



## 26.2 Editors - Properties Editor - Render Properties Tab

### Table of content

Detailed Table of content.....	1
Render Tab.....	4
Sampling panel.....	4
Ambient Occlusion panel.....	4
Bloom panel.....	5
Depth of Field panel.....	5
Subsurface Scattering panel.....	6
Screen Space reflections panel.....	6
Motion Blur panel.....	7
Volumetric panel.....	8
Curves panel.....	9
Shadows panel.....	9
Indirect Lighting panel.....	10
Film panel.....	11
Eevee (Legacy) + Workbench - Simplify panel.....	12
Simplify panel.....	13

### Detailed Table of content

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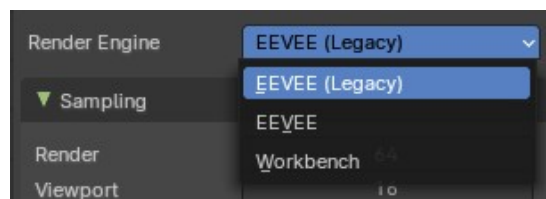
Detailed Table of content.....	1
Render Tab.....	4
Sampling panel.....	4
Viewport Samples.....	4
Render Samples.....	4
Viewport Denoising.....	4
Ambient Occlusion panel.....	4
Enable.....	4
Distance.....	4
Factor.....	4
Trace Precision.....	4
Bent Normals.....	4
Bounces Approximation.....	5
Bloom panel.....	5
Enable.....	5
Threshold.....	5
Knee.....	5
Radius.....	5
Color.....	5
Intensity.....	5
Clamp.....	5
Depth of Field panel.....	5
Max Size.....	5
Sprite Threshold.....	5

Neighbor Rejection.....	6
Denoise Amount.....	6
High Quality Slight Defocus.....	6
Jitter Camera.....	6
Overblur.....	6
Subsurface Scattering panel.....	6
Enable.....	6
Samples.....	6
Jitter Threshold.....	6
Separate Albedo.....	6
Screen Space reflections panel.....	6
Enable.....	7
Refraction.....	7
Half Res Trace.....	7
Trace Precision.....	7
Max Roughness.....	7
Thickness.....	7
Edge Fading.....	7
Clamp.....	7
Motion Blur panel.....	7
Enable.....	7
Position.....	7
Shutter.....	7
Background Separation.....	8
Max Blur.....	8
Steps.....	8
Volumetric panel.....	8
Start.....	8
End.....	8
Tile Size.....	8
Samples.....	8
Distribution.....	8
Viewport Volumetric Blending.....	8
Volumetric Lighting.....	9
Enable.....	9
Light Clamping.....	9
Volumetric Shadows.....	9
Enable.....	9
Samples.....	9
Curves panel.....	9
Shape.....	9
Additional Subdiv.....	9
Shadows panel.....	9
Method.....	9
Cube Size.....	9
Cascade Size.....	10
High Bit depth.....	10
Soft Shadows.....	10
Indirect Lighting panel.....	10
Bake Indirect Lighting.....	10
Bake Cubemap Only.....	10
Delete Lighting Cache.....	10
Auto Bake.....	10

Diffuse Bounces.....	10
Cubemap Size.....	10
Diffuse Occlusion.....	10
Irradiance Smoothing.....	11
Clamp Glossy.....	11
Filter Quality.....	11
Display.....	11
Cubemap Size.....	11
Irradiance Size.....	11
Film panel.....	11
Filter Size.....	11
Animate Property.....	11
Overscan.....	11
Overscan Size.....	11
Eevee (Legacy) + Workbench - Simplify panel.....	12
Enable.....	12
Viewport.....	12
Max Subdivisions.....	12
Child Particles.....	12
Volume Resolution.....	12
Animate Property.....	12
Render.....	12
Max Subdivisions.....	12
Child Particles.....	12
Animate Property.....	12
Grease Pencil.....	13
Playback Only.....	13
Fill.....	13
Modifiers.....	13
Shader Effects.....	13
Layers Tinting.....	13
Antialiasing.....	13
Simplify panel.....	13
Enable.....	13
Viewport.....	13
Max Subdivisions.....	13
Max Child Particles.....	13
Volume Resolution.....	14
Shadow Resolution.....	14
Render.....	14
Max Subdivisions.....	14
Max Child Particles.....	14
Shadow Resolution.....	14
Grease Pencil.....	14
Playback Only.....	14
Fill.....	14
Modifiers.....	14
Shader Effects.....	14
Layers Tinting.....	14
Antialiasing.....	14

## Render Tab

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



## Sampling panel

### Viewport Samples

The number of samples when rendering in the viewport.



