Snow Shaders | Ciconia Studio

[Online Documentation]

Overview

Redesign your levels in snowy scenes. This pack contains a set of shaders with advanced features that will allow you to completely or partially cover your models with snow.

This pack includes 3 shaders with different levels of complexity. Choose the one that best suits your needs.

Shaders :

- Snow Basic
  Fastest shader to add glittering effect on all or selected parts of a model. Perfect for ground fully covered in snow or for models that already contain a painted snow texture in their base color.

- Snow Lite
  Have complete control over the projection of snow on all types of models. Use a detail map and auto top projection snow accumulation to combine a fully textured model into a snowy model.

- Snow Pro
  Includes detail map with triplanar projection and Top and Bottom snow accumulation. Have the greatest level of control for the best results.

Features :

- Built-In and URP support.

- PBR Metallic Workflow.
- Metallic, Ao, Height map and Smoothness channel-packed Textures.
- Heightmap support for both RP.
- Blend standard shader with snow effect.
- Glittering effect.
- Choose between Smoothness and Emissive Sparkle mode.
- Add snow effect using a Mask map.
- Snow accumulation on top and bottom of any meshes using World Space Projection.
- Advanced control on snow blending.
- Mask the glittering effect by shadow.

URP Package :
Supported Unity versions
2019.4.x and higher

HDRP Package :
Supported Unity versions
2019.4 LTS
2020.3 LTS

The package comes with demo scenes for each shader using 1k and 2k textures in .png format.

URP Setup

Support Unity versions
2019.4.x and higher

First delete the Builtin folder and unpack the URP-Snow shaders.unitypackage.

Tutorials

Videos |

URP set up
Tutorial

Snow Pro
Preview 1

Shader Properties

Shaders Pro

Base Layer (R) | These properties affect all the maps selected in the Main Properties.

Global --> XY(TilingXY) - ZW(OffsetXY) – Controls the Tiling and the Offset of all maps contained in this layer

Color – Specifies the RGB color of the model.

Invert Alpha – Inverts the alpha channel.

Base Color – Selects a color map.

Saturation – Controls the amount of saturate or desaturate of the Base Color map.

Brightness – Controls the amount of brightness of the Base Color Map

Normal Map – Selects a normal map.

Normal Intensity – Controls the normal intensity.

Mask Map -->M(R) - Ao(G) - H(B) - S(A) – It's a channel-packed textures which store multiple maps in one. The Metallic in the red channel, the Ambient occlusion in the Green, the Height map in the Blue one and the smoothness in the Alpha channel. Find more information about Unity Channel packed texture here.

Metallic – Controls the amount of metallic reflection.

Smoothness – Controls the amount of glossiness reflection.

Height Scale – Controls the height intensity.

Ao Intensity – Controls the intensity of ambient occlusion.

Emission Color – Specifies the HDR color for the emission.

Emission Map – Selects an emission map.

Intensity – Controls the emission intensity.

Mask Properties | These properties control the mask for the snow effects.

Visualize Mask – Enables or disables the detail mask visualization.

Fill Mask – Only Available for the Basic Version. Fill the mask with white value. This makes the glitters 100% visible.

Source – Selects between the Detail Mask, the BaseColor Alpha from the Main property or the combination of both maps to display the snow maps.

Exclude BaseColor Alpha – Uses the alpha of the BaseColor to preserve the areas of the model where snow should not appear.

Coverage : Top – Project the snow effect only on polygons facing upwards.

Invert Mask – Inverts the alpha channel. If no detail mask is selected, enabling this property will be defined a white color by default.

Detail Mask – Selects a detail mask map. If no map is selected, the detail mask map will be black by default. Black value means no snow effect.

Intensity – Controls the intensity of the detail mask.

Contrast – Controls the amount of contrast of the detail mask.

Spread – Controls the diffusion amount of the detail mask. This property is used to increase or decrease the white or black values. The black areas will show only the main properties and mask the snow maps.

The default value is set to 0.5.

If a map is selected in the Detail Mask slot a value of 0 means 100% black and the value of 1 means 100% white. A value of 0.5 will use the detail map without major grayscale variations.

If no map is selected, regardless of the value selected, the detail mask map will be black by default. At this stage, by inverting the Mask the result will be 100% white

Snow Properties | These properties control the snow effects.

Global --> XY(TilingXY) - ZW(OffsetXY) – Controls the Tiling and the Offset of all maps contained in this layer

Color – Specifies the RGB color of the model.

Base Color – Selects a color map.

