



# CINEMA SUITE



USER DOCUMENTATION FOR CINEMA **PRO CAMS**

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## Introduction

Thank you for purchasing Cinema Pro Cams! Our team makes software extensions for Unity that allow game developers, machinimists, and movie professionals create and control content for their projects quickly, and easily. More importantly, we want our users to have fun doing it.

Being avid fans of video games and movies, our team set out on a common goal - to create a set of cinematic game and film tools, which are powerful, affordable and available to the masses, through the Unity Asset Store.

Cinema Pro Cams is a module of our set of tools called "Cinema Suite". Cinema Suite is a collection of software extensions for Unity3D that will allow developers to create content without the need for scripting or programming. Cinema Pro Cams is a complete set of industry standard camera tools that allow game developers and film professionals to add high quality visuals to their projects.

Please remember, making great products is only possible if we have feedback from people like you, and our community. Feedback is critical to our success and we welcome it in all forms, be it Facebook, Twitter, Email or our Forums. Please check out ways that you can directly communicate with us, at the end of this document.

Thank you for helping us make Cinema Pro Cam great!

The Cinema Suite Team

## Requirements

It is recommended you have **Unity Pro** as the majority of the Cinema Pro Cams features make use of Unity Pro features.

**Unity Free** does **NOT** support Live/Dynamic camera previews, as well as depth of field. Therefore selecting Aperture/FStop values will have **NO** effect on depth of field. Also, the only stereoscopic 3D mode available in Unity Free is Side By Side. Other 3D display modes will not work with Unity Free since they use shaders.

You must set the Game Window to **Standalone** mode to view the rendered window in the correct aspect ratio and resolution.



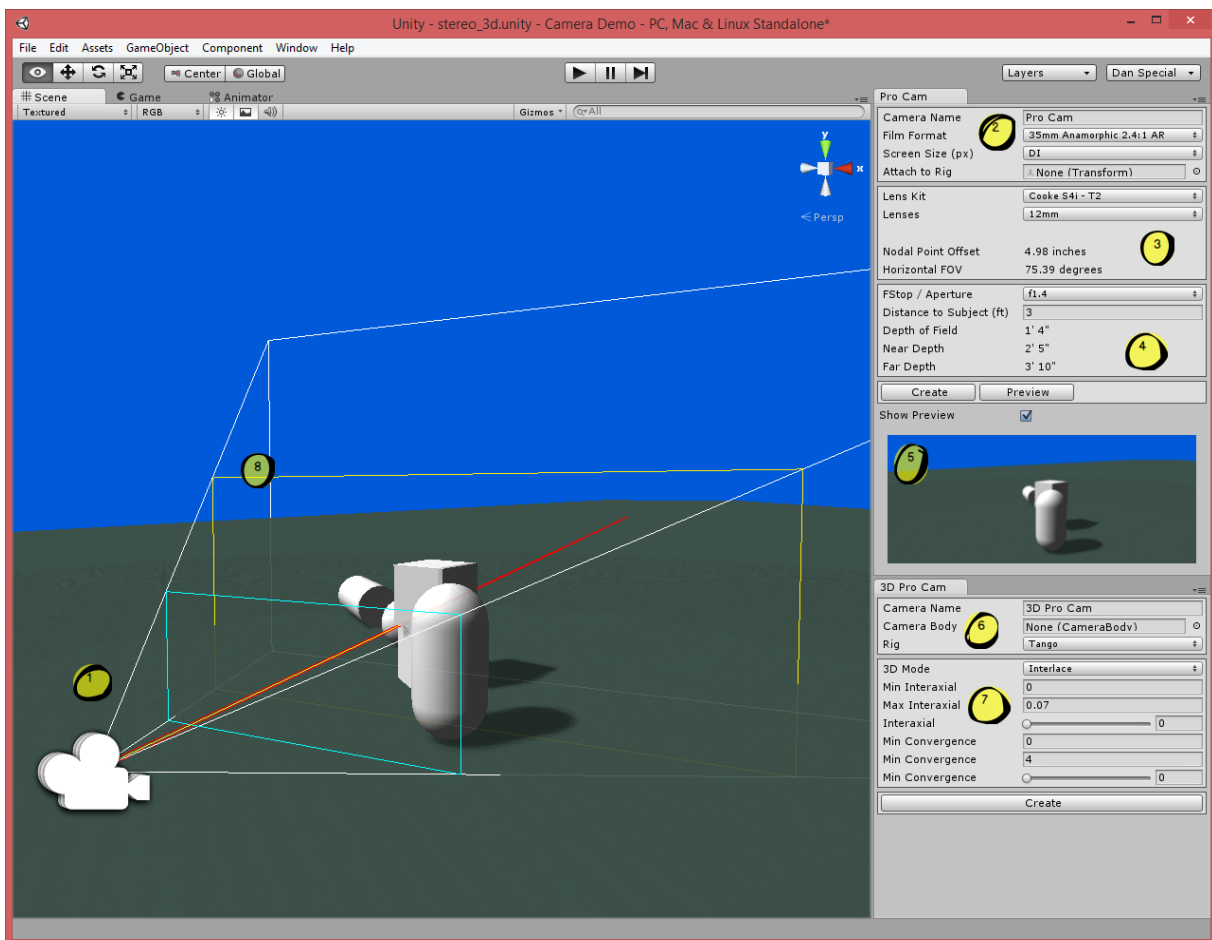
## Cinema Pro Cams Overview

### Key Features

- Industry standard Cooke® Prime Lens Kit (12mm to 180mm)
- Realistic Aperture and DOF (depth of field) settings
- Live, dynamic camera preview
- Stereoscopic 3D Camera and rig support

### Interface Overview

Cinema Pro Cams is a software extension for Unity3D. As with any Unity window, you can position the application any way you wish. The Cinema Pro Cams windows are narrow and long, and look best integrated to the right or left side of your Unity application.



- |                      |                         |                      |
|----------------------|-------------------------|----------------------|
| 1 In-Scene Camera    | 4 Lens Effects          | 7 3D Camera Settings |
| 2 Camera Information | 5 Camera Shot Preview   | 8 Camera Gizmo Lines |
| 3 Lens Information   | 6 3D Camera Information |                      |

Figure 1: Cinema Pro Cams Overview

We will go more in depth with functionality later in this documentation.

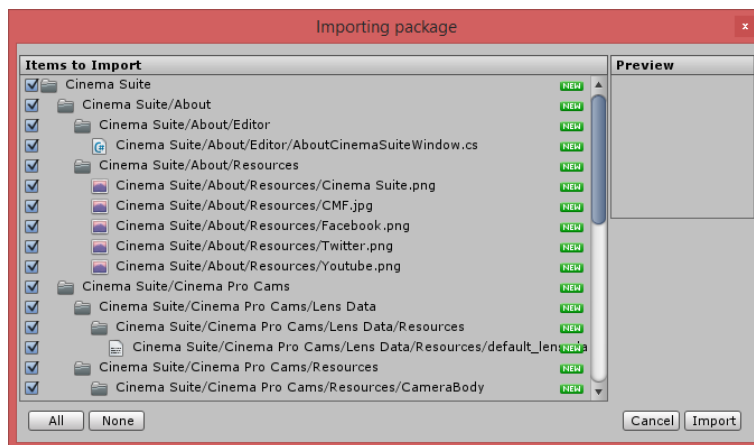


## Installing Cinema Pro Cams

### Installing Cinema Pro Cams Unity Package

Cinema Pro Cams is a standard Unity3D Software Extension, and installs like any other Unity3D package. The name of the file we have created is called "CinemaProCams.unitypackage"

In order to load the Cinema Pro Cams Unity3D package you either drag the Unity package into your current Unity3D project, or in Unity3D go to the dropdown menu: **Assets > Import Package... > Custom Package...** then browse to the CinemaProCams.unitypackage file. If you purchased from the Unity Asset Store, this process is automatic. The below image shows the Import Package dialog box, and the contents of the Cinema Pro Cams Unity Package.



Once the Importing package dialogue appears, click the Import button. After approximately ten seconds, you will see a new drop down menu (Cinema Suite) under the window pulldown. Once installed, Cinema Pro Cams will appear in a folder, inside your Unity project.

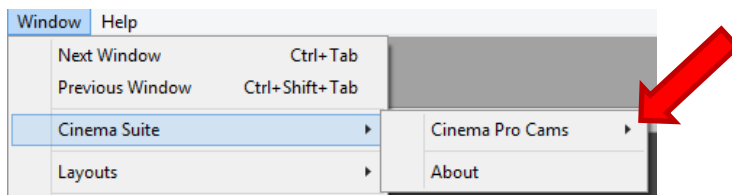


Figure 2: Unity Pull down for Cinema Mo-Cap

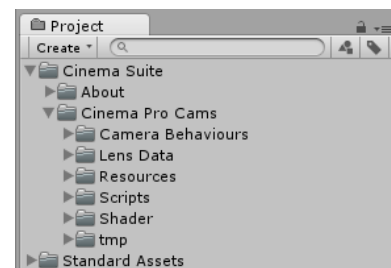


Figure 3: Unity Project Folder



## Creating a 2D Camera

Creating a real world camera with Unity is very easy, using Cinema Pro Cams. To create a camera, select “Create Pro Cam” from the **Window > Cinema Suite > Cinema Pro Cams > Create Pro Cam** pulldown. To make things as easy as possible, the created camera will always be aligned with the current Unity Scene view within the Unity project. To adjust what the camera is seeing, simply adjust the scene view in Unity.