### Render Samples

The number of samples when rendering to file.

### Viewport Denoising

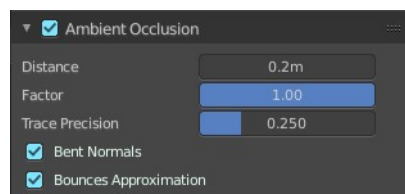
Denoise Image. The temporal re-projection can cause some ghosting.

## Ambient Occlusion panel

Ambient occlusion is a self shadowing effect.

### Enable

In the header you will find a checkbox to enable the Ambient Occlusion.



### Distance

The distance of the object to contribute to the ambient occlusion.

### Factor

The blend factor

### Trace Precision

Precision of the horizon search

### Bent Normals

Compute the main non occluded direction to sample the environment

## Bounces Approximation

An approximation to simulate light bounces gives less occlusion on brighter objects.

### Bloom panel

#### Enable

In the header you will find a checkbox to enable the Bloom.

#### Threshold

Filters out pixel that are below this level of brightness.

#### Knee

Makes transition between under / over threshold gradual.

#### Radius

Bloom spread distance.

#### Color

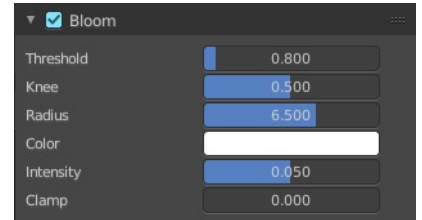
The color of the bloom effect.

#### Intensity

Blend Factor.

#### Clamp

Maximum intensity a bloom pixel can have.



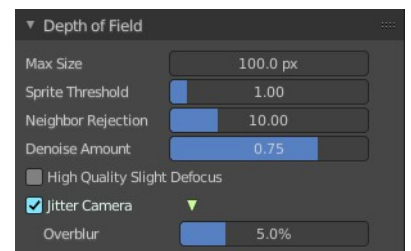
### Depth of Field panel

#### 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.

## Denoise Amount

Amount of flicker remove applied to bokeh highlights.

## High Quality Slight Defocus

Sample all pixels in almost in-focus regions to eliminate noise.

## Jitter Camera

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

## Overblur

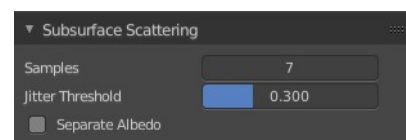
Apply blur to each jittered sample to reduce undersampling artifacts.

## Subsurface Scattering panel

Subsurface scattering is a mechanism of light transport through the object. It penetrates the surface of a translucent object, is scattered by interacting with the material, and exits the surface at a different point.

### Enable

In the header you will find a checkbox to enable the Subsurface Scattering.



### Samples

Number of samples to compute the scattering effect.

### Jitter Threshold

Rotate samples that are below this value.

### Separate Albedo

Avoid albedo being blurred by the subsurface scattering. This feature uses more memory.

## Screen Space reflections panel

Contains settings around the Screen Space reflections.

Screen Space Reflections is a common technique in games. It reuses the information that is already on screen for reflections. It doesn't reflect geometry outside of the camera though.

## Enable

In the header you will find a checkbox to enable the Subsurface Scattering.

## Refraction

Enable Screen Space refraction.



## Half Res Trace

Ray trace at a lower resolution.

## Trace Precision

The precision of the screen space ray-tracing.

## Max Roughness

Do not ray-trace reflections that are above this value.

## Thickness

Pixel thickness used to detect intersections.

## Edge Fading

Screen percentage used to fade the Screen Space Reflection.

## Clamp

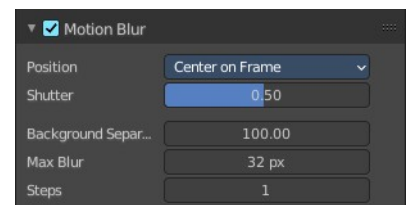
Clamp Pixel intensity to remove noise.

## Motion Blur panel

Contains settings for motion blur.

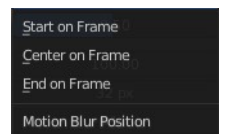
## Enable

In the header you will find a checkbox to enable the Subsurface Scattering.



## Position

Offset for the shutters time interval. This allows to change the motion blur trails.



## Shutter

Time taken in frames between shutter open and close.

## Background Separation

Separate background elements from foreground elements. Lower values will reduce background bleeding onto foreground elements

## Max Blur

The maximum blur distance a pixel can spread over.

## Steps

The accuracy of motion blur. Higher values results in higher accuracy and higher render times.

## Volumetric 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

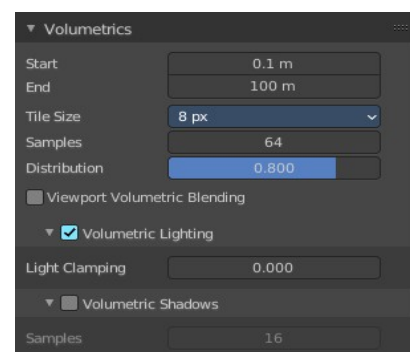
Number of samples to compute for the volumetrics effect.

### Distribution

Distribute more samples closer to the camera.

### Viewport Volumetric Blending

Enable volumetrics blending with previous frame in viewport. Attention, this setting is just for the viewport. The final rendering is not affected.





## Volumetric Lighting

### Enable

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

### Light Clamping

The maximum light contribution.

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## Volumetric Shadows

### Enable

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

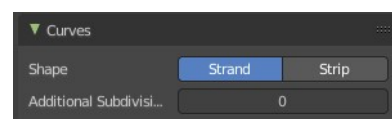
### Samples

Number of samples to compute volumetric shadowing.

## Curves panel

### Shape

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



### Additional Subdiv

Additional subdivision along the hair.

## Shadows panel

Contains settings regarding shadows.

### Method

Choose between ESM and VSM method for the shadow. ESM stands for exponential shadow mapping. VSM stands for Variance shadow mapping.



### Cube Size

The cube shadows resolution.

## Cascade Size

Directional shadows resolution.

## High Bit depth

Use 32 bit shadows. Low bit depth uses 8 bit.

## Soft Shadows

Create soft shadows.

## Indirect Lighting panel

Indirect lighting can be baked to speed up the rendering process and increase the render fidelity.

Eevee uses volume and sphere light probes to calculate indirect lighting.

## Bake Indirect Lighting

Bake all volume, plane and sphere light probes.

## Bake Volume Only

Bakes only the volume light probes.

## Delete Lighting Cache

Deletes baked lighting information from cache.

## Auto Bake

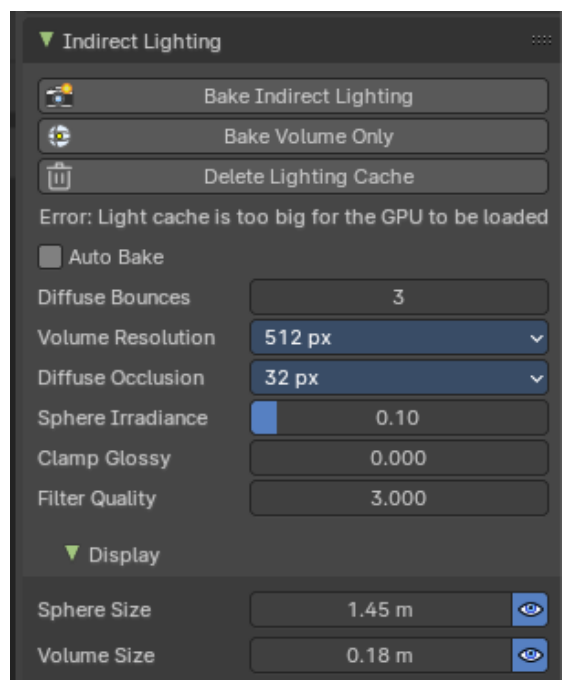
Auto bake indirect lighting when editing light probes.

## Diffuse Bounces

Number of times the light is reinjected inside light grids. 0 will disable indirect diffuse light.

## Volume Resolution

The resolution of the volume light probe.



## Diffuse Occlusion

The size of the shadow map applied to each volume sample.

## Sphere Irradiance

Smooth the sphere lightprobe lightning.

**Note:** *This might introduce light bleeding.*

## Clamp Glossy

Clamp Pixel intensity to reduce noise inside glossy reflections from reflection cube maps. A value of 0 disables the clamping.

## Filter Quality

Take more samples during volume light probe filtering to remove artifacts.

## Display

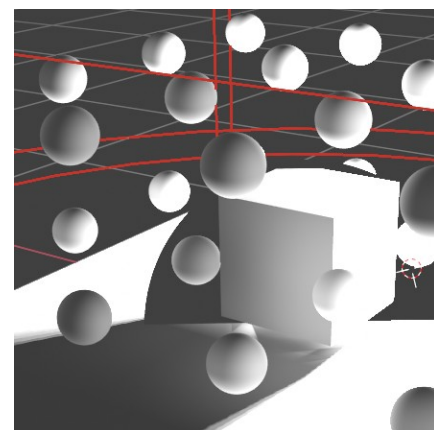
Shows an additional overlay to troubleshoot and see how the Indirect Light was baked.

## Sphere Size

Size of the sphere light probe center to debug captured light.

## Volume Size

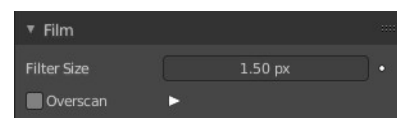
Size of the volume light probe spheres to debug captured light.



## 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.

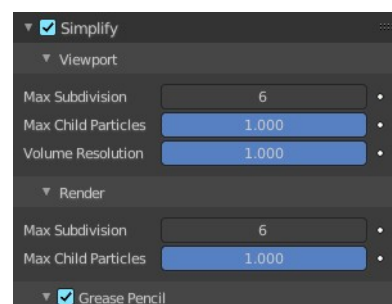


## Overscan Size

How much bigger the image should be internally rendered.

## Eevee (Legacy) + Workbench - 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.

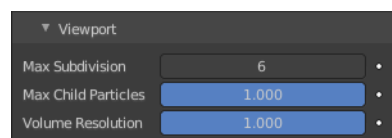


## Enable

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

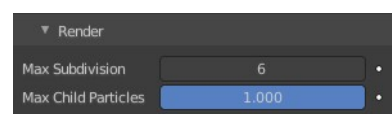
Simplify volumes by setting the resolution percentage of volume objects in viewport

## 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.

## Animate Property

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

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## Grease Pencil

This section affects Grease Pencil drawings.

### Playback Only

Simplify Grease Pencil only during animation playback.

### Fill

Display Fill strokes in the Viewport.

### Modifiers

Apply modifiers in the viewport.

### Shader Effects

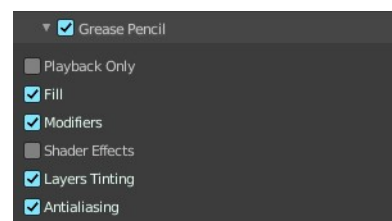
display shader effects.

### Layers Tinting

Display layers tint.

### Antialiasing

Use antialiasing to smooth stroke edges.



## 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 set global limits on subdivision, shadow samples and more.



## Enable

In the header is a checkbox to enable Simplify.

## Viewport

This section affects the rendering with cycles in the Viewport.



### Max Subdivisions

Limit the number of maximum subdivisions.

### Max Child Particles

Limit the number of child particles

### Volume Resolution

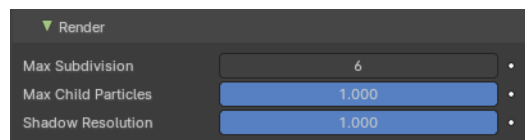
Simplify volumes by adjusting volume percentage of volume objects in viewport.

### Shadow Resolution

Resolution percentage of shadows in viewport.

## Render

This section affects the final rendering.



### Max Subdivisions

Limit the number of maximum subdivisions.

### Max Child Particles

Limit the number of child particles

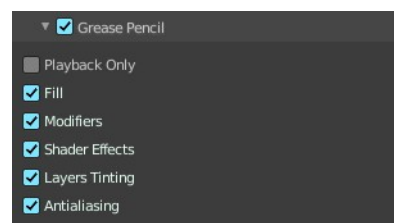
### Shadow Resolution

Resolution percentage of shadows in viewport.

## Grease Pencil

### Playback Only

Simplify the grease pencil strokes only during playback.



### Fill

Display Fill strokes in viewport.

### Modifiers

Display Modifiers.

## **Shader Effects**

Display Shader effects.

## **Layers Tinting**

Display layer tint.

## **Antialiasing**

Use antialiasing to smooth stroke edges.