Scatter - User Guide

Version 1.8

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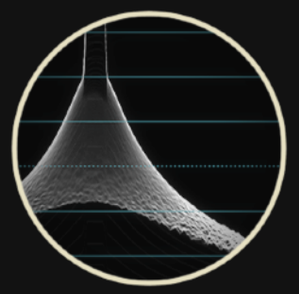
videovillage.co

Scatter emulates the characteristics of real-world optical diffusion filters on scene-referred footage.



Scene Referred

Physically-based workflow that maps diffusion intensity and falloff according to scene radiance, which makes it behave like real diffusion with consistent results between scenes, cameras, and alignments of Venus.*

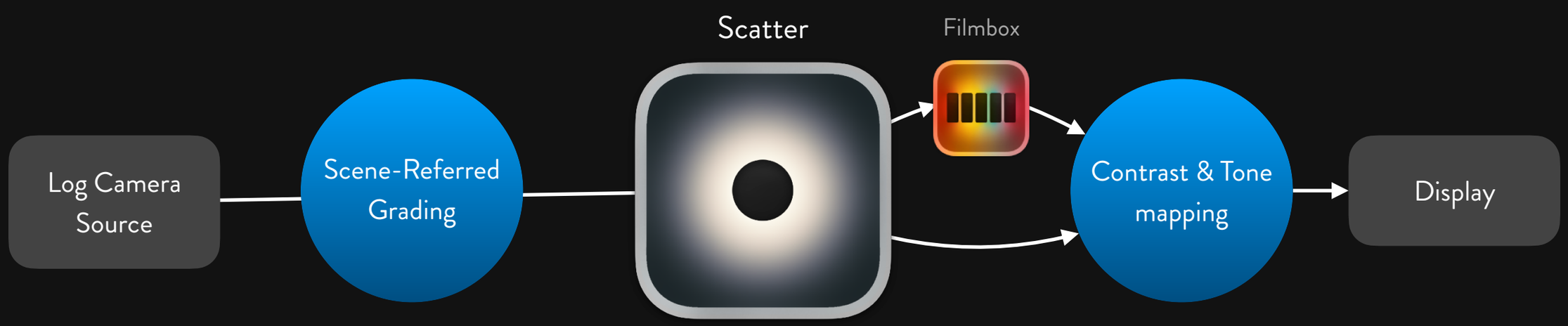
Familiar Filters

Presets built to match the characteristics of real photographic diffusion filters of various types and strengths.

*not tested for consistency in all astrological configurations

Grading with Scatter OFX for Resolve

The Scatter OFX node operates on ungraded footage from a supported camera in its native log colorspace or an intermediate space, and will output a processed image in that same colorspace.



Scatter is physically-based - we've calibrated the falloff and intensity of the diffusion for the quantities of light that the scene-referred image represents.

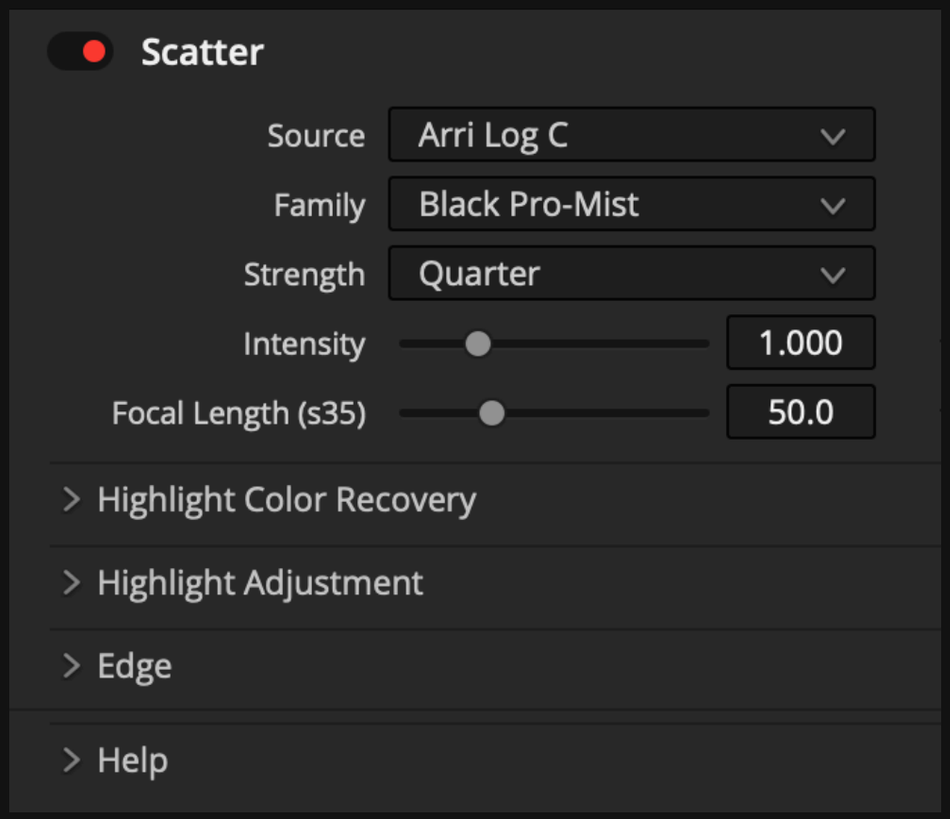
Grading ***after*** the Scatter node is analogous to working with footage shot with diffusion burned-in on set. Grading ***before*** the Scatter node is analogous to changing the light on set before scattering it through the diffusion filter.

