HLS Noise Ino

Add pixel noise to the Hue, Lightness, Saturation, and Alpha of the image.
It allows for adding noise to cell-like images, to blend in with the background.

The Alpha channel will determine the strength of the noise. Therefore,
smooth edges will remain smooth.
The strength of the Alpha channel itself will also affect noise.

When checking the results, sub-camera must not be used.
As the sub-camera uses a different input image range, the noise pattern will
be different.

--- Inputs ---

Source

Connect the image to be processed.

Reference

Connect the reference image to assign the strength of the effect into each pixel.

--- Settings ---

Hue

Specify the strength of the noise for the color tone (Hue).
Pixel value (8 or 16bits) specified as a value from 0 to 1.
Minimum value is 0, maximum value is 1.
When it is 0, no noise will be applied to the hue.
The default value is 0.025.

Lightness

Specify the strength of the noise for the brightness (Lightness).
Pixel value (8 or 16bits) specified as a value from 0 to 1.
Minimum value is 0, maximum value is 1.
When it is 0, no noise will be applied to the brightness (Lightness).
The default value is 0.035.

Saturation

Specify the strength of the noise for the chroma (Saturation).
Pixel value (8 or 16bits) specified as a value from 0 to 1.
Minimum value is 0, maximum value is 1.
When it is 0, no noise will be applied to the chroma (Saturation).
The default value is 0.0.

Alpha

Specify the strength of the noise for the Alpha channel.

Pixel value (8 or 16bits) specified as a value from 0 to 1.

Minimum value is 0, maximum value is 1.

When it is 0, no noise will be applied to the Alpha channel.

The default value is 0.0.

Seed

This value is used to determine the noise pattern to be applied to the image.

Specify an integer value greater than or equal to 0.

When this value is the same, it will produce the same pattern.

When this value is different, a different noise pattern will be produced.

The default value is 1.

NBlur

It blurs the noise component, reducing the dots presence in the image.

Minimum value is 0, maximum value is 1.

Because it is calculated only in pixels adjacent to the dot,

it will feel like a very light blur.

When at 0, no blur will be applied; when at 1, it will apply an average of

neighbor pixels.

The default value is 1.

Limits

Adjusts the effect on the extremes (near 0 or 1) of Lightness, Saturation, and

Alpha changes.

When noise is applied near 0 or 1, values less than 0 or greater than 1 could be

generated, but since it cannot be expressed, they are truncated to 0 or 1

respectively. This allows to compensate for the truncation.

--> See Figure 1: "Noise effect adjustments at extremes values".

--> See Figure 2: "Illustration of noise change range at extreme values".

Effective

Determines the strength of the Limits effect.

When the value is at 0, it has no effect. The effect will be shown when values are

greater than 0

A value of 1 will have the strongest effect.

The default value is 0.

Center

> Defines the center of the effect.
>
> Allows to shift the range of the Limits effect, with more intensity at the extremes, and no intensity at its center.
>
> The center value position will show no limiting effect.
>
> The value must be between 0 and 1.
>
> If is 0, Limits effect will have no effect for pixel values of 0.
>
> If is 1, Limits effect will have no effect for pixel values of 1.
>
> The default Center value is 0.5.

Type

> Select the Type of the effect.
>
> When "Keep Noise"is selected, the overall noise range is shifted, maintaining its width, and reducing the contrast of the image.
>
> When "Keep Contrast"is selected, the noise range width is reduced only at the extremes, to maintain the contrast of the image.
>
> The default setting is "Keep Noise".

Premultiplied

> When ON, the image will be processed as if having a Premultiplied Alpha channel (Alpha value already multiplied by RGB channels).
>
> If image is not premultiplied, the image may not look correct.
>
> The default setting is ON.

