2020-01-31

Cineware by Maxon – Documentation

Created by Maxon Computer GmbH

Cineware by Maxon - Introduction

Version 1.0.302262

Cinema 4D is a professional 3D modeling, animation, and rendering software solution. Its fast, powerful, flexible and stable toolset conquer the complex challenges of 3D content creation for design, motion design, VFX, games and visualization professionals. Cinema 4D is the most accessible 3D software package on the market and provides a uniquely efficient workflow. A playground-like feel gives artists the freedom to be creative - producing outstanding results, whether working on their own or in a team. For more information visit https://www.maxon.net/cinema-4d

The Cineware for Unity plug-in allows you to quickly and easily import Cinema 4D files into Unity by translating .c4d files into native Unity asset formats. No Cinema 4D license is required to import translated files into the editor. All you have to do is make sure Cinema 4D scenes have been "Saved for Cineware". By default, imported assets will appear relative to the asset folder or imported asset, and the plug-in also supports user-defined folder hierarchies. Works with C4D Release 21.

How to Install

Download the package from the Unity Asset Store and click the import button. Alternatively, if you retrieved the package from a different source, simply drag and drop the .unitypackage into an active Unity project.

Limitations
The plug-in works for Unity versions 2019.3.0 and later.
Previous versions of the engine will not free the .c4d extension to be handled by this newer plug-in.
Older versions of the Unity engine cannot be used in conjunction with the new plug-in to open .c4d files.

How to Use

After a successful import of the package you can add .c4d files to your project in whichever way suits your needs. Either drag & drop a file into the Project window or right click within the Project window and select "Import new Asset".

Limitations
Please be aware that all files must be saved using the "Save for Cineware" command ("Save for Melange" in older Cinema 4D versions).

Registration

The plug-in does not require the installation of Cinema 4D or a Cinema 4D license. It does require an active Maxon account, which can be created for free. After the first import on a machine, the user has a grace period of 14 days to create an account. If no account is created in this time, the plug-in will no longer import assets.

Supported Components

Translation, Scale, Rotation

Position, Scale and Rotation are mapped to Unity's Transform component.

The relative **Position** is mapped with Transform.localPosition. The value in Cinema 4D is multiplied with the import scale settings. Supports animation.

The relative **Scale** is mapped with Transform.localScale. Supports animation.

The relative **Rotation** is mapped with Transform.localRotation. Supports animation.
Please note that all rotation animations are baked down to keyframes on import and Quaternion continuity is applied.

Geometry

All geometry is triangulated on import and stored in Unity's Mesh object. **Selection Tags** in Cinema 4D are imported as Submeshes.

Imported vertices data

Positions are mapped to Mesh.vertices. The value in Cinema 4D is multiplied with the import scale settings.

Normals are mapped to Mesh.normals. A Normal Tag has a higher priority than a Phong Tag. Should there be no defined normals, the plug-in recalculates normals, tangents and bounds on import.

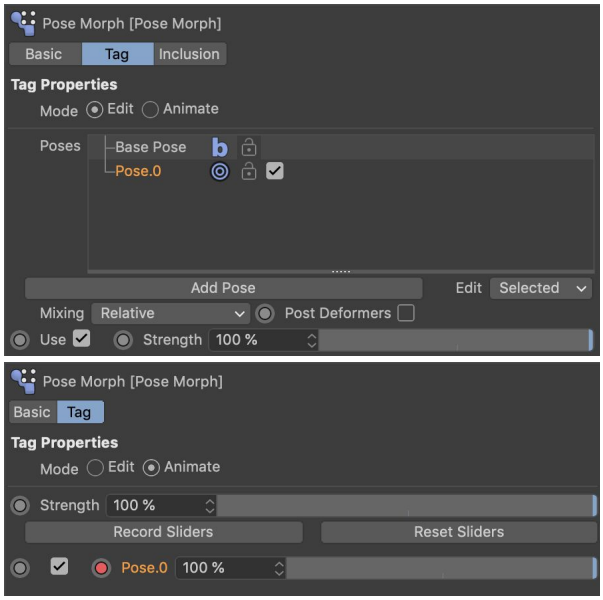
UV are mapped to Mesh.uv. Cinema 4D sets the origin of the UV space on the upper left corner. This means the V coordinates are inverted on import.

Vertex Colors are mapped to Mesh.color. Both layouts Points Only and Polygon Points are supported.

Skin Deformer maps the influences of joints per vertex to Mesh.boneWeights and applies a Skinned Mesh Renderer to the GameObject. The amount of influences is limited to 4 bones per vertex.

Pose Morph are mapped to Unity's Blendshapes. This applies a Skinned Mesh Renderer to the GameObject. When working with the Pose Morph Tag the Base Pose vertices are imported as default geometry and applied to Mesh.vertices.

Due to the access pattern of animations within Unity special name characters are replaced with an underscore. The Strength slider of each pose is mapped to the Blend Shape influence in Unity. Supports animation.



