

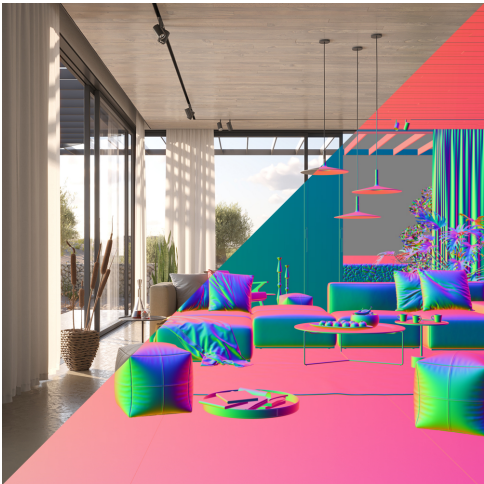
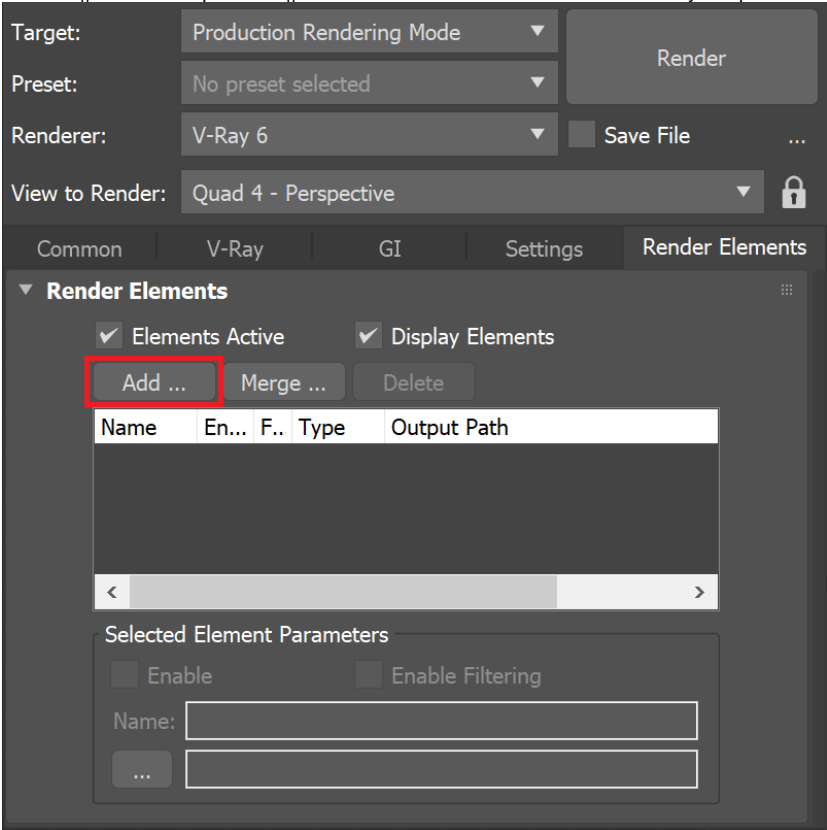
VRaySamplerInfo

This page gives information about the Sampler Info Render Element.

Overview

The Sampler Info Render Element is a color image that provides information about the scene, with the choice to show any of various aspects as color blocks. This render element provides information about various aspects of the shaded points such as position, normal, bump normal, reflection/refraction vectors and UVW coordinates. This render element can be used either for world position passes or normal passes. It extracts particular information about the scene, converting the gathered information into RGB data for use in compositing.

UI Path: ||Render Setup window|| > Render Elements tab > Add button > VRaySamplerInfo



Parameters

This render element is enabled through the Render Elements tab of the Render Setup window in 3ds Max and displays its parameters in a rollout at the bottom of the window:

VRayVFB – Enables the render element inside the V-Ray Frame Buffer.

Deep output – Specifies whether to include this render element in deep images.