If accuracy is important, only scene-referred operations should be performed before the Diffusion node. Exposure and color balance operations should be done linearly (gain in scene-linear, offset in ACEScc, or using Resolve's colorspace-aware HDR Global controls.)

Operations like contrast adjustment and tone-mapping before the Scatter node may produce results that are not analogous to real-world physically-based diffusion. But if you like what you see - go for it.

If you are using Filmbox, Scatter should be used *up-stream* from the Filmbox node.

Scatter Interface



Source
Choose the colorspace of your “log” or “scene-referred” footage or working space.

> It is not technically possible to produce accurate diffusion from “display-referred” footage but we have included the “*(Inaccurate) Gamma 2.4”* Source option which may produce a useful approximation on generic Rec.709 or sRGB “display-referred” source footage or graphics.

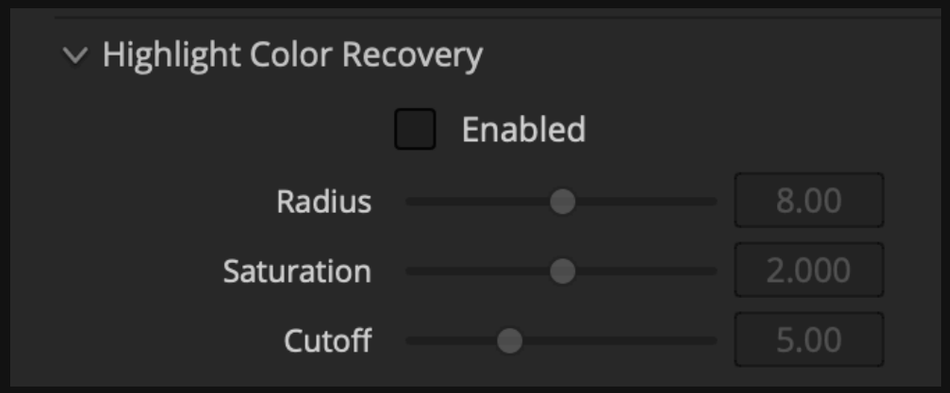
Family
Select the family of profiled filters.

Strength
Select the strength of the selected filter family.

Intensity
Amplify or reduce the effect of the active filter. Modifying intensity is not necessarily the same as selecting a different filter strength since some filter families do not have consistent characteristics between strengths.

Focal Length
The size of diffusion falloff typically varies with the field of view of the lens/sensor. The profiled filters have been calibrated for a 50mm lens on a s35mm sensor. This slider reduces/enlarges the falloff to approximate other fields of view (expressed in millimeters of focal length on s35mm).

Highlight Color Recovery Module



When a sensor clips a colorful light source, the resulting diffusion in Scatter may end up appearing white because the chrominance of the pixels at the core of the source was not recorded.