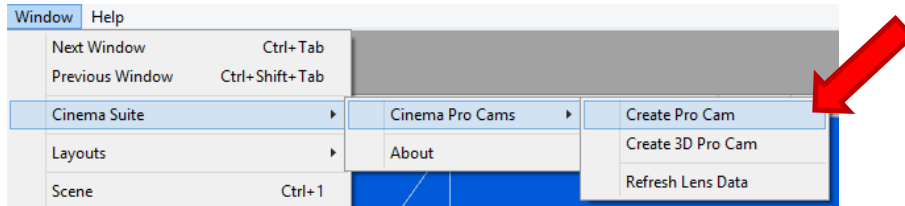


Figure 4: Create Pro Cam Pulldown

## Create Pro Cam Window

The Pro Cam Window will open when selected from the Create Pro Cam pulldown menu.

The Create Pro Cam Window is divided into four sections: **Camera Information**, **Lens Information**, **Lens Effects**, and **Camera Preview**.

### Camera Information

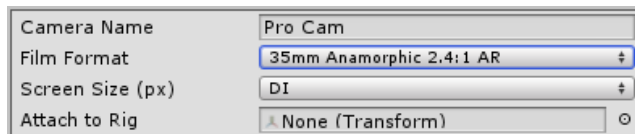


Figure 5: Camera Information

The Camera information area contains options that modify the way the Camera will appear in Unity.

**Camera Name** allows the user to specify a name for the camera. This is the name the camera will be called, when created in the current Unity project.

**Film format** will change the “Standalone” Unity resolution in the game window, which affects the whole scene. Changes are made across all Camera Body scripts in your scene.

**Screen Size** will allow you to increase the resolution of the standalone image in the game window.

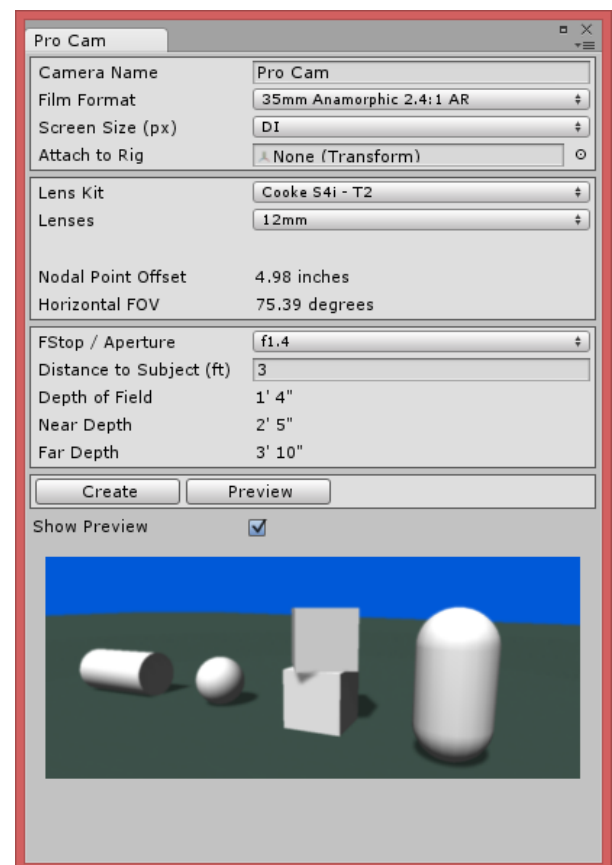


Figure 6: Create Pro Cam Window



**Attach to Rig** allows the user to attach the camera to a specific Unity Object. This is helpful when you want to attach the camera to a moving object such as a crane or dolly.

## Lens Information

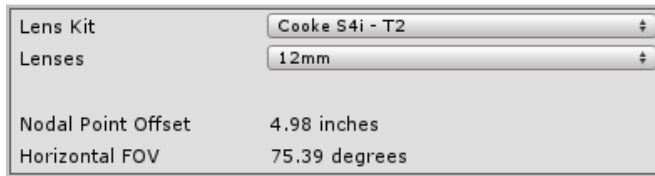


Figure 7: Lens Information

The lens information area allows the user to configure the type of lens that will be placed on the camera being created.

**Lens Kit:** Currently we have built in functionality for the Cooke® S4i – T2 lens kit. Other lens kits will be available in future releases of Cinema

Pro Cams. Additional Lens Kits can be added manually by replacing the lens kit data file. This will be discussed later, in “Advanced Configuration”

**Lenses** effect the overall size of the subject being displayed. Lens options range from 12mm to 180mm. When the user selects a lens, the preview will show its effect on the camera. Useful information such as the nodal point offset and horizontal field of view are listed underneath for reference, and will change depending on the lens being selected.

**Nodal Point Offset** is the point inside the lens where light paths cross before being focused onto a film plane. This is hard coded to the lens, and cannot be changed manually.

**Horizontal FOV** (which stands for Horizontal Field of View) is the total amount of degrees that the lens can see in the horizontal direction. The wider the lenses angle (lower mm sized lens) the higher the horizontal FOV that the lens can see. This is hard coded to the lens, and cannot be changed manually.

## Lens Effects

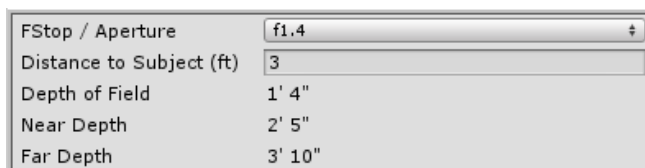


Figure 8: Lens Effects

Lens effects will control the overall look and feel of what the camera is capturing. Lens effects allow the user to change f-stop (aperture), and focus distance (distance to subject) when you create a camera. After the camera is created, other focal options will be available, which we will cover later in the documentation.

**FStop / Aperture (Unity Pro Only)** controls how wide the depth of field will be around the subject matter that the camera is capturing. The lower the value, the shallower the total depth of field being captured will be. The higher the value, the wider the total depth of field will be. A smaller FStop means the aperture of the camera is open wider (or, more light is let into the camera). The higher the FStop value, the smaller the aperture of the camera becomes (or, less light is let into the camera).

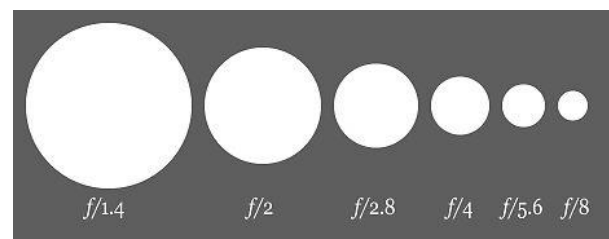


Figure 9: Aperture size vs. F-stop Value





**Distance to Subject (ft)** is the number the user will enter to control where the camera is focusing. If you have an object that is approximately 10 feet from the camera, then enter this value, and the lens will focus to that point. This value can be changed later, after the camera is created, and placed in the Unity scene.

**Depth of field (Unity Pro Only)** is the area that will remain in focus for the subject matter being captured. Any objects outside the limits of the **Near Depth** and **Far Depth** of the DOF will be out of focus.

The **Near Depth** and **Far Depth** are measurements in feet that outline the boundaries of the depth of field currently in place. Depth of field is the distance between the near and far limits.

## Camera Preview

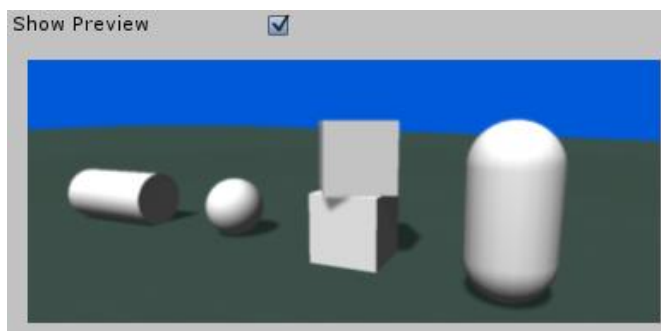



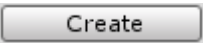
Figure 10: Camera Preview Area

The **Camera Preview (Unity Pro Only)** will render what the camera is currently viewing. This is useful if you do not have easy access to the Game window and would like to quickly view what the final rendered camera will look like. The camera preview will show all effects being rendered, depending on what settings have been adjusted above. The preview will reflect lens type and size, FStop, focus distance to object and the effect of depth of field on the object being focused on.