Type – Controls the type of render element produced by VRaySamplerInfo:

Point – The X, Y, and Z coordinates of the point are converted to RGB data according to the **Coord system** that is set. This outputs a Position Pass for use in compositing.

Normal vector – The direction of the normal at the particular shaded point according to which **Coord system** is set.

Reflection vector – Commonly used for adjusting reflections in the composite.

Refraction vector – Commonly used for adjusting refractions in the composite.

UVW coordinates – Extracts the UVW coordinates of the object at the particular shaded point. This can be used to apply another texture at a composite level.

Normal vector with bump mapping – Produces the bump normal according to the **Coord system** that is set.

Backward occlusion – The red and green components of this render element represent the screen position of the shaded point at the beginning of the motion-blurred frame, while the blue component represents camera occlusion at the beginning of the motion-blurred frame. Together with the **Forward occlusion** render element, this can be used for denoising and/or post-process motion blur.

Forward occlusion – The red and green components of this render element represent the screen position of the shaded point at the end of the motion-blurred frame, while the blue component represents camera occlusion at the end of the motion-blurred frame. Together with the **Backward occlusion** render element, this can be used for denoising and/or post-process motion blur.

Integer ID from node user attribute – Extracts any integer node user property into an integer render element. Can be used as an extended Object ID.

Float number from node user attribute – Extracts any floating-point node user property into a single-channel floating-point render element. Can be used to extract additional masks.

Tangent vector in object space – Displays tangent vector according to the **Object space**.

Bitangent vector in object space – Displays bitangent vector according to the **Object space**.

Point multiplier – Acts as a multiplier when **Type** is set to **Point**.

Refract IOR – Sets the index of refraction when **Refraction vector** is set as the **Type**.

UVW channel – The UVW mapping channel used when the **Type** is set to **UVW coordinates**.

UVW mode – Specifies what happens to UVW values outside the 0.0-1.0 range of the unit texture square:

Normal – Stores the UVW coordinates without modification.

Clamp – UVW coordinates above 1.0 are clamped to 1.0, and values below 0.0 are clamped to 0.0.

Tile – Wraps the UVW coordinates to the unit texture square.

Coord system – Controls the coordinate system used:

World – X, Y, and Z coordinates (in world space) of the point are converted to RGB data.

Object – X, Y, and Z coordinates (in object space) of the point are converted to RGB data.

Camera – X, Y, and Z coordinates (in camera space) of the point are converted to RGB data.

Relative – X, Y, and Z coordinates in the object space of the **Relative node** are converted to RGB data.

Relative node – When **Coord system** is set to **Relative**, this specifies the scene node relative to which the point/vector data is stored.

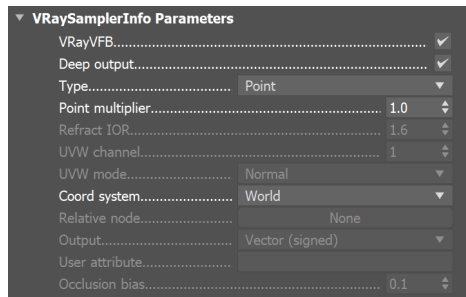
Output – Controls the way data is stored in the render element when the type is a normal vector, or a reflection/refraction direction:

Vector (signed) – Values are stored directly without modification, including negative components.

Color (unsigned) – Values are scaled down by 0.5 and offset by 0.5 so that (0, 0, 0) maps to (0.5, 0.5, 0.5), (-1, -1, -1) maps to (0, 0, 0) and (1,1,1) maps to (1,1,1). This avoids negative values which might be necessary for some compositing packages.

User attribute – Determines which user attribute to connect to when **Integer ID from node user attribute** or **Float number from node user attribute** are selected as **ype**.

