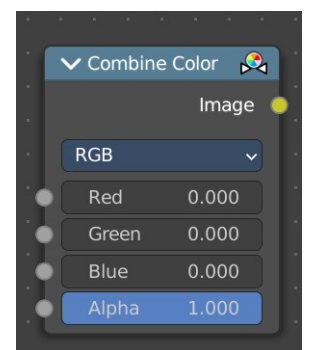
Combine Color

Combine single RGBA floating point channels into a single image.

Input

Mode

- **RGB** colour processing
- **HSV** colour processing
- **HSL** colour processing
- **YcbCr** converts an YCbCrA image to RGBA color space and unions the channels.
 - Y: Luminance, 0=black, 1=white
 - Cb: Chrominance Blue, 0=Blue, 1=Yellow
 - Cr: Chrominance Red, 0=Red, 1=Yellow
- **YUV** converts an YUVA image to RGBA color space. Note that U and V values range from -0.5 to +0.5.



Input – RGB mode

R, G, B and A

The red, green, blue and alpha channels of an image.

Input – HSV mode

H, S and V

The Hue, Saturation and Value channels of an image.

Input – HSL mode

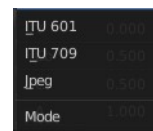
H , S and L

The Hue, Saturation and Luminescence channels of an image.

Input – YCbCRA mode

Y, Cb, Cr and A

Luminance, Chrominance Blue, Chrominance Red and Alpha input.



Properties

Modes

ITU 601, ITU 709, Jpeg. These are encoding standards for the YCbCrA color space.

Input – YUVA mode

Y, U, V and A

Luminance, Chrominance U, Chrominance V and Alpha channel.

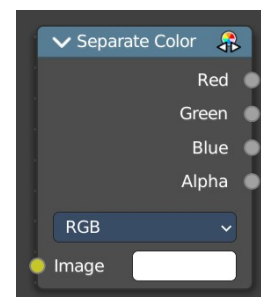
Separate Color

Separates the single RGBA channels from a single image.

Input

Mode

- **RGB** colour processing
- **HSV** colour processing
- **HSL** colour processing
- **YcbCr** converts an YCbCrA image to RGBA color space and unions the channels.
 - Y: Luminance, 0=black, 1=white
 - Cb: Chrominance Blue, 0=Blue, 1=Yellow
 - Cr: Chrominance Red, 0=Red, 1=Yellow
- **YUV** converts an YUVA image to RGBA color space. Note that U and V values range from -0.5 to +0.5.



Output – RGB mode

R, G, B and A

The red, green, blue and alpha channels of an image.

Output – HSV mode

H , S and V

The Hue, Saturation and Value channels of an image.

Output – HSL mode

H , S and L

The Hue, Saturation and Luminescence channels of an image.

Output – YCbCRA mode

Y, Cb, Cr and A

Luminance, Chrominance Blue, Chrominance Red and Alpha input.



Properties

Modes

ITU 601, ITU 709, Jpeg. These are encoding standards for the YCbCrA color space.

Output – YUVA mode

Y, U, V and A

Luminance, Chrominance U, Chrominance V and Alpha channel.

Mix Color

The Mix Node mixes images by working on the individual and corresponding pixels of the two input images. Called “MixRGB” in the shader and texture context.

Inputs

Factor

Controls the amount of influence the node exerts on the output image.

Image 1

Usually the background image. The image size and resolution sets the dimensions of the output image.

Image 2

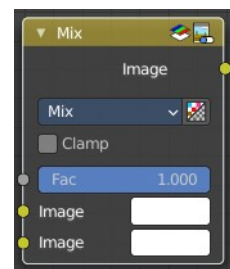
Usually the foreground image.

Properties

Mix

Choose the different blending modes.

Add, Subtract, Multiply, Screen, Divide, Difference, Darken, Lighten, Overlay, Color Dodge, Color Burn, Hue, Saturation, Value, Color, Soft Light, Linear Light.



Clamp

Limit the highest color value to not exceed 1.

Outputs

Image

Image output.

Z Combine

The Z Combine node combines two images based on their Z-depth maps. It overlays the images using the provided Z values to detect which parts of one image are in front of the other.

Inputs

Image

The background image.

Z

Z depth of the background image.

Image

The foreground image.

Z

Z depth of the foreground image.

Properties

Use Alpha

The chosen Image pixel alpha channel is also carried over. If a pixel is partially or totally transparent, the result of the Z Combine will also be partially transparent; in which case the background image will show through the foreground (chosen) pixel.

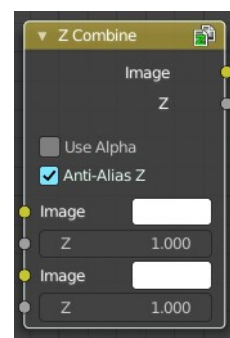
Anti-Alias Z

Applies Anti-Aliasing to avoid artifacts at sharp edges or areas with a high contrast.

Outputs

Image

If both Z values are equal, it will use the foreground image. Whichever Z value is less decides which image pixel is used. See Z-buffer.

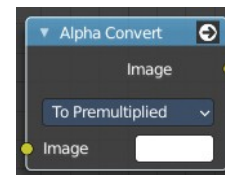


Z

The combined Z depth, which allows to thread multiple Z-combines together.