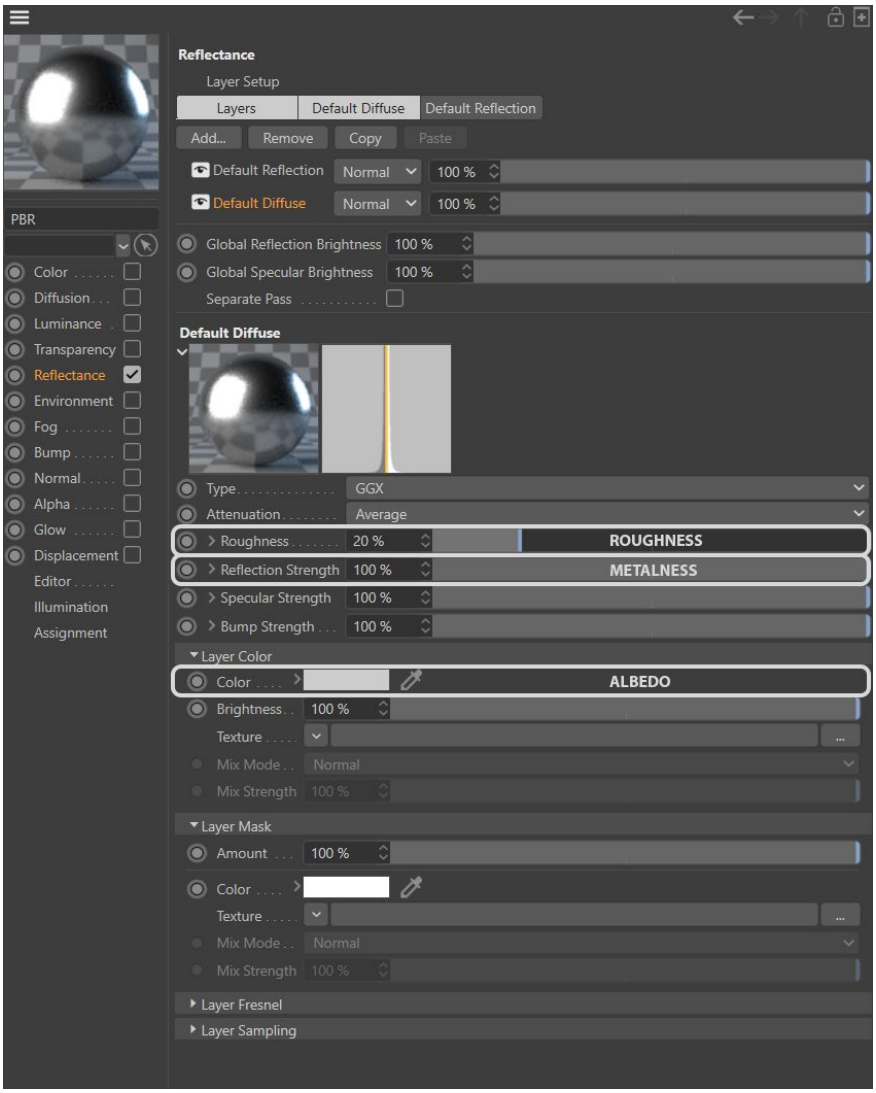
Materials

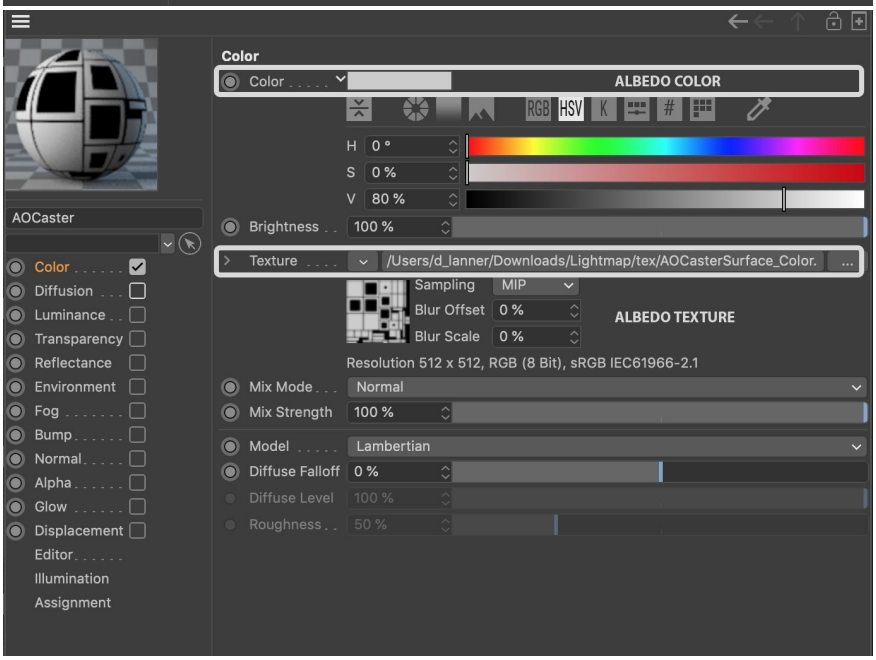
Per default the plug-in creates a Material of the Autodesk Interactive Shader. Objects without a material applied share a generated default material. Differing properties of UV tiling and offset within the projection settings of the Material tag trigger a duplication of the material and the UV sampling information will be applied across all texture samplers within the Unity material.

Albedo, Metal, Rough

Within the Reflectance Layer of the Material Editor the importer maps the values of **Roughness**, **Reflection Strength** and **Color** in the Color Layer.