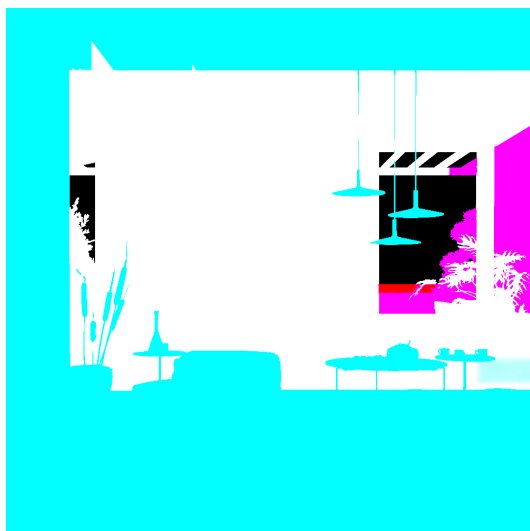
Occlusion bias – Controls the positional bias of the **Backward occlusion & Forward occlusion** types in order to prevent incorrect self-occlusion.



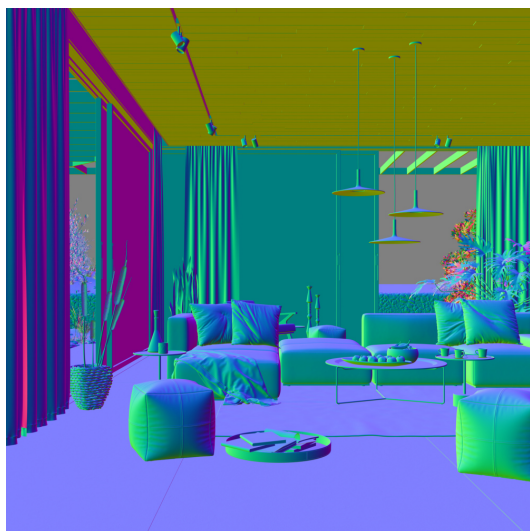
Common Uses

The **VRaySamplerInfoTex** texture extracts particular information about the scene. It then converts the gathered information into RGB data that can be used for compositing. Here are examples of the types of data that can be extracted, and how that data is displayed in the render element.

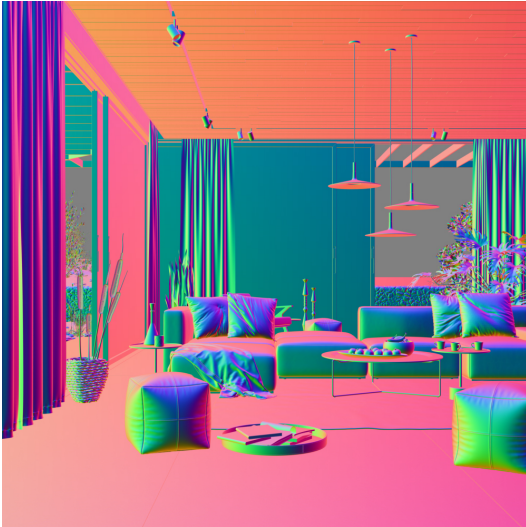
The following examples have the coordinates system set to world space.



