26.2 Editors - Properties Editor - Render Properties Tab

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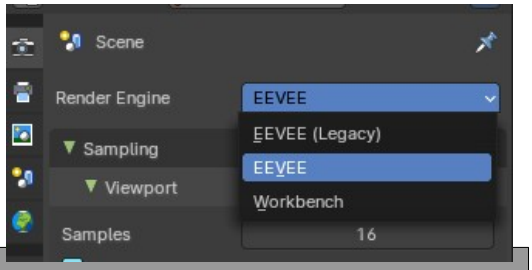
Render Tab

There are four different render engines available. Workbench, EEVEE, EVEE (Legacy), and Cycles. This chapter has a focus on the EEVEE render engine.



Sampling panel

Viewport subtab

Samples

The number of samples when rendering in the viewport.

Temporal Projection

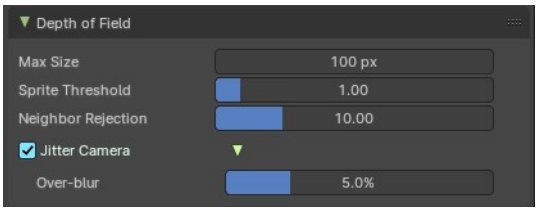
Denoise image using a method called temporal reprojection. This method can leave some ghosting.

Render subtab

Samples

The number of samples when rendering to file.

Depth of Field panel



Max Size

The maximum size of the bokeh shape for Depth of Field. Lower is faster.

Sprite Threshold

Brightness threshold for using sprite base depth of field.

Neighbor Rejection

The maximum brightness to consider when rejecting bokeh sprites based on neighborhood. Lower is faster.

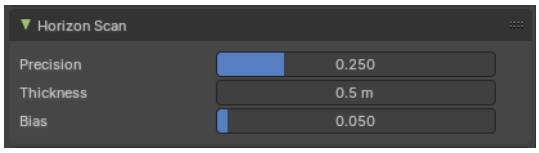
Jitter Camera

Jitter the camera to create accurate blurring by using render samples.

Overblur

Apply blur to each jittered sample to reduce undersampling artifacts.

Horizon Scan



Horizon scan is a new way of computing occlusion using visibility bitmask.

Precision

The precision of the horizon scan.

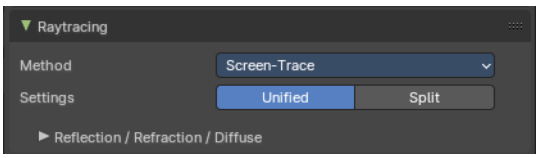
Thickness

Constant thickness of the surfaces considered when doing horizon scan and by extension ambient occlusion.

Bias

The bias horizon angles to reduce self intersection artefacts.

Raytracing panel



Method

Select the tracing method to find scene-ray intersections.

None

Do nothing.

Screen-Trace

Raytracing against the depth buffer.

Settings

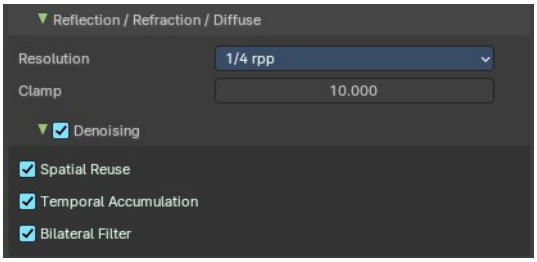
The split settings per ray type

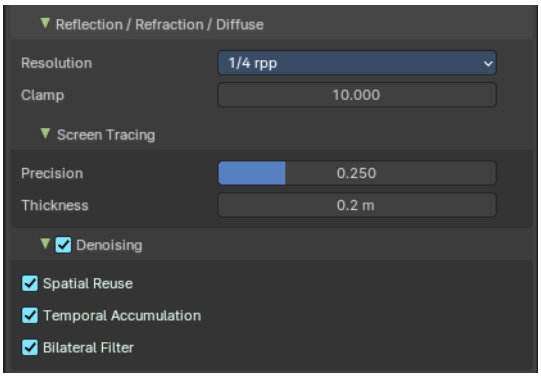
Unified

All ray types use the same settings.

