Refraction Filter

This page gives some basic details about the Refraction Filter Render Element and how it is used in compositing.

Overview

The Refraction Filter Render Element is an image that stores refraction information calculated from the materials' refraction values in the scene. Materials with no refraction values appear as black, while refractive materials appear as white (maximum refraction) or gray (lesser amounts of refraction). If any hue (color) is specified in the material's Refractive Color parameter, that hue and value will be represented here in the Refraction Filter as well as being affected by the refraction's Amount parameter.

In comparison, the Raw Refraction Render Element (vrayRE_Raw_Refraction) is a color render element that takes materials and their colors into account when rendering refraction. Multiplying these two render elements together produces the Refraction Render Element (vrayRE_Refraction).

To properly calculate the Refraction Filter Render Element, the Refraction Render Element must also be added to the list of render elements being calculated during the rendering process to properly determine all the refraction information in the scene.

UI Path: ||Display Render Settings button|| > Render Elements tab > Refraction Filter
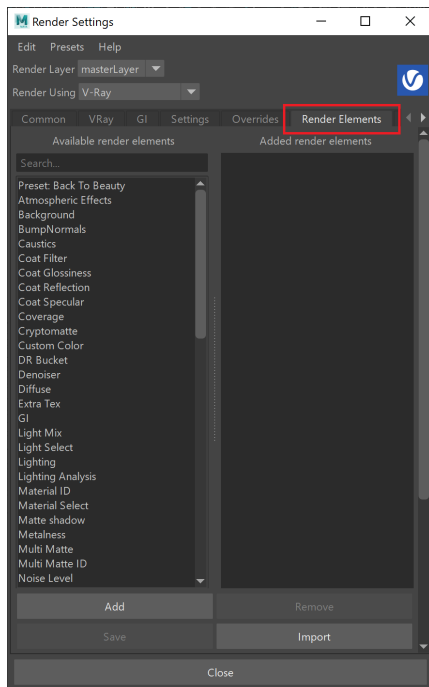
To use render elements, select from the Available render elements column and click the **Add** button to add the passes you wish to generate at render time. When you render the scene, the added render elements listed in the column on the right, will also render, which can be viewed from the VFB window's channel drop-down menu.

For more information on the parameters on this dialog, see the Render Elements tab page.
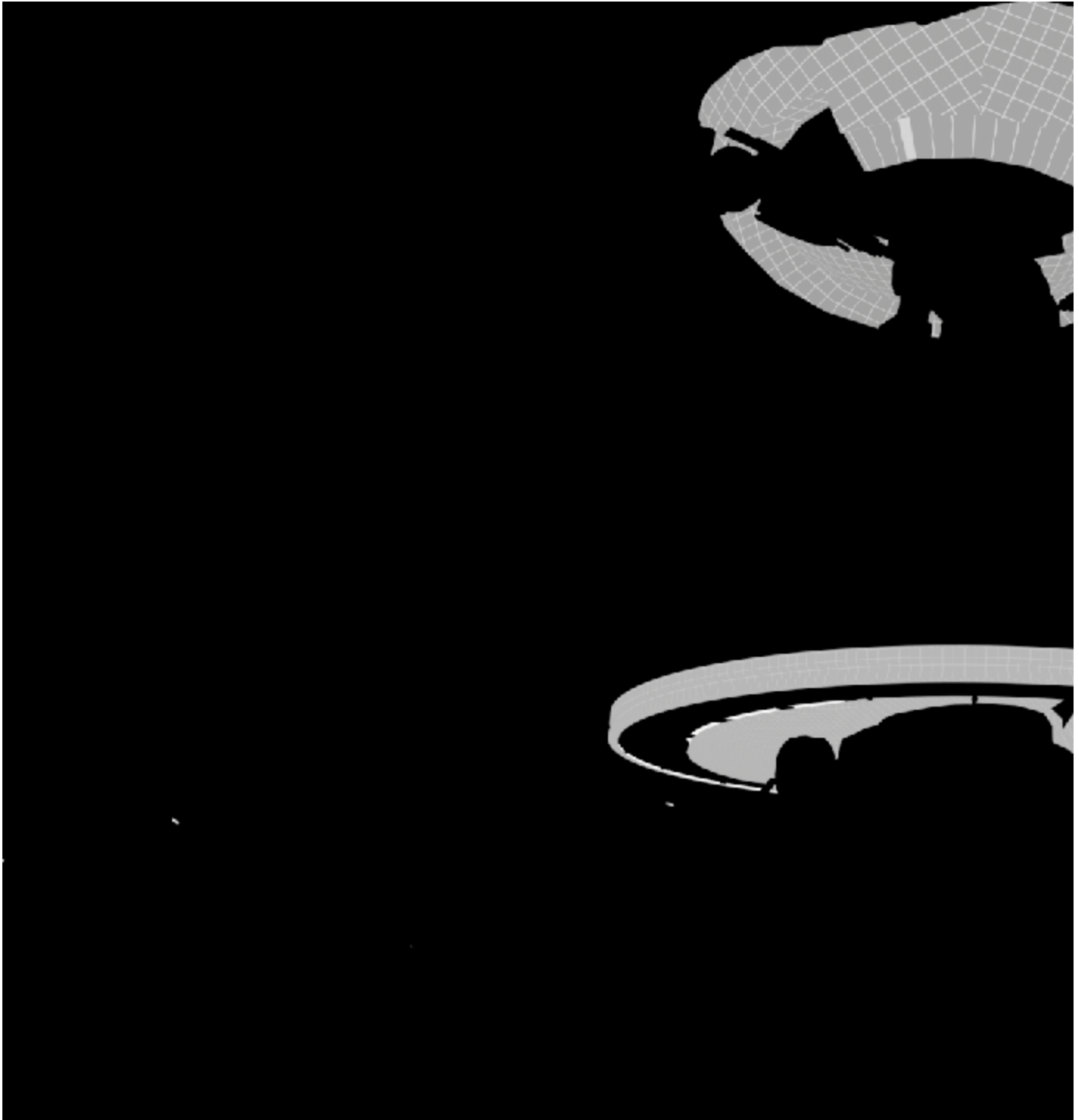
Attributes