**Show Preview** will be checked off by default. When unchecked, you will not see a preview of what the camera is seeing. This will help performance in Unity. Since the Camera Preview renders real-time, you may notice a slight effect on Unity performance when Show Preview is selected.

**To update the Preview** either click the preview image after adjusting the camera position, or click the preview button. 

## Creating the Camera

Once all settings above have been made, hit the create button.  The new Cinema Pro Cams camera will then be placed in your Unity scene, aligned to the current scene view. Further adjustments can be made to the camera after it has been inserted into the scene. Selecting your newly created camera in the Unity Hierarchy will display the "Camera Body" properties in the Unity Inspector. The settings can then be further adjusted, to get the exact camera effect that you require.

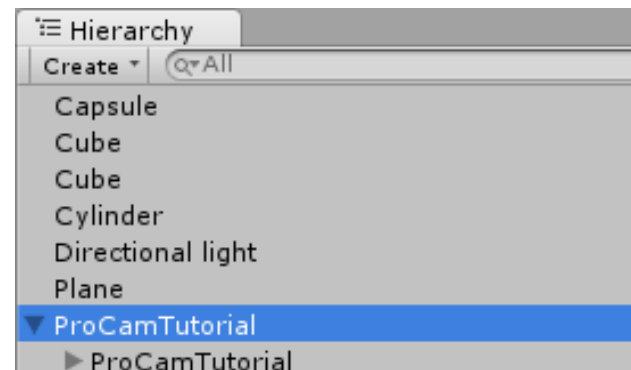
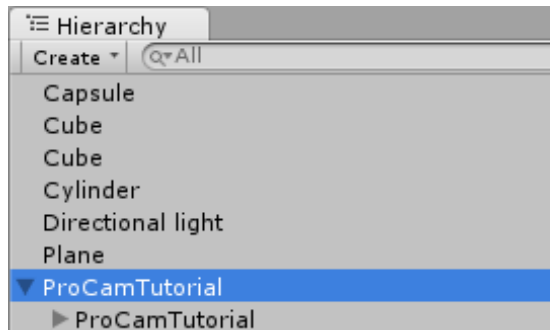


Figure 11: Unity Hierarchy View



## Modifying the Camera

### Unity Inspector



Once the camera has been created, you can continue to refine the camera's settings using the Unity Inspector. Selecting the camera body in the Hierarchy will display the camera's properties. We have grouped these options into the following sections:

**GENERAL** – Change the name of the camera, and settings related to aspect ratio and resolution.

**LENS KIT** – Displays the current lens kit in use as well as current aspect of the lens. These fields are read-only.

**LENS** – Displays detailed information about the lens size and its associated properties.

**DEPTH OF FIELD** – Contains adjustments for aperture settings, as well as options for controlling what the camera is focusing on, as well as focus method.

**ENHANCEMENTS** – Add camera effects here. Future versions of Cinema Pro Cams will have effects added to the database.

**CAMERA PREVIEW** – A live, dynamic preview of the current camera view according to the existing settings currently applied. DOF, FOV, Focus and camera position will all be reflected in this view. NOTE: Requires **Unity Pro**.

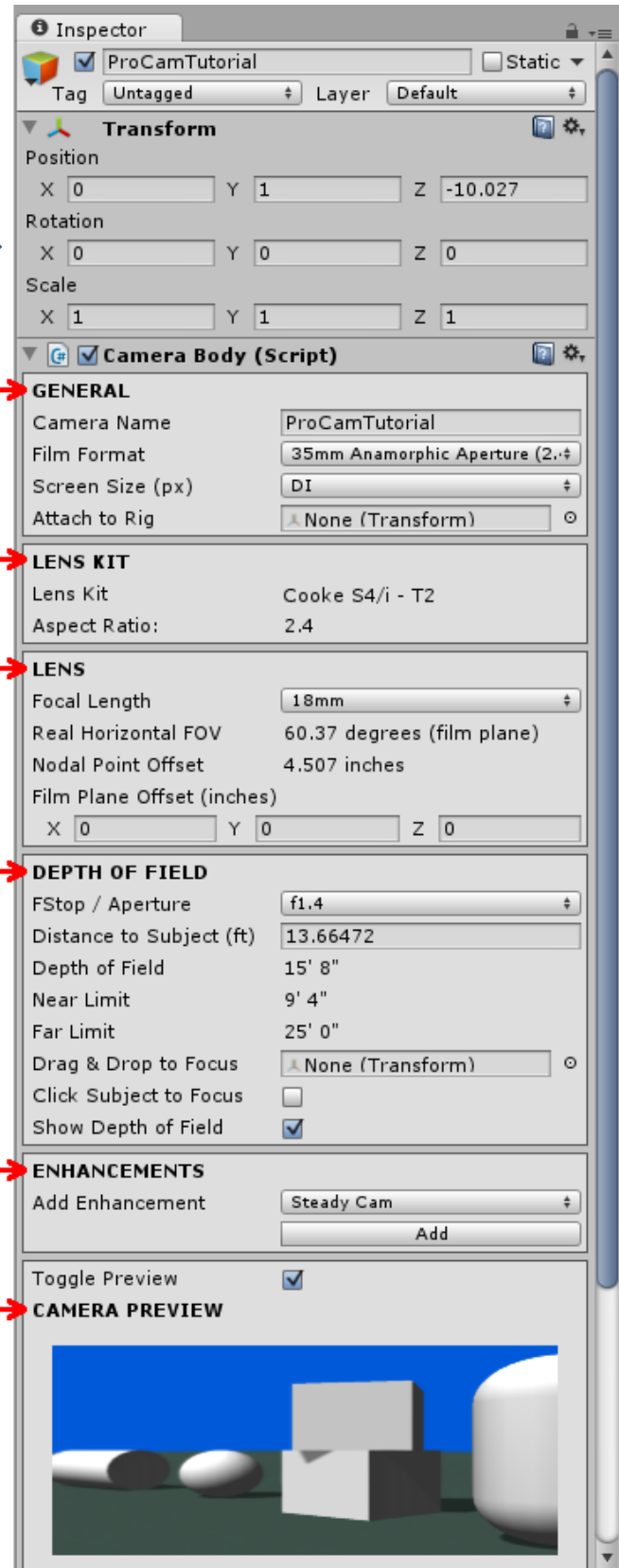


Figure 12: Pro Cams Inspector View



## General Properties:

GENERAL	
Camera Name	ProCamTutorial
Film Format	35mm Anamorphic Aperture (2.40:1)
Screen Size (px)	DI
Attach to Rig	None (Transform)

**Camera Name:** To change the name of your camera, just click into the text box and rename the camera to anything you wish. This will update the camera name in your current scene, and with any other software extensions you may be using, such as Cinema Director.

**Film Format:** Cinema Pro Cams provides 5 different, industry standard film formats to choose from. The format you chose will automatically adjust the aspect ratio of the camera, as well as the properties of the lens for that particular film format. The below picture shows the difference between selecting a 16:9 standard HD aspect versus an Anamorphic aspect ratio.

- 35mm Full Aperture (1.33:1)
- 35mm Full Aperture (1.37:1)
- 35mm 16:9 Aperture (1.78:1)
- 35mm Academy Aperture (1.85:1)
- ☒ 35mm Anamorphic Aperture (2.40:1)

**NOTE:** Always make sure your game window is in Standalone mode, so that Unity can display the different resolutions required by Cinema Pro Cams.

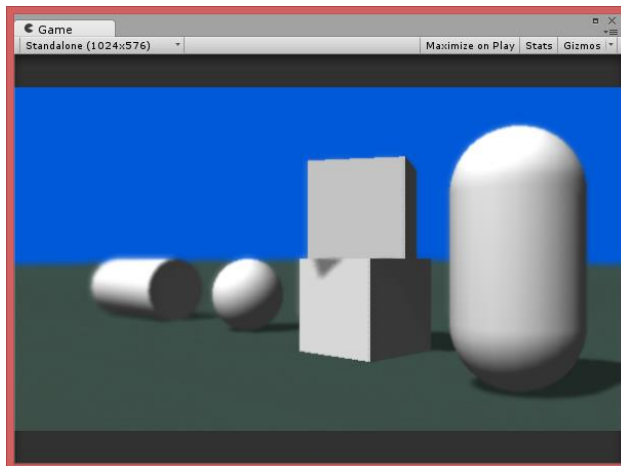


Figure 14: 35mm 16:9 Aperture (1.78:1) Preview

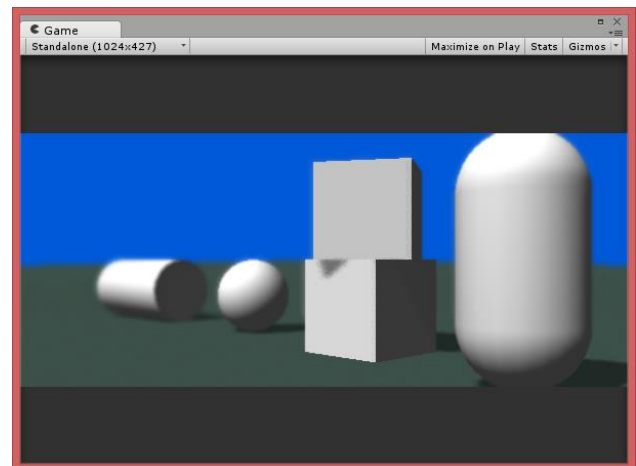


Figure 13: 35mm Anamorphic Aperture (2.40:1) Preview



**Screen Size (px):** To assist with the newest resolution of monitors on the market, Cinema Pro Cams provides the option to change the resolution of the camera, for when the game window is resized. DI represents standard resolution, 2x DI represents 2K (double) resolution and 4x DI represents 4K (quadruple) resolution.

