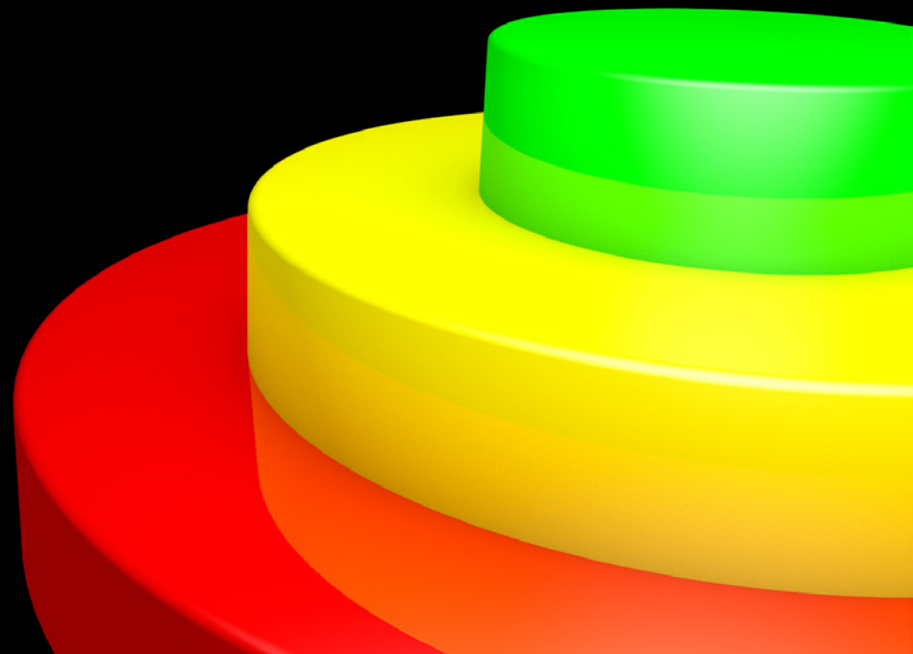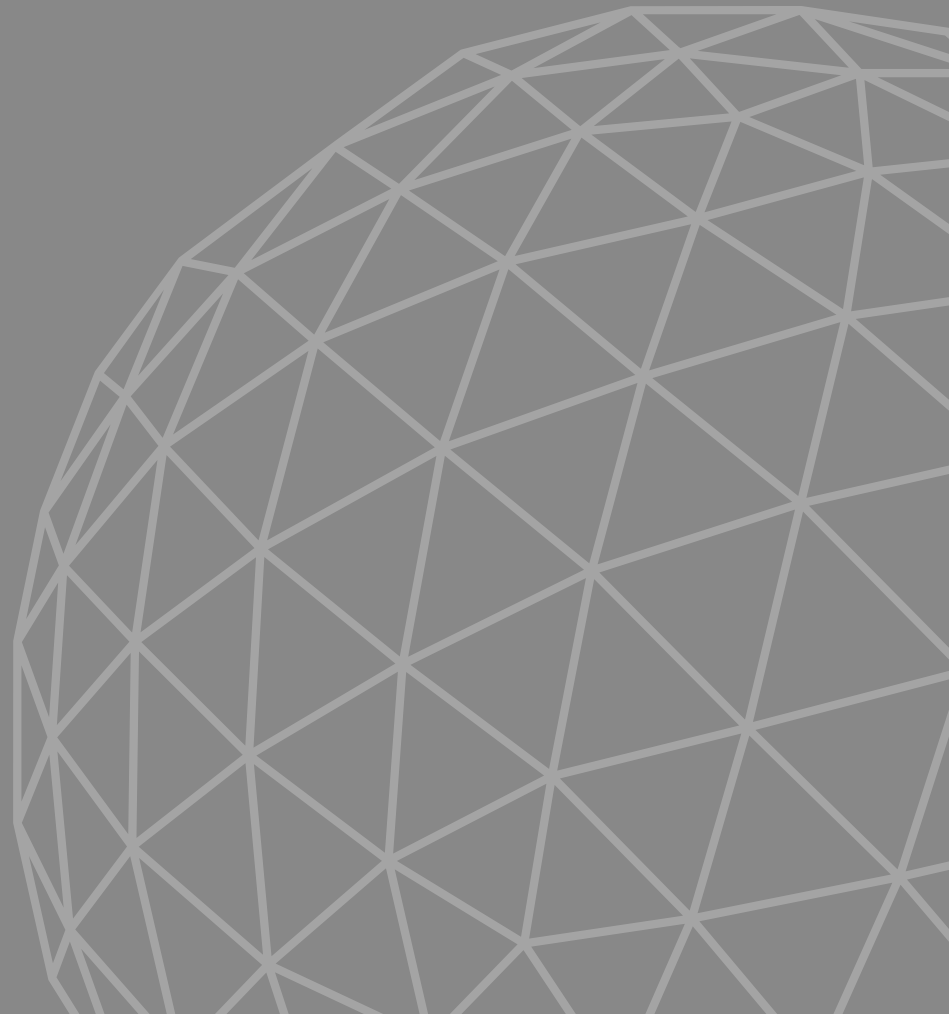# Blendy 360 Cam
for *Cinema4D*
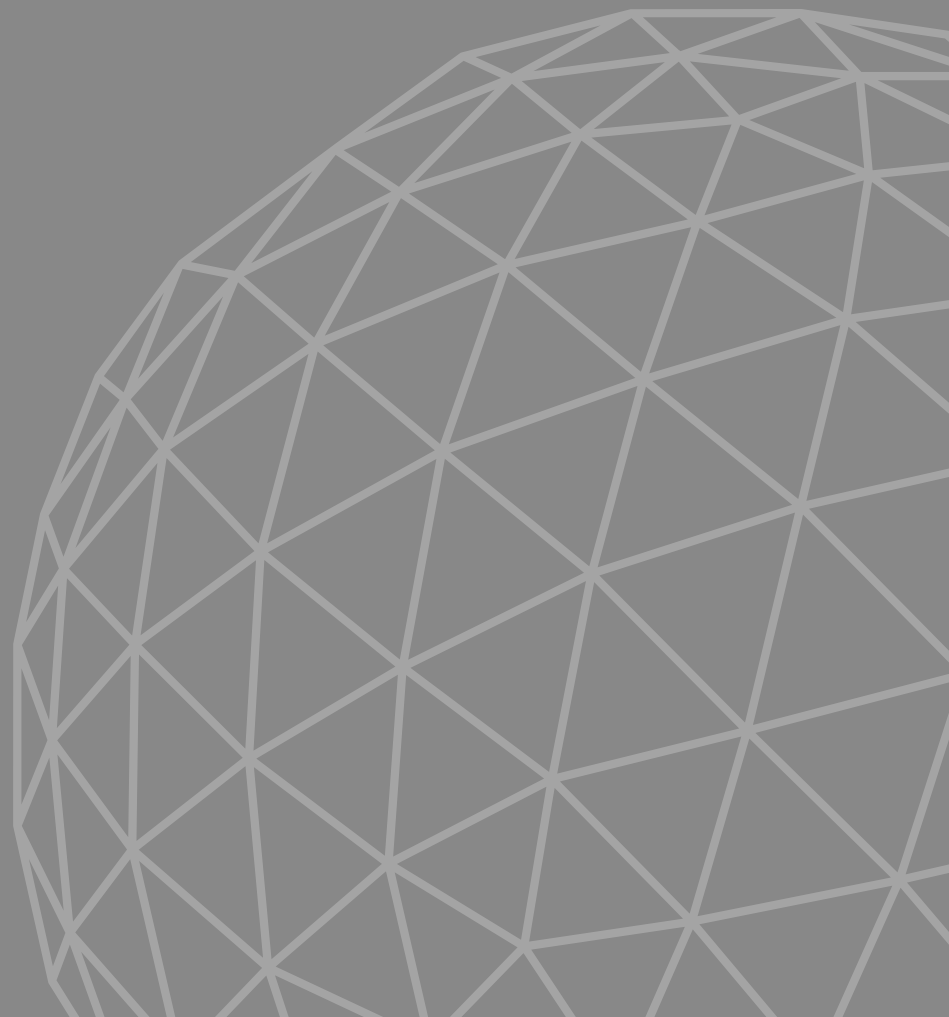### version 2.4

FEATURES

Blendy 360 Cam
for **Cinema4D**

- Render true immersive scenes on **Cinema 4D**.

- 6 different camera **presets**: 360 Panorama, Fisheye, Fulldome, Cubemap, Cylindrical, Little Planet.

- Full control over **Field of View**, with aspect ratio calculator.

- **ExoCamera** render for Fulldome and 360 Panorama.

- **Stereoscopic** render for all cameras, as anaglyph, side by side, interlaced or single channels.

- Custom **eye separation** map to reduce stereoscopic separation on specific parts of the frame.

- Real time stereoscopic **eye position simulator**.

- Automatic or custom **Domemaster/Fisheye** masking, rendering 27% less pixels.

- Print **Domemaster info** on the masked area: frame number, timecode, credits, custom logo and mask on the Domemaster masked area.

- 6 fully customisable **Cubemap** formats, or single channels.

- Real time preview (macOS only, via Syphon) with **Oculus Rift**, **Blendy Dome VJ** (buy) or **Blendy Dome VJ Demo** (download).

- **Full featured demo** with limited resolution.

- Plenty of examples available from the plugins menu.

INSTALLATION

Blendy 360 Cam
for **Cinema4D**

SYSTEM REQUIREMENTS

• Same **hardware specs** required by Cinema 4D.
• Make sure you have the **minimum OS version** as the table below.
• Make sure you have the **minimum Cinem 4D version** as the table below.

	Lite	R13	R14	R15	R16	R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	2023	2024	2025
360 Cam	no	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Cinema 4D	no	R13.061	R14.041	R15.064	R16.050	R17.055	R18.057	R19.068	R20.059	R21.207	R22.123	R23.110	R24.113	R25.121	R26.110	2023.2.2	2024.5.0	2025.1.0
macOS	no	10.7.5	10.7.5	10.7.5	10.7.5	10.8.5	10.9.5	10.11.6	10.11.6	10.12	10.12	10.14	10.14	10.14	10.14	10.5	10.5	10.5
Windows	no	no	no	Win 7 64	Win 7 64	Win 7 64	Win 7 SP1 64	Win 7 SP1 64	Win 7 SP1 64	Win 10	Win 10	Win 10	Win 10	Win 10	Win 10	Win 10	Win 10	Win 10

Warning: The plugin was built for the Cinema 4D versions on the table above. It is common to newer versions not support plugins build for previous versions. If you have problems with a newer Cinema 4D, please contact support, and we will build and test the plugin for the latest version available.

INSTALLATION

• Make sure you already have Cinema 4D installed.
• Download the latest Blendy 360 Cam plugin here:
• Mac: http://download.studioavante.com/Blendy360Cam/Blendy360Cam.pkg
  • Run Blendy360Cam.pkg.
  • Choose the Cinema 4D versions you want to use the plugin.
  • Finish the installation and restart Cinema 4D.
  • The installation will always be on the default Cinema 4D folders (/Applications/MAXON/CINEMA 4D Rxx/plugins/). If your Cinema 4D is installed on another place, move the **Blendy360Cam** folder created by the installer to your plugins folder.
• Windows: http://download.studioavante.com/Blendy360Cam/Blendy360Cam_win.zip
  • Unzip and copy the corresponding Blendy360Cam folder to your Cinema 4D plugins (Program Files/Maxon/Cinema 4D RXX/plugins/)
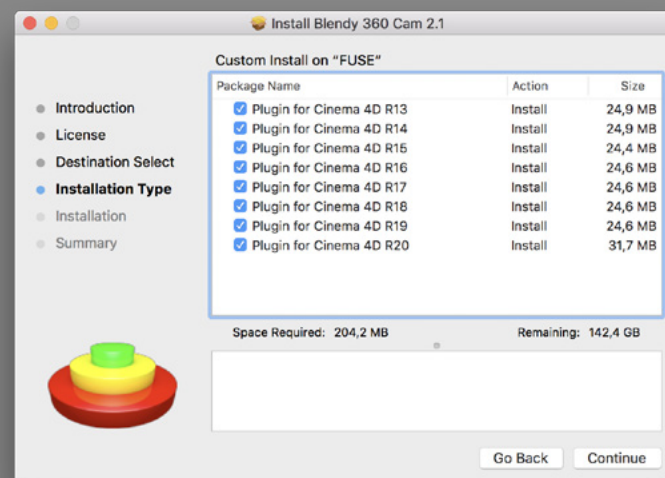
AUTHORIZING A COMPUTER

Blendy 360 Cam is fully functional without authorization, but with render size limited to 512 pixels.

The plugin can be used with a **Blendy Dome VJ** or a **Blendy 360 Cam** serial. To authorize and unlock the plugin, purchase a serial here:
http://www.blendydomevj.com/buynow/

After installation, follow these steps to authorize:
• Make sure you are connected to the internet.

• Go to **Render Settings** on Cinema 4D.

• If you see **Blendy 360 Cam** effect, select it.
• If you don't, create it by clicking on **Effects...** and **Blendy 360 Cam**.
• Click on **Authorize this Computer.**
• The **AVAuthorizer** app will open. Use your serial to login and follow the instructions.
• If the authorizer app is unavailable, the default browser will open. Use your serial to login and follow the instructions.
• Go back to Cinema 4D and enjoy.
• If it's authorized on the app, but not on Cinema 4D, click the **Authorize this Computer** button again.

You can see your licence status and all authorized computers on **AVAuthorizer** or the Licence Manager website, use your serial to login.

All communication with the authorization server is encrypted by the HTTPS protocol, and we promise never to share your personal information.
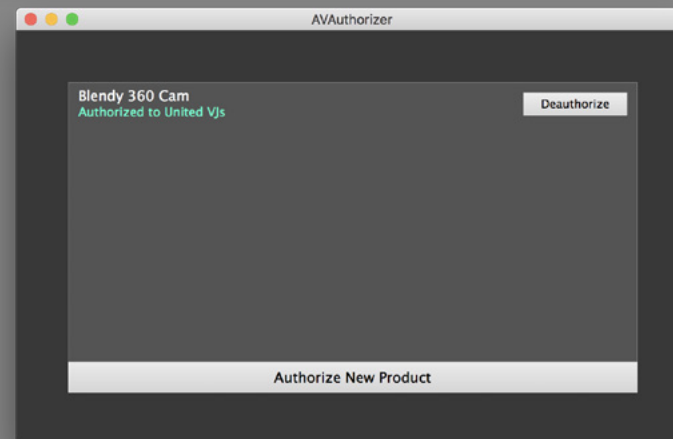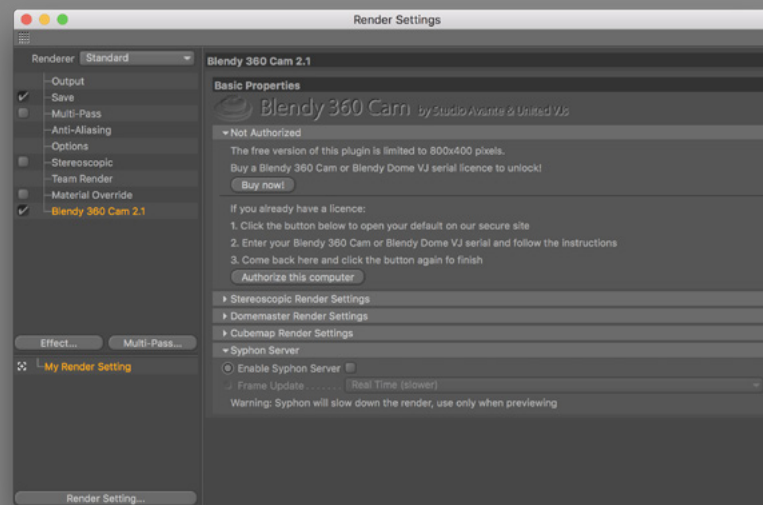
DEAUTHORIZING A COMPUTER

If you want to use your serial in another computer, you need to deauthorize it first.