The parameters for this render element appear in the Attribute Editor under Extra V-Ray Attributes.

Enabled – When enabled, the render element appears in the V-Ray Virtual Frame Buffer.

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

Filename suffix – The text added to the end of the rendered file, when saved as a separate file (e.g. myrender.refractionFilter.vrimg).
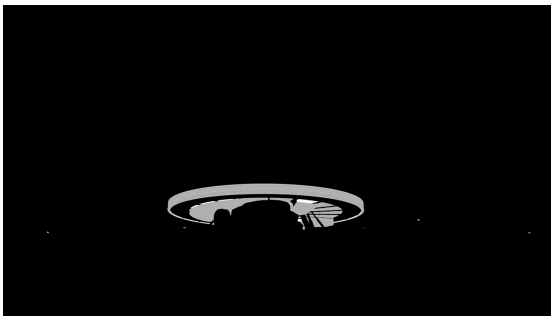
Denoise – Enables the render element's denoising, provided the Denoiser render element is present.
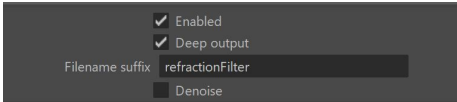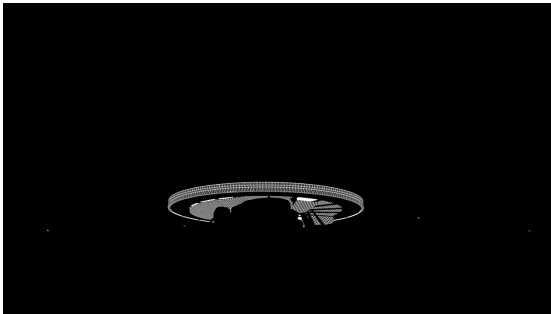
Common Uses

The Refraction Filter Render Element is useful for changing the appearance of refractive elements after rendering, using a compositing or image editing application. Below are examples of possible uses.
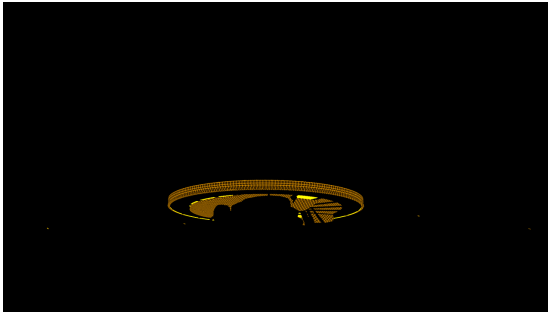