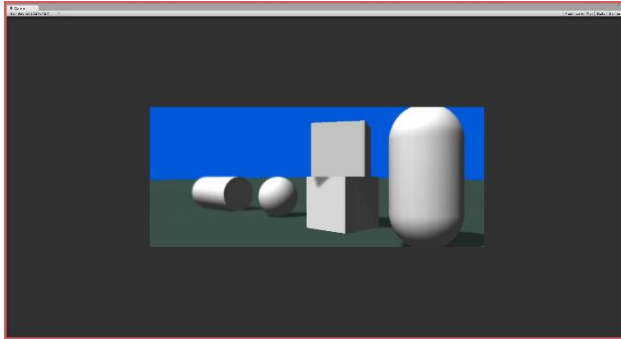
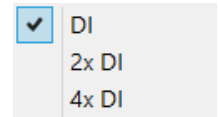


Figure 15: Game window with DI Screen Size

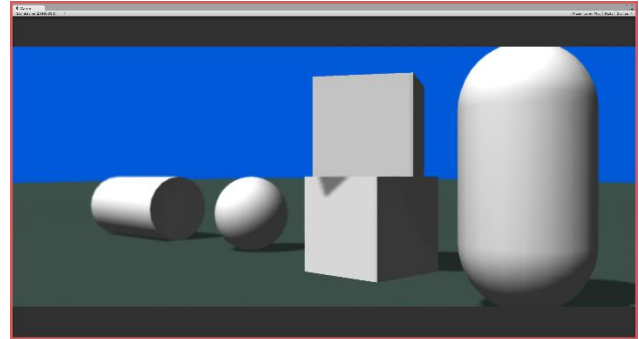


Figure 16: Game window with 2x DI Screen Size

**Attach to Rig:** If you have other models within your current scene, that you would like to use as a camera rig, you can drag that model from your Unity Hierarchy into this field. This will “mount” the created camera to the center point of the model selected.

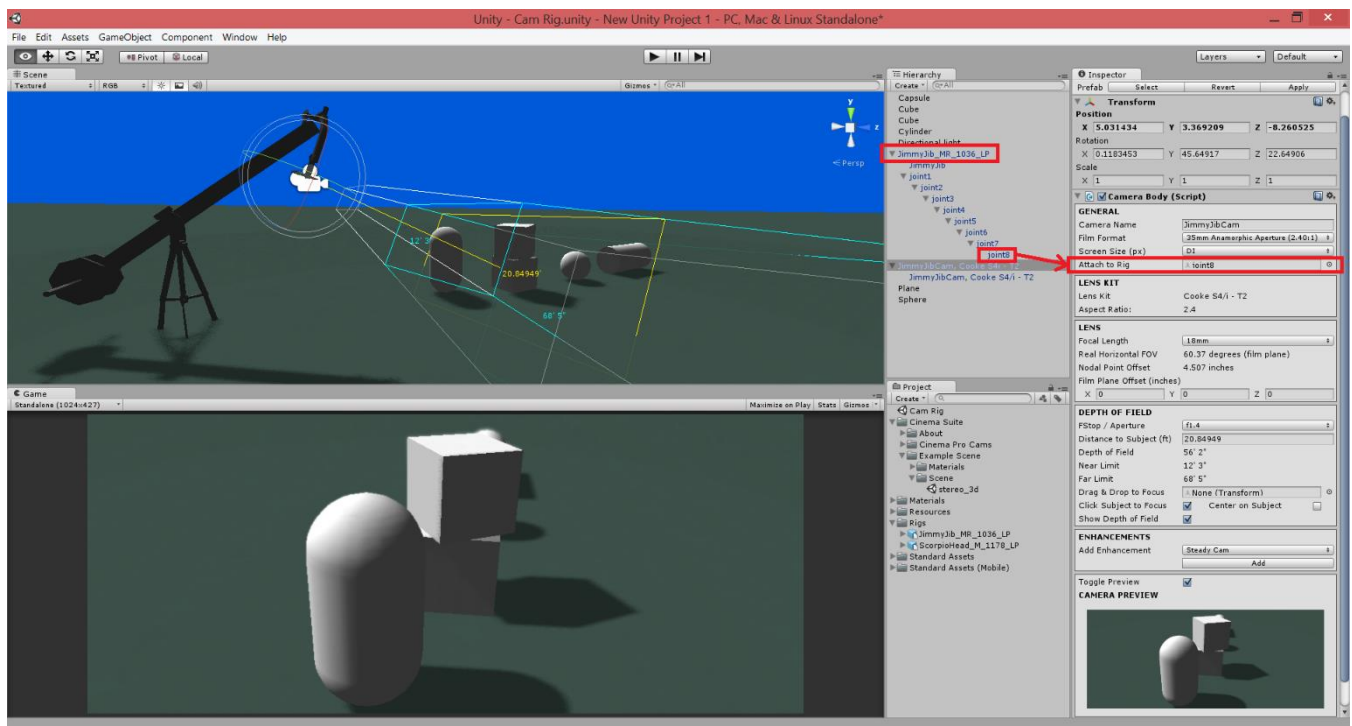
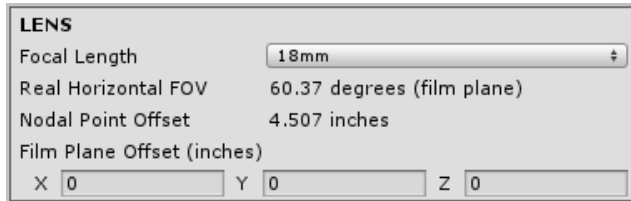


Figure 17: Using Attach to Rig option in Cinema Pro Cams

The above image shows a Cinema Pro Cam camera attached to the head of a Jimmy Jib model that we imported into Unity. By using the “Attach to Rig” option and attaching the camera to Joint 8 of the model, we can control where the camera is going to look, by adjusting this joint in Unity, using standard Unity controls such as move and rotate.



## Lens Properties:



**Focal Length:** By default, Cinema Pro Cams includes 17 standard lens sizes. These lenses are all included in the real-world Cooke S4/I – T2 lens kit. These lenses range from 12mm all the way up to 180mm.

The size of lens that is selected, will affect the camera's overall behaviour. Many of these values have been calculated during real-world testing with the actual Cooke lens kit, and cannot be changed. Read-Only values include the **Rear Horizontal FOV** as well as the **Nodal Point Offset**. Selecting a different lens will also affect other values such as **Depth of Field**, **Near Limit** and **Far limit**.

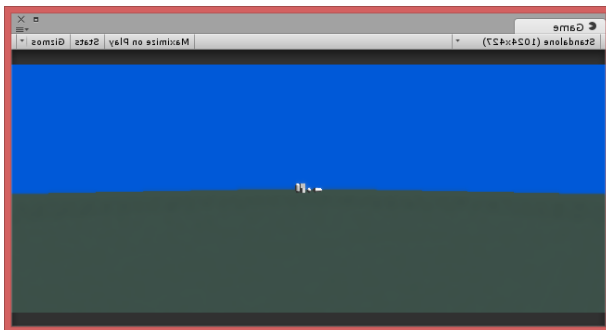


Figure 18: 12mm Lens, 208.5 feet from subject

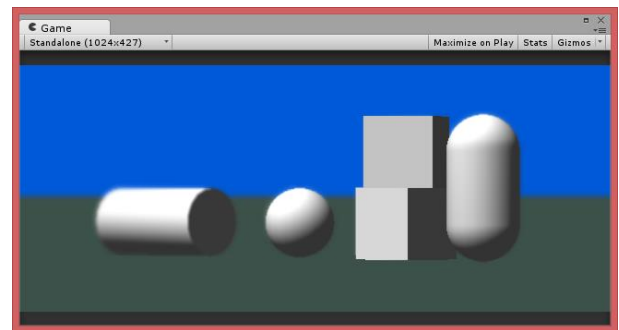


Figure 19: 180mm Lens, 208.5 feet from subject

The above picture demonstrates the difference in selecting lenses. Selecting a smaller lens will allow more of the subject to be viewable by the camera. Smaller lens sizes are known in the cinematography world as wide angle lenses. Selecting a larger lens size will display more of the subject, and allow you to have the camera much farther away from a subject you want to capture up close. This will provide a much narrower depth of field, and provide a different look and feel for the subject. The larger of these lenses are known as telephoto lenses.