Reference

> Specify which channel to use from the image connected to the Reference port to drive the intensity of the effect.
>
> Choose from Red/Green/Blue/Alpha/Luminance.
>
> Choose Nothing to disable the effect.
>
> The default value is "Red".
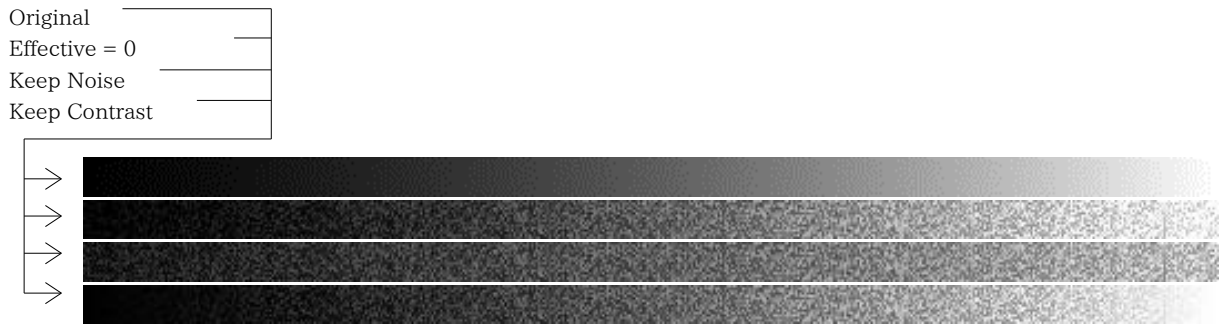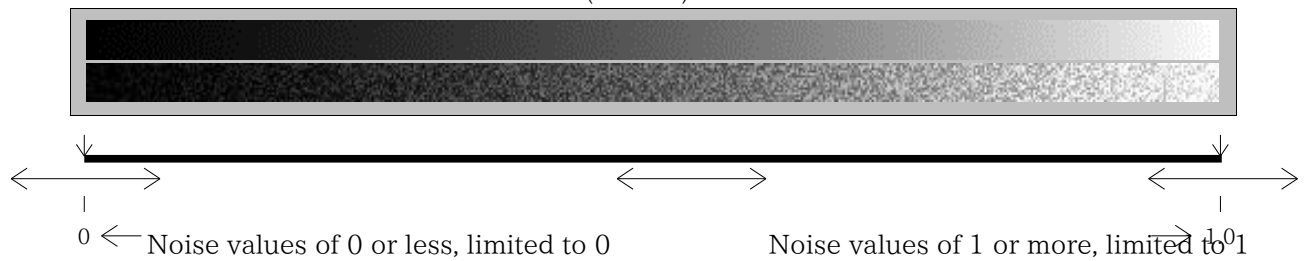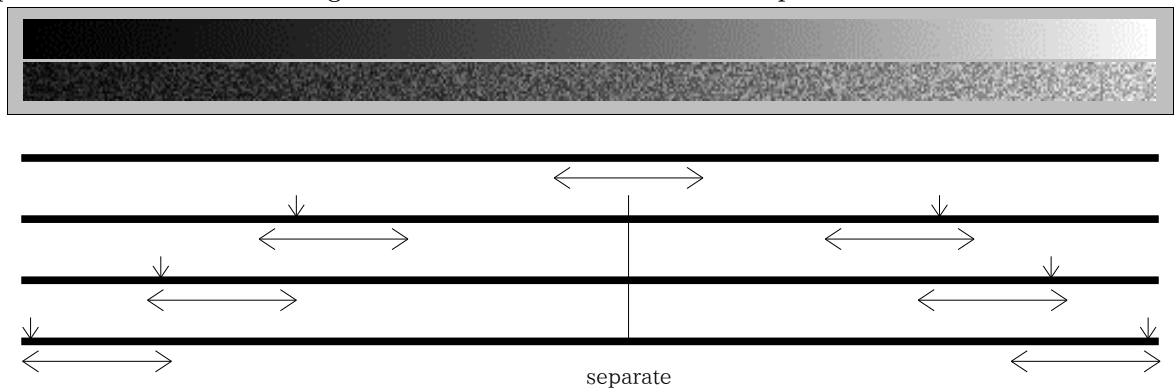
Figure 1 Noise effect adjustments at extremes values.

Original
Effective = 0
Keep Noise
Keep Contrast

Figure 2 Illustration of noise change range at extreme values.

Effective = 0:   Noise extreme values are cut. (default)

0 ← Noise values of 0 or less, limited to 0   Noise values of 1 or more, limited to 1

Keep Noise: Shift maintaining noise. Contrast is reduced. Noise position is shifted overall.

separate

Keep Contrast: Noise width reduced at extremes. Contrast is maintained.

separate