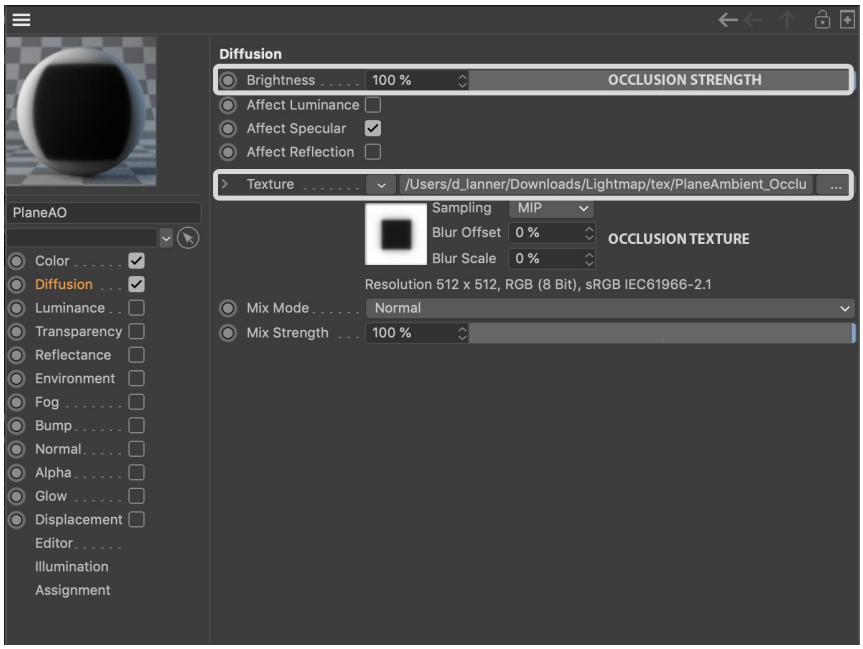
Alternatively, if the Reflectance channel is not active, the importer maps the values of the Color Channel as Albedo values and sets Metal and Roughness within Unity to 0.5





Diffusion / Occlusion

Within the Diffusion Layer of the Material Editor the importer maps the values of **Brightness** to Occlusion Strength and **Texture** to Occlusion Texture.



Bump / Height / Parallax

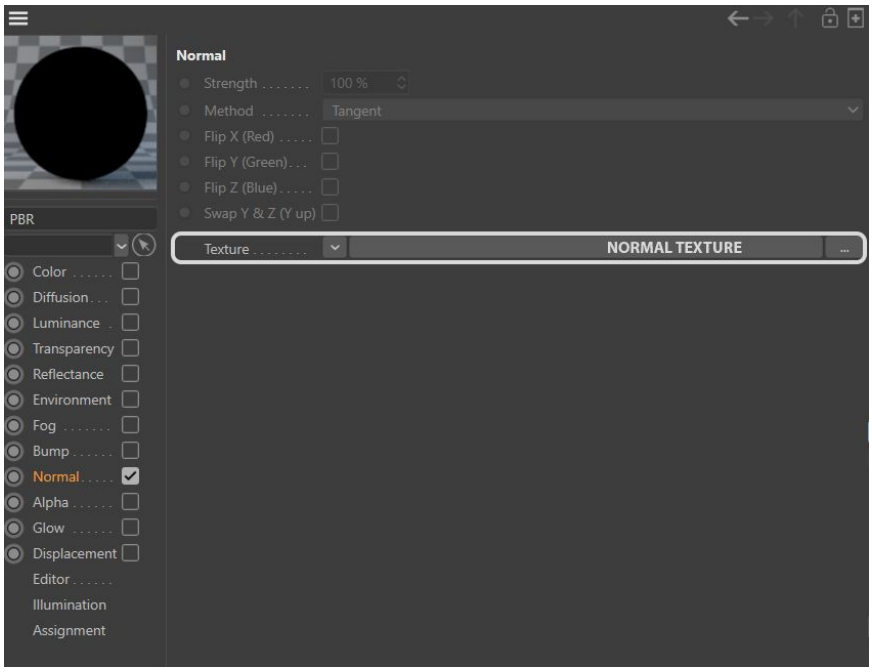
Within the Bump Layer of the Material Editor the importer uses the value of **Strength** as a delta for a linear interpolation between Unity's minimum and maximum values for the Parallax Strength.

The imported texture is mapped to the Height Map / Parallax Map.

PLEASE NOTE: Due to the different nature of Cinema 4D's Bump and Unity's Parallax there are some visual differences.

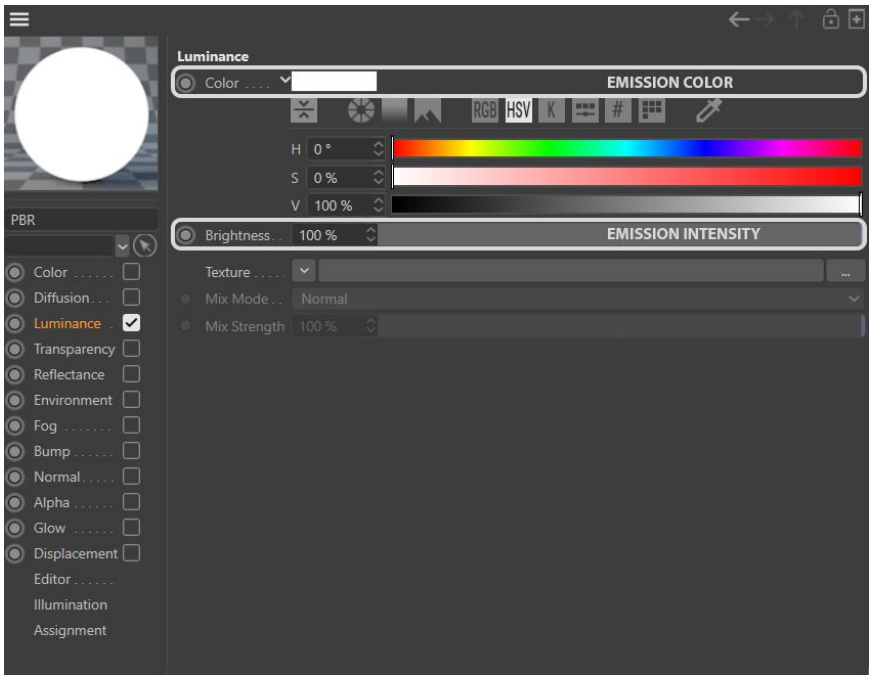
Normal Map

Within the Normal Layer of the Material Editor the importer maps the texture to the Normal Map.



