URP - Glass Shader | **Ciconia Studio**

Overview

The Built-in and URP packages contain 2 Glass shaders : CS_Glass and CS_Glass (IOR).
CS_Glass(IOR) give a more accurate result almost instantly but can only be used in forward rendering path.
CS_Glass offers more parameters and give more freedom to create different glass renderings.

An object with an index of refraction (IOR) >1.01 will not be able to refract correctly an object contained inside (like water for example).
CS_SimpleLiquid(IOR) only support Built-In render. You can use this shader to add refraction to the liquid.

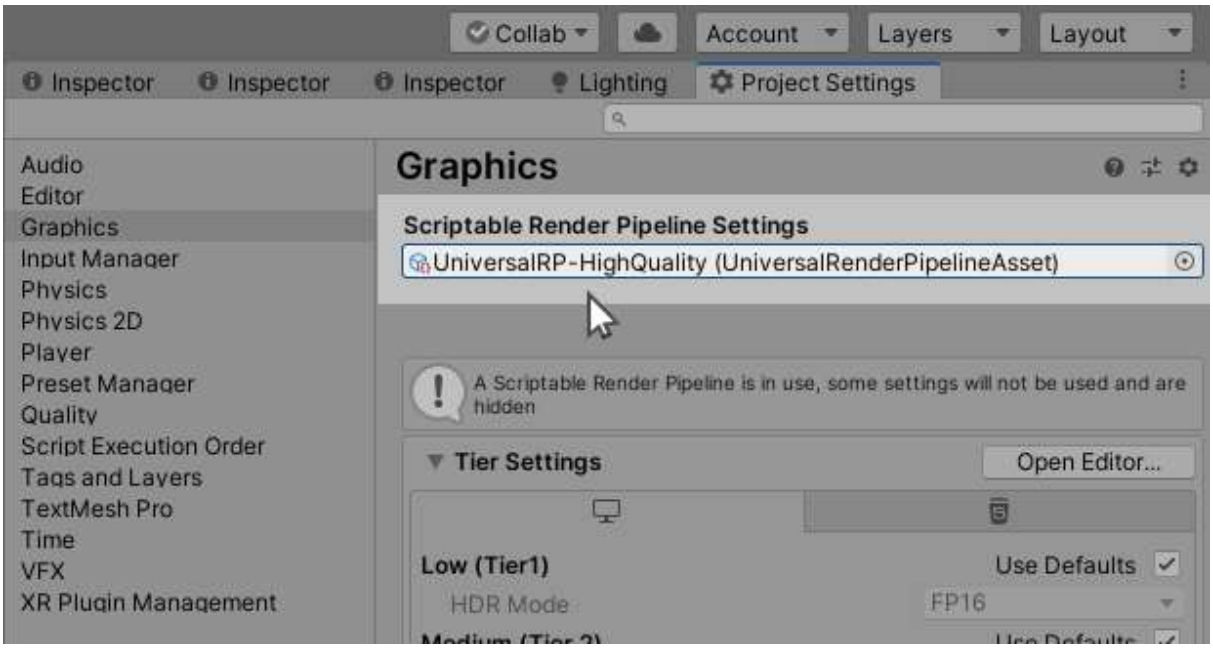
To visualize correctly the **demo scene** included make sure to enable **Linear color space** rendering in the player settings (Project Settings/Player/Other Settings).

URP Setup

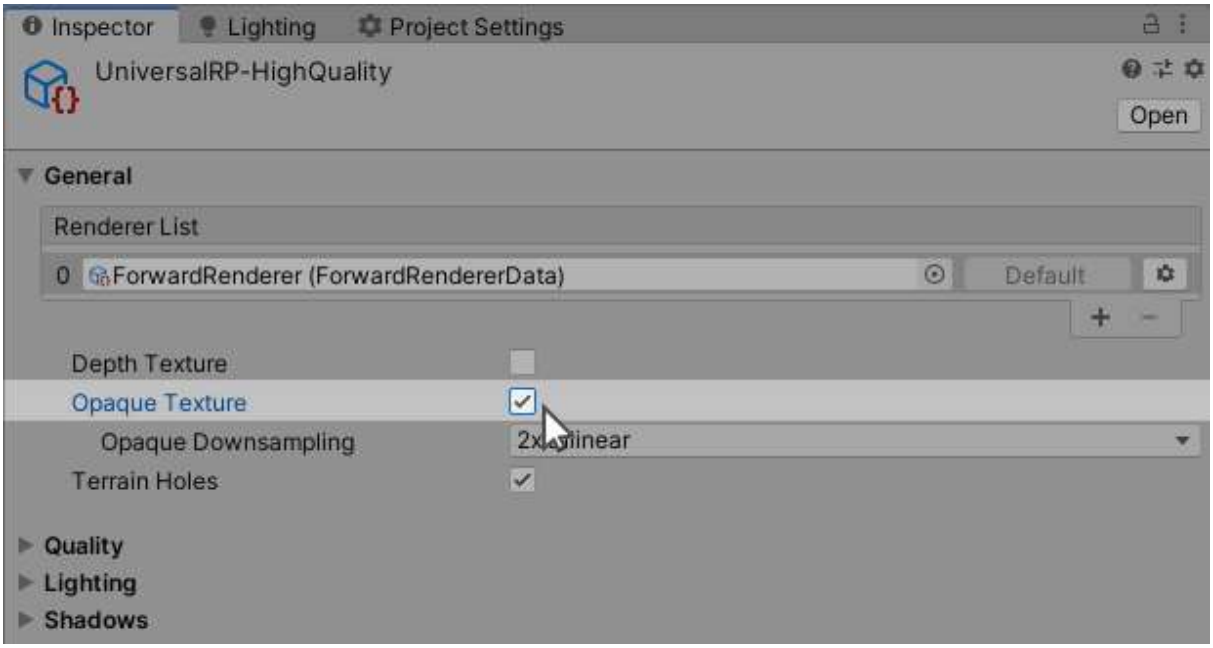
Support Unity versions
2019.4.0 or higher