Alpha Convert

This node converts the alpha channel interpretation of an image from pre-multiplied to straight or vice versa. With a straight alpha channel you might run into artifacts at the borders when the pixels in the semi transparent areas.



Input

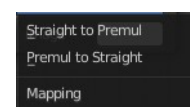
Image

The input image.

Properties

Mapping Type

Convert straight to premultiplied. Or convert premultiplied to straight.



Output

Image

The image output.

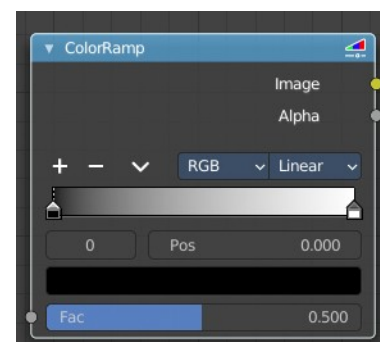
ColorRamp

The Color Ramp Node is used for mapping values to colors with the use of a gradient.

Inputs

Factor

The Factor input is used as an index for the color ramp.



Properties

Color Ramp

Color Ramps enables the user to specify a range of colors based on color stops. The color between the color stops gets interpolated.

Controls

+

Add a stop to your color ramp. The stop will be added after the selected one, in the middle to the next one.

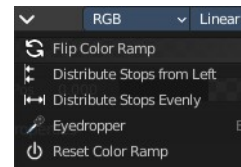
-

Deletes the selected color stop from the list.

Tools menu

Flip Color Ramp

Flips the gradient, inverting the values of the color ramp.



Distribute Stops from Left

Rearrange the stops so that every step has the same space to the right.

Distribute Stops Evenly

Space between all neighboring stops becomes equal.

Eyedropper (pipette icon) E

An Eyedropper to sample a color or gradient from the interface to be used in the color ramp.

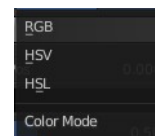
Reset Color Ramp

Resets the color ramp to its default state.

Color Mode

RGB

Blends color by mixing each color channel and combining.



HSV/HSL

Blends colors by first converting to HSV or HSL, mixing, then combining again. This has the advantage of maintaining saturation between different hues, where RGB would de-saturate, this allows for a richer gradient.

Interpolation

Ease

Uses an Ease Interpolation for the color stops.

Cardinal

Uses a Cardinal Interpolation for the color stops.

Linear

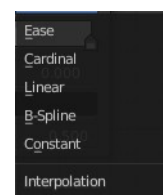
Uses a Linear Interpolation for the color stops.

B-Spline

Uses a B-Spline Interpolation for the color stops.

Constant

Uses a Constant Interpolation for the color stops.



Color Ramp

The color band. A click at one of the color stops makes it the active one. You can



move the color stops by clicking at them and dragging them around.

Active Color Stop elements

Adjust the active color stop.



Choose active color stop

Choose the color stop by index.

Pos

The position of the active color stop. The range goes from 0.000 to 1.000

Outputs

Image

Image output.

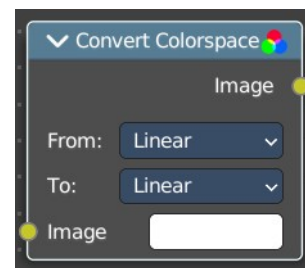
Alpha

Alpha channel output.

Convert Colorspace

Convert between color spaces.

Note that the conversion is skipped when converting between the same color spaces or to or from data spaces.



Input

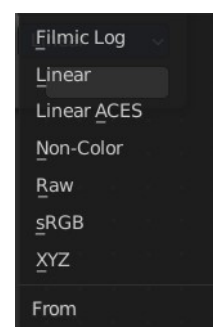
Image

The input image.

Properties

From

The current color space.



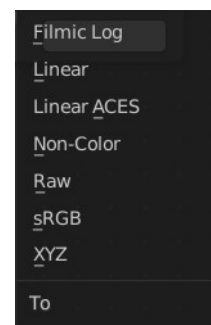
To

The destination color space.

Output

Image

The image output.



Set Alpha

The Set Alpha Node adds an alpha channel to an image.

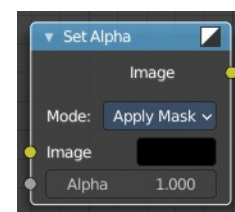
Inputs

Image

Standard image input.

Alpha

The amount of Alpha can be set for the whole image by using the input field or per pixel by connecting to the socket.



Outputs

Image

The image output.

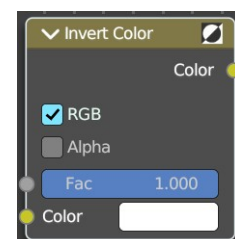
Invert Color

The Invert Node inverts the colors in the input image, producing a negative.

Inputs

Factor

Controls the amount of influence the node exerts on the output image.



Color

Standard input.

Properties

RGB

Invert the RGB values.

Alpha

Invert the Alpha values.

Outputs

Color

Standard image output.

RGB to BW

The RGB to BW Node converts an RGB color image to a gray-scale image based at its luminance.

Inputs

Image

Color image input.

Outputs

Value

Gray-scale value output.