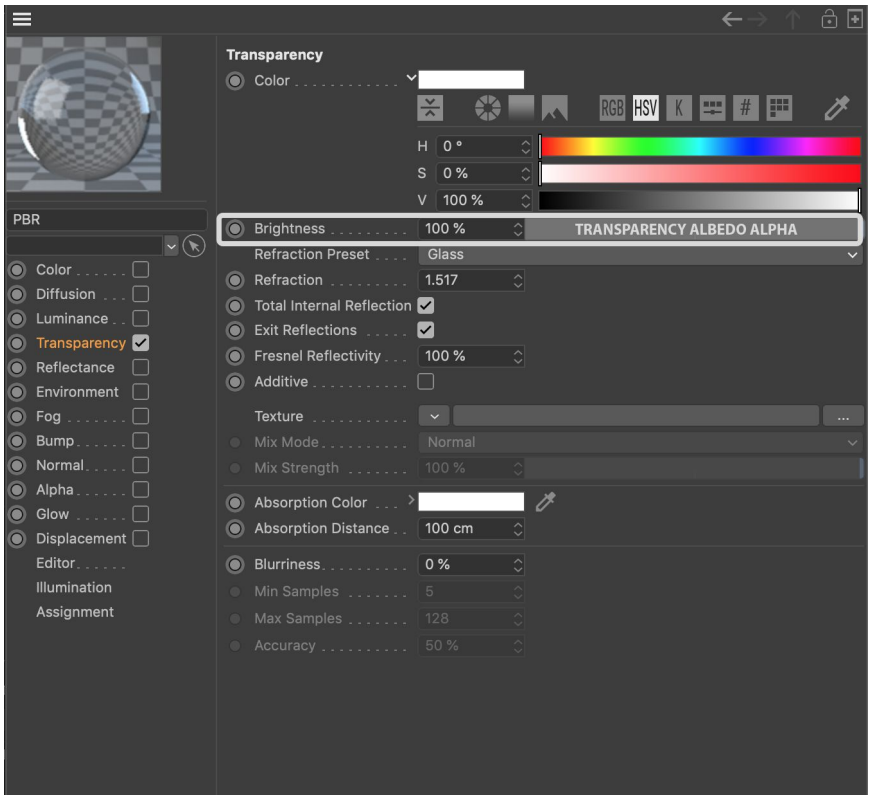
Luminance / Emission

Within the Luminance Layer of the Material Editor the importer calculates an HDR color value based on the Color and Brightness settings and applies it to Emission.



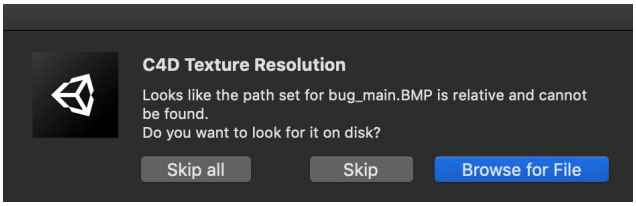
Transparency

Within the Transparency Layer of the Material Editor the importer maps the Brightness slider to the alpha value of the material. A brightness of 100% is transparent, 0% is opaque.



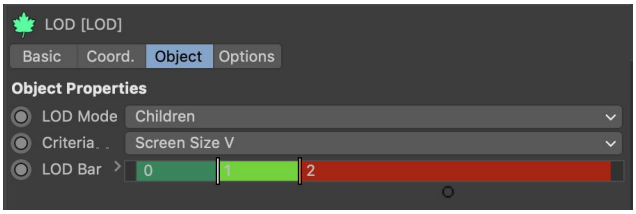
Textures

Textures referenced within the .c4d file are imported using Unity's native texture importer. Should the texture not be available at the location the project is pointing towards, the plug-in will prompt the user to locate the file. The selected path is stored and evaluated for future missing encounters.



LOD

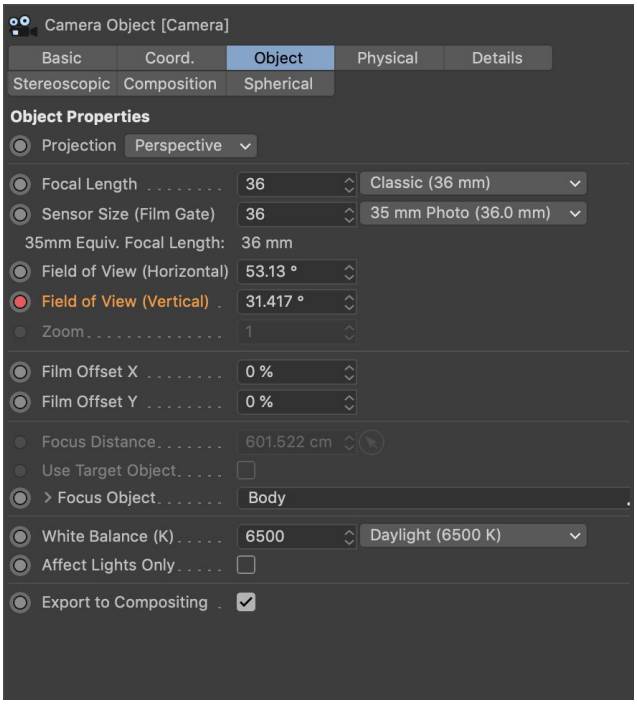
Cinema 4D's **LOD** generator is mapped to the LOD Group component in Unity. The Mesh Renderers of the imported Polygon Objects are applied to the set LOD level. The LOD Mode needs to be set to **Children**. If the Criteria is set to **Screen Size V** the LOD Bar is mapped to Unity, otherwise the LOD levels are normalized.