**The effect of focal length on depth of field (DOF):** Depth of field (the area that stays in focus) will change depending on the size of lens (focal length) selected. This effect is caused by many factors, one of which is the magnification of the lens itself. Play with different lenses and apertures to get different cinematic effects on your subject.

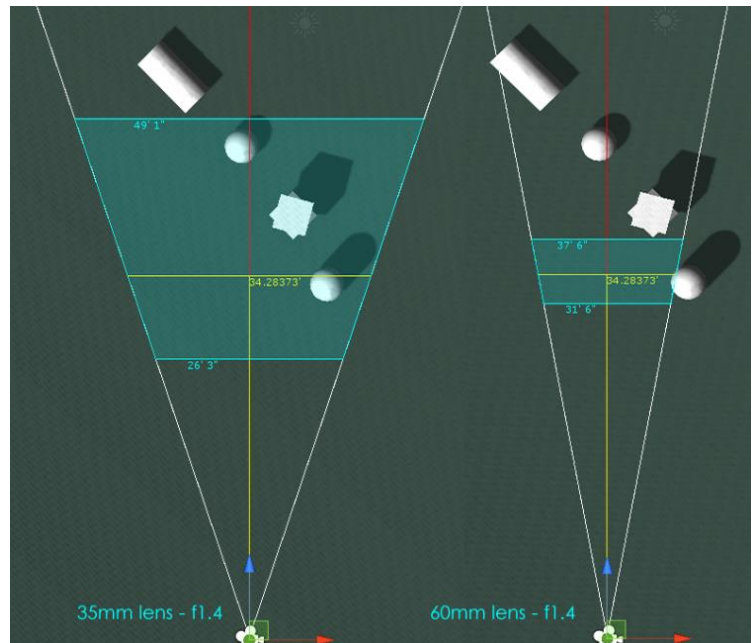


Figure 18: DOF comparison between lenses same F-stop



## Depth of Field (Unity Pro Only)

DEPTH OF FIELD	
FStop / Aperture	f2.8
Distance to Subject (ft)	21.73121
Depth of Field	19' 5"
Near Limit	15' 8"
Far Limit	35' 2"
Drag & Drop to Focus	None (Transform)
Click Subject to Focus	<input checked="" type="checkbox"/> Center on Subject <input checked="" type="checkbox"/>
Show Depth of Field	<input checked="" type="checkbox"/>

**Fstop / Aperture:** As mentioned earlier in the documentation, Fstop controls how wide the depth of field will be around the subject matter that the camera is capturing. Remember, a smaller Fstop value will allow for a narrower depth of field or DOF. A larger Fstop value will widen the range of the DOF. The Depth of Field value (in this case, 12'4") is the distance between the

**Near Limit** and **Far Limit** of the total Depth of Field range. The below image shows the effect of adjusting the Fstop value, and its effect on the depth of field. Remember, the area within the near and far limit will be the area in focus for your subject, shown in cyan colour.

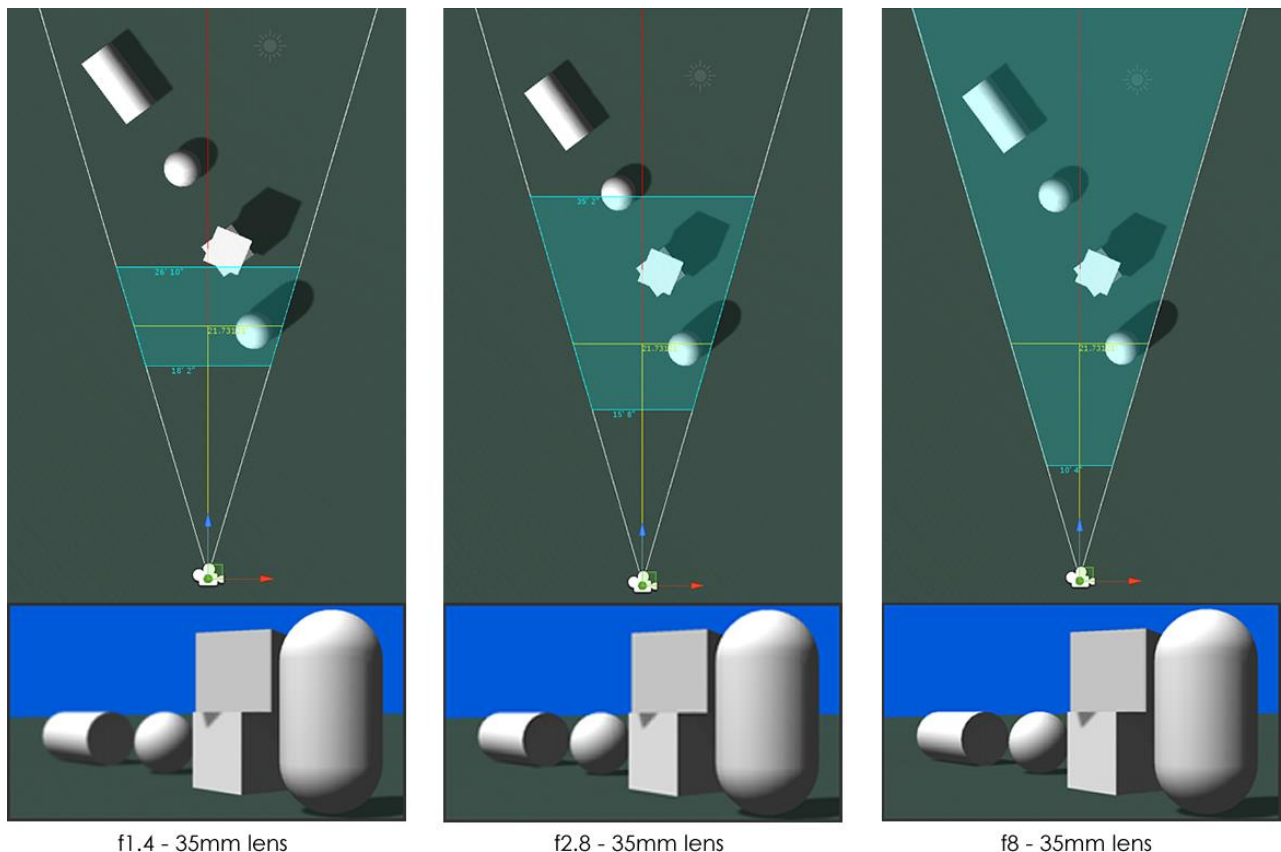


Figure 19: Effect of DOF through Aperture settings

This image demonstrates the effect of DOF. In the example, the camera is focused on the cylinder. Notice with the lower **f1.4** value, only the cylinder stays fully in focus, with falloff occurring from the 2 stacked boxes onward. (**Note:** Depth of Field not available in Unity Free)

With **f2.8** setting, the depth of field is increased, and the cylinder and blocks are in focus as well as part of the sphere. There is less drop off after the blocks because of the wider DOF.

The third example, **f8** has an infinite far limit for DOF. Therefore, the entire scene remains fully in focus.





## Depth of Field – Focus Options

**Drag & Drop to Focus:** This feature lets you select an object in the scene either by dragging and dropping an object from the Unity Hierarchy into this field, or by clicking the object field target button. This will automatically adjust Distance to Subject so that it focuses on this new object.

**Click Subject to Focus:** When enabled, will let the user click on any object in the scene, which will cause the camera to focus on that object. In the scene view, you will notice the yellow focus line will update to the new object selected.

**Center on Subject:** When Subject to Focus is enabled, this second checkbox option will appear. When enabled, this will cause the camera to rotate and face the object that was clicked.

**Show Depth of Field:** is a toggle to turn off the Scene GUI, which will be explained in the Camera Body Scene GUI section.

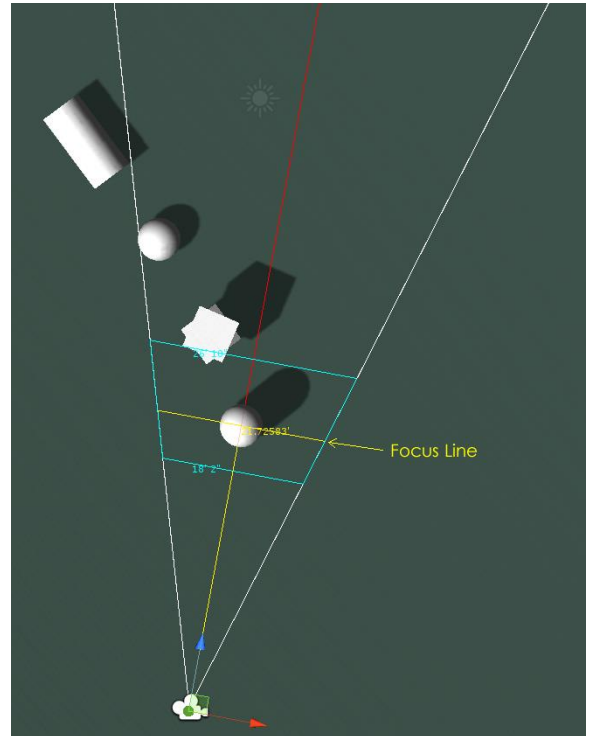
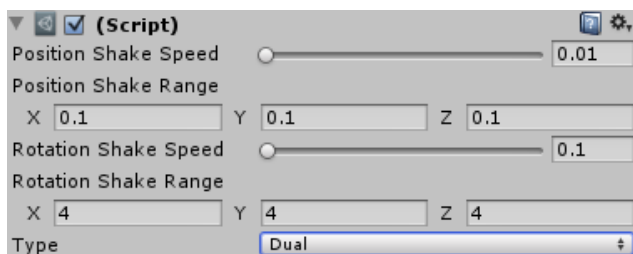


Figure 20: Camera focused on object using "Center on Subject" option

## Enhancements:



The initial version of Cinema Pro Cams includes an enhancement to add "Steady Cam" motion properties to your existing camera. As future versions of Cinema Pro Cams are released, additional enhancements will be added. Custom scripts can also be written, and added to this area of the Inspector.