As a consequence there is just one panel for all of the ray types.

Reflection / Refraction / Diffuse subpanel





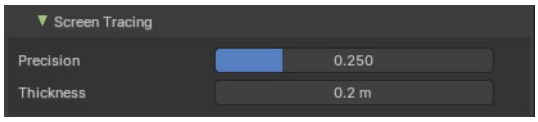
Resolution

Number of rays per pixel

Clamp

Clamp ray intensity to reduce noise. 0 to disable.

Screen Tracing subpanel



Just available with method Screen-Trace.

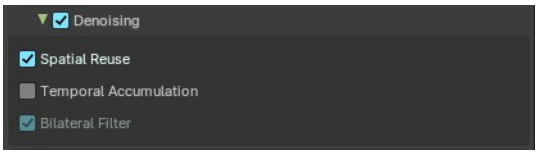
Precision

The precision of the screen space ray-tracing.

Thickness

Pixel thickness used to detect intersections.

Denoising Subpanel



Denoising

Enable Denoising for raytraced effects.

Spatial Reuse

Reuse the rays of neighbour pixe.

Temporal Accumulation

Accumulate samples by reprojecting last tracing results

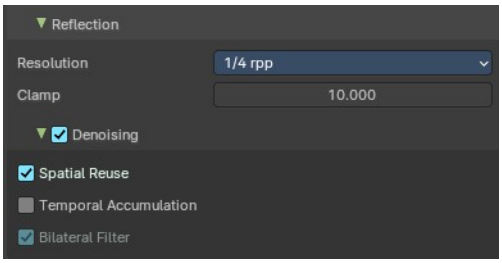
Bilateral Filter

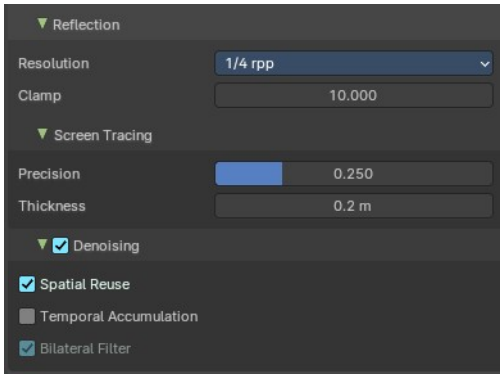
Blur the resolved radiance by reprojecting last tracing result of the temporal accumulation.

Split

Settings are individual to each ray type. So there is a subpanel for each ray type then. With basically the same content.

Reflection subpanel





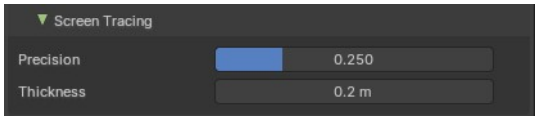
Resolution

Number of rays per pixel

Clamp

Clamp ray intensity to reduce noise. 0 to disable.

Screen Tracing subpanel



Just available with method Screen-Trace.

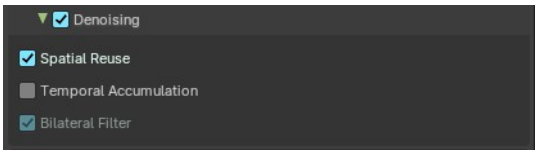
Precision

The precision of the screen space ray-tracing.

Thickness

Pixel thickness used to detect intersections.

Denoising Subpanel



Denoising

Enable Denoising for raytraced effects.

Spatial Reuse

Reuse the rays of neighbour pixe.

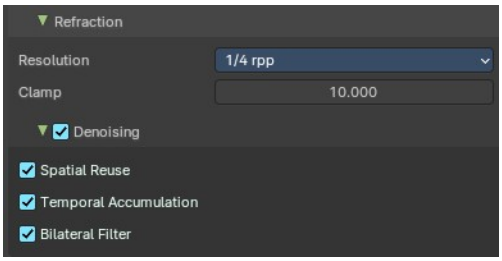
Temporal Accumulation

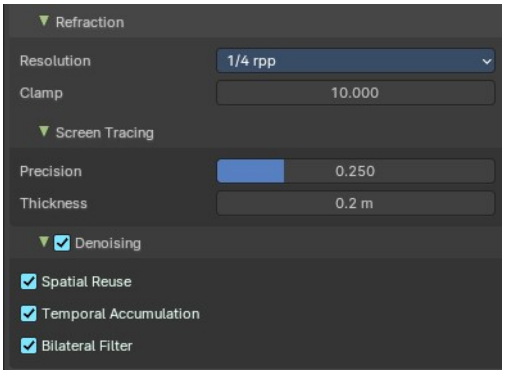
Accumulate samples by reprojecting last tracing results