Cameras

The **Field of View (Vertical)** is applied to the Field of View object in Unity. Supports Animation.

PLEASE NOTE: HDRP/URP/Standard Physical support is not yet implemented



Lights

This version of the plug-in offers default mapping for the Standard Render Pipeline of Unity.

Spot Light

General supported properties

Color matches the value to Unity's Color property. Supports animation.

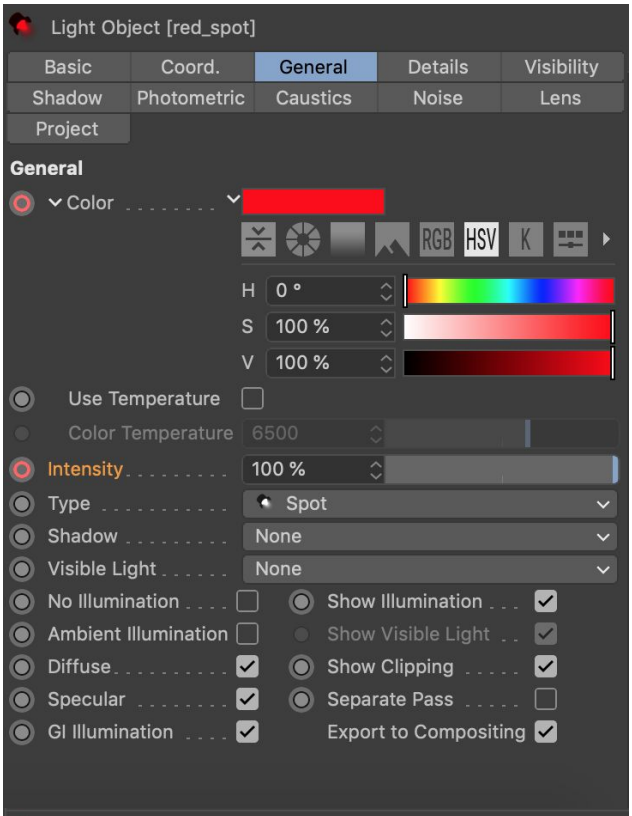
Intensity is matched to Unity's Intensity property. The value of 100% in Cinema 4D equals a value of 1 in Unity. Supports Animation.

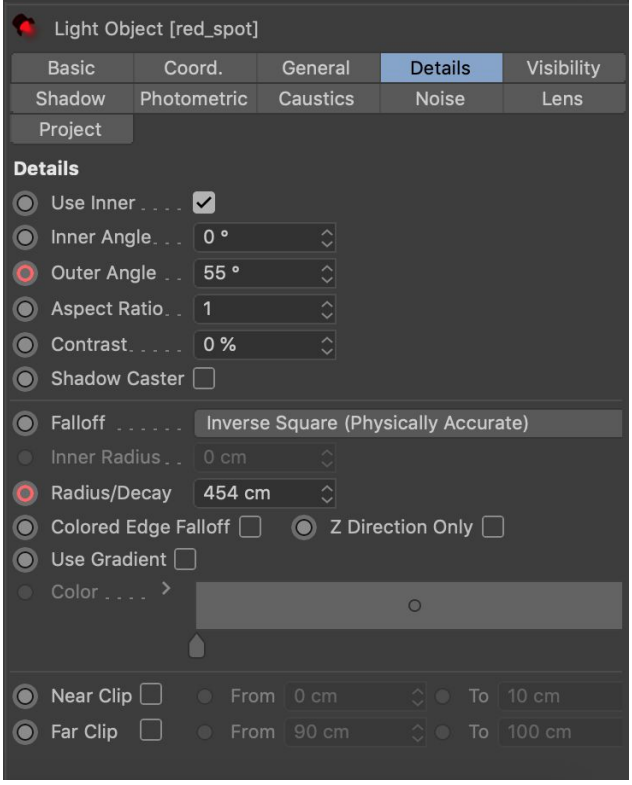
Shadow matches Unity's Shadow Type property. This defines the type of shadow the light will cast. None sets the shadow type to No Shadows, Raytraced (Hard) sets the shadow type to Hard Shadows, Shadow Maps (Soft) and Area set the shadow type to Soft Shadows.

Details supported properties

Outer Angle matches the value of Spot Angle. Supports animation.

If **Falloff** is set to None the light is imported with a default Range of 10, if any other form of Falloff is set the property Radius/Decay is set as Range. The value in Cinema 4D is multiplied with the import scale settings. Supports animation.