Refraction Filter Render Element

Original Beauty Composite

Refraction Filter Render Element with added contrast

Tinted Refraction Filter Render Element with added contrast


Refractions with added contrast

Tinted Refractions with added contrast

Underlying Compositing Equation

The Refraction Filter Render Element is multiplied by the Raw Refraction to produce the same information seen in the Refraction pass, but having them separated out allows them to be manipulated individually before combining them together.

vrayRE_Raw_Refraction x vrayRE_Refraction_Filter = vrayRE_Refraction

Raw Refraction

Refraction Filter
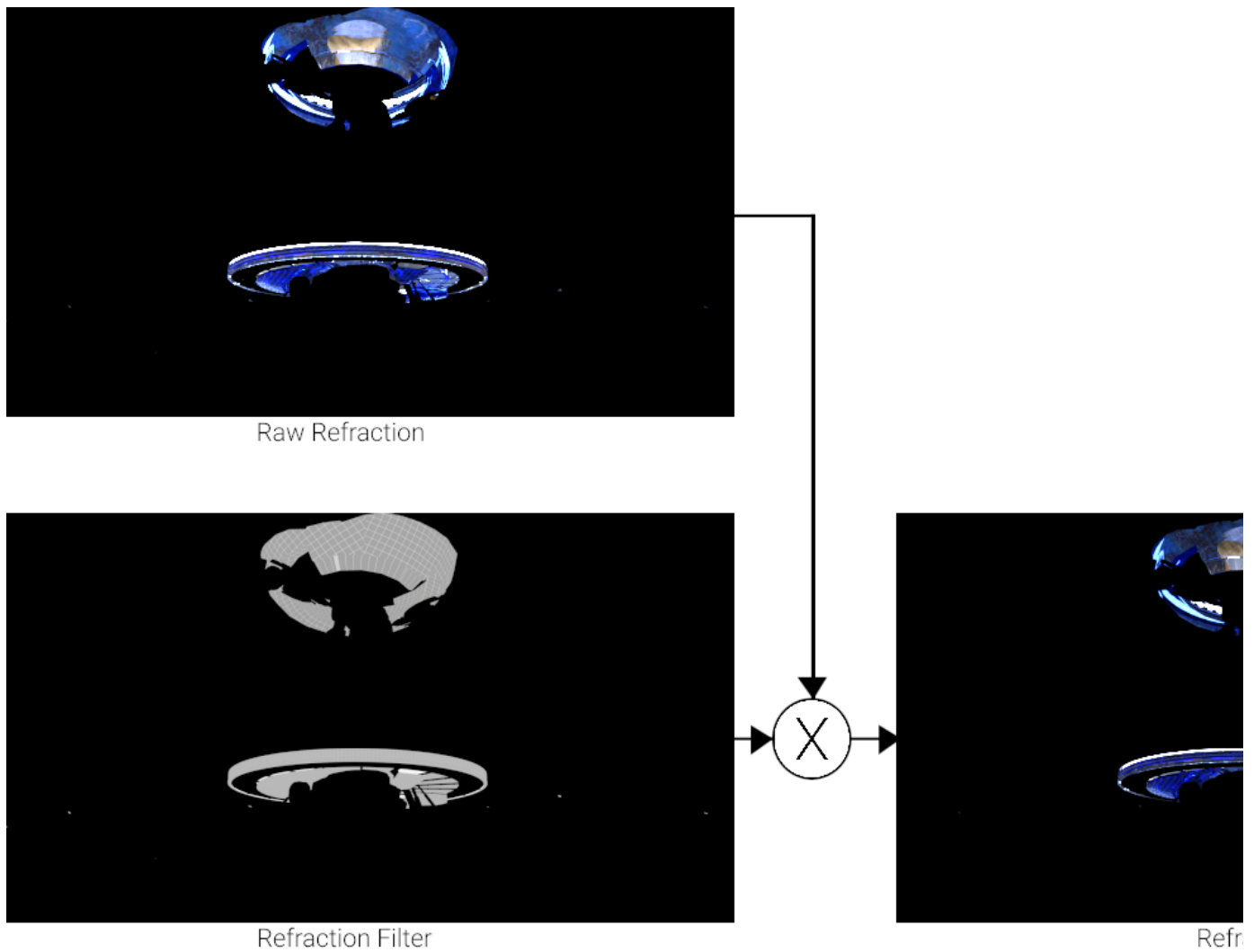
Refr

Notes

- To properly calculate the refraction information in the Refraction Filter and Raw Refraction Render Elements, the Refraction Render Element must also be rendered at the same time, even if it's not going to be used in the compositing process. Doing so enables all the refraction information to be included in the rendering calculations.