Bilateral Filter

Blur the resolved radiance by reprojecting last tracing result of the temporal accumulation.

Refraction subpanel





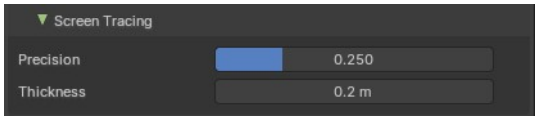
Resolution

Number of rays per pixel

Clamp

Clamp ray intensity to reduce noise. 0 to disable.

Screen Tracing subpanel



Just available with method Screen-Trace.

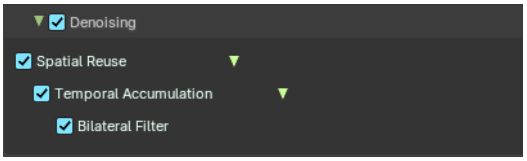
Precision

The precision of the screen space ray-tracing.

Thickness

Pixel thickness used to detect intersections.

Denoising Subpanel



Denoising

Enable Denoising for raytraced effects.

Spatial Reuse

Reuse the rays of neighbour pixe.

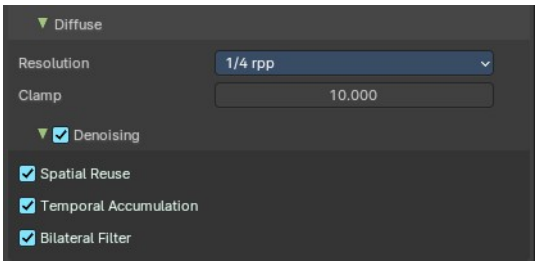
Temporal Accumulation

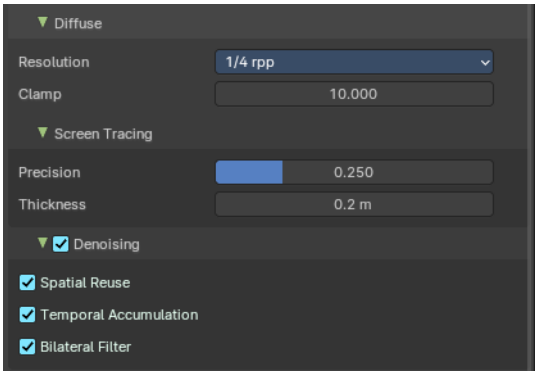
Accumulate samples by reprojecting last tracing results

Bilateral Filter

Blur the resolved radiance by reprojecting last tracing result of the temporal accumulation.

Diffuse subpanel





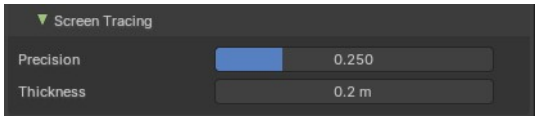
Resolution

Number of rays per pixel

Clamp

Clamp ray intensity to reduce noise. 0 to disable.

Screen Tracing subpanel



Just available with method Screen-Trace.

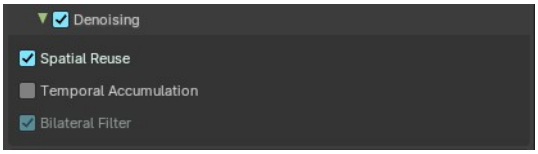
Precision

The precision of the screen space ray-tracing.

Thickness

Pixel thickness used to detect intersections.

Denoising Subpanel



Denoising

Enable Denoising for raytraced effects.

Spatial Reuse

Reuse the rays of neighbour pixe.

