

VRscan

This page provides some details in the settings available when using the VRScan Material in V-Ray.

Overview

The Scan material allows the rendering of scanned BRDF material data stored in .vrscan files. These files are produced by Chaos' own internal material scanner and accompanying material creator software.

With V-Ray 6, the Scanned Material doesn't require a separate from Chaos license to work correctly.

In earlier V-Ray versions, the Scanned Material requires a separate render license to work correctly. Without a license, the material renders with a watermark.

The scanned material renders the captured appearance of an actual physical material sample, that has been scanned with special scanner hardware. The material goes beyond single-point BRDF capture and can faithfully represent the textured appearance of a large number of real-world surfaces using bidirectional texture function (**BTF**) approximation.

Because the scanned material simply reproduces the way a physical material responds to light, it has no notion of "diffuse" or "reflection" components, "normal" or "bump" maps.

Currently, the material can render only opaque surfaces. Also, for the moment except for some general tint control, the material is unmodifiable - i.e. you can't change glossiness, increase reflectivity etc. You can only change the overall tint of the material. In its present form, the material is targeted at users that need to match exactly a given real-world sample.

The .vrscan files tend to be quite large as they need to pack a lot of data (they need to describe the BRDF of the material over its entire surface).

For more details on VRscans, please see the [Chaos Scans](#) documentation space for information on downloadable sample scenes and Frequently Asked Questions or visit the [Chaos Scans](#) website.



UI Paths

||V-Ray Asset Editor|| > **Materials** (right-click) > **VRScan**

||V-Ray Asset Editor|| > **Create Asset** (left-click) > **Materials** > **VRScan**

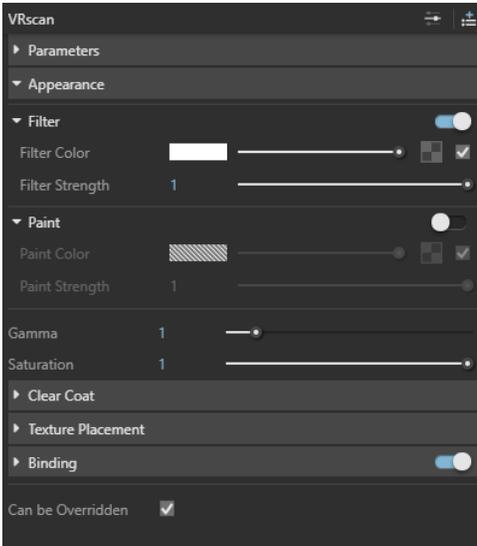
UI Options

From the **Add Attribute** button, you can select additional attributes that can add up to the appearance of the material. For more information, see [the Attributes section](#).

Holding down Ctrl while having the Add Attribute menu open, allows selecting multiple entries without closing the dropdown.

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.

A **Reset** option is provided in the context menu of each Number Slider. You can reset the slider value to the default one.



Parameters

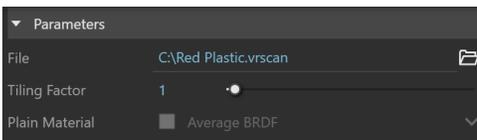
File – The file name with the data for the scanned material; usually has a .vrscan extension.

Tiling Factor – Global multiplier for U and V coordinates.

Plain Material – A strategy used for material display. It controls the visibility of textures (if present). Possible values are:

Average BRDF – Averages the BRDF and removes any anisotropy. This mode can be used on objects without proper UV coordinates.

Average isotropic BRDF – Averages the BRDF and can be used to speed up the rendering for previews. Because texture details are removed, this also removes any tiling artifacts that might arise if the scanned sample does not tile very well. UV coordinates are still needed because most BRDFs are slightly anisotropic.



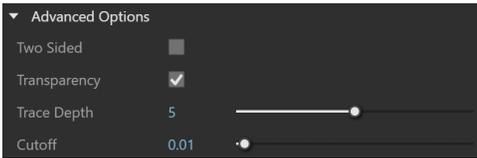
Advanced Options

Two Sided – Forces the back-facing polygons to be shaded in the same way as the front-facing ones. When this option is disabled, the back-facing polygons appear black.

Transparency – Disables transparency for materials that store such information. This can be useful for speeding up the rendering, especially when the transparency produces little or no effect.

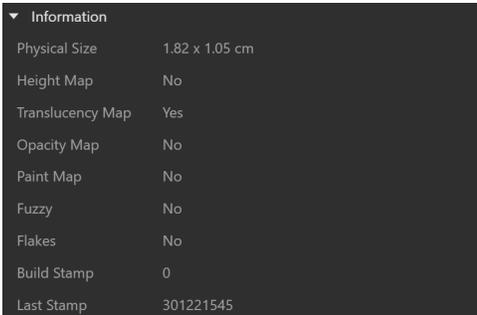
Trace Depth – Controls the number of reflection bounces. A value of -1 means that the reflection bounces are controlled by the global V-Ray trace depth in the Global switches rollout of the Renderer Settings.

Cutoff – A threshold used to speed up reflections. If the contribution of reflections falls below this threshold, the reflections are not traced. This is similar to the Cutoff threshold of the [V-Ray Generic](#) material.



Information

The section displays some useful information contained in the .vrscan file, like the actual material sample size.



Appearance

The Appearance parameters allow for further customization of the scanned material.

Filter – Enables the use of the color filter.

Filter Color – A color multiplier for the material sample and can be used to tint the material (it affects the color of the reflections as well as a post effect).

Filter Strength – Multiplies the effect of the filter.