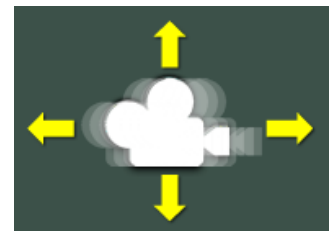


Clicking the add button will create a script attached to your camera, that allows you to control camera motion in a variety of ways. The Motion Camera Script will allow the camera to shake from very subtle movements, to very violent, explosion like movements. How the camera moves can also be controlled, whether it

be by its position, rotation, or a combination of both.

**Position Shake Speed:** Controls the speed at which the camera will change its position. Enter a value in the right box or control by slider

**Position Shake Range:** Controls how far the camera will move in each axis available in Unity. Enter values in manually, or hover your mouse over X,Y,Z to slide to the desired value.





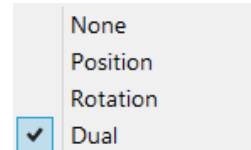
**Rotation Shake Speed:** Controls the speed at which the camera will rotate. Enter a value in the right box or control by slider

**Rotation Shake Range:** Controls how many degrees the camera will rotate in each axis available in Unity. Enter values in manually, or hover your mouse over X,Y,Z to slide to the desired value.



Unfortunately at this time, camera preview is not available for camera movement. In order to see the results of the camera movement settings, you must play your game.

**Type:** When setting camera motion, you can determine if you would like to have the camera move by its position, by its rotation, or by both rotation and position. Selecting the "Dual" option will combine both rotation and position for dramatic steady camera effects. Selecting either position or rotation, will adjust the camera to the settings selected under each type. If you are using a sequencing program for Unity such as Cinema Director, you can toggle the camera to "none" to cancel its movement.



## Camera Preview (Unity Pro Only)



The camera preview will show the user exactly what the current camera is seeing. Changing the above options, will affect how the preview behaves. The camera preview, for the most part, will update dynamically. If it does not, clicking on the scene will usually update things.

Some of the things reflected in the preview are – Aspect Ratio, DOF, Lens size, position, rotation and aperture settings. Camera movement (using the steady cam script) does not show live in the camera preview.

**NOTE:** The prefab that the camera is based on can be found in CS Camera -> Resources -> CameraBody.





## Camera Body Scene GUI

When a Camera Body is selected in the Unity Hierarchy, multiple coloured lines will appear on the camera body in your scene, complete with measurements. These are called “**gizmo lines**” and appear as visual aid, to assist you when creating and using cameras in Cinema Pro Cams.

### Hyperfocal Distance Frustum

As previously mentioned in the Editor section, the Camera Body component lets the user adjust the Depth of Field. By changing the focal length, f-stop and distance to subject, the depth of field can be adjusted.

The Near Limit, Far Limit and Distance to Subject are visually represented on the scene as a frustum. As the depth of field is adjusted, the frustum is updated to correctly display the area of focus. This is known as the hyperfocal distance.

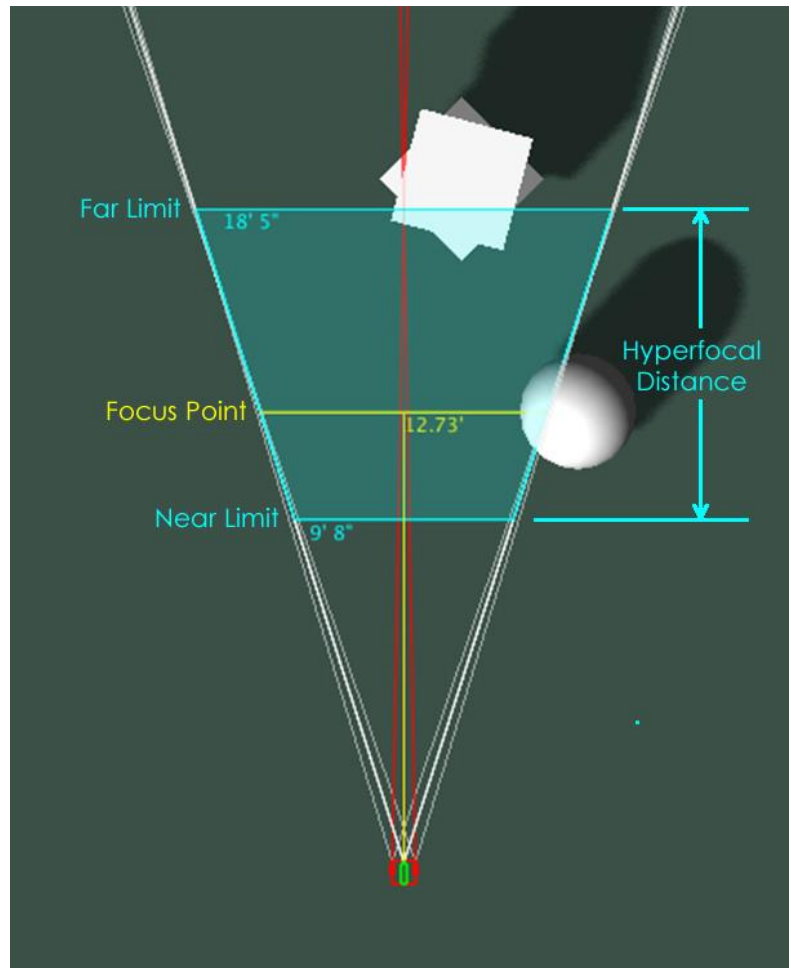


Figure 21: Gizmo Lines - Camera Body in Unity Scene

### Near Limit

The blue line closest to the camera is the Near Limit. Any object between the camera and near limit will appear out of focus.

### Far Limit

The blue line furthest from the camera is the Far Limit. Any object behind the far limit will appear out of focus.

### Focus Point

The yellow line between the near and far limit is the focus point (distance to subject). Any object at this distance will appear the sharpest.

Sometimes the far limit is so great that no matter how far away any object is, it will appear in focus. The frustum cannot logically be represented in this case and will fall-back to display the distance to subject line and near limit line.

We will discuss Stereo 3D Scene GUI (red lines) later in the documentation.



## Stereo 3D Cameras

The Stereo 3D component handles 3D functionality. It simulates a 3D camera rig by creating a left and right camera separated by an inter-axial value and toed-in with a specified convergence angle. The stereo 3D component of Cinema Pro Cams is a script that is added to either a new, or existing camera body in the Unity Scene.

### Create 3D Camera

To create a 3D camera, select “Create 3D Pro Cam” from the **Window > Cinema Suite > Cinema Pro Cams > Create 3D Pro Cam** pulldown. The created camera will always be aligned with the current Unity Scene view within the Unity project. To adjust what the camera is seeing, simply adjust the scene view in Unity.



### Create 3D Pro Cam Window

The Pro Cam Window will open when selected from the Create Pro Cam pulldown menu.

The Create Pro Cam Window is divided into two sections: **Camera Information**, and **3D Options**

**Camera Name** allows the user to specify a name for the camera. This is the name the camera will be called, when created in the current Unity project.

**Camera Body** allows you to drag and drop an existing camera body from your Unity project, and convert it to a 3D camera. Or, click the object field target button to select the camera body by name. If none is provided, a default Camera Body is created instead.

**Rig:** Select the 3D Camera rig you would like to use. The rig you select will affect the limits of Convergence and Interaxial values. Choices are **Tango**, **TS5** or **TS2**.

**Convergence** is the angle formed by your eyes and the observed object. The higher the angle value is, the nearer the observed object is to your two eyes, and vice versa. Use the slider to select the amount that the left and right camera will be toed in towards each other. This number is measured in degrees.

**Interaxial** separation is the distance between the centers of two camera lenses. Control the slider to determine the distance the left and right camera lens are away from each other. This distance is measured in millimetres (mm).