Omni Light / Point Light

General supported properties

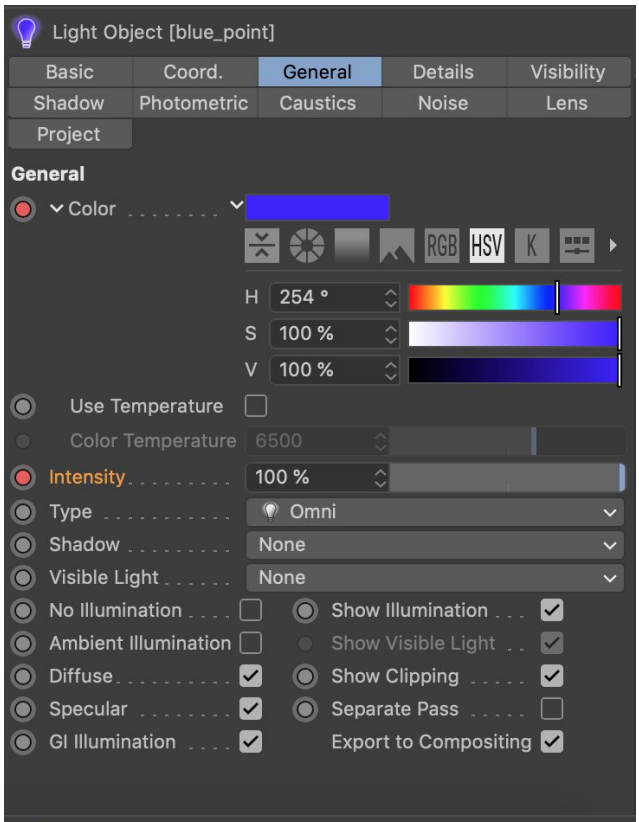
Color matches the value to Unity's Color property. Supports animation.

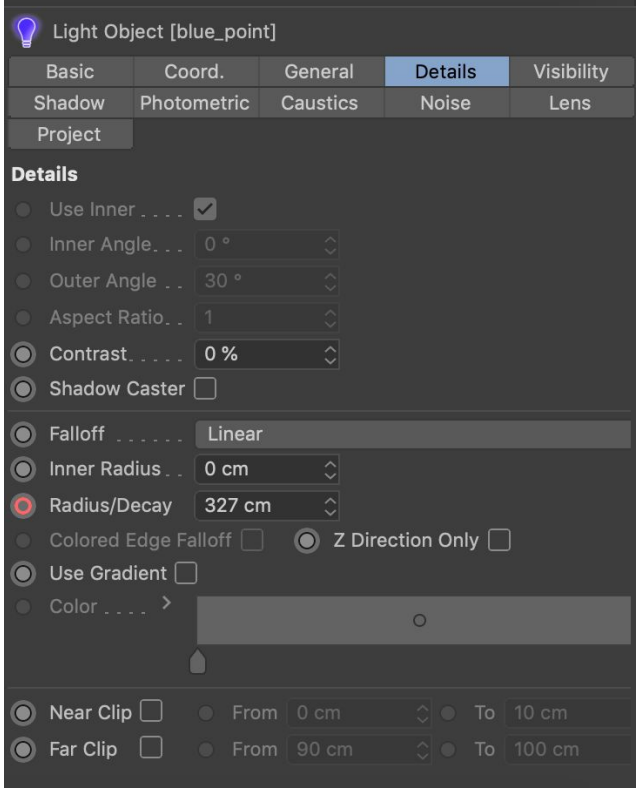
Intensity is matched to Unity's Intensity property. The value of 100% in Cinema 4D equals a value of 1 in Unity. Supports Animation.

Shadow matches Unity's Shadow Type property. This defines the type of shadow the light will cast. None sets the shadow type to No Shadows, Raytraced (Hard) sets the shadow type to Hard Shadows, Shadow Maps (Soft) and Area set the shadow type to Soft Shadows.

Details supported properties

If **Falloff** is set to None the light is imported with a default Range of 10, if any other form of Falloff is set the property Radius/Decay is set as Range. The value in Cinema 4D is multiplied with the import scale settings. Supports animation.





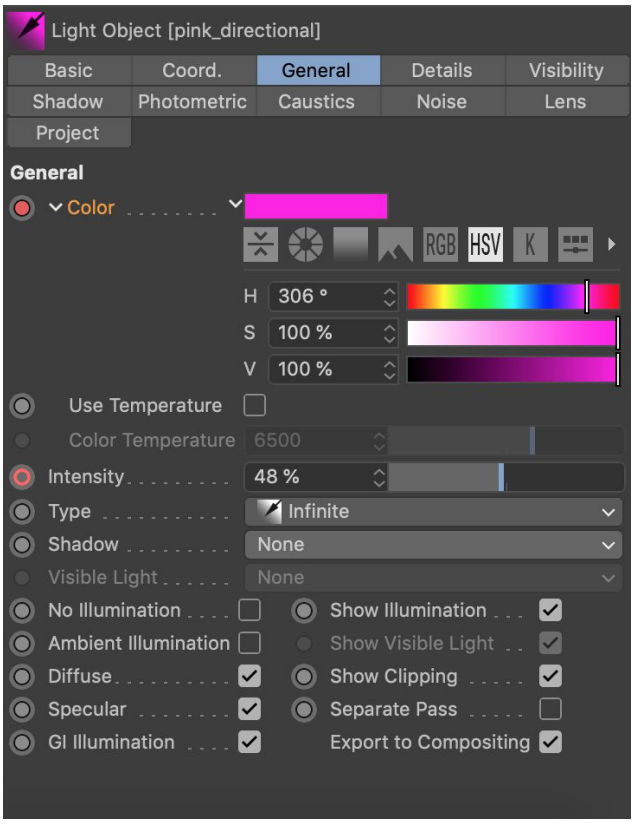
Infinite Light / Directional Light

General supported properties

Color matches the value to Unity's Color property. Supports animation.

Intensity is matched to Unity's Intensity property. The value of 100% in Cinema 4D equals a value of 1 in Unity. Supports Animation.

Shadow matches Unity's Shadow Type property. This defines the type of shadow the light will cast. None sets the shadow type to No Shadows, Raytraced (Hard) sets the shadow type to Hard Shadows, Shadow Maps (Soft) and Area set the shadow type to Soft Shadows.