First delete the Builtin folder and unpack the URP-Glass shaders.unitypackage. In order to use the shaders with the Universal Render Pipeline you will need to enable the Opaque Texture toggle in the pipeline asset inspector.

Go to Edit/Project Settings/Graphics.



Go to the UniversalRenderPipelineAsset's inspector and enable Opaque Texture.



Shader Parameter

Global Properties | These properties affect all the maps selected in the Main Properties.

Tiling X/Y – Controls the texture repetition on the X and Y axis.

Offset X/Y – Controls the texture offset on the X and Y axis.

Cull Mode –
Back | Don't render polygons that are facing away from the viewer *(default)* i.e. back-facing polygons are culled.
Front | Don't render polygons that are facing towards the viewer. Used for turning objects inside-out.
Off | Disables culling - all faces are drawn. Used for special effects.

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ZWrite – Controls whether **pixels** from this object are written to the **depth buffer** (default is *On*). If you're drawing solid objects, leave this on. If you're drawing semitransparent effects, switch to ZWrite Off.

Main Properties | These properties affect all the maps selected in the Main Properties.

Color – Specifies the RGB color of the glass.

Albedo -->(Mask A) – Selects a color map. The alpha channel is used if "Use AlbedoA" is checked in the transparency Properties section. Black is fully transparent.

Saturation – Controls the amount of saturate or desaturate of the Albedo map.

Brightness – Controls the amount of brightness of the Albedo map.

Metallic(SmoothnessA) – Selects a metallic map. Specifies a roughness map in the alpha. channel.

Metallic – Controls the amount of metallic reflection.

Smoothness – Controls the amount of glossiness reflection.

Normal Map – Selects a normal map.

Scale – Controls the normal intensity.

Refraction – Controls the amount of refraction. The refraction is affected by the normal map and the surface normal.

Ambient Occlusion Map – Selects an ambient occlusion map.

Ao Intensity – Controls the intensity of ambient occlusion.

Self Illumination | These properties simulate the amount of light passing through the glass. Enabled only if Opacity > 0.

Intensity – Controls the intensity of the lighting.

Reflection Properties | These properties control the additional reflections.

Color – Specifies the RGB color of the reflection.

Cubemap – Selects a cubemap.

Reflection Intensity – Controls the intensity of the reflection.

Blur – Specifies the amount of blur.

Color Fresnel – Specifies the RGB color of the Fresnel.

Use Cubemap – Enables or disables additional cubemap reflection on the Fresnel effect.

Fresnel Strength – Controls the intensity of Fresnel.

Power – Controls the spread amount of the Fresnel. The higher this value is, the more contrasted the Fresnel will be.

Transparency Properties | These properties control the opacity of the glass.

Opacity – Controls the amount of transparency.

Use AlbedoA – Use the grayscale map packed is the alpha channel.

Invert – Inverts the alpha channel.

Use smoothness – Use the smoothness map packed is the alpha channel.

Falloff Opacity – Enables or disables the falloff effect.

Invert – Inverts the falloff.

Falloff Intensity – Controls the intensity of the falloff.

Power – Controls the spread amount of the falloff. The higher this value is, the more contrasted the Fresnel will be.

Fade Properties | These properties control the fade of the model.

Fade – Controls the amount of fade.

Exclude Decal – Enables or disables the Decal maps from the fade effect.

Falloff – Enables or disables the falloff effect. To use it properly, set the Fade value to 0.

Invert – Inverts the falloff.

Falloff Intensity – Controls the intensity of the falloff.

Power – Controls the spread amount of the falloff. The higher this value is, the more contrasted the Fresnel will be.

Decal Properties | These properties control the decal details.

Color -->(Transparency A) – Specifies the RGB color of the decal. The alpha vector controls the transparency.

Decal Map -->(Mask A)– Selects a color map. The alpha channel is used as mask for the transparency. Black is fully transparent.

Saturation – Controls the amount of saturation of the Decal map.

Metallic– Controls the amount of metallic reflection.

Smoothness– Controls the amount of glossiness reflection.

Reflection– Controls the amount of reflection defined in the Reflection Properties section.

Normal Map– Selects a normal map.

Scale– Controls the normal intensity.

Normal Blend– Allows you to blend the decal normal map with the normal map assigned in the Main Properties.

Rotation – Determines the angle of rotation in degrees of the decal maps.

Emission Color – Controls the emission color of the Decal map.

Emission Intensity – Controls the intensity of the emission.