Point Type in world space



Normal vector in world space

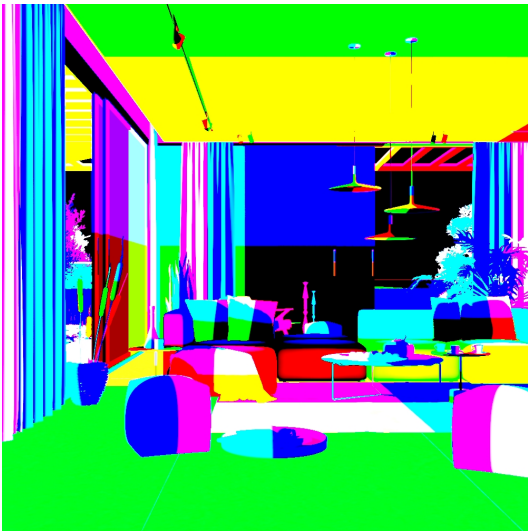


Reflection vector Type in world space

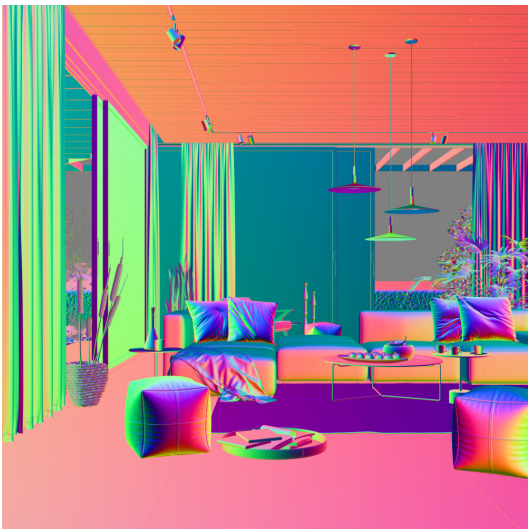


Refraction vector Type in world space

The following examples have the coordinate system set to object space.



Point Type in object space

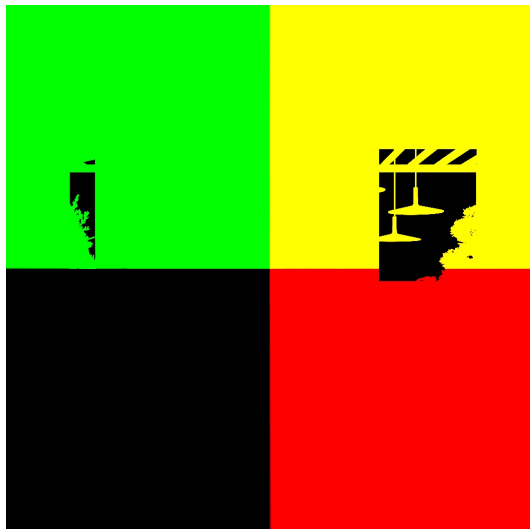


Reflection vector Type in object space

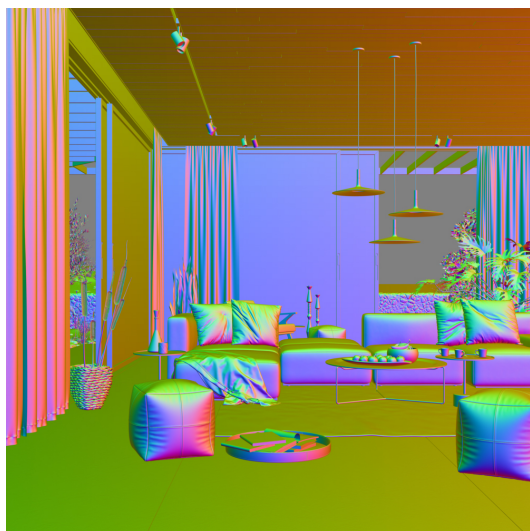


Refraction vector Type in object space

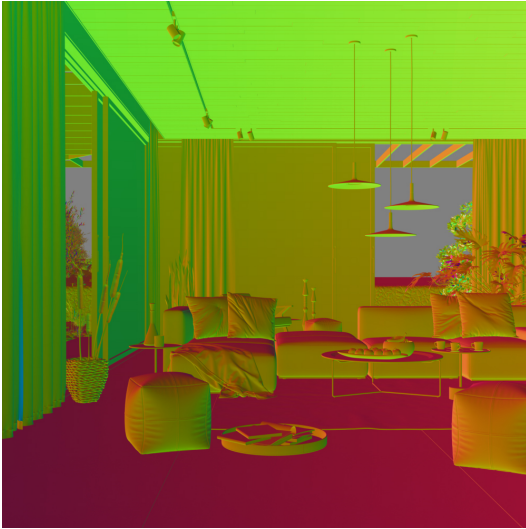
The following examples have the coordinates system set to camera space.



