



## 13.1.9 Editors - Shader Editor - Header - Add Menu - Color

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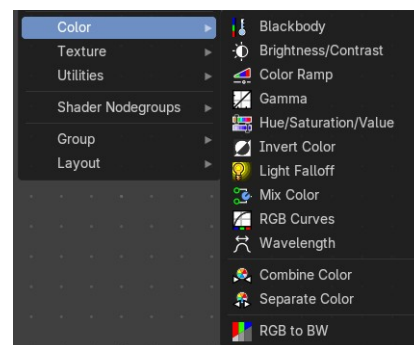
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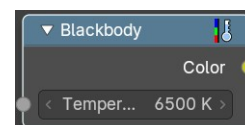
## Add menu - Color

This sub menu contains color related nodes.



### Blackbody

Convert a blackbody temperature to an RGB value.



#### Inputs

##### *Temperature*

Standard input.

#### Outputs

##### *Color*

Standard output.

### Brightness/Contrast

#### Inputs

##### *Color*

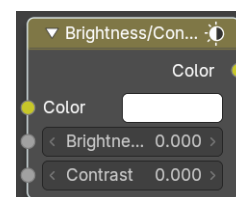
Standard input.

##### *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.



## 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).

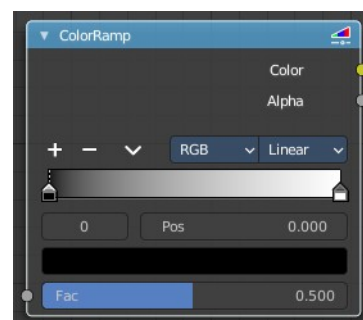
## Color Ramp

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

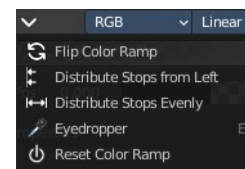
Flips the gradient, inverting the values of the color ramp.

##### 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.

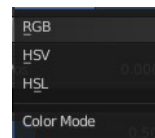
## Color Mode

### 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

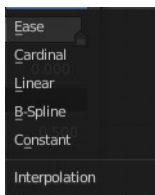
Uses a Linear Interpolation for the color stops.

### 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

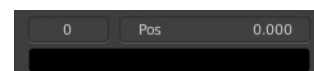
Adjust the active color stop.

## 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

Standard image output.

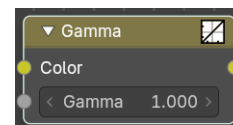
## Alpha

Standard Alpha Output.

---

## Gamma

Use this node to apply a gamma correction.



### Inputs

#### Color

Standard image input.

#### Gamma

An exponential brightness factor.

### Outputs

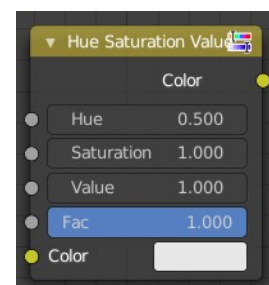
#### Color

Standard output.

---

## 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.

#### 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 greyscale 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.

## **Color**

Standard input.

## **Outputs**

### **Color**

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.

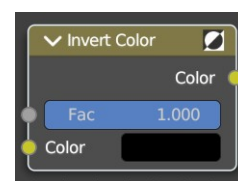
Changing the effect over time

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

---

## **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.

## **Outputs**

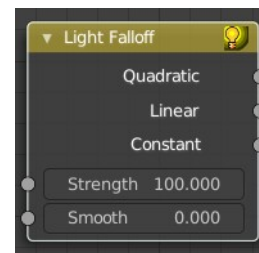
### **Color**

Standard image output.

## Light Falloff

### Cycles Only

The Light Falloff node allows you to manipulate how light intensity decreases over distance. In reality light will always fall off quadratically; however, it can be useful to manipulate as a non-physically-based lighting trick. Note that using Linear or Constant falloff may cause more light to be introduced with every global illumination bounce, making the resulting image extremely bright if many bounces are used.



## Inputs

### Strength

Light strength before applying falloff modification.

### Smooth

Smooth intensity of light near light sources. This can avoid harsh highlights, and reduce global illumination noise. 0.0 corresponds to no smoothing; higher values smooth more. The maximum light strength will be strength/smooth.

## Outputs

### Quadratic

Quadratic light falloff; this will leave strength unmodified if smooth is 0.0 and corresponds to reality.

### Linear

Linear light falloff, giving a slower decrease in intensity over distance.

### Constant

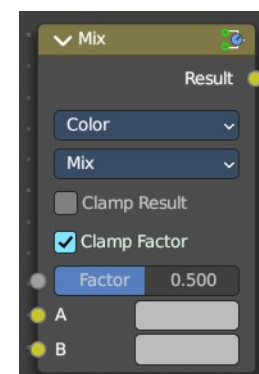
Constant light falloff, where the distance to the light has no influence on its intensity.

## Mix Color

The mix Color node is in real the Mix node in Color mode. It is shared across editors.

The Mix node is meant to mix values. This can be colors, or also a vector or a single value.

Note that the Mix Color node does not start in Color mode when you insert it from the sidebar due a technical limitation in the Blender Python api. Here you have to manually switch to the color mode.



## Data Type

The mode in which the node works.



### Color

The Mix Node in color mode 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.

#### Color 1

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

#### Color 2

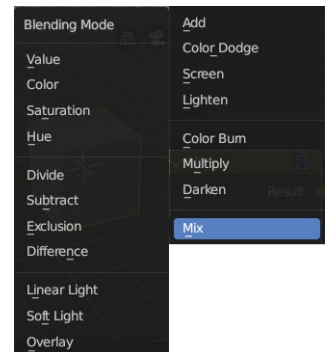
Usually the foreground image.