Temporal Accumulation

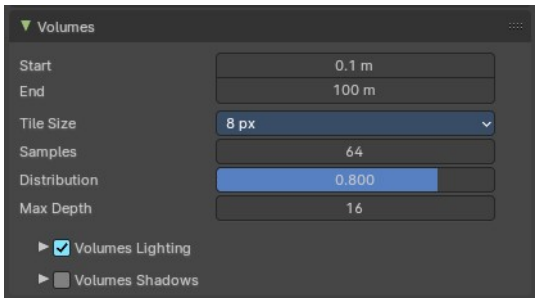
Accumulate samples by reprojecting last tracing results

Bilateral Filter

Blur the resolved radiance by reprojecting last tracing result of the temporal accumulation.

Volumes panel

Contains volumetrics settings.



Start

The start distance for volumetrics.

End

The end distance for volumetrics.

Tile Size

The quality of the volumetrics effect. The lower the size the higher the quality and ram usage.

Samples

Number of samples to compote for the volumetrics effect.

Distribution

Distribute more samples closer to the camera.

Max Depth

Maximum surface intersection count used by the accurate volume intersection method. Thise feature will create artifacts if it is exceeded.

Volumes Lighting subpanel

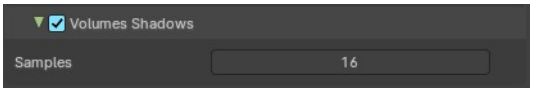
Enable

In the header you will find a checkbox to enable Volumetric Lighting.

Light Clamping

The maximum light contribution.

Volumetric Shadows subpanel



Enable

In the header you will find a checkbox to enable Volumetric Shadows.

Samples

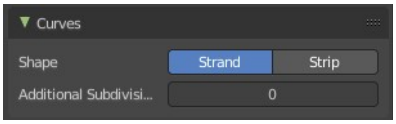
Number of samples to compute volumetric shadowing.

Performance panel

High Quality Normals

Use high quality tangent space. Slower but more accurate.

Curves panel



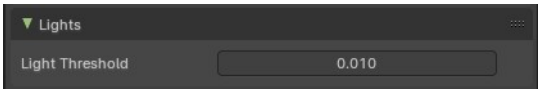
Shape

Choose if the hair is displayed as strand or as strip.

Additional Subdiv

Additional subdivision along the hair.

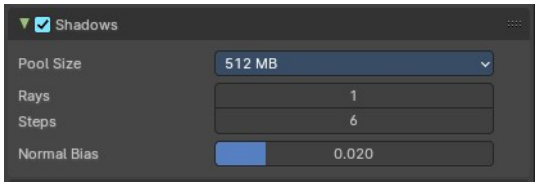
Lights panel



Light Threshold

Minimum Light intensity for a light to contribute to the lighting.

Shadows panel



Contains settings regarding shadows.

Enable

The checkbox in the header enables shadows and its settings.

Pool Size

Size of the shadow pool. A bigger pool size allows for more shadows in the scene. But might not fit into the GPU memory of your graphics card.

Rays

Amount of shadow ray for each light.

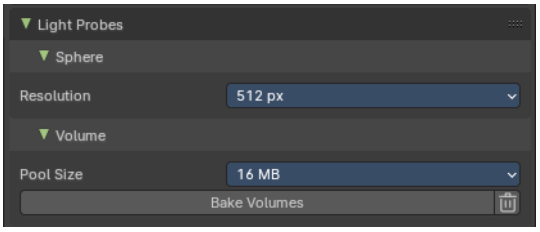
Steps

Amount of shadow map sample per shadow ray.

Normal Bias

Move along their normal.

Light Probes

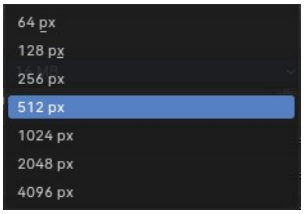


Light probes are precalculated lights to speed up rendering.

Sphere subtab

Resolution

The size of the cubemaps in pixels. Precalculated light gets stored in cubemaps.



Volume subtab

Pool Size

The size of the irradiance pool. A bigger pool allows for more irradiance grid in the scene. But might not fit into the GPU memory, and decrease performance.