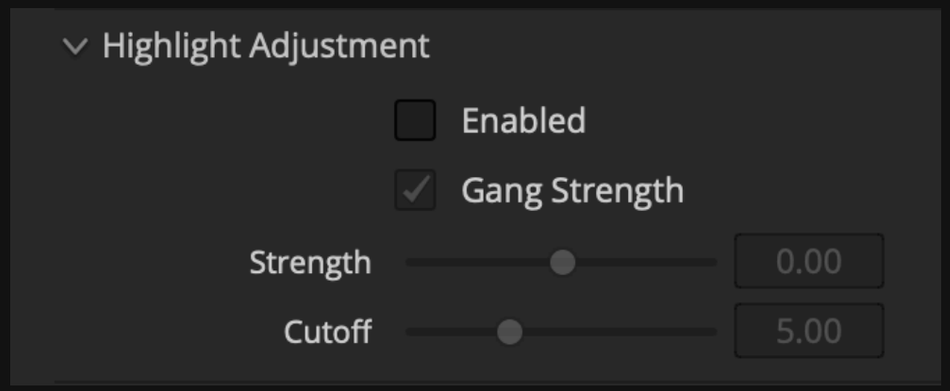
The Highlight Color Recovery module attempts to rebuild color information in blown-out highlight regions by considering the hue of neighboring pixels so diffusion can be calculated more naturally.

Radius
The radius around the clipped pixels that are used to rebuild color. Larger clipped image regions may need larger radii.

Saturation
Boosts the saturation of the rebuilt color.

Cutoff
The luminance threshold above which a pixel is considered to be clipped and recovery is performed. Measured in number of stops above middle grey.

Highlight Adjustment Module



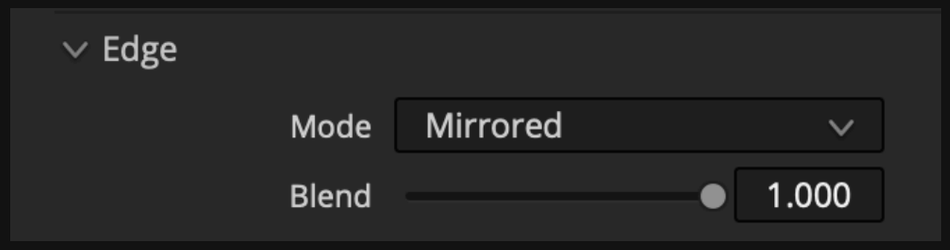
Manually amplify or reduce diffused highlights either for creative effect or to compensate for clipped highlights that should be brighter than what the sensor was able to record.

Gang Strength
Disabling this gives separate RGB controls to change the color balance of diffused highlights.

Strength
Strength of the amplification or reduction. Measured in stops.

Cutoff
The luminance threshold above which the adjustment takes place expressed in stops above middle grey.

Edge Module



Diffusion can be influenced by light beyond the bounds of the image.

In some cases the default mode (*Mirrored*) can cause glints similar to a gate flare if a very bright source is near the edges of frame. If this behavior is not desirable the *Blend* property can be reduced or a different *Mode* can be selected.

Mode - *Vignette*
No extrapolation beyond image bounds (black)

Mode - *Mirrored*
Mirrors the image beyond image bounds

Mode - *Repeated*
Repeats pixels on the border of the image beyond the image bounds

Blend
Decreases the strength of *Mirrored* or *Repeated* pixels.

Scatter Filter Comparison

Soft FX
Three

Classic Soft
One

Hollywood Black Magic
One

Radiant Soft
Two

Black Diffusion FX
Two

Glimmer Glass
One

Black Pro-Mist
One

Pearlescent
One

Pro-Mist
Quarter

Smoque
Two ex

LoCon
One

Soft FX
Two

Classic Soft
Half

Hollywood Black Magic
Half

Radiant Soft
One

Black Diffusion FX
One

Glimmer Glass
Half

Satin
Two

Black Frost
Half

Black Pro-Mist
Half

Pearlescent
Half

Pro-Mist
One

Fog
Two

Smoque
One

LoCon
Half

Mitchell Diff
B

Soft FX
One

Classic Soft
Quarter

Hollywood Black Magic
Quarter

Radiant Soft
Half

Black Diffusion FX
Half

Glimmer Glass
Quarter

Satin
One

Black Frost
Quarter

Black Pro-Mist
Quarter

Scatter
Linear

Pearlescent
Quarter

Pro-Mist
Half

Fog
Half

Smoque
Half ex

LoCon
Quarter

Soft FX
Half

Classic Soft
Eighth

Hollywood Black Magic
Eighth

Radiant Soft
Quarter

Black Diffusion FX
Quarter

Glimmer Glass
Eighth

Satin
Half

Black Frost
Eighth

Black Pro-Mist
Eighth

Scatter
Exponentia

Pearlescent
Eighth

Pro-Mist
Eighth

Fog
Quarter

Smoque
Quarter

LoCon
Eighth