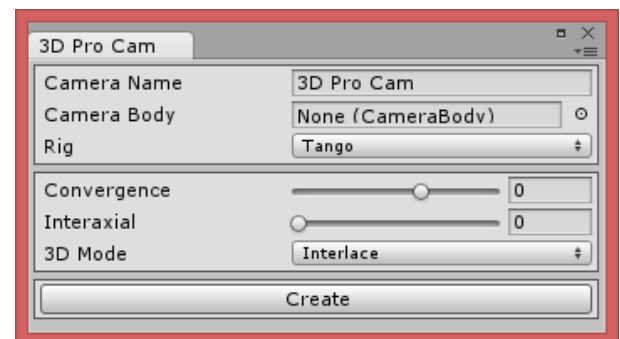


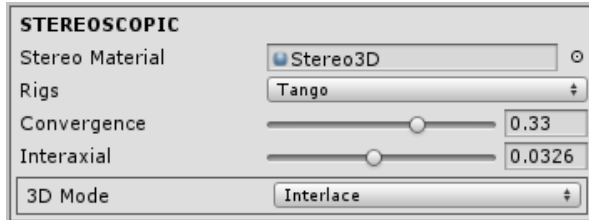
Figure 22: 3D Pro Cam Window



**3D Mode:** Determine how the 3D image will look in the game window, when the game is run, and in the camera preview window after the camera is created. **Choices available are Interlace, Reversed Interlace, Shutter, Side by Side, and Anaglyph.** We will discuss the differences in the Stereo 3D Editor Section. If you are using **Unity Free**, Side by Side is the **ONLY** supported 3D mode.

**NOTE:** Create your camera before adjusting Convergence and Interaxial values. Once the camera is created, these values can be adjusted in the Unity Inspector with a live camera preview of the stereoscopic 3D Effect.

## Stereo 3D Editor



Once the camera is created, or the 3D Pro Cam is added to an existing camera body, and Stereoscopic component will be added to the Unity Inspector under the camera body. This component allows the user to edit which 3D rig is in use, adjust the convergence and inter-axial of the 3D rig, and

select the 3D mode.

**Stereo Material:** This is a pre-defined material for rendering the camera. This option should not be modified, except by advanced users.

**Rigs:** In this example, the Tango rig is selected which has a min/max convergence of 0 and 4 degrees. The Tango rig's min/max interaxial values are 0 and 70mm. Selecting a different rig, such as the TS5 and TS2 Reality rigs, will adjust the min/max values of convergence and interaxial options to suit the real-world constraints of those rigs.

**Convergence:** Adjusting these values in degrees, will determine where the viewpoint of the left and right lens will meet in the scene. This is discussed further in Stereo 3D Scene GUI.

**Interaxial:** Adjusts, in millimetres (mm) the distance between the left and right lens. Interaxial effects are also discussed in the Stereo 3D Scene GUI of this document.

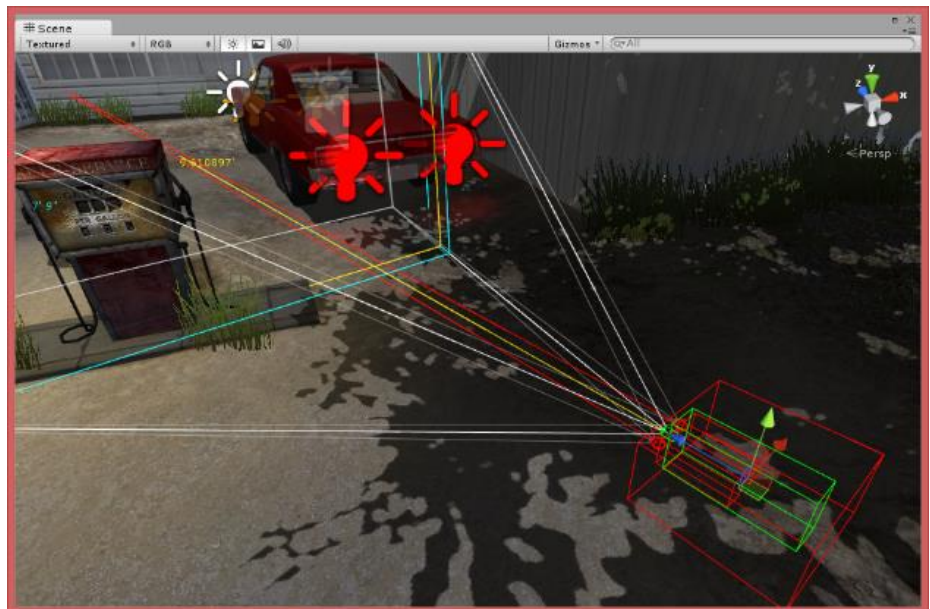


Figure 23: 3D Pro Cam inserted into Unity Scene



## 3D Mode

As mentioned earlier, Cinema Pro Cams can render Stereo 3D in one of 4 ways (Interlace, Reverse Interlace, Side-By-Side and Anaglyph). Depending on the project you are working on, and the type of display, one of these modes should suit your needs. If you do not have a 3D display but still need to do 3D creation, use the Anaglyph mode. Adjustments made will reflect in the camera preview.



*Figure 24: Interlaced Pro Cam Preview*

**Interlace:** This will weave the two cameras together to create an interlaced image. With each row being 1 pixel in height, a monitor that supports interlacing can create a 3D image. Note that if not viewing in full screen, the first row of the image might be on an odd pixel relative to the monitor that will cause the depth to appear reversed. It is best to change the 3D Mode to **Reversed Interlace** if this happens. Since interlacing requires two "RenderTextures", this feature will only work with **Unity Pro**.





Figure 25: Side-By-Side (SBS) Pro Cam Preview

**Side-By-Side:** This will only work if running the game in full screen. Side-By-Side is a universal 3D format that can be read and decoded by any 3D monitor/TV or display. Side by side is the preferred option for the final render of a 3D previz project or 3D game. This feature works with **Unity Free** since it does not require "RenderTextures" to create a final image.



Figure 26: Anaglyph Pro Cam Preview

**Anaglyph:** Will use the Stereo3D shader to only consider the red color from the left camera as well as green and blue for the right camera. You will need a Red/Cyan pair of anaglyph glasses to preview the effect. Since this uses "RenderTextures", it will require **Unity Pro** to work.

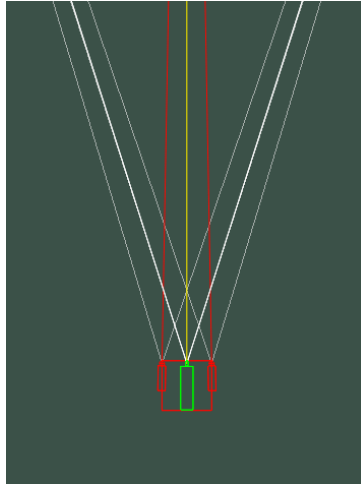


Figure 27: 3D Pro Cam with Camera Body

## Stereo 3D Scene GUI

After creating a 3D Pro Cam, and adding it to a camera body, additional gizmo lines will appear in the Unity scene view to represent the 3D camera as part of the existing camera body.

The red box represents the 3D rig containing the left and right cameras. The two red rectangles attached to the rig are two cameras – one for the left lens, and one for the right lens.

The green box is the main camera body, which is drawn by the Camera Body Scene GUI. The output of the two cameras is blended together using the specified 3D method and is rendered using the main camera.

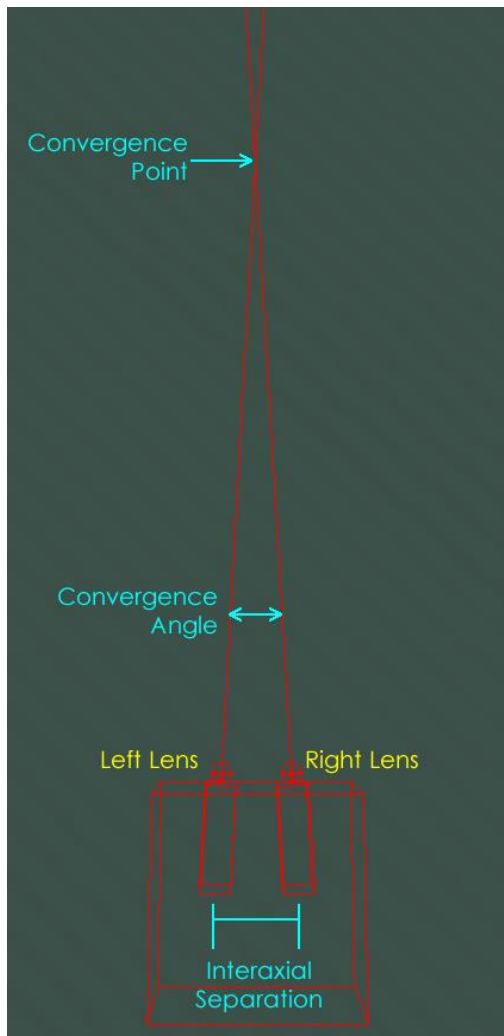


Figure 28: Stereo 3D Glossary

## Stereoscopic Glossary

**Convergence Point:** This is the point at which the left and right lenses are focused (also known as the point of “zero parallax”). Any objects before this point will be in positive space (pop out of the screen). This is known as “positive parallax”. Any objects behind this point will be in negative space (inside the screen). This is known as “negative parallax”.