### 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 Result

Clamp the result to 0, 1 range.

#### Clamp Factor

Clamp the factor to 0, 1 range.

### Outputs

#### Result

Standard output.

### Vector

The vector mode allows you to mix vectors.

### Inputs

#### Factor

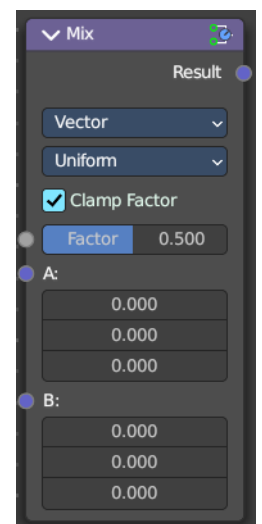
Controls the amount of influence.

#### A

The input vector.

#### B

The output vector.



## Properties

### Factor Mode

Use a single factor for all values, or a factor per value.

### Clamp Factor

Clamp the factor to 0, 1 range.



## Outputs

### Result

Standard output.

### Float

The vector mode allows you to mix vectors.

## Inputs

### Factor

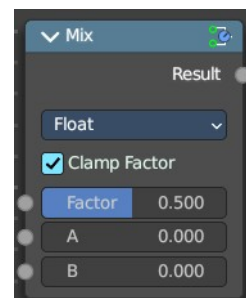
Controls the amount of influence.

### A

The input value.

### B

The output value.



## Properties

### Clamp Factor

Clamp the factor to 0, 1 range.

## Outputs

### Result

Standard output.

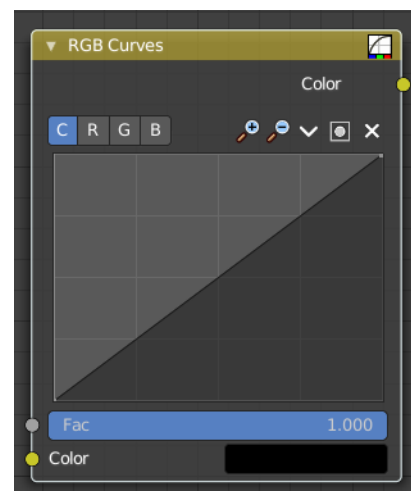
## RGB Curves

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.



## Color

Standard image input.

---

## Properties

### 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

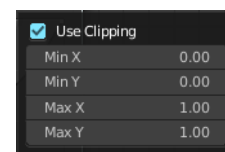
The two buttons with the magnifying glass at it zooms in and out in the curve window.

---



#### 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.

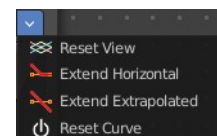
### Extend extrapolated

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

### Reset Curve

Resets the curve to the initial shape.

---



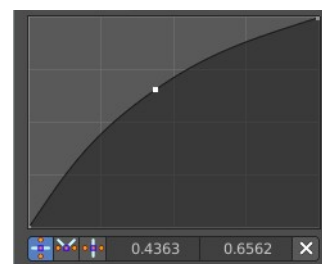
## Curve edit field

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

### **Selecting Points**

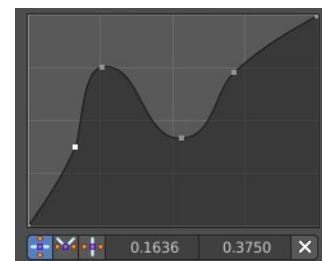
You can select curve points. This reveals two edit boxes for the x and y coordinate of this point.

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



### **Adding Points**

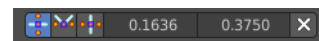
You can add new curve points by simply left clicking at the curve. Move the mouse to position them where you need it.



---

### **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.

---

## **Wavelength**

Convert a Wavelength value to a RGB value.



### **Inputs**

#### **Wavelength**

The wavelength input.

## Outputs

### Color

Standard output.

---

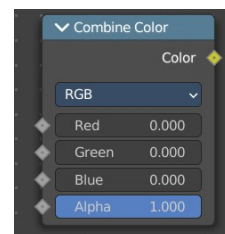
## Combine Color

Combine the single RGBA channels into a single image.

### Input

#### Mode

- **RGB** colour processing
- **HSV** colour processing
- **HSL** colour processing



#### Input – RGB mode

##### R, G and B

The red, green and blue 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.

## Outputs

### Color

The rgba output color.

---

## Separate Color

Combine the single RGBA channels into a single image.



## Input

### Mode

- **RGB** colour processing
- **HSV** colour processing
- **HSL** colour processing

### Image

The image input.

## Output

### *Red, Green, Blue and Alpha*

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

### *Hue Saturation Value Alpha*

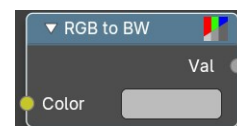
The Hue Saturation Value Alpha channels in HSV mode.

### *Hue Saturation Lightness Alpha*

The Hue Saturation Lightness Alpha channels in HSL mode.

## RGB to BW

Convert a 24 bit RGB value to a 8 bit black and white value.



### Inputs

#### *Color*

Standard output.

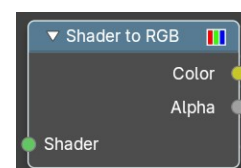
### Outputs

#### *Val*

Standard output.

## Shader to RGB

Convert rendering effects to RGB value. Eevee only.



## **Inputs**

### ***Shader***

Standard output.

## **Outputs**

### ***Color***

Color output.

### ***Alpha***

Alphachannel output.