Saturation – Controls the amount of saturate or desaturate of the Base Color map.

Brightness – Controls the amount of brightness of the Base Color Map

Normal Map – Selects a normal map.

Normal Intensity – Controls the normal intensity.

Blend Normal – Blends this normal map with the normal selected in the main properties.

Mask Map -->M(R) - Ao(G) - H(B) - S(A) – It's a channel-packed textures which store multiple maps in one. The Metallic in the red channel, the Ambient occlusion in the Green, the Height map in the Blue one and the smoothness in the Alpha channel.
Find more information about Unity Channel packed texture here.

Metallic – Controls the amount of metallic reflection.

Smoothness – Controls the amount of glossiness reflection.

Height Scale – Controls the height intensity.

Ao Intensity – Controls the intensity of ambient occlusion.

___ Sparkles Properties ___ *Controls the glittering effect*

Source – Selects between Smoothness or Emissive mode. None, will disable the glitters.

Selecting smoothness, the glittering effect will only be visible depending on the light position. RGB map is in supported.

Emissve mode, will display the glittering everywhere. RGB map in supported.

Both mode use shadow masking property.

Blending Mode Additive – Enabled only if SmoothnessSparkles is selected above. By default, the blending mode is set to lighten.

The smoothness map from the snow properties and the sparkles map will blend smoothly. Thus, increasing the smoothness value from the smoothness map will gradually mask the white value of the sparkles until they are completely gone.

Enable this property, if you plan to use a smoothness value greater than 0.3.

Visualize Maps – Visualize the maps to configure them more easily.

Sparkle Mask – The Sparkle Map is stored in RGB channels. The Dot Mask is stored in the alpha (the white value will specify where the sparkle will be visible.).
The package comes with three Sparkle Mask.Sparkle Mask_Crystals Color 01_DotMaskx3 A is selected by default.

Dot Mask – *Affects only the map contained in the alpha channel of the Sparkle Mask*

Tiling – Controls the XY Tiling of the Dot mask.

Intensity – Controls the intensity of the Dot mask.

Contrast – Controls the amount of contrast of the Dot mask.

Spread – Controls the diffusion amount of the Dot mask. For custom map, keeping a value between 0.4 and 0.6 should work in most cases.

Sparkle Map – *Affects the maps contained in the RGB channel of the Sparkle Mask*

Tiling – Controls the XY Tiling of the Sparkle map.

Intensity – Controls the intensity of the Sparkle map.

Contrast – Controls the amount of contrast of the Sparkle map.

Amount – Controls the amount of sparkle dots.

Custom Properties – *Affects the sparkle effect*

Tiling Instance – This value will multiply both of the DotMask and Sparkle Map Tiling values.

Sparkle Power – Increases the Intensity of the glitters. May cause an unexpected result in Smoothness mode (keep a value between 1 and 1.5).

Desaturate – Controls the amount of desaturation of the Sparkle map. If the sparkle source is set to Smoothness, the sparkle are automatically desaturated, since smoothness only takes into account grayscale values.

Shadow Mask – Use this property to hide the sparkles in contact with all the shadows cast by the directional light.

Ao Mask – Mask the sparkles using the Ao map stored in the Mask map. The Mask intensity depends on the Ao Intensity slider.

___ Snow Accum ___ *Controls the accumulation of the snow, top and bottom*

Enable Top Accum – Enables the snow projection on top of the model.

Coverage : All – Enables the projection of snow on the whole model from top to bottom By default, the snow effect is only projected on polygons facing upwards.

Intensity – Controls the intensity of the snow.

Coverage Amount– Controls the snow diffusion from the top to bottom.

Gradient Blend– Controls the blending contrast of the snow with the main maps. The higher this value, the more contrasting the blending will be.

Enable Bottom Accum– Enables the snow projection at the bottom of the model.

Intensity – Controls the intensity of the snow.

Coverage Amount– Controls the snow diffusion from the bottom to the top.

Gradient Blend– Controls the blending contrast of the snow with the main maps. The higher this value, the more contrasting the blending will be.

Source Blend – *Customization of the mix between snow and main properties*

Source – Selects between Heightmap, noise or the combination of both, to display the blending of the snow effect.

Sharpen Edge – Defines a sharper blending according to the sources selected.

By selecting the heightmap in the source properties, the snow will be blended using the height information.

By using the Noise, the snow will be blended using a noise pattern.

Noise Scale – Controls the tiling of the noise

Shaders Lite

Please refer to the Pro versions. The Lite shaders are a simplified version that contain fewer properties.