• Make sure you are connected to the internet.

• Open Cinema 4D Render Settings on the currently authorized computer.

• If you see Blendy 360 Cam effect, select it.
• If you don't, create it by clicking on **Effects...** and **Blendy 360 Cam**.
• Open the Authorization tab and click **Deauthorize this Computer**.
• Now the serial is free to be authorized on another computer.
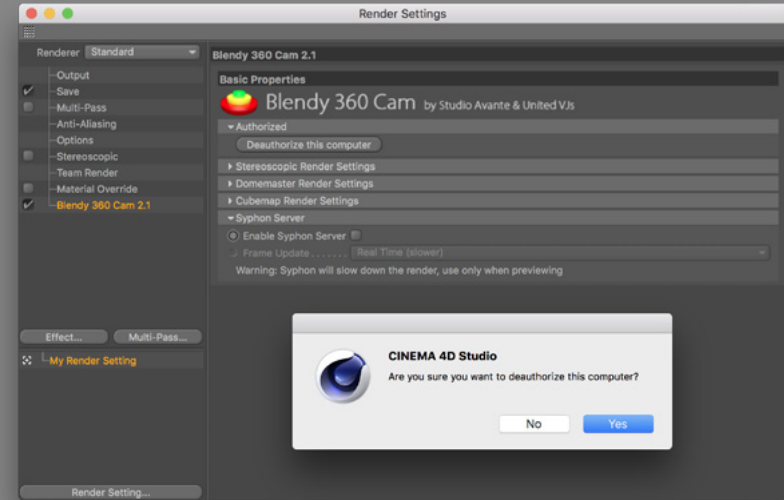
USAGE

Blendy 360 Cam
for Cinema4D
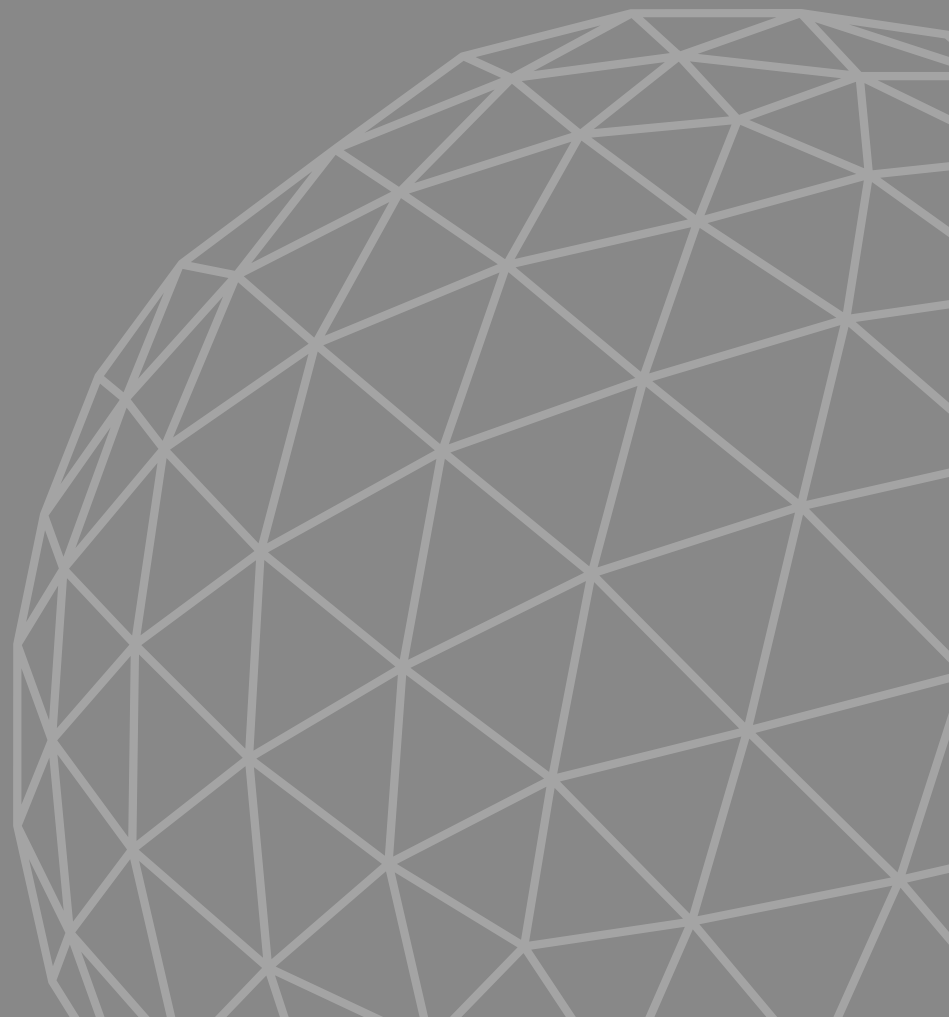
QUICK START

It is really easy to start using Blendy 360 Cam:

• Create a **New Scene**.
• **Add a Camera** to your scene using the **Extensions/Blendy360Cam** menu templates.
• Make your stuff and render!
• The menu also have access to this manual and several examples.
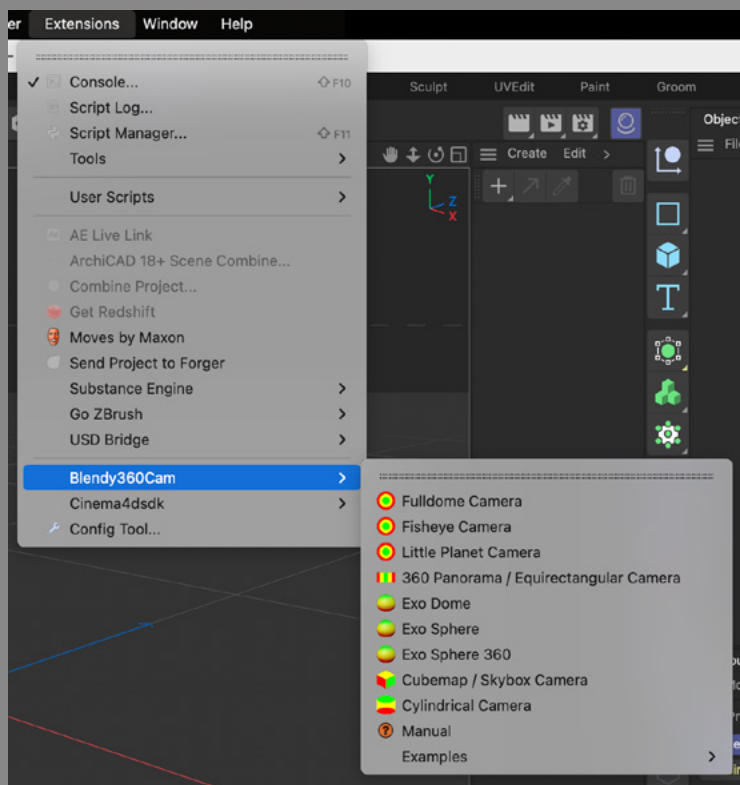
ADAPT AN EXISTING PROJECT

So you already have a project that you want to render with Blendy 360 Cam:

• Find your camera on your scene and select it
• Add the Blendy 360 Cam tag from the Tags Menu or by second-clicking the camera.
• If you don't have a camera, add it from the **Plugins/Blendy360Cam** menu.
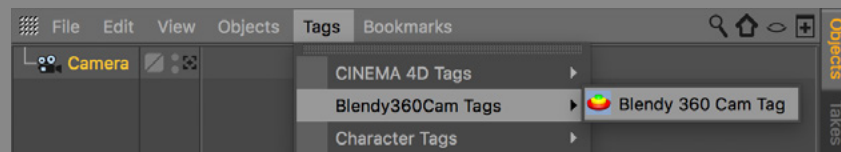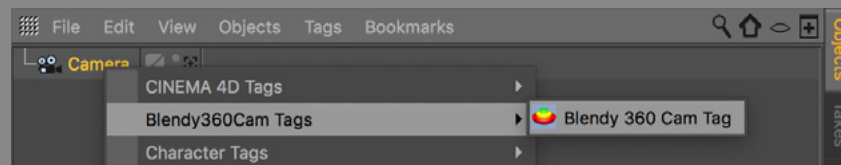
UPGRADING OLD PROJECTS (VERSION 1.x)

Blendy 360 Cam 2.x is not compatible with version 1.x, so you need to completely remove it from the project then follow the instructions to add the plugin to an existing project.

• Go to **Render Settings**, select **Blendy 360 Cam** and delete it.
• You may want to copy any custom settings before deleting, like the Domemaster credits info, and custom Field of View.

TAG AND CAMERA OPERATION

All **camera related settings** are on the Blendy 360 Cam **tag**.
All **render related settings** are on the Blendy 360 Cam Effect on **Render Settings** (automatically created when a tag is added to the scene).
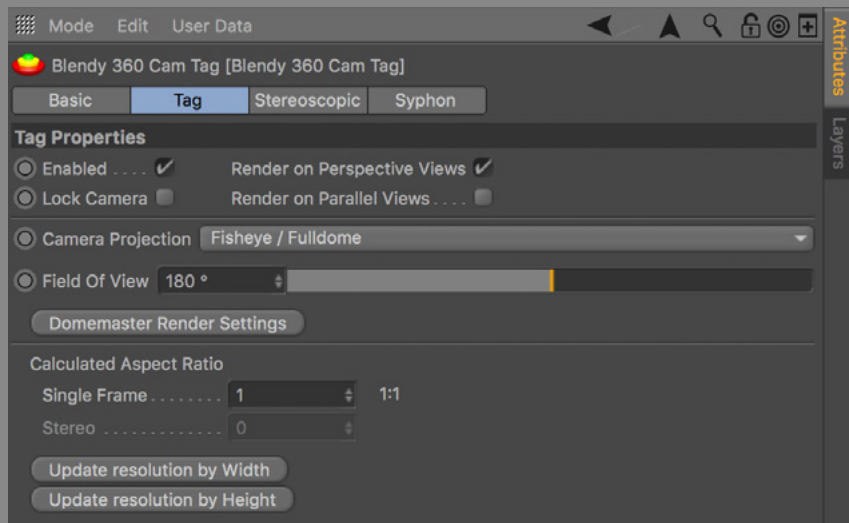


You can easily disable rendering using Blendy 360 Cam from the **Enabled** setting on the tag, or disabling it on the Objects Manager. The camera will function as if no tag is present.
Any camera with a tag that is not active will have a grayscale tag icon.
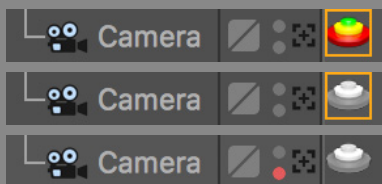
A camera with the Blendy 360 Cam tag **don't need to be active** to render. The plugin look for all active cameras in the scene with an enabled tag, and choose as the active camera in this order:

1. Camera is set as the active camera.
2. First enabled camera from top to bottom.
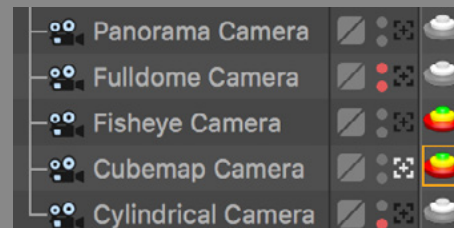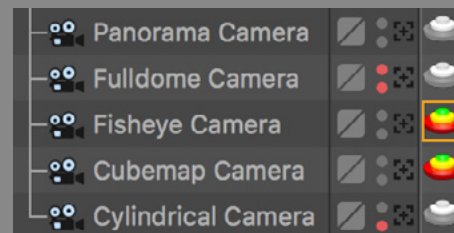
If you do not animate your camera, it's a good idea to lock it with the **Lock Camera** setting to avoid moving it out of place. It is in fact a shortcut add/remove a **Protection tag** to the camera.
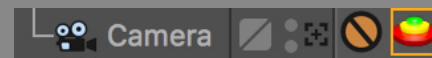
EDITOR PREVIEW

It is not possible to emulate the actual camera projection in the Editor views, but you can preview the renders in it.

By default the **Render on Perspective Views** tag setting is enabled, meaning that if you click **Render View**. It is possible to preview on the parallel views as well by enabling **Render on Parallel Views**.

Editor preview renders will always use the Calculated Aspect Ratio (more to follow), with letterbox to fill the view.

The only camera projection that cannot be fully previewed is the Cubemap, the preview will contain the channel set on the tag.

RENDER OUTPUT AND ASPECT RATIO

Blendy 360 Cam will always fill the frame, using the **Width** and **Height** configured on the **Render Settings Output**.

So it is convenient to remember that is always your responsibility to set the project size accordingly.

Since all the 360 projections have an optimal aspect, the tag can help you with the **Calculated Aspect Ratio**.