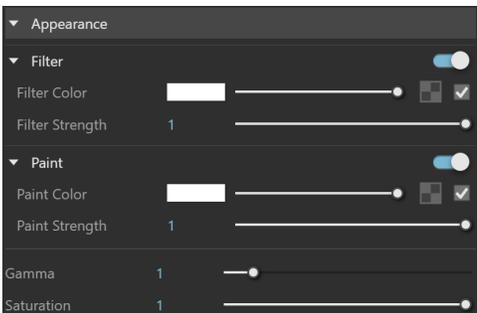
Paint – Enables the use of Paint Color.

Paint Color – Changes the color of the material without losing the texture or change the reflection color. For example, changing the color of wood or leather without losing their textures.

Paint Strength – Multiplies the effect of the paint.

Gamma – Adjusts the gamma of the material (including paint color and filter color if used) as a post effect.

Saturation – Controls the saturation of the material (including paint color and filter color if used) as a post effect.



Clear Coat

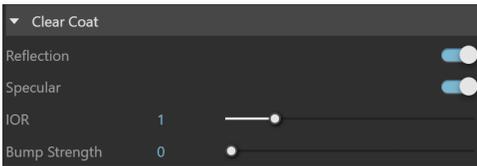
The clear coat parameters are similar to those found in the V-Ray Car Paint Material. These parameters are only available if while scanning an object, it is determined that the object possesses the properties of a material with a clear coat.

Reflection – Enables the tracing of a clear coat layer for the material's reflection.

Specular – Enables highlights from point light sources for the coat layer.

IOR – Determines the Index of Refraction of the coat layer and controls the strength of the reflections. A value of 1.0 does not produce any reflections and disables the coat layer. Higher values produce stronger clear coat reflections. The .vrscan file contains the correct value (typically 1.6) for this parameter, which is set automatically when the file is loaded but can be adjusted higher or lower if needed.

Bump Strength – The coat layer has a built-in bump map stored into the material sample file. This parameter allows control over the strength of that bump.



Texture Placement

Type – Controls how the texture is positioned on the geometry.

2D (UV Channel) – The texture uses the object UV coordinates.

Tri-Planar Projection – The texture will be automatically projected onto the object (along the X, Y, and Z object space axis). This works similarly to the [Tri-Planar](#) texture. Use the [Tiling Factor](#) parameter to change the projected texture size.

2D (UV Channel)

UV Channel/Set – Specifies the index of the mapping channel data to use. A value of 1 takes the first available channel.

Repeat U/V – Determines how many times the texture is repeated in the 0 to 1 UV square.

Lock U/V Repeat – Locks the U/V Repeat.

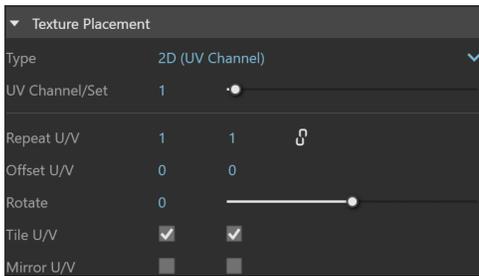
Offset U/V – Controls the texture offset in the U and V direction.

Rotate – Rotates the texture (in degrees).

Tile U/V – Tiles the texture in the U and V direction. If the option is disabled, the Default texture color is used outside the 0 to 1 UV square. Default color is found in Parameters > Color Manipulation.

Mirror U/V – Mirrors the texture in the U and V direction separately. The option cuts the texture in the half flipping one side vertically or horizontally. This can be used to avoid seams in-between non-tileable repeated textures.

Double-sided – This option should be enabled only if support for unique front and back face UVS is required. If enabled, channel "n" is used for front-side UVS and channel "n+1" is used for back-side UVS.

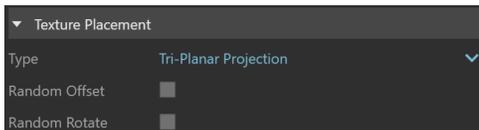


2D (UV Channel)

Tri-Planar Projection

Random Offset – Randomizes the texture offset. When rendering many instances using the same material, with this option enabled, you get variation of the look.

Random Rotate – Randomizes the material rotation from one object to another. When rendering many instances using the same material, with this option enabled, you get variation of the look.

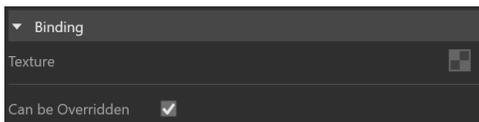


Tri-Planar Projection

Binding

Texture – Selected Bitmap texture is displayed in the viewport and it overrides all other material parameters. The viewport texture does not affect the way the material is rendered with V-Ray. It is mainly used for preview purposes.

Keep in mind that procedural textures are not shown in the viewport, however, any Bitmap textures, including ones nested in procedurals, will be automatically displayed.



Override Control

Can be Overridden – When enabled, the material can be overridden by the Material Override option in the Settings.

Attributes

The attributes from the following expandable menus are available for the **VRscan** material.

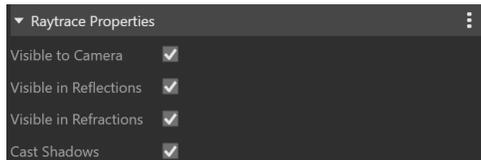
Raytrace Properties

Visible to Camera – When enabled, makes objects using this material visible to the camera.

Visible to Reflections – When enabled, this option makes objects using this material visible for to Reflection rays.

Visible to Refractions – When enabled, this option makes objects using this material visible for the Refraction rays.

Cast Shadows – When disabled, all objects with this material applied do not cast shadows.



Material ID

ID Number – Isolates objects as an R/G/B mask in the [MultiMatte](#) render elements.

ID Color – Allows you to specify a color to represent this material in the Material ID VFB render element.

Each material is assigned with an automatically generated ID Color.