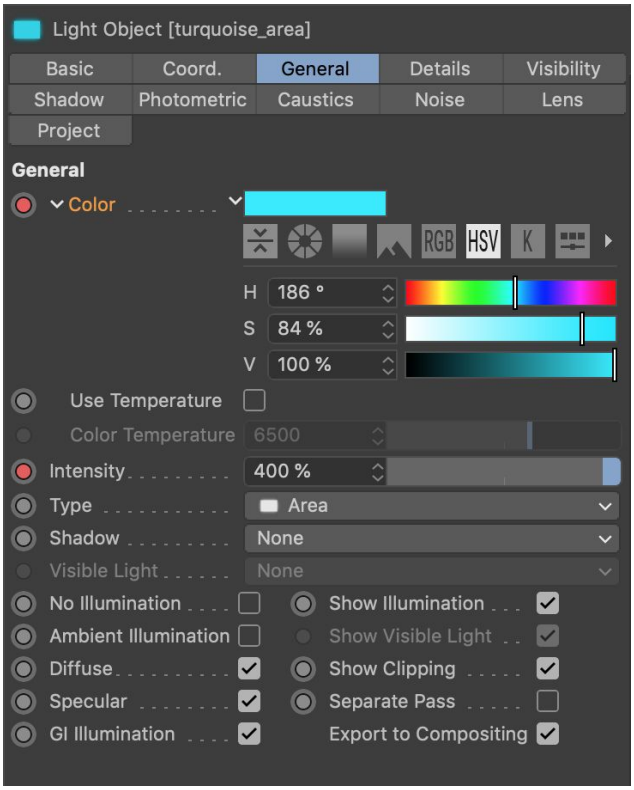


Area Light

General supported properties

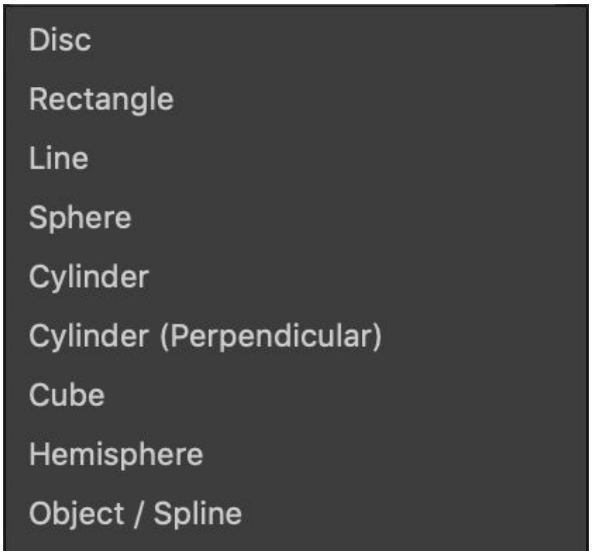
Color matches the value to Unity's Color property. Supports animation.

Intensity is matched to Unity's Intensity property. The value of 100% in Cinema 4D equals a value of 1 in Unity. Supports Animation.



Details supported properties

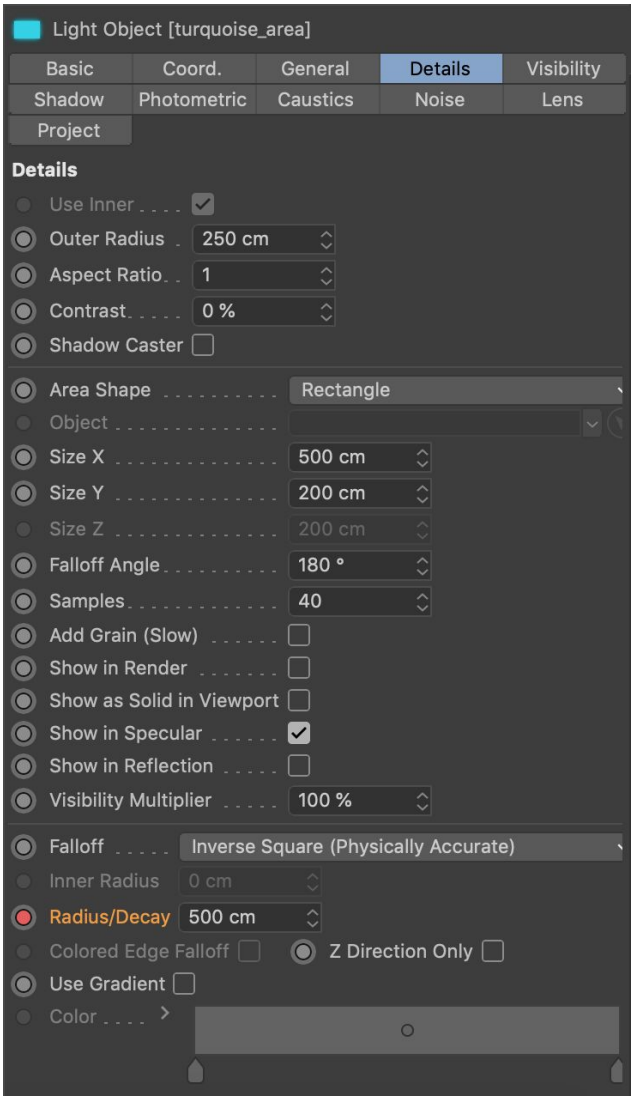
Area Shape maps to Unity's Shape when working with Area Lights.



Disc, Sphere, Cylinder and Hemisphere are mapped to Disc. Rectangle, Cube, Object, Line, Cylinder (Perpendicular) are mapped to Rectangle.

Size X and **Size Y** set the Width and Height of the Area Light when set to Rectangle. The larger value of Size X and Size Y is set as the Radius when the shape is set to Disc. These values are multiplied with the import scale settings.