Point Type in camera space



Reflection vector in camera space



Refraction vector in camera space

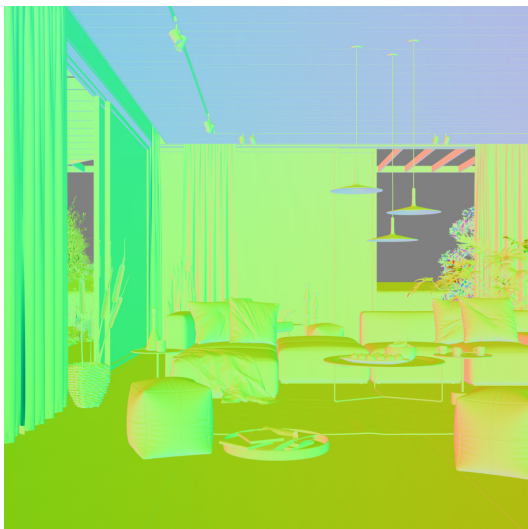
The following examples have the coordinates system set to relative space.



Point Type in relative space



Reflection vector Type in relative space



Refraction vector Type in relative space

Example: Re-texturing in composite

Using the V-RaySamplerInfo Render Element makes it possible to apply a new texture to an already rendered still or sequence via setting its **Type** to **UVW coordinates**. This then enables the creation of what effectively amounts to a new [Diffuse Filter Render Element](#) which can then be used in a composite, enabling a change of texture to be easily made. It is worth noting that any UV stretching on the model carries through into the UVW pass created by the V-RaySamplerInfo. See the render before and after compositing.

Before
After





Supported UVW Coordinate Types

The table below provides some details on the supported UVW coordinate types within the Sampler Info Render Element. Pass types such as **Normal**, **Normal vector with bump mapping**, **World coordinates** and **Point** can be used to relight a scene at a composite level. While **UVW coordinates** and Object coordinates can be used to re-texture items in a scene in composite. The **Reflection vector** type can be used to adjust or remap reflections, similarly the **Refraction vector** can do the same at a composite level for refractions. Some types such as the **Forward occlusion** and **Backwards occlusion** can be used together for denoising and/or post-process motion blur.

The **Integer ID from node user attribute** can be used as an extended Object ID and the **Float number from node user attribute** can be used to extract additional masks.

Pass Type	Coord. System	UVW Mode	Output	V-Ray Render	V-Ray GPU
Point	World			✓	✓
Point	Object			✓	✗

Point	Camera			✓	✓
Point	Relative			✓	✗
Normal	World		Vector (signed) or Color (unsigned)	✓	PARTIAL
Normal	Object		Vector (signed) or Color (unsigned)	✓	✗
Normal	Camera		Vector (signed) or Color (unsigned)	✓	PARTIAL
Normal	Relative		Vector (signed) or Color (unsigned)	✓	PARTIAL
Reflection	World		Vector (signed) or Color (unsigned)	✓	✗
Reflection	Object		Vector (signed) or Color (unsigned)	✓	✗
Reflection	Camera		Vector (signed) or Color (unsigned)	✓	✗
Reflection	Relative		Vector (signed) or Color (unsigned)	✓	✗
Refraction	World		Vector (signed) or Color (unsigned)	✓	✗
Refraction	Object		Vector (signed) or Color (unsigned)	✓	✗
Refraction	Camera		Vector (signed) or Color (unsigned)	✓	✗
Refraction	Relative		Vector (signed) or Color (unsigned)	✓	✗
UVW coordinates		Normal		✓	✓
UVW coordinates		Clamp		✓	✓
UVW coordinates		Tile		✓	✗
Normal vector with bump mapping	World		Vector (signed) or Color (unsigned)	✓	✗
Normal vector with bump mapping	Object		Vector (signed) or Color (unsigned)	✓	✗
Normal vector with bump mapping	Camera		Vector (signed) or Color (unsigned)	✓	✗
Normal vector with bump mapping	Relative		Vector (signed) or Color (unsigned)	✓	✗
Backwards occlusion				✓	✗
Forward occlusion				✓	✗
Integer ID from node user attribute				✓	✓
Float number from node user attribute				✓	✓