**Convergence Angle:** The angle at which the two convergence lines cross. This angle is defined by both the convergence point, and the interaxial separation.

**Interaxial Separation:** The distance between the centres of the left lens and the right lens of the 2 cameras used to create the stereoscopic 3D effect. Interaxial separation will control the intensity of the 3D effect in the scene. One must be careful to not over-exaggerate the effect, as this can lead to viewers experiencing nausea or headaches.



## Camera Equipment Models

For the serious cinematographer who wants to previz movie sets, or constrain their camera to actual camera bodies, we are including a small set of real world models that are specific to the film industry. These models include:

Camera Rigs & Heads, Camera Bodies, Dollies and Carts, Jib Arms, Lights and Props.

The models can be found by navigating to the “ProCams Models” folder inside of your Unity project, after installing Cinema Pro Cams.

The models are not textured, and do not contain any animations or rigging. We have included them for developers to play with and animate or configure on their own. All included models are FBX models created with Maya.

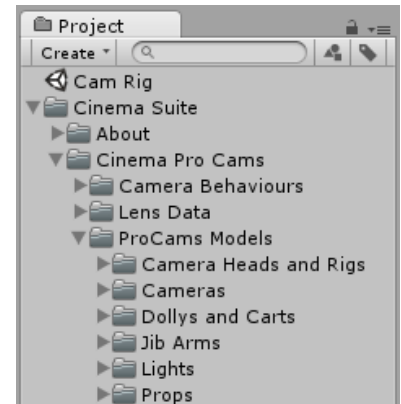


Figure 29: ProCam Model List

The below picture shows a Cinema ProCams camera, mounted to an Arri Alexa Plus camera body, which is attached to an MR1036LP JimmyJib Jib arm.

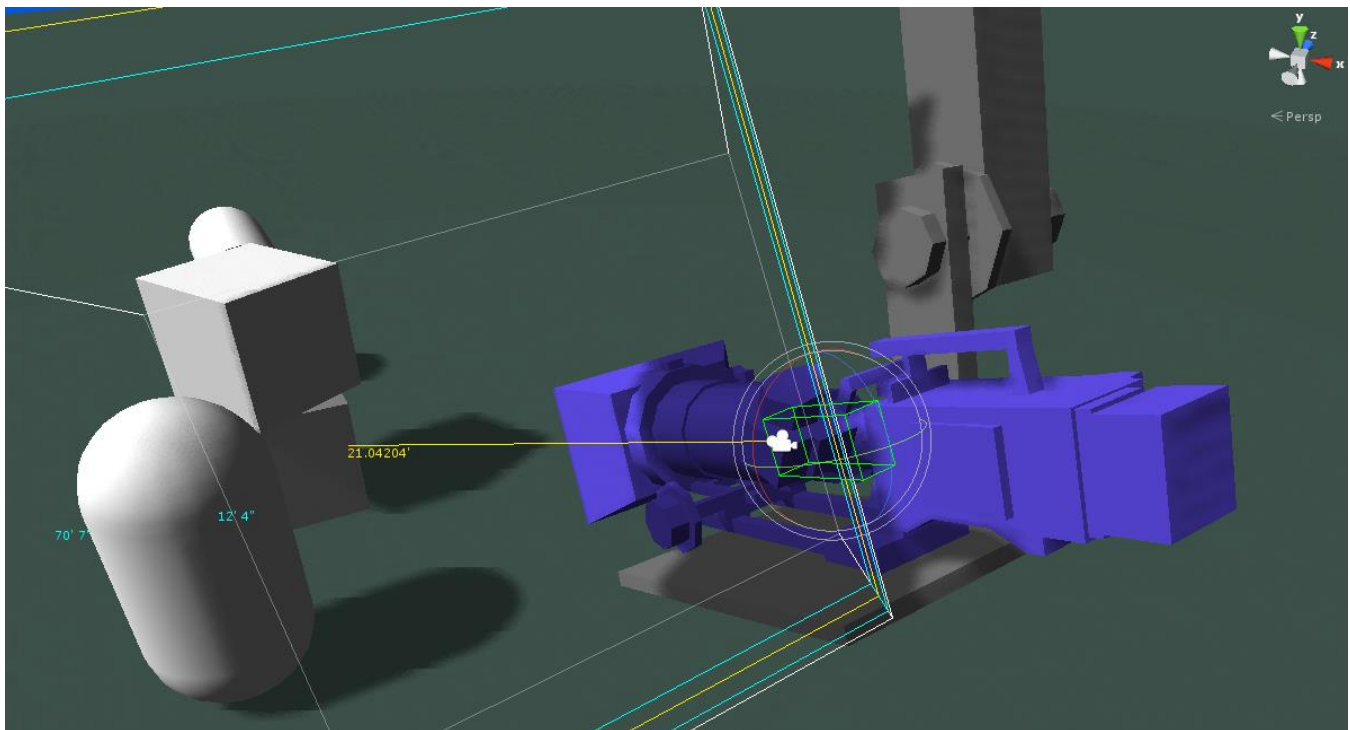


Figure 30: Arri Alexa Plus Mounted to JimmyJib Arm

With future versions of Cinema ProCams, we may add animations and constraints to dollies and cranes, to make them match real-world criteria.



## Community

We want to hear from you! Quite simply, without you, none of what we develop would be possible. We always want to hear from our community, whether it is for feedback, sharing ideas, adding features, and providing additional help. Here's how you can find us:

Website:	<a href="http://www.cinema-suite.com">www.cinema-suite.com</a>
Facebook:	 <a href="https://www.facebook.com/CinemaSuiteInc">/CinemaSuiteInc</a>
Twitter:	 <a href="https://twitter.com/CinemaSuiteInc">/CinemaSuiteInc</a>
YouTube:	 <a href="https://www.youtube.com/CinemaSuiteInc">/CinemaSuiteInc</a>
Blog:	<a href="http://www.cinema-suite.com/blog">www.cinema-suite.com/blog</a>
Email:	<a href="mailto:support@cinema-suite.com">support@cinema-suite.com</a>
Forums:	<a href="http://www.cinema-suite.com/forum">www.cinema-suite.com/forum</a>

## Help and Support

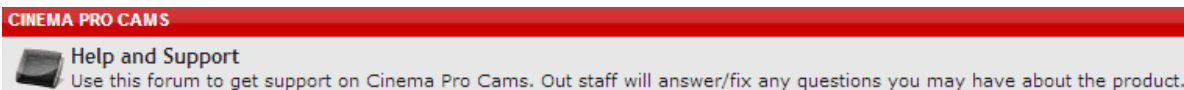
### Cinema Suite Forums:

The fastest way to obtain support for Cinema Pro Cams is to visit the Cinema Suite forums. Our forums can be found at [www.cinema-suite.com/forum](http://www.cinema-suite.com/forum).

Before creating a post, please make sure to search the forum using the search bar located in the upper right area of our forum site.

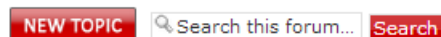


If you cannot find what you are looking for, please create a new forum topic under the Cinema Pro Cams category "**Help and Support**" by clicking on the text below.



Once inside the Help and Support area for Cinema Pro Cams, create a new topic by selecting the new topic button in the upper left area of the page.

### Help and Support







We constantly monitor our forums for new support inquiries.

## Email:

If you fail to receive an answer in the forums, you may also email our support team directly. Our email address is [support@cinema-suite.com](mailto:support@cinema-suite.com).

Please note the following when emailing support for quickest service:

1. We need 2-3 days to process email support requests, due to volume.
2. For fastest service, please provide your Unity Asset Store Purchase invoice number for our product.
3. Put invoice number in subject field, with brief description of problem.
4. In the body of the email, please provide as much of the following as possible, for quickest service:
  - Detailed explanation of the problem. Provide screenshots if possible.
  - What version of Unity?
  - What version of Cinema Pro Cams? (Go to **Window>Cinema Suite>About** to obtain version number).
  - Sequence of events leading to issue.

## Licensing:

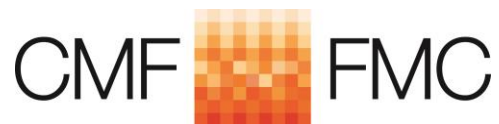
Licensing for Cinema Pro Cams is governed by the Unity Asset Store End User License Agreement (EULA). For more information about the EULA, please [click here](#) for more information.



## Thank you

Without you, what we do would not be possible. We sincerely thank you for purchasing Cinema Pro Cams, and allowing us to create software that helps the community do their work quicker, easier, and hopefully with a bit more fun.

Cinema Suite Inc., would like to extend a special thank you to the Canadian Media Fund, for making Cinema Pro Cams Possible.



[www.cmf-fmc.ca](http://www.cmf-fmc.ca)