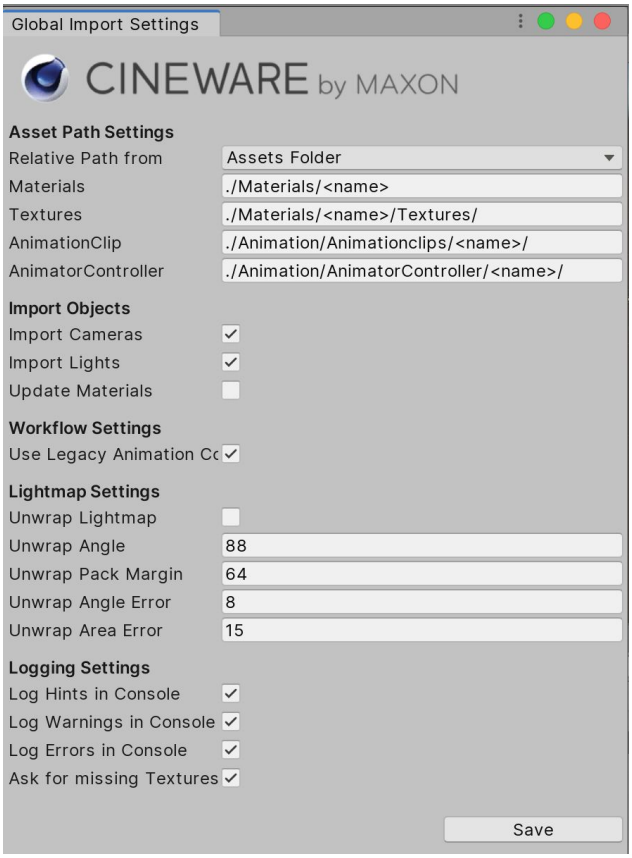
If **Falloff** is set to None the light is imported with a default Range of 10, if any other form of Falloff is set the property Radius/Decay is set as Range. The value in Cinema 4D is multiplied with the import scale settings. Supports animation.



The Area Light in Unity is baked only. Area Shape and Size animations are not exposed by Unity. While the Range property is exposed, animating this will not change the baked light information at runtime.

Settings

Default import settings can be defined by the user in the Window/Maxon/Asset Import Settings menu. These values will be used on an initial import of any .c4d asset. Individual changes can be then defined at the asset editor properties of the imported file.



Relative Path from defines the option where directories for sub-assets are created. Relative to Assets Folder creates the directories at Assets/<defined path>. Relative to Imported Asset creates the directories at the import location.

If the directory does not yet exist it will be created. To include the name of the asset into the path, the user may use the tag <name>. This is replaced by the asset name on import. The user can set **directory paths** for **Materials**, **Textures**, **AnimationClips** and **AnimationControllers**.

Import Cameras and **Import Lights** toggles if Camera or Light objects are included into the imported asset.

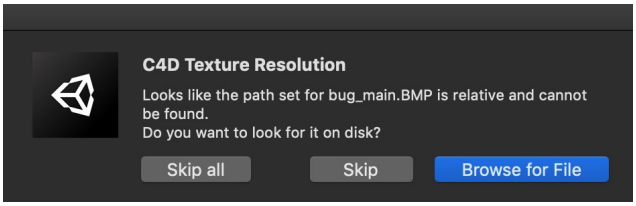
Toggling **Update Materials** defines the import process regarding Materials. If enabled, all Materials and Textures are (re)imported and (re)applied to the generated Mesh Renderers. If disabled, the importer will reapply the Materials already imported to the updated geometry.

Use Legacy Animation Components toggles which animation component to apply to the object and whether imported Animationclips are set to legacy. If disabled, the importer creates an Animator component, an AnimationController and applies the imported animation to the entry state. *PLEASE NOTE: In the current version the Animator workflow is not supported for Skinned Meshes.*

Unwrap Lightmap toggles the option to unwrap a lightmap for the asset into the UV2 channel.

Logging Settings toggle if Hints, Warnings or Errors should be displayed in the Unity console during import. These messages mention unsupported features or compatibility limitations while traversing through the .c4d file and generally inform about the import process.

If **Ask for missing Textures** is enabled, the importer will prompt if the stored texture path is set to relative within the .c4d file. The prompt offers the option to browse for the missing textures. If the texture is found the location is stored and used for future texture lookups.



Known Issues

This importer is still in beta, so expect some hindrances. If you have a question not addressed within the documentation, please create a ticket at https://support.maxon.net/ and select Cineware and Maxon Plug-ins.

Error messages

Unity no longer supports importing Cinema 4D files directly, but we're working with Maxon to make the experience better. To import Cinema 4D files, install Maxon's external importer. You can find more information on the Unity Forum: https://on.unity.com/c4d.

This message is displayed when opening a project containing .c4d assets. The importer still works, but Unity displays the error anyway. This will be fixed in an upcoming Unity version.

Asset with guid '' and path '' is up to date, but does not have a correct target hash assigned to it in the GuidPersistentManager

This message is displayed when reimporting assets with sub-assets. It does not hinder functionality.

Limitations

- Animator Controllers do not work with skinned meshes.
- ~~Incorrect position when working with some generator objects.~~ (Resolved in v0.1.5.302262)
- Cinema 4D **pose morph tag** sometimes does not behave correctly when applied to a primitive and made editable in a later stage. To resolve this make sure to apply pose morph tags only to polygon objects.
- **Dynamic animations** relying on Cinema 4D core code have to be baked down. This includes but is not limited to animations such as target cameras, physics, IK chains and resolvers, etc.
- Baked **light map textures** created in Cinema 4D are not imported