It displays the pixel perfect aspect ratio for the current **Projection, Field Of View and Stereoscopic** settings.
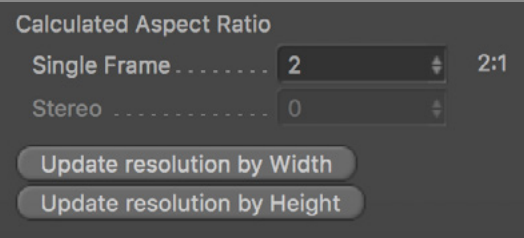
You can change your project resolution to use the calculated aspect ratio, keeping the width or height.
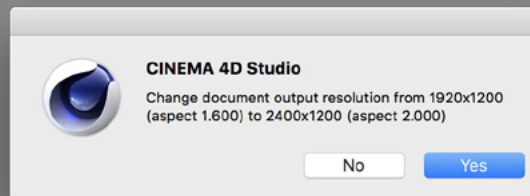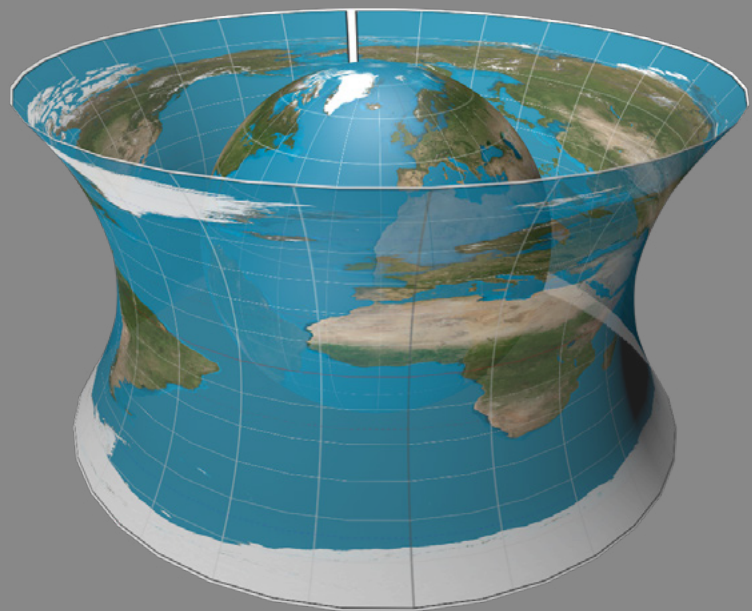
PROJECTIONS

Blendy 360 Cam

for Cinema4D
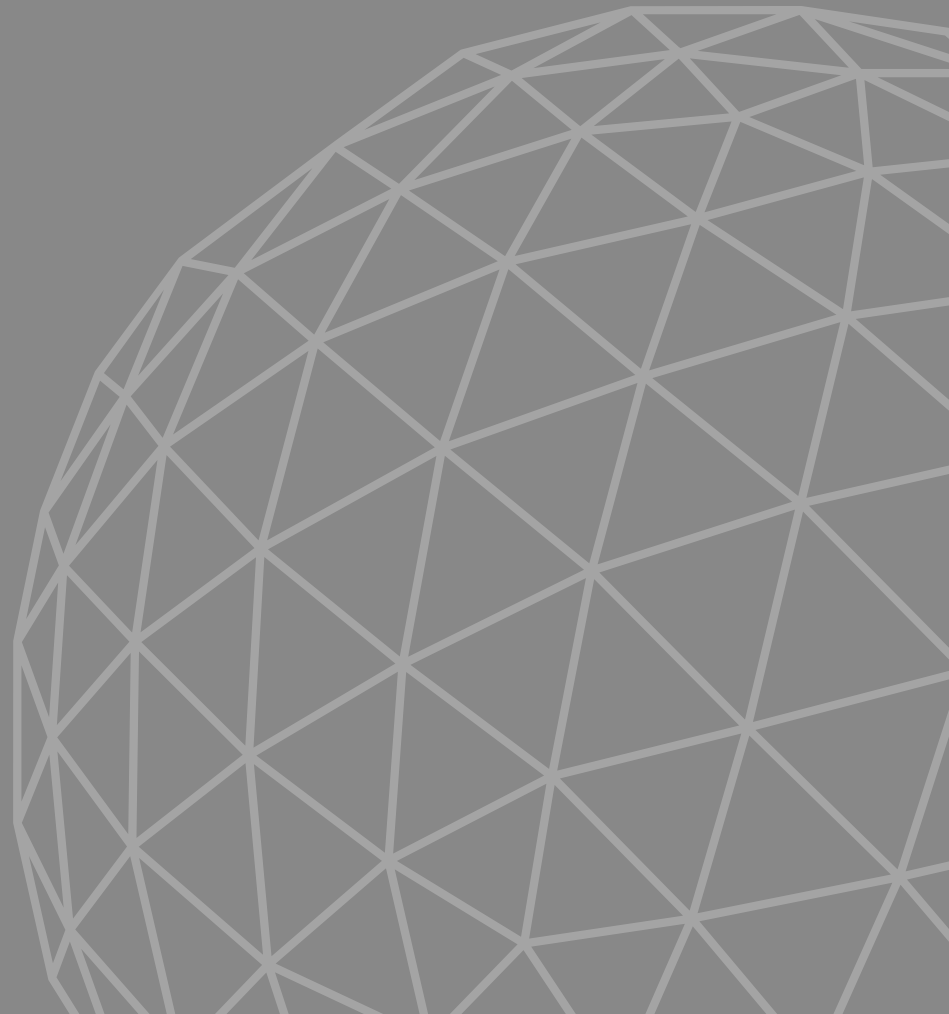
WHAT IS PROJECTION

Projection is the technique used to draw a 3D objects (your scene) into a 2D surface (the rendered frame).

Much like Cartographic Projections represent the surface of the earth on a map.

It can also be interpreted as the lens of the camera. In fact, Blendy 360 Cam is classified in Cinema 4D as a Custom Lens Plugin.

The most common projections used on 3D graphics are **Perspective** and **Orthographic** (or **Parallel**). Each one has its own benefits, and give completely different results.
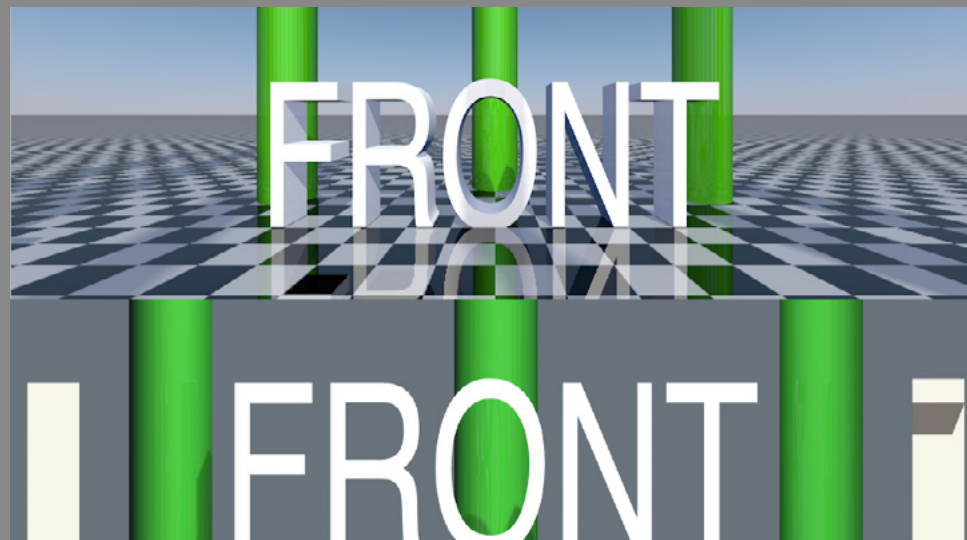
IMMERSIVE PROJECTIONS

Blendy 360 Cam offers 4 projection types (Panorama, Fisheye, Cubemap and Cylindrical), each drawn with a unique yellow gizmo around the camera.

There are 6 camera presets using those projections available from the **Plugins/Blendy360Cam** menu:
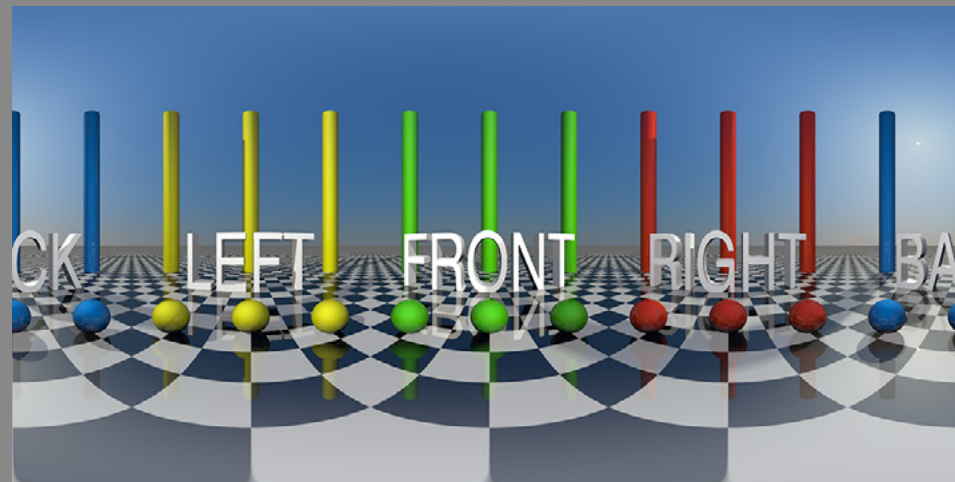
Panorama
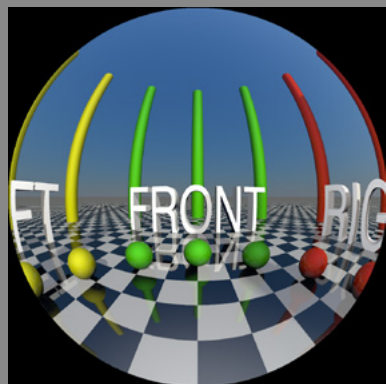
Fisheye

Fulldome

Little Planet

Cubemap

Cylindrical
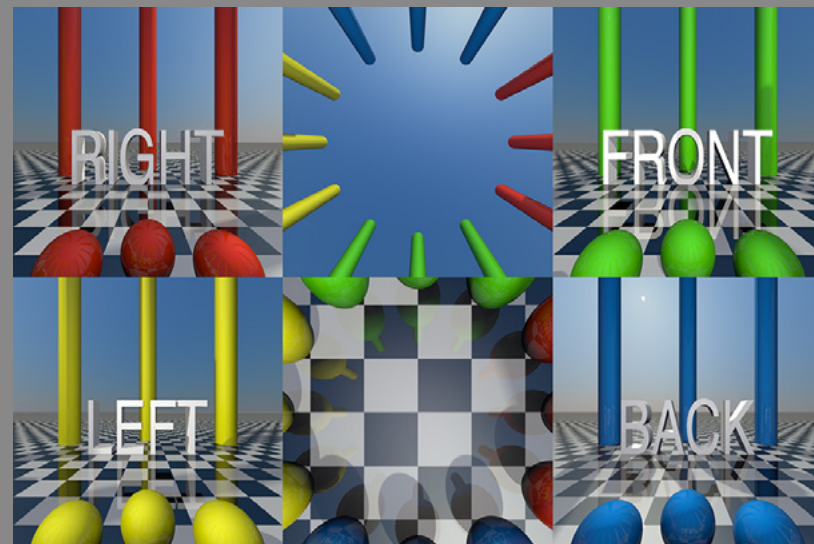
CAMERA PRESET:

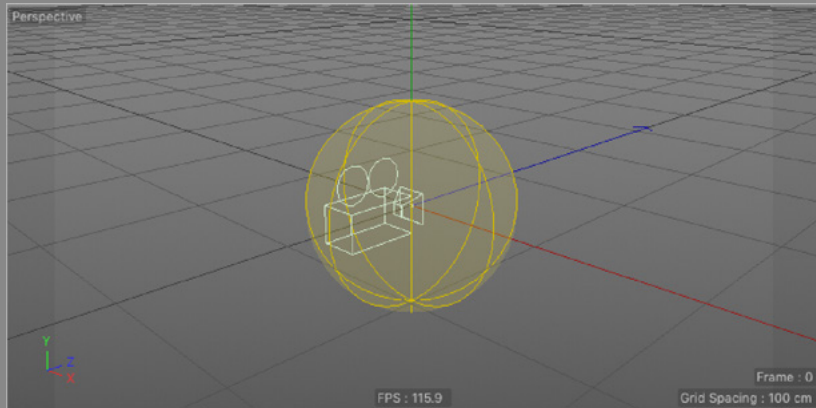# 360 PANORAMA

Blendy 360 Cam
*for **Cinema4D***
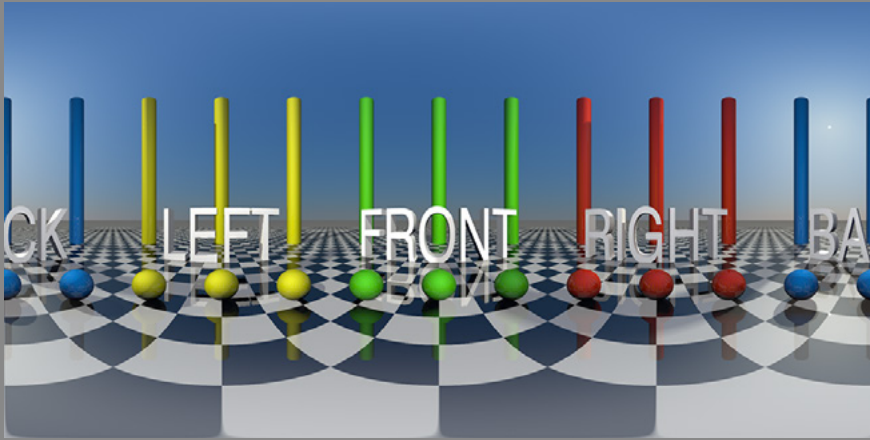
CAMERA PRESET: 360 PANORAMA / EQUIRECTANGULAR

Used for Virtual Reality, usually covers 180 by 180 degrees, or everything from left to right, top to bottom.
Mimics real world camera setups with a single or dual (stereo) cameras for shooting Point Of View experiences, like in the movie Hardcode Henry (Ilya Naishuller, 2015). This projection is the perfect fit for post production.
Also good for upright immersive dome environments like the iDome.

- The Camera Projection is **360 Panorama / Equirectangular**.
- The camera is always pointing to the center of the render, which is the front view.
- Position and animate your camera at will.
- The standard aspect ratio for 360 Panoramas is 2:1.
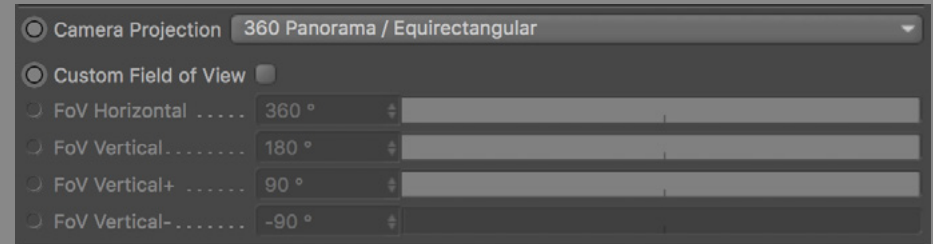
- The **Horizontal Field** of View will be usually **360 degrees**.
- Horizontal FOV will start opening the FOV from the back to the front.
- Vertical FOV can be used for top (V+) or bottom (V−).
- The Calculated Aspect Ratio will be updated to render the custom FOV without distortion.
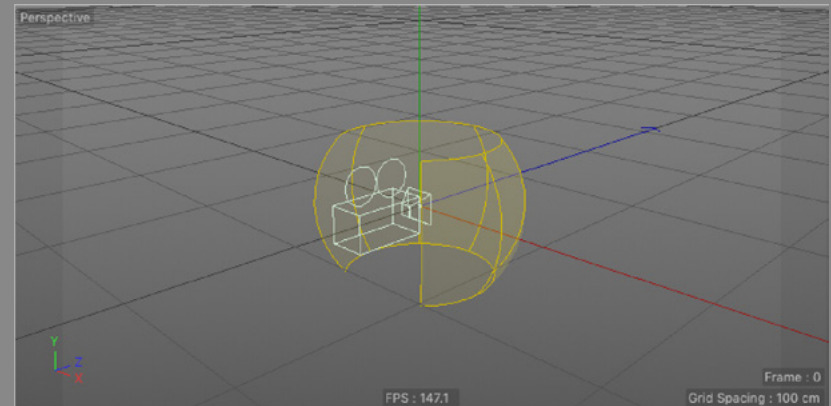
CAMERA PRESET:

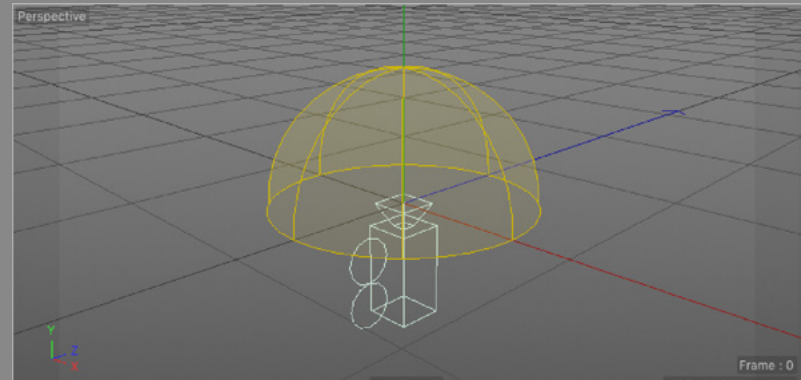# FULLDOME

Blendy 360 Cam
*for* **Cinema4D**
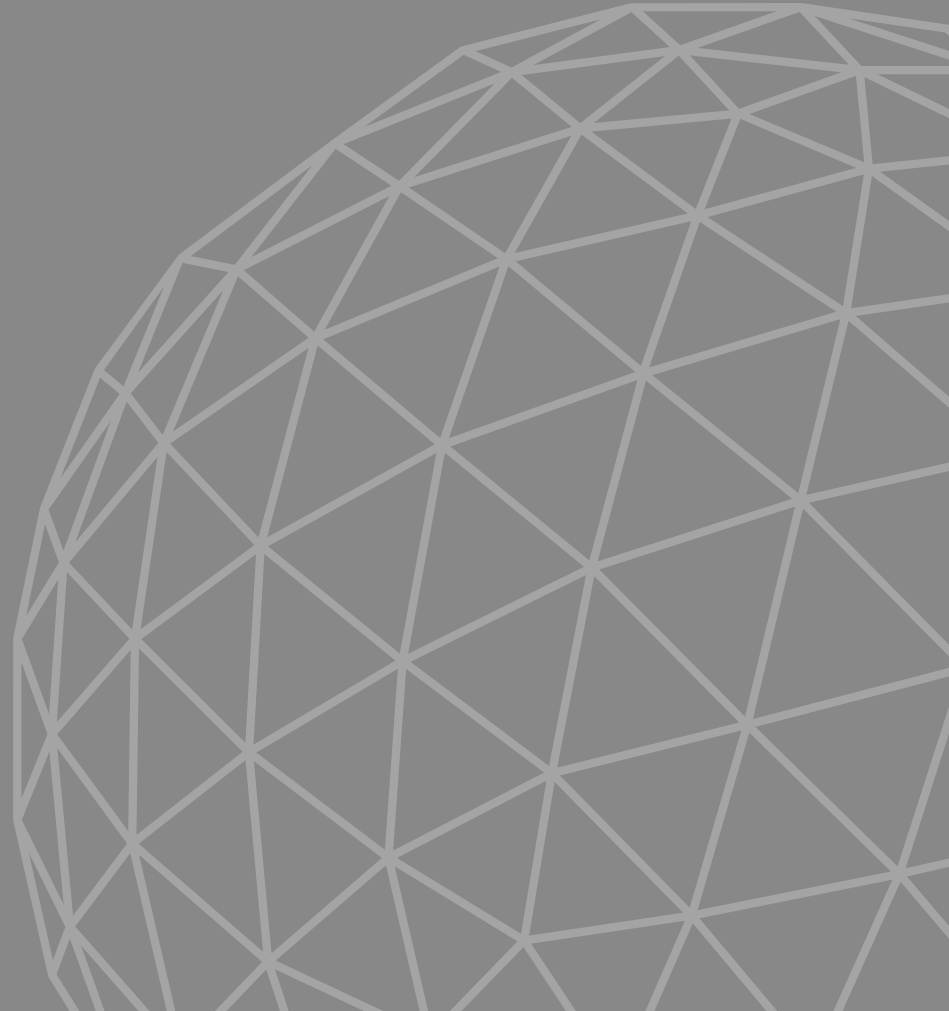
CAMERA PRESET: FULLDOME

Fulldome Theatres are immersive dome-shaped environments with video projectors covering the whole inside area, like digital planetariums.

The standard format is called **Domemaster**, rendered with a **Fisheye projection**, formally known as **Azimuthal Equidistant**.

Different from Fisheye footage, where the subject is on the center of the frame, Fulldome footage has the subject on the bottom (more to follow).

- The Camera Projection is **Fisheye / Fulldome**.
- The camera is always pointing to the top of the dome, known as **Zenith**.
- Usually the camera stays at position 0x0x0 and all the action occurs around it. But not necessarily, you can animate the camera at will.
- The Domemaster preset camera is locked by default, unlock on the tag if you need to animate it.
- The (vertical) **Field of View** will usually be **180 degrees**, meaning everything from the horizon up will be visible.
- The standard aspect ratio for Fulldome is 1:1.
- Change the **Top** editor view to **Bottom**, to see in the same orientation as a Domemaster.
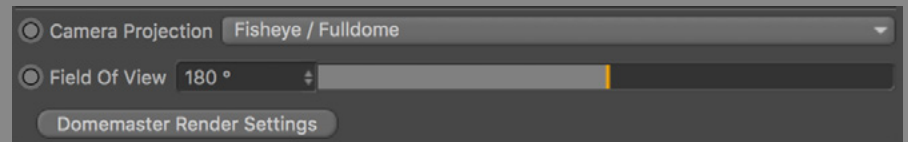
FULLDOME MASKING & SETTINGS

Since Domemasters are round, all the space around can be ignored and used to print important information about your movie (more on it later).

• Go to the Blendy 360 Cam **Render Settings** to enable masking and info on the masked area.
• You can use the default black mask, use a custom image with transparency or disable it.
• When masked (black or custom), the masked area will not be rendered. That's 27% less pixels you save!
• Enable **Project Info** to print file name, resolution, frame rate, total time and frames on the top right corner.
• Enable **Frame Number** and **Timecode** on the bottom left corner. Use **Timecode Offset** to sync a clip to a movie, entering the actual frame number of your animation's first frame.
• Enable **Credits** and fill a free text on the top left corner.
• Enable **Print Logo** to add your custom logo on the bottom right corner.
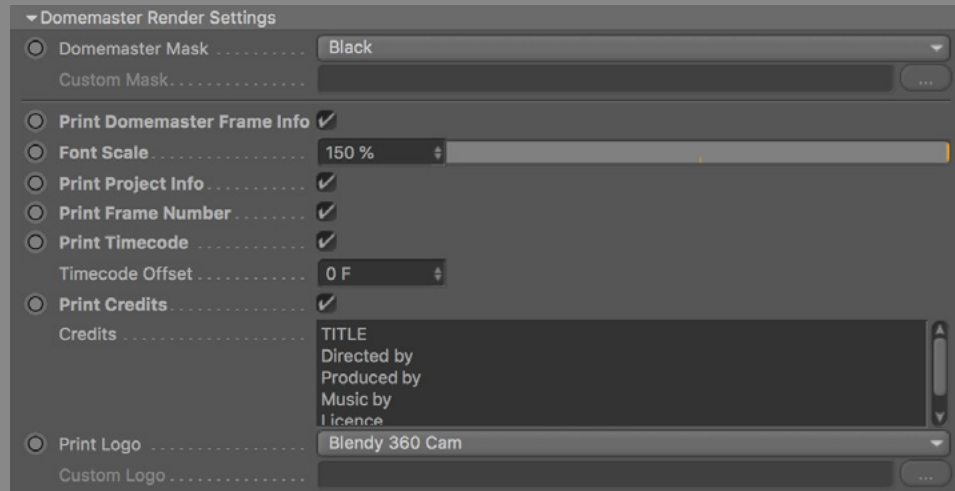
RENDERING DOMEMASTERS

• Always render as image sequence of TIFF, PNG or high-res JPEG. Later (if needed), you can compress it with your codec of choice.
• Always use the Default Black Mask. A full frame is beautiful, but there's no practical reason not to mask. On a VJ set it will look strange if scaled down.
• To get a sense of scale, enable Syphon output and see how it looks in Blendy Dome VJ or Oculus Rift. More on Real-time Preview.

RENDERING FULLDOME MOVIES

• The standard resolution is **4098 x 4098**, at **60 fps**. The minimum accepted usually is **3073 x 3072**, at **30 fps**.
• Fulldome Movies are distributed as image sequence. This way you keep top quality of your frames and gives freedom for the theatre to reproduce it any way it wants/can.
• Please print all the info on the masked area. This is **VERY useful f**or theatres.

RENDERING FULLDOME VJ LOOPS

• A good resolution is **2048 x 2048** at **30 fps**. Less is ugly. More is too expensive for the machine and can compromise performance.
• **Do not print** any information or logo on the masked area. Scaling the loop is a quick mix trick and anything there will look strange.
• The **best codecs** to use are HAP and **Prores 422LT**. Make some tests and stick to the one that works best for you.
• Using various codecs on a project will affect the performance, so choose which suits you best and encode all your loops with it.
• Keep your **VJ loops** in a **SSD drive**!

DOMEMASTER CONSIDERATIONS

It is important to understand how the **Domemaster** format works.

• The area from the bottom to the center of the frame is the **Sweet Spot**. There's where the audience is facing and where most of the action takes place.
• The **top of the frame** will be projected on the back of the audience and appears upside down on the frame. It can be considered a dead zone. Don't expect the audience to pay much attention to it unless you want to give them a pain in the neck.
• The top of the dome is called **Zenith**, and is equivalent to the center of the frame.
• The angles on the dome horizon (rim) is called called **Azimuth**. Always measured in degrees, from 0 to 360.
• The angle from the horizon to the zenith is called Altitude. Always measured in degrees, from 90 (zenith) to 0 (horizon).
• Straight lines will get curved due to the fisheye distortion.

Orientation
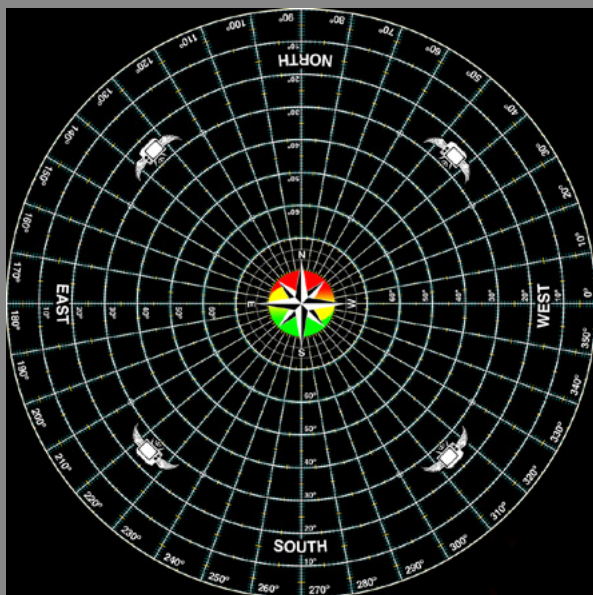
A domemaster grid
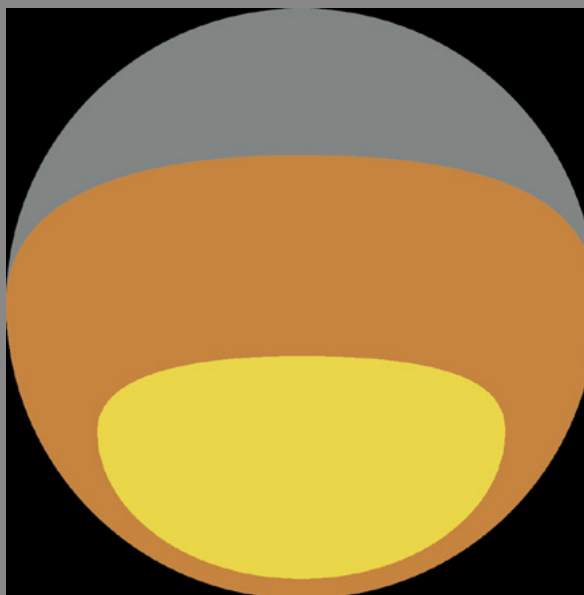
The sweet spot

Orientation

FULLDOME VENUE CONSIDERATIONS

• The **horizontal FOV** (or azimuth) of a Domemaster is always 360 degrees, all the way around.
• The **vertical FOV** (or Altitude) is usually180 degrees.
• As of now, only the SATosphere, (Montreal, Canada) has 210 degrees. With 30 degrees below our natural horizon, we can actually see the floor extending into infinity, giving an incredible and unique creative freedom.
• Fulldome venues can be flat or tilted.
• Most digital planetariums are tilted (from 10 to 45 degrees), giving the audience a more comfortable experience and an optimum field of view for maximum immersion.
• On the other hand, all mobile and club domes are flat.

EXTERNAL FULLDOME RESOURCES

• Fulldome Master Specifications, IPS Standard Adoption.
• Fulldome Theatre Configuration, by Kevin Scott.
• DomeLab Content Creation Workshop, by Paul Bourke.

Flat dome, flat media
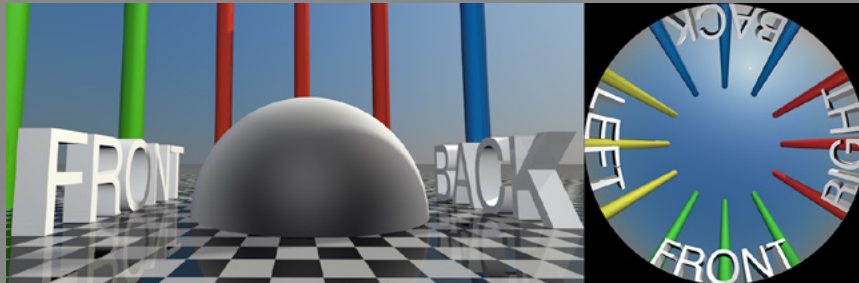
Tilted dome, tilted media

210 dome, includes ground

Le SATosphere: 210 degrees of freedom

EXO CAMERA

Blendy 360 Cam
for Cinema4D
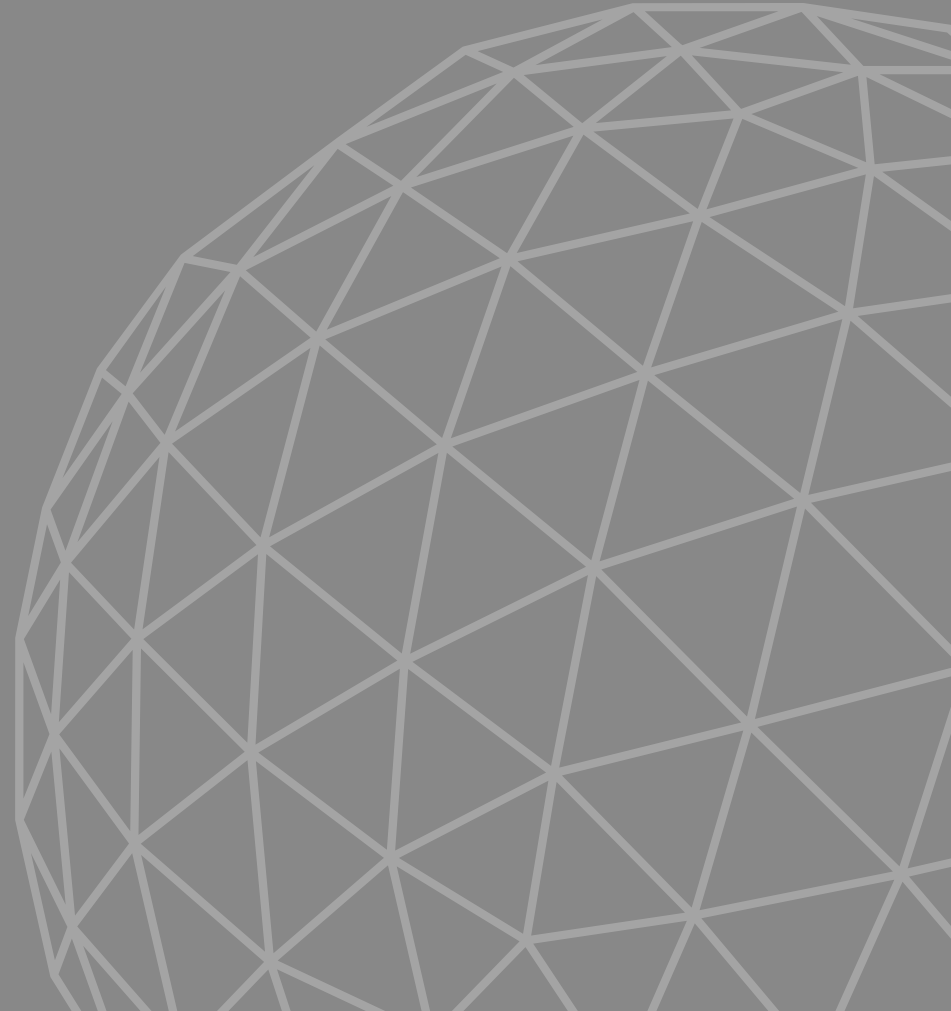
EXO CAMERA (v 2.4)

Designed specifically for **spherical LED screens** and **external sphere**, like the MSG Sphere in Vegas and other physical spheres video projeciton.

This mode will flip the camera rays, instead of capturing light from the center of the camera to the outside, it will captures from the outside in.

• Available for **Fulldome** and **360 Panorama** projections only.
• Enable the **Exo Cam** option.
• **Exo Far Distance**: The distance from the camera center where rays start. Anything farther than this radius will not be rendered.
• **Exo Inner Distance**: The distance from the camera center where rays stop. Anything inside this radius will not be rendered.
• The camera gizmo displays a wireframe representation of the Far and Inner distances, in orange.
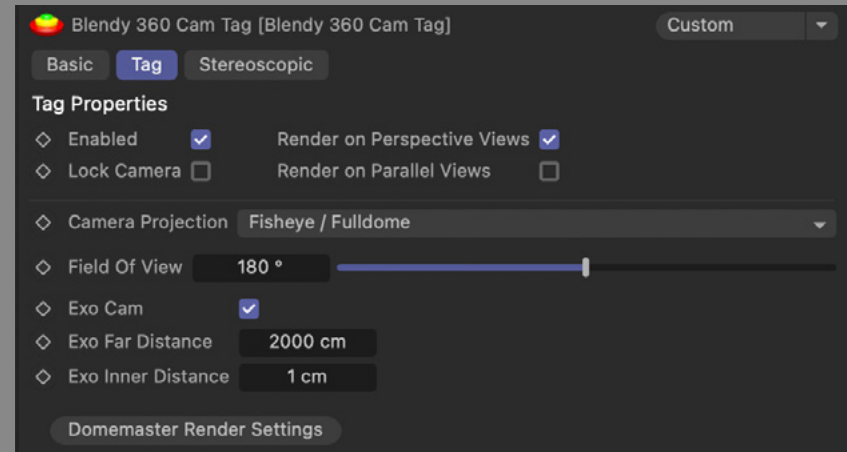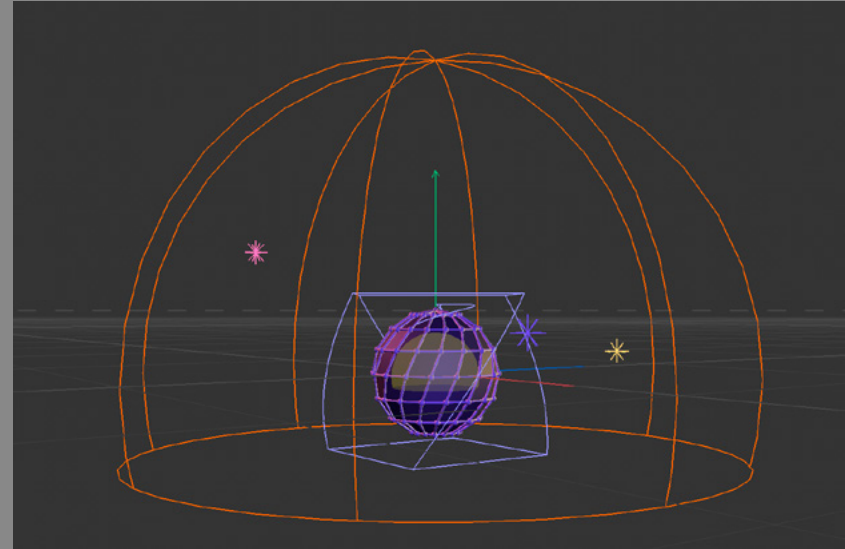
CAMERA PRESET:

FISHEYE

Blendy 360 Cam
for Cinema4D
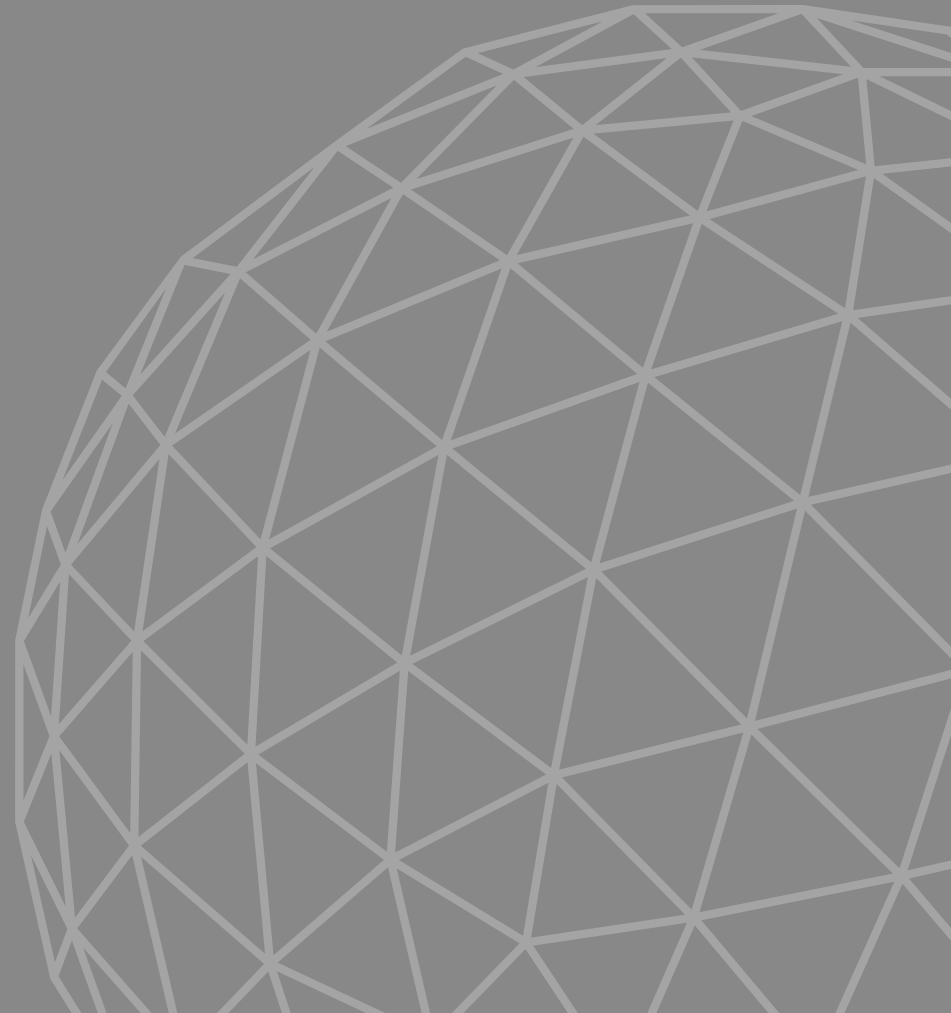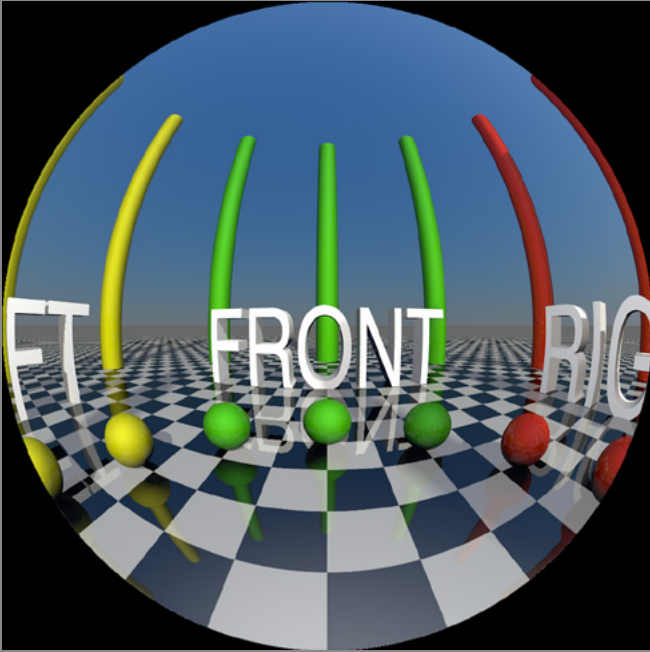
CAMERA PRESET: FISHEYE

Used for Virtual Reality, usually covers 180 by 180 degrees, or everything from left to right, top to bottom.

Mimics real world camera setups with a single or dual (stereo) cameras for shooting Point Of View experiences, like in the movie Hardcode Henry (Ilya Naishuller, 2015). This projection is the perfect fit for post production.

Also good for upright immersive dome environments like the **iDome**.

- The Camera Projection is **Fisheye / Fulldome**.
- The camera is always pointing to the center of the render, which is the front view.
- Position and animate your camera at will.
- The **Field of View** will be usually **180 degrees**.
- The standard aspect ratio for Fisheye is 1:1.
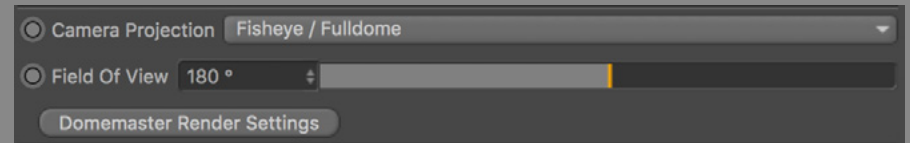
CAMERA PRESET:

LITTLE PLANET

Blendy 360 Cam
*for **Cinema4D***

CAMERA PRESET: LITTLE PLANET

That little fun thing people do on Photoshop, it is a fisheye lens placed above the scene looking down.

Using the fisheye projection and a field of view higher than 180 degree, It gives the impression that your scene is a little planet.
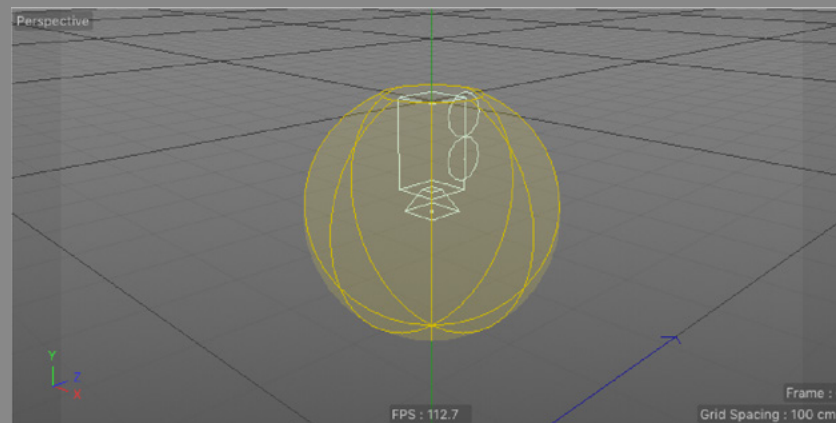
- The Camera Projection is **Fisheye / Fulldome**.
- The camera is usually upside down
- Position and animate your camera at will.
- The **Field of View** can be extrapolated a lot, around **315 degrees**.
- The standard aspect ratio for Fisheye is 1:1.

CAMERA PRESET:

CUBEMAP / SKYBOX

Blendy 360 Cam
for Cinema4D

- The Camera Projection is **Cubemap / Skybox**.
- The Field of View is always **360 degrees**.
- The editor preview will show only the channel selected on **Preview Channel**.
- The only custom settings for the Cubemap projection are related to packing the channels on Render Settings.
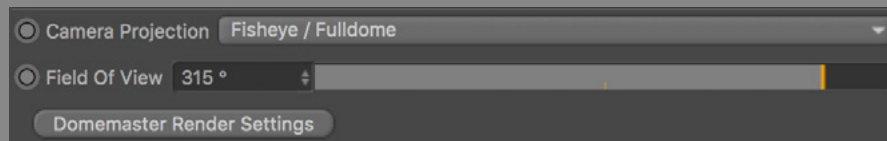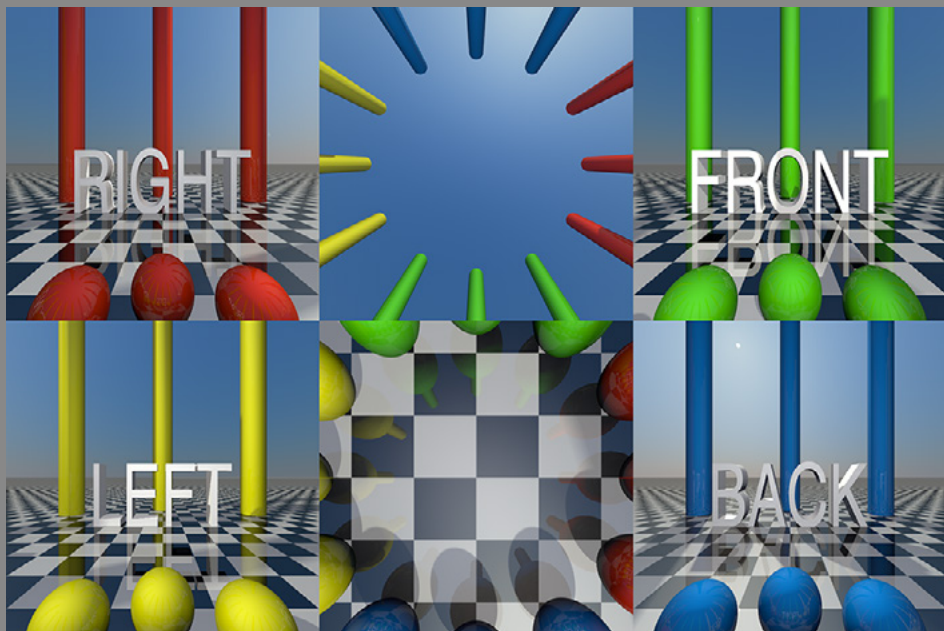
CAMERA PRESET: CUBEMAP / SKYBOX

Commonly used as backgrounds for **video games** and **Virtual Reality** as a cheap way to add depth to **environments**.

This projection is a combination of **six 90 degrees cameras**, or channels (front, back, left, right, up, down).

The six channels are textured on the **inside faces of a cube** that wraps the whole environment.
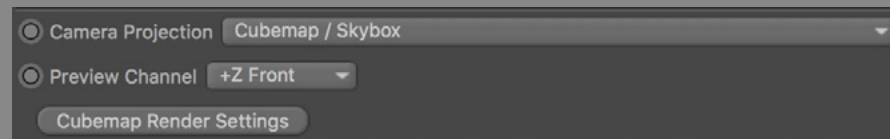
CUBEMAP RENDER SETTINGS

There are no tag parameters specific for this projection, but a lot of customisation on **Render Settings**.
The tag's Calculated Aspect Ratio will be based on the selected **Image Format**. There are 6 fully customisable image formats for laying ou the channels in the frame.

• **Cross:** Horizontal or vertical. This is the classic Cubemap look, giving a good idea of the whole environment, but wastes too many unused pixels.
• **Horizontal:** Packs the channels horizontally in a single (6:1) or double (3:2) row. The channel order is customisable.
• **Vertical:** Packs the channels vertically in a single (1:6) or double (2:3) column. The channel order is customisable.
• **Single Channel:** Render each channel individually.
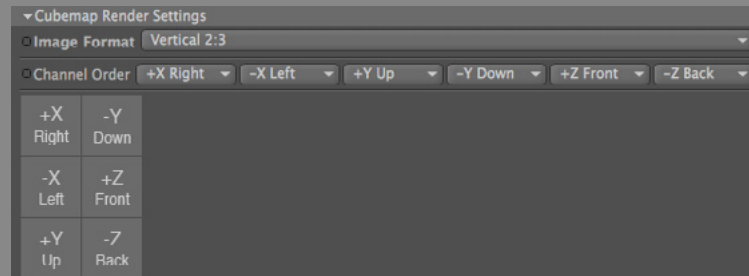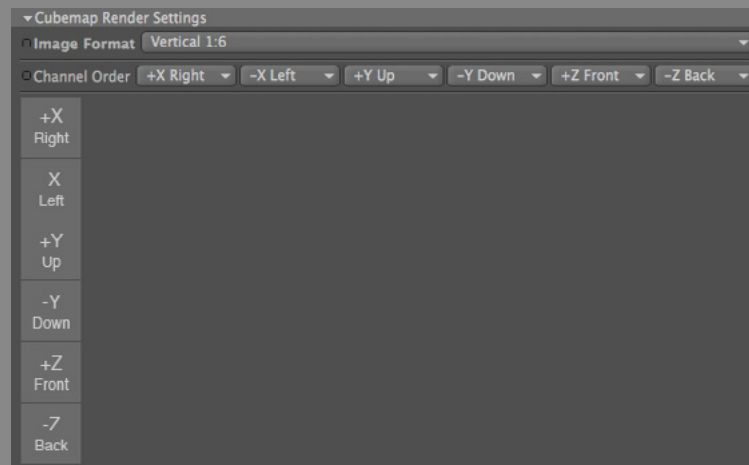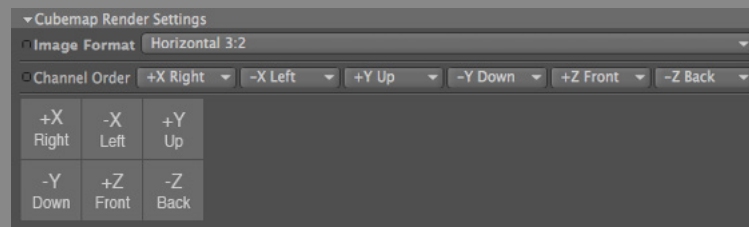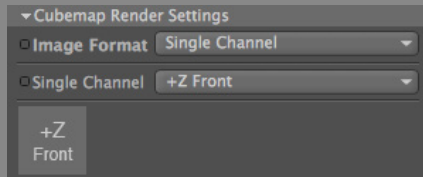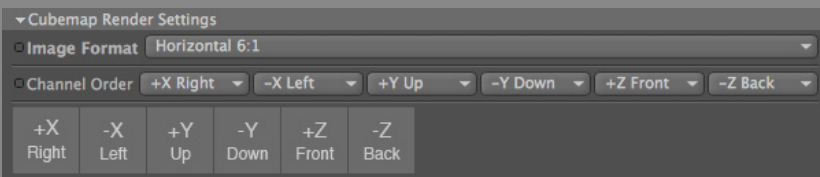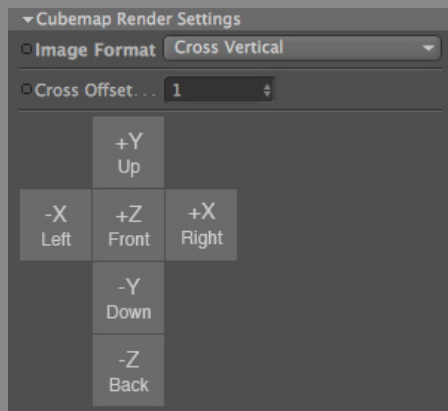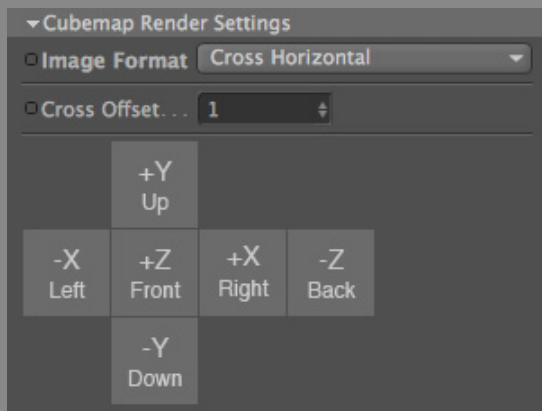
CAMERA PRESET:

CYLINDRICAL

Blendy 360 Cam
for **Cinema4D**
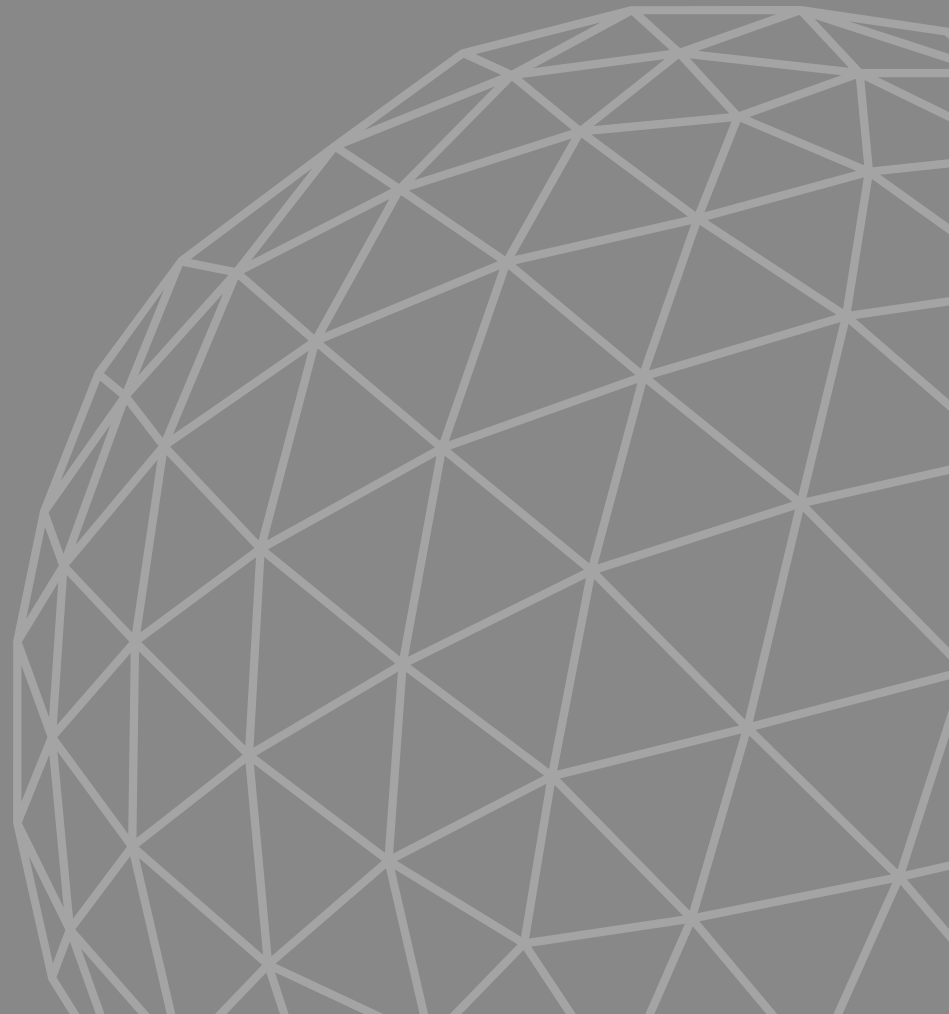
CAMERA PRESET: CYLINDRICAL

This projection acts like an orthogonal camera wrapped over a cylinder, so it don't have any vertical perspective.
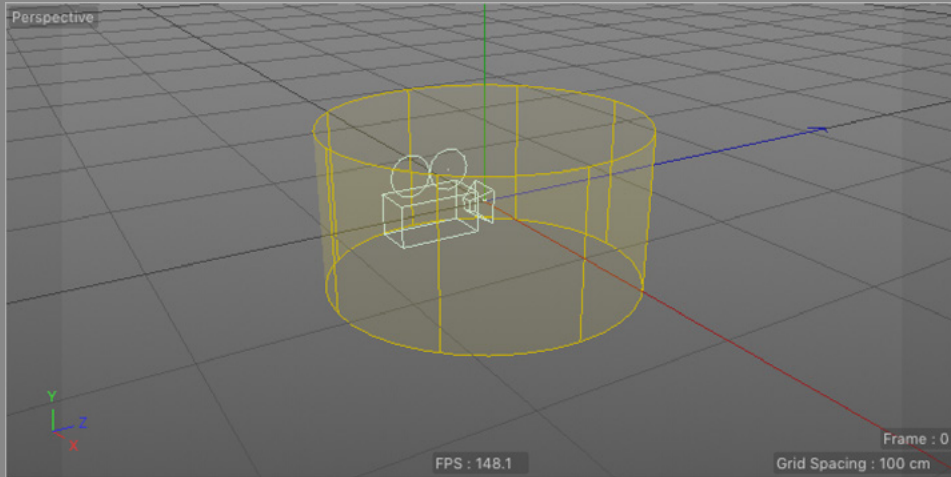
• The Camera Projection is **Cylindrical**.
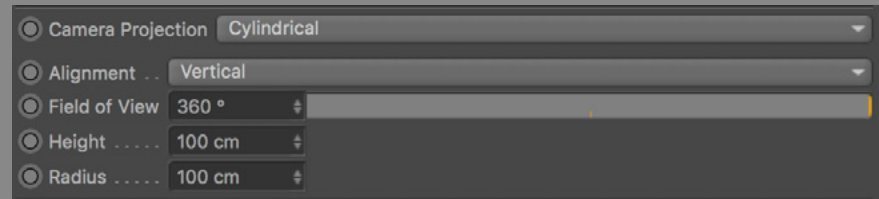
• The object in focus must be close to the camera radius.
• Use the camera gizmo as a guide, as it reflects the cylinder **height** and **radius**.
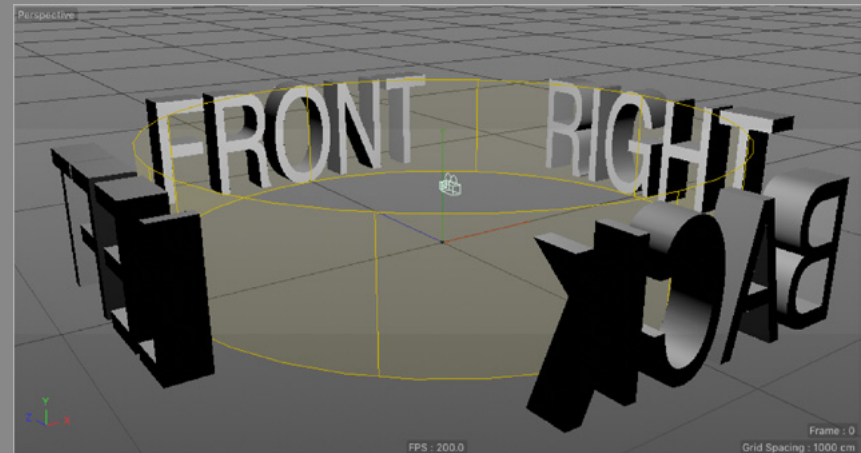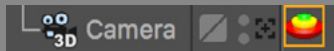
# STEREOSCOPICS

Blendy 360 Cam
for **Cinema4D**

STEREOSCOPICS BASICS

A Stereoscopic render is composed of two images (channels), one rendered for the left eye and one for the right eye.
When used properly, gives a great perception of depth, and is essential for the Virtual Reality experience.

• **Enable** it on the **Stereoscopic tab** of the Blendy 360 Cam tag. The camera object will change indicating stereo is enabled.

• The camera's stereoscopic tab will also be enabled, as you can see on the Object Manager. The parameters will not be greyed-out, but they are useless because the plugin is in control.

• The main camera's position and direction will be used as the basis for determining each eye's position and direction. Each eye is in fact another camera.

• By enabling Blendy 360 Cam Stereoscopic, you can notice that Cinema 4D Stereoscopic on Render Settings is also enabled, but all greyed-out. That's because the plugin is taking control of the stereoscopic render.

• The editor preview will not render as stereoscopic, it will always render the left channel.
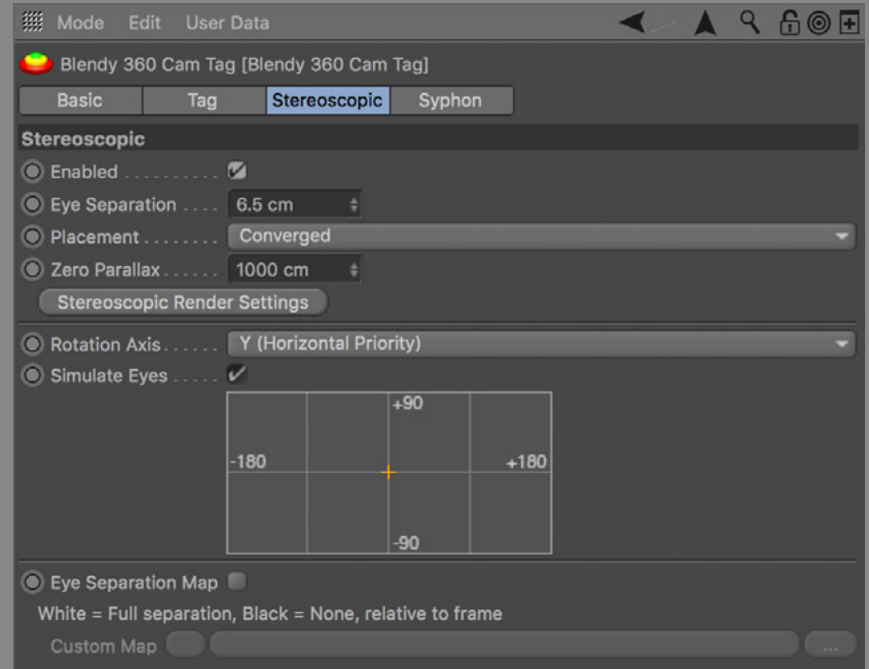
SEPARATION / PLACEMENT / PARALLAX

• **Eye separation** is the distance between the left and right eyes. The optimal value will depend on the scale of your scene.
• **Placement** defines if the direction of the eyes are **Parallel** or **Converged (On Axis)** into a point in the distance.
• **Zero Parallax** is the distance of the convergence point for Converged eyes. This is usually your scene focus, where both eyes are rendered equally.
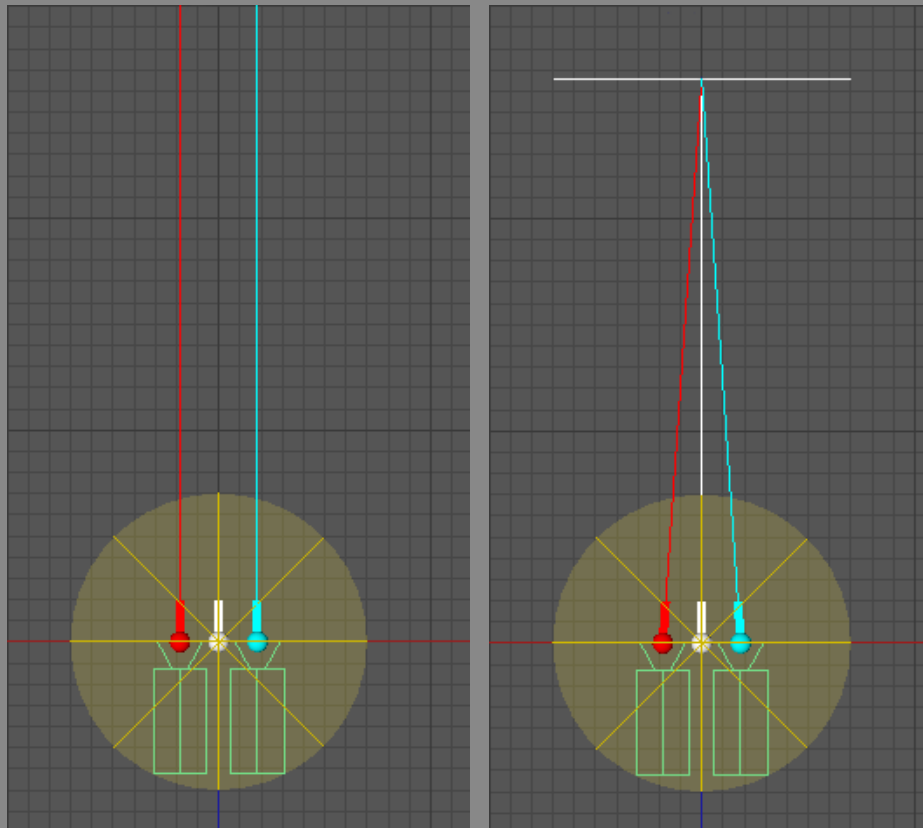
EYES SIMULATOR

• See how each Rotation Axis works by rotating the camera on every direction.
• Enable **Simulate Eyes** to draw a gizmo for each eye on the editor views.
• **Click and move** around the **reference frame** to simulate how the eyes position will be calculated for every direction.
• The **main camera** (center) is a white sphere with a line representing the direction.
• The **left and right cameras** are red and cyan, respectively.
• When using **Converged** placement, the left and right directions will converge on the Zero Parallax, where you'll see a white line perpendicular to the cameras.
• The eyes separation will reflect the current **Separation Map**, if enabled.

Panorama reference frame
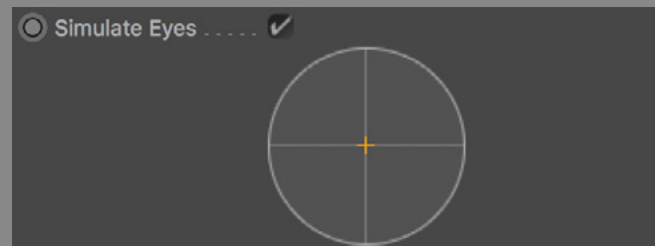
Fisheye reference frame

ROTATION AXIS

Unlike realtime virtual reality experiences where you can freely move and rotate the eyes as you move your head, when making a render we need to determine how the eyes will rotate around the main camera.

Each pixel of a 360 render is represents a different direction the camera is pointing to. For each pixel, the plugin must calculate how each eye is offset from the main camera. The Rotation Axis offers different methods for rotating the eyes.

• **Fixed:** No rotation. The eyes are placed on a fixed distance from the main camera using the **Eye Separation**. As the cameras look to the sides, this separation will start to decrease until it reaches zero when looking straight left and right, as the eyes' direction overlap. In real life, this is how a dual fisheye camera rig works.

• **Cylindrical:** Eyes r**otate around the Y axis** of the main camera. This will give good separation on the sides, but when the eyes get closer to the top or bottom, they will have mixed, conflicting orientation (as pictured). To correct this effect, use the Separation Map (see next section). The Cylindrical Rotation Axis needs separation map because both eyes will not converge equally on the top and bottom.

• **Y (Horizontal Priority)**: Can look to every direction. When looking to the sides, just rotate around the Y axis (as pictured). Used when the focus subject is forward.

• **Z (Vertical priority)**: Can look to every direction. When looking to the sides, will first look up (or down), then rotate around the Z axis (as pictured). Used when the focus subject is up.
• In the end, the difference from Y and Z axis is a 90 degrees rotation over the X axis when looking sideways.
• When using a Fisheye projection, you need to set if the projection is **Fisheye** or **Fulldome**. This is essential to determine the rotation because on Fisheye the forward looking camera points to the center of the frame, while Fulldome points to the bottom.
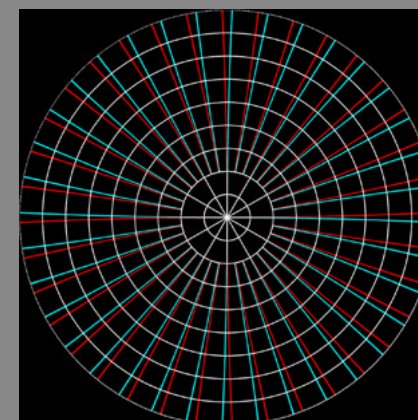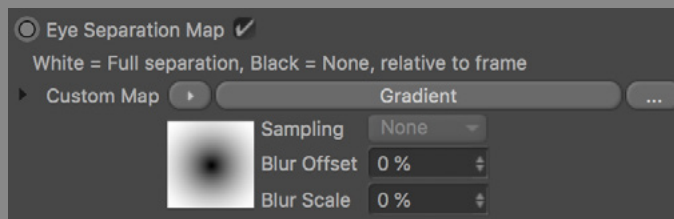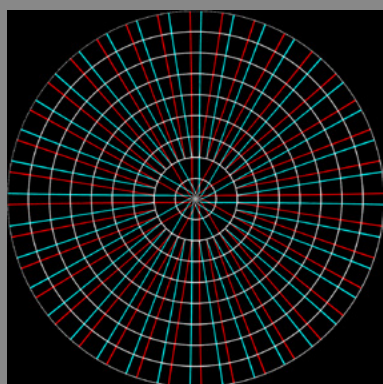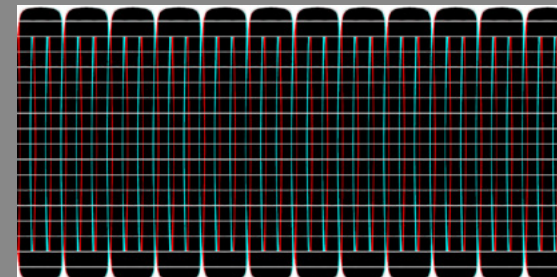

Y: Horizontal priority

Z: Vertical Priority

Cylindrical (bad eyes convergence)
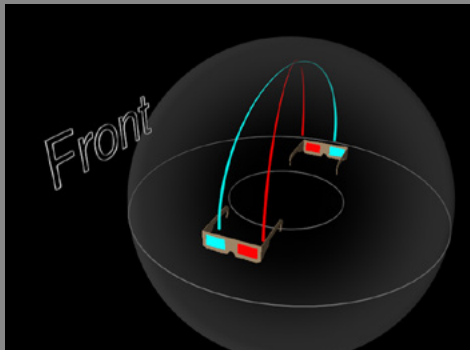
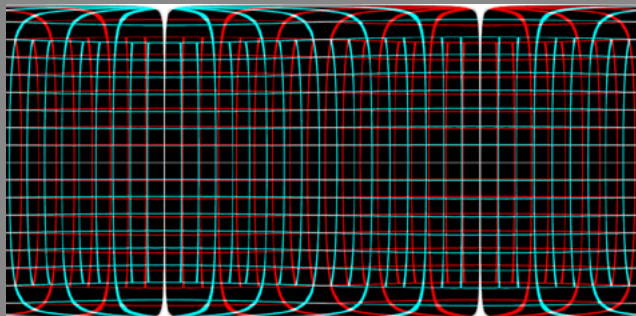
Separation map removes bad convergence
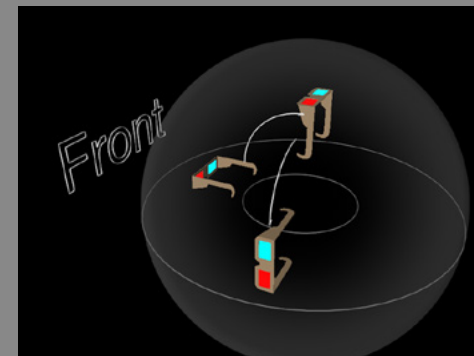
SEPARATION MAP

• Enable Eye Separation Map to reduce eye separation anywhere on the frame.
• The Custom Map is a shader that correlates to the final frame.
• For Fisheye projection, the reference frame is a fisheye frame, set the shader as Gradient Circular to reduce separation on the zenith.
• For all other projections, the reference frame is a Panorama frame, set the shader as Fresnel to reduce separation on top and bottom.
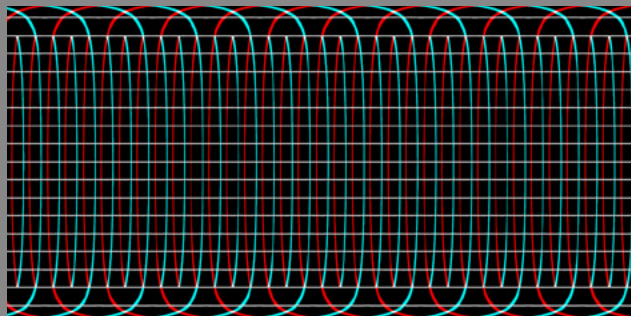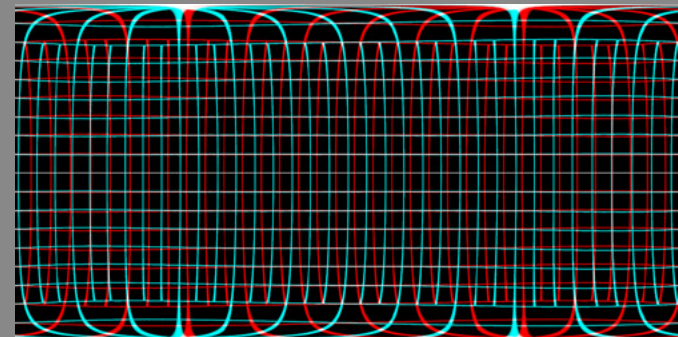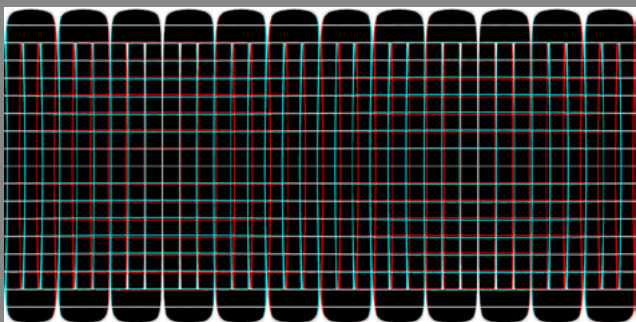

◉ Eye Separation Map ✔
White = Full separation, Black = None, relative to frame
▸ Custom Map ▸   Fresnel   ...
          Sampling   None ▾
          Blur Offset 0 %
          Blur Scale   0 %

◉ Eye Separation Map ✔
White = Full separation, Black = None, relative to frame
▸ Custom Map ▸   Gradient   ...
          Sampling   None ▾
          Blur Offset 0 %
          Blur Scale   0 %
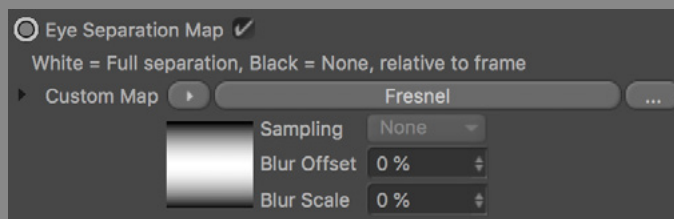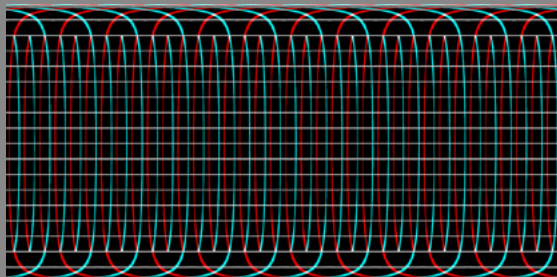
Left Right

Fixed

Cylindrical

Y (horizontal priority)

Fixed, with separation map
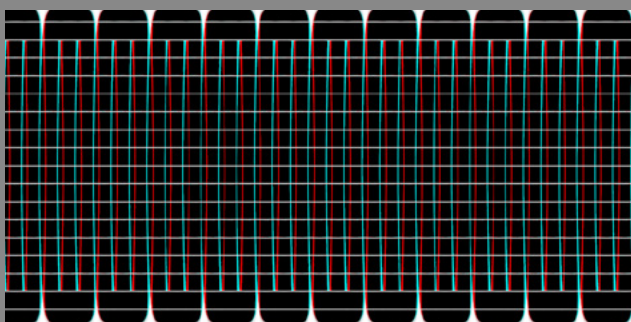
Cylindrical, with separation map
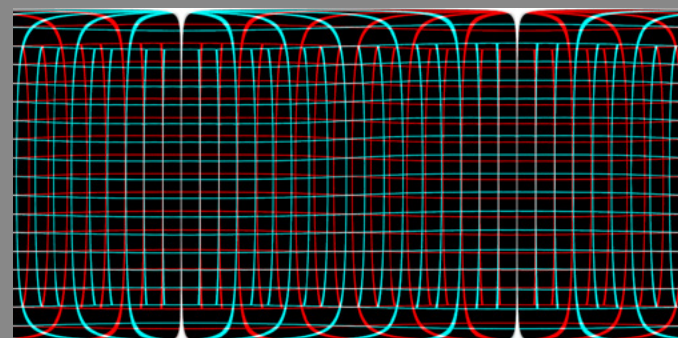
Z (vertical priority)

Left   Right

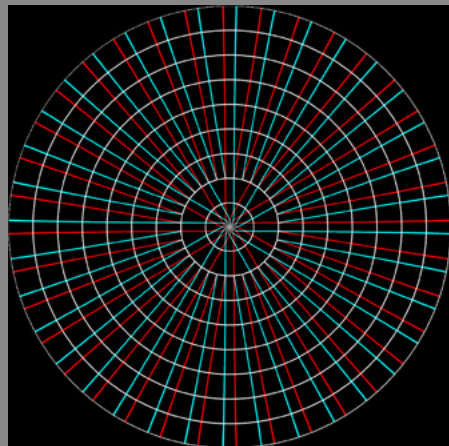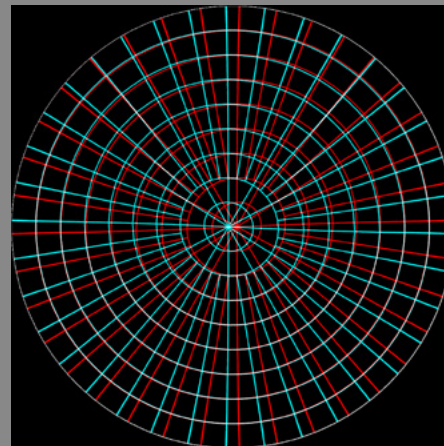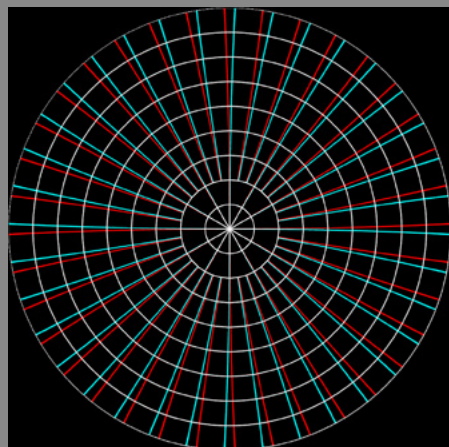# ROTATION AXIS EXAMPLES (FULLDOME)
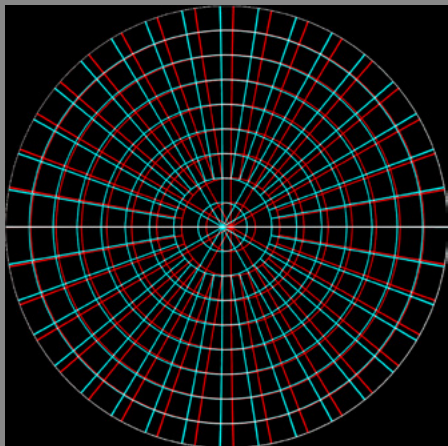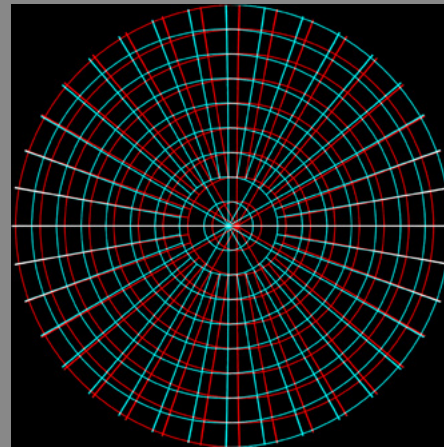

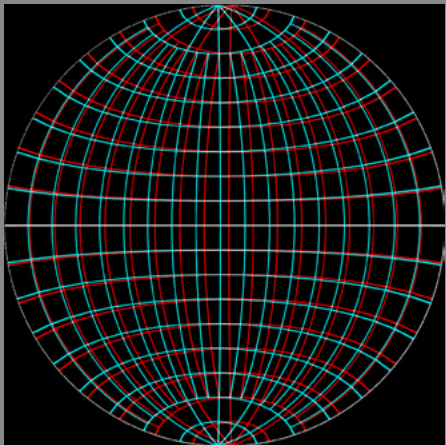Fixed

Cylindrical

Y (horizontal priority), good for seating

Cylindrical, with separation map
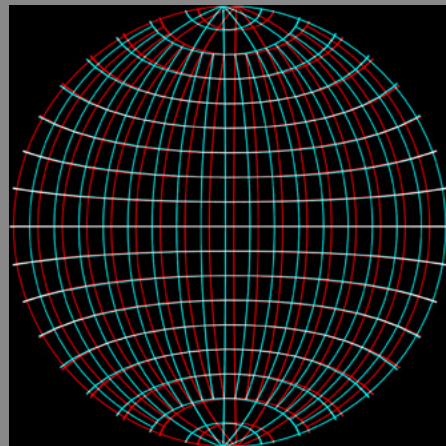

Z (vertical priority), good to watch lying in the ground

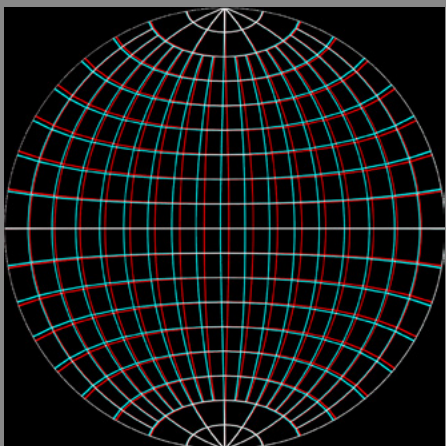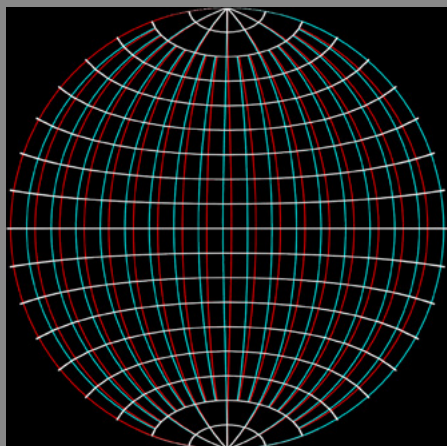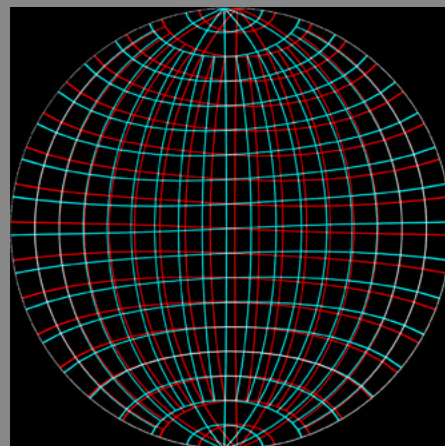Left   Right

Left Right
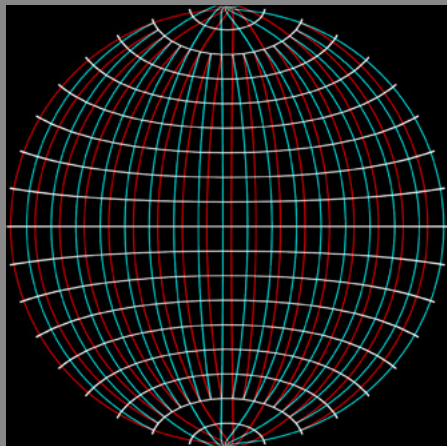
Fixed

Cylindrical

Y (horizontal priority)

Fisheye, with separation map

Fixed, with separation map. NO!!!

Z (vertical priority)

STEREOSCOPIC RENDER SETTINGS

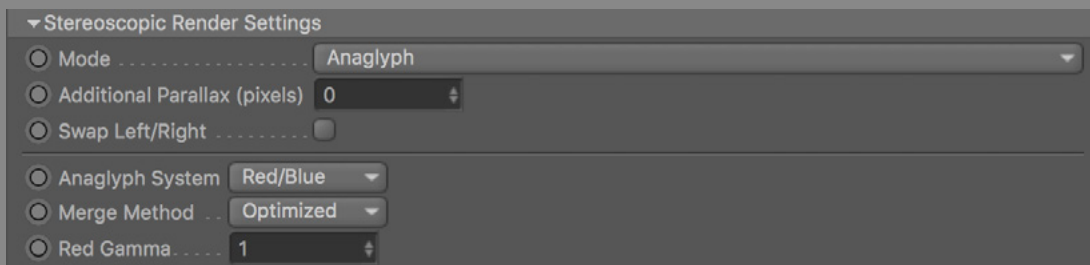There are several ways to pack the left and right stereo channels into a frame.

• Go to **Render Settings** and select Blendy 360 Cam. There's a shortcut button Stereoscopic Render Settings on the tag.

Each **Mode** packs the stereo channels in a different way on the frame. More on each soon.
• **Additional Parallax** is an extra **pixel offset** applied to the channels. A value of 2, for example, will offset each channel by 1 pixel.
• **Swap Left/Right** will du just that. Swap the channels when packing.

MODE: SINGLE CHANNEL

• **Single Channel** mode will render only the channel specified in the **Single Channel** parameter.

• Used to render one channel at a time. If needed, merging or packing must be done in post.
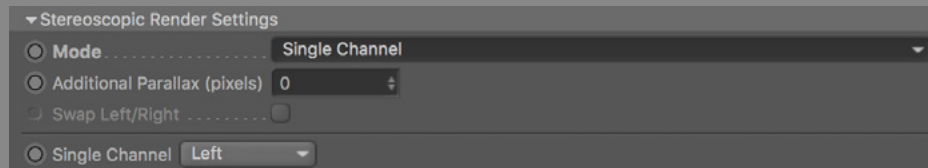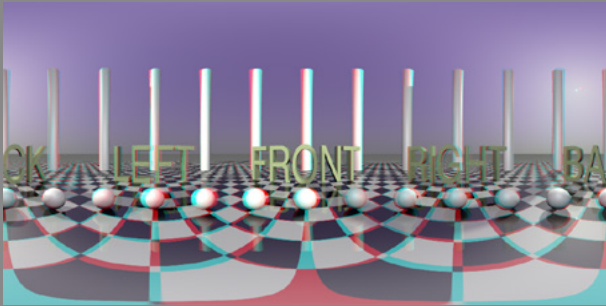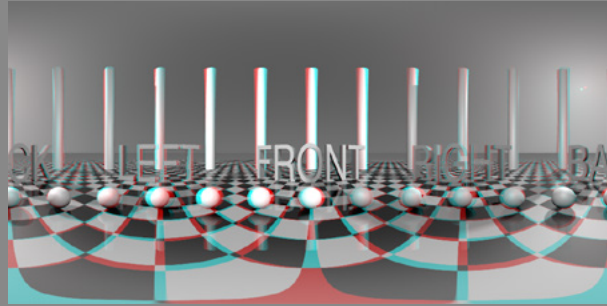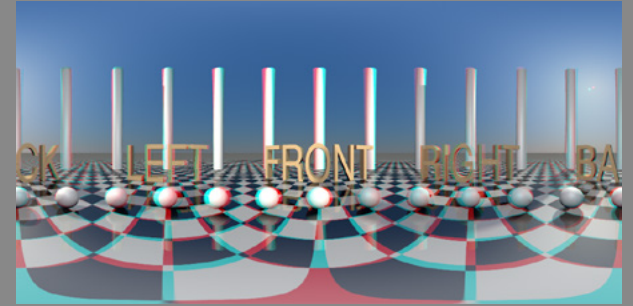

MODE: ANAGLYPH

• An **Anaglyph 3D** image combines both channels into one **single frame**, encoding each channel with chromatically opposite colours.
• Can be observed with cheap glasses with filters of the same colours, so it's perfect for web and print.
• The **Anaglyph System** is usually **Red/Blue**, but can also be set as **Red/Green**. This corresponds to the glass filter color.
• Each **Merge Method** uses a different algorithm to merge the channels.
• **Full** (or True) method: Dark image and no color reproduction.
• **Color** method: Better color reproduction and more retinal rivalry.
• **Half Color** method: Less color reproduction and less retinal rivalry.
• **Optimized** method: Partial color reproduction (no reds) and little retinal rivalry. The most common and comfortable to observe.
• **Gray** method: No color reproduction (grayscale), but enhanced 3D effect.
• The Optimized method offers a **Red Gamma** boost.

ANAGLYPH EXAMPLES

(Optimized, 1.0 red gamma)
$r = (\ Lr * 0.299,\ Lb * 0.587,\ Lb * 0.114)$
$g = (\ Rg * 0.299,\ Rg * 0.587,\ Rg * 0.114)$
$b = (\ Rr * 0.299,\ Rb * 0.587,\ Rb * 0.114)$

(Gray)