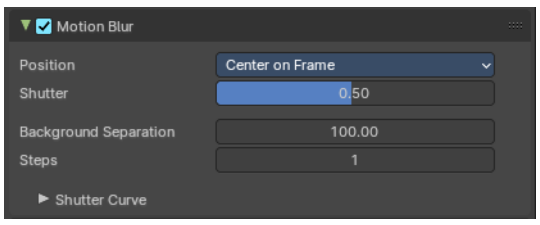
Bake Volumes

Bake all light probe volumes.

Delete Light Cache

Deletes the baked light cache.

Motion Blur panel



Enable Motion Blur and adjust the settings.

Each object has also its own settings to control motion blur. These options can be found in the corresponding Object tab of the Properties editor.

Enable

In the header is a checkbox to enable Simplify.

Position

Controls at what point the shutter opens in relation to the frame.

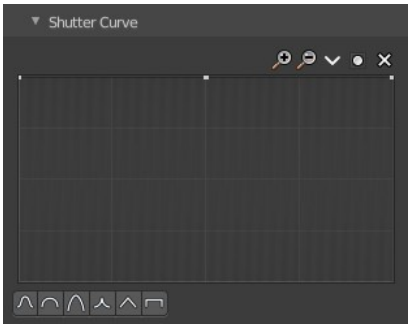
Background Separation

Lower values will reduce background bleeding onto foreground elements.

Steps

Controls the accuracy of motion blur. More steps means longer render time.

Shutter Curve



Sutter curve is a sub menu wAdjust a curve for the shutter effect.

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.

Tools

Tools is a menu that contains 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

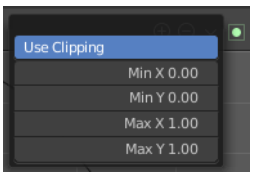
Causes the curve to stay horizontal before the first point and after the last point.

Extend Extrapolated

Causes the curve to extrapolate before the first point and after the last point, based on the shape of the curve.

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.

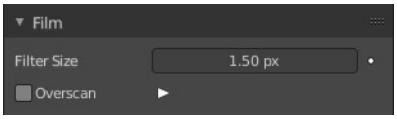
X and Y values

The coordinates of the currently selected curve point.

Presets

At the bottom you can find some curve presets.

Film panel



Filter Size

The width over which the reconstruction filter combines samples.

Animate Property

This property can be animated. Activating this button sets a keyframe.

Overscan

Internally render past the image borders to avoid screen space effects disappearing.

Overscan Size

How much bigger the image should be internally rendered.

Simplify panel

Sometimes you want to simplify the rendering without to loose the already tweaked settings and adjustments. For test renderings for example. Simplify allows you to simplify the rendering.

Enable

In the header is a checkbox to enable Simplify.

Viewport

This section affects the rendering with Eevee in the Viewport.

Max Subdivisions

Limit the number of maximum subdivisions.

Child Particles

Limit the number of child particles.

Volume Resolution

Simplify volumes by setting the resolution percentage of volume objects in viewport.

Shadow Resolution

The shadow resolution in percentage.

Animate Property

This properties can be animated. Activating this button sets a keyframe.

Render

This section affects the rendering with Eevee to file.

Max Subdivisions

Limit the number of maximum subdivisions.

Child Particles

Limit the number of child particles.

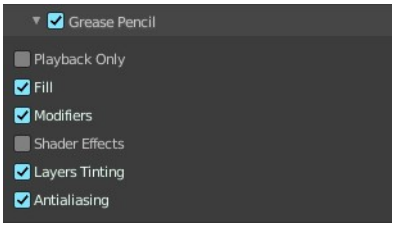
Shadow Resolution

The shadow resolution in percentage.

Animate Property

This properties can be animated. Activating this button sets a keyframe.

Grease Pencil



This section affects Grease Pencil drawings.

Enable

Enables the Grease Pencil features.

Playback Only

Simplify Grease Pencil only during animation playback.

Fill

Display Fill strokes in the Viewport.

Modifiers

Apply modifiers in the viewport.

Shader Effects

display shader effects.

Layers Tinting

Display layers tint.

Antialiasing

Use antialiasing to smooth stroke edges.