

Render Elements

This section contain information on the Render Elements found in V-Ray for Rhino.

Overview

Render Elements are a way to break out renders into their component parts such as diffuse color, reflections, shadows, mattes, etc. This gives fine-tune control in the final image using compositing or image editing applications when re-assembling the final image from its component elements. Render elements are also sometimes known as render passes.

Render Elements are generated at render time based on the ones you choose before rendering. Most render elements have parameters that can be set to customize the render element or its later use in compositing software. These parameters are described on each render element's individual page, along with common uses and any notes on their generation and usage.

For a complete list of render elements supported in Rhino, see the [Supported Render Elements page](#).

In V-Ray Next Update 1.1 some of the render elements are rendered differently than before. The Lighting render element now contains all direct diffuse illumination and the GI element contains all indirect diffuse illumination. Similarly, all direct reflections of lights now go to the Specular element and all indirect reflections go to the Reflection element.

Previously this depended on the sampling of the lights and not just on the type of contribution. Some of the direct contributions that should be in the Lighting and Specular elements were written to the GI and Reflection elements instead. In both cases they compose back to Beauty correctly but the different types of contributions are now split between the elements more consistently.

This change makes the elements more consistent but it's also needed for preventing artifacts in these elements with the adaptive dome light (and possibly in the future with other adaptive lights).

The raw elements are affected only when the corresponding normal and filter elements are available, otherwise they're rendered as before. This is because the raw elements have to be derived internally from the corresponding normal elements in order to work with the consistent elements.

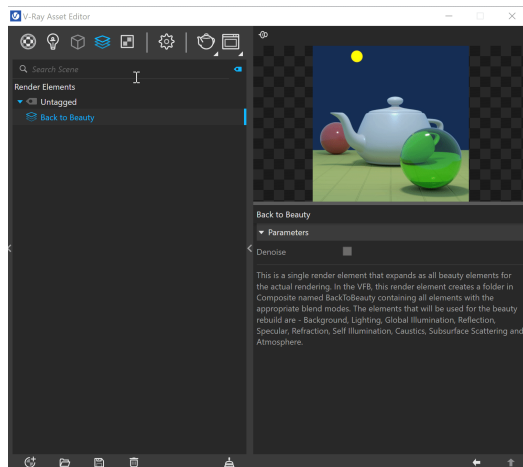
The consistent elements are automatically enabled when the scene contains an adaptive dome light so they don't have artifacts. They are also enabled by default for both new and old scenes and can only be disabled via script access. For V-Ray GPU they are always enabled without an option to disable them.



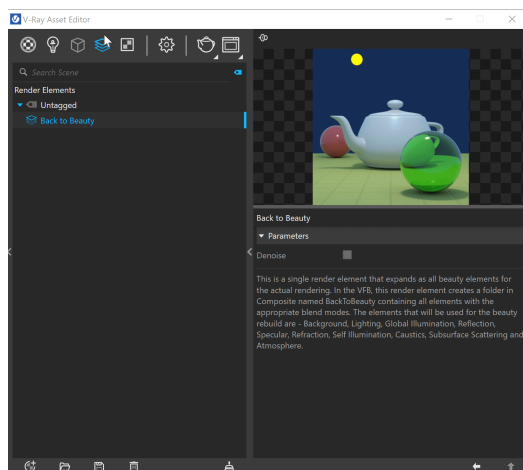


UI Paths

||V-Ray Asset Editor|| > **Create Asset** (left-click) > **Render Elements**



||V-Ray Asset Editor|| > **Render Elements** (right-click to add Render Elements)

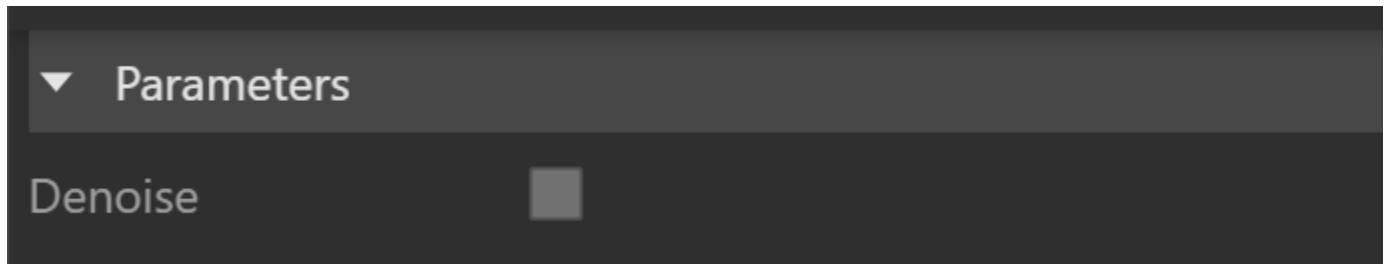


The creation of render elements is available from two places in the Asset Editor: from the **Create Asset** button and the **Render Elements** category icon (top). If the **Render Elements** category is empty, left- or right-clicking the icon prompts you to create a new asset. Otherwise, it selects the category in which case right-click opens the creation menu.

The Asset creation dropdown lists remain active when the **Ctrl** (cmd on macOS) key is held, allowing the creation of multiple assets in quick succession. The Asset creation dropdown lists can be activated via the **Create Asset** button or the Asset Category icons.

Denoise

A number of Render Elements have a **Denoise** option in their Parameters rollout. It enables the render element's denoising, provided the [Denoiser](#) option is switched on for the scene.



Notes

- V-Ray always anti-aliases with respect to the RGB color channel. Therefore other channels may appear jagged or noisy in areas where V-Ray has placed fewer samples.
- Render elements will render in Distributed Rendering mode.
- Render elements require additional storage when rendering and thus increase the amount of RAM taken during the rendering. When rendering to the [V-Ray VFB](#), you can reduce this memory by rendering directly to a .vrimg file on disk and not storing the final image in memory.
- Render elements may slightly slow down the final image rendering, depending on the number of elements that are selected. They have no effect on GI/reflection etc. calculations.
- Creating or removing render elements does not work during interactive rendering. The changes take effect only after the render process is restarted.
- The context options of the Color Slot allow to **Copy** and **Paste** a color from one color slot to another, as well as to **Reset** the color selection to a default value.
- A new option allows VFB color corrections to be applied to each of the render channels when they are saved to disk as separate image files.