Light Settings

Reference
Panel:
Properties ‣ Light Shader Editor ‣ Sidebar ‣ Options

Besides lighting from the background and materials with emission shaders, lights are another way to add light into the scene. The difference is that they are not directly visible in the rendered image, and can be more easily managed as objects of their own type.

See Light settings for settings common to all renderers.

Shadow

EEVEE uses a technique called *Virtual Shadow Mapping* along with *Shadow Map Raytracing*. *Virtual Shadow Mapping* produces more accurate results than traditional shadow mapping by putting resolution only where it is needed. It also includes a very efficient caching mechanism. This technique offers better performance than ray tracing and is compatible with any Render Method.

> Tip
>
> - The error message *Shadow buffer full* means that the system cannot allocate enough shadow memory. Increasing the Shadow Pool Size or the Resolution Limit on some lights can fix the issue. Otherwise, the only workaround is to disable shadow casting on some lights.
> - *Shadow Map Raytracing* can be tweaked in the Render Settings.
> - Turning on Jitter can reduce the light leaking artifacts caused by large lights and *Shadow Map Raytracing*.

> See also
>
> Limitations.

Jitter

Enable jittered soft shadows to increase shadow precision. Has a high performance impact as the shadow map cannot be cached and needs to be updated for each render sample.

> Note
>
> The effect isn't visible by default in the viewport. See render settings.

Overblur

Apply shadow tracing to each jittered sample to reduce under-sampling artifacts.

> Note
>
> Any value higher than zero will result in a blurrier shadow and is not physically correct.

Filter

Blur shadow aliasing using PCF with a circular kernel. The effective world scale of the filter depends on the shadow map resolution at the shadow pixel position.

> Note
>
> Any value bigger than 1px will increase the chances of light leaking artifacts.

Resolution Limit

Minimum size of a shadow map pixel. Higher values use less memory at the cost of shadow quality. Higher values also speed-up rendering of heavy scenes. Each shadow is scaled depending on the shadowed pixel on screen. This can create very sharp shadows but also requires a lot of memory the shadowed pixel is close to the camera. This property limits the maximum amount of detail that the shadow map can capture.

> Note

Reducing the shadow map resolution will increase the chances of light leaking artifacts.

Absolute Resolution Limit

Limit the resolution at 1 unit from the light origin instead of relative to the shadowed pixel. This makes Resolution Limit act as a regular shadow m
pixel size.

Hint

With this option enabled, the following equation can be used to set the *Resolution Limit* with a desired resolution:

$$resolution\_limit = 2 * \sqrt{2} / resolution$$

The $(2 * \sqrt{2})$ refers to the unit cube diagonal and $(resolution)$ refers to the desired resolution (e.g. 1024px).

Note

The setting Absolute Resolution Limit does not exist for Sun Light.

Influence

These parameters modulate the intensity of the light depending on the shader type. These are meant for artistic control, and any value other than 1.0 brea
PBR rules.

Diffuse

Diffuse reflection intensity multiplier.

Glossy

Glossy light intensity multiplier.

Transmission

Transmission light intensity multiplier.

Volume Scatter

Volume light intensity multiplier.

Custom Distance

If enabled, uses Distance as the custom attenuation distance instead of global Light Threshold. In order to avoid long setup times, this distance is first
computed automatically based on a light threshold. The distance is computed at the light origin and using the inverse square falloff.

Distance

Specifies where light influence will be set to 0.

Note

The setting Custom Distance does not exist for Sun Light.

See also

Global Light Threshold.

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