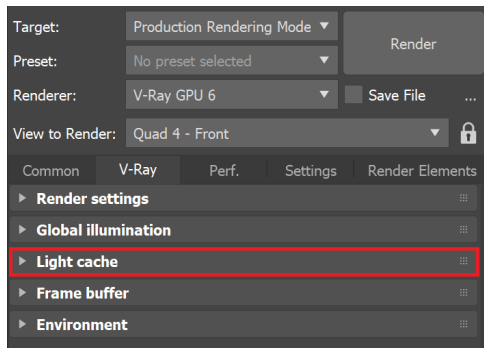# GPU Light Cache

This page provides information on the Light Cache rollout in the V-Ray tab when V-Ray GPU is used as the production renderer.

Overview

The Light Cache rollout is available under the **V-Ray tab** when the GI engine is set to Light Cache and the render engine is **V-Ray GPU**. You can control various aspects of the Light Cache settings from this section. For more details on how the Light cache engine calculates GI, please see the Light Cache GI page under Indirect Illumination.

UI Path: ||Render Setup window|| > **V-Ray** tab > **Light Cache** rollout (**Renderer** set to **V-Ray GPU**)

Parameters

Preset – Allows you to manage V-Ray setting presets.

> **Still** – Presets for a still image.
> **Animation** – Presets for animation.

Subdivs – Controls the quality of the Light Cache by determining how many paths are traced from the camera. The actual number of paths is the square of the subdivs (the default 1000 subdivs mean that 1,000,000 paths are traced from the camera). A value of 1000 is a good starting point, but higher values (2000 or 3000 or more) work better for more complex interior scenes and for reducing flickering in animations.

Sample Size – Controls the size of the individual Light Cache samples. Smaller values produce a more detailed lighting solution, but are noisier and take more RAM. Larger values produce less detail, but also take less RAM and may be faster to calculate.

Show calc. phase – Shows the paths that are traced during the Light Cache calculation phase in the frame buffer. This does not affect the calculation of the Light Cache and only provides visual feedback to the user. This option is ignored when rendering to fields - in that case, the calculation phase is never displayed. This option does not work with distributed rendering.

Store direct light – When enabled, the Light Cache also stores and interpolate direct light. This can be useful for scenes with many lights, since direct lighting is computed from the Light Cache instead of sampling each and every light. Note that only the diffuse illumination produced by the scene lights is stored. If you want to use the Light Cache directly for approximating the GI while keeping the direct lighting sharp, disable this option.

Retrace – Enables retracing of GI near corners. This helps prevent light leaks and flickering. Normally, this should be enabled. The value specifies the extent to which GI near corners are retraced instead of being read from the Light Cache. A value of 0.0 disables retracing. A value of 2.0 is good for still images, and 8.0 is good for animations. Higher values result in more rays traced at render time.

Mode – Determines the rendering mode of the Light Cache:

Single frame – Computes a new Light Cache for each frame of an animation.
From file – The Light Cache is loaded from a file. The Light Cache file does not include the prefiltering of the Light Cache; prefiltering is performed after the Light Cache is loaded, so that you can adjust it without the need to recompute the Light Cache.

File – Specifies the file name to load the Light Cache from, when the **Mode** is set to **From file**.

Save – Saves the Light Cache that remains in memory after the rendering to a file on disk for later reuse. Note that the **Don't delete** option must be enabled for this to work. Otherwise, the Light Cache is deleted as soon as rendering is complete, and it is not possible to save it.

Switch to saved cache – When enabled, after the rendering is complete, the Light Cache **Mode** is automatically set to **From file** and the name of the auto-saved Light Cache file is copied to the **File** parameter.

Don't delete – When enabled (the default), the Light Cache remains in memory after the rendering. Disable this option to automatically delete the Light Cache (and thus save memory).

Auto save – When enabled, the Light Cache is automatically written to the specified file. Note that the Light Cache is written as soon as it is calculated, rather than at the actual end of the rendering.

To save a separate Light Cache file for each frame of an animation, append **%04d** suffix to the name of the file.