

List of Supported Render Elements

This page provides a list of all the render elements supported in V-Ray for Rhino.

Overview

The following render elements are supported by V-Ray. All render elements support native V-Ray materials. Some render elements also support standard Rhino materials. This is noted in the table below.

Supported Render Elements

Render element name	VRayMtl support	Std material support	Filtering control	Transparency support	Color Depth of EXR floating-point channels ****	Description
Atmosphere			—		16bit/32bit	Atmospheric effects.
Background			**		16bit/32bit	The image background.
Caustics		— *	**		16bit/32bit	The caustics on the material. Only present when the Caustics option of V-Ray is enabled. This channel does not include GI caustics.
Cryptomatte			—		forced 32bit (for multi-channel files)	Uses the Cryptomatte convention by Psypop to encode mattes into multichannel OpenEXRs.
Denoiser					16bit/32bit	Applies a denoising operation to the image after it is rendered (with the necessary channels).
Diffuse			**		16bit/32bit	The pure diffuse surface color. Note that this is different from the standard Rhino Diffuse render element, which contains the diffuse surface lighting.
DR Buckets	N/A	N/A	N/A	N/A	16bit/32bit	Shows which render node rendered which bucket during distributed rendering
ExtraTex	N/A	N/A	—	N/A	forced 32bit (optional for multi-channel files)	Renders the entire scene with one texture mapped on all objects.
Geometric Normals				—	16bit/32bit	The surface normals.
Global Illumination		— *	**		16bit/32bit	The diffuse surface global illumination. Only present if Global illumination is enabled.
Lighting		*	**		16bit/32bit	The diffuse direct surface lighting.
Lighting Analysis				—	16bit/32bit	Provides visual representation of the lighting intensity within a rendered frame.
Light Mix					16bit/32bit	Provides adjustment control to the lights in the scene from inside the New V-Ray Frame Buffer (VFB2).
Material ID Color			— (always off)	—	16bit/32bit	The material ID Color of the object.
Material ID Number					16bit/32bit	The material ID Number of the object.
Material Random Color					16bit/32bit	Creates colorful selection masks based on the material assignment in the scene.
Matte Shadow					16bit/32bit	The matte shadow part of the image
MultiMatte					16bit/32bit	Creates selection masks based on an object ID or material ID.
Normals and Bump				—	16bit/32bit	The normals generated by bump maps.
Object ID***			—	—	16bit/32bit	Object G-buffer ID.

Raw GI			**		16bit/32bit	The raw diffuse global illumination (not multiplied by the diffuse surface color). Only present if Global illumination is enabled.
Raw Light		–	**		16bit/32bit	The raw diffuse direct illumination before it's multiplied by the diffuse surface color.
Raw Reflection		–	**		16bit/32bit	The pure surface reflection before it's multiplied by the reflection filter color.
Raw Refraction		–	**		16bit/32bit	The pure surface refraction before it's multiplied by the refraction filter color.
Raw Shadow		–	**		16bit/32bit	The raw light that was blocked by other objects.
Raw Total Light		–			16bit/32bit	The sum of all raw lighting - direct and indirect.
Reflection			**		16bit/32bit	The reflections on the surface.
Reflection Filter		–	**		16bit/32bit	The reflection filter (the color by which the raw reflections are multiplied to give the final surface reflection). This may be considered as an alpha channel for the reflections.
Refraction		–	**		16bit/32bit	The refractions on the surface.
Refraction Filter		–	**		16bit/32bit	The refraction filter (the color by which the raw refractions are multiplied to give the final surface refraction). This may be considered as an alpha channel for the refractions.
Render ID			– (always off)	–	16bit/32bit	The node render ID of the object that contributes most to the pixel value.
Sample Rate	N/A	N/A	N/A	N/A	16bit/32bit	Shows an image where the pixel brightness is directly proportional to the number of samples taken at this pixel.
Self Illumination			**		16bit/32bit	The self-illumination of the surface.
Shadows		–	**		16bit/32bit	The diffuse light that was blocked by other objects.
Specular			**		16bit/32bit	The surface specular highlights.
Subsurface Scattering	–	–			16bit/32bit	Renders just the subsurface part of BRDFSSS2Complex material on a separate layer.
Total Light					16bit/32bit	The total lighting in the scene - direct and indirect.
Z-Depth				–	forced 32bit (for multi-channel files)	The z-depth of the surface.
Ambient Occlusion					16bit/32bit	Ambient occlusion effect.
Back to Beauty	–	–	–	–	16bit/32bit	Expands as all beauty elements for the actual rendering.

Footnotes

* For Standard materials, the V-RayLighting element includes the direct and indirect lighting as well as caustics, while the V-RayGlobalIllumination and V-RayCaustics elements are black. However for all materials, adding the V-RayLighting, V-RayGlobalIllumination and V-RayCaustics elements always gives the total diffuse surface lighting.

** When an element is filtered, it will dimmed by atmospheric effects like fog, etc. However, when an element is unfiltered, it will not be affected by atmospherics.

*** By selecting an object directly in the viewport, you can set, change or remove an Object ID. *Go to the Properties tab > V-Ray > Object ID.*

**** For all image formats except EXR the render elements depend on their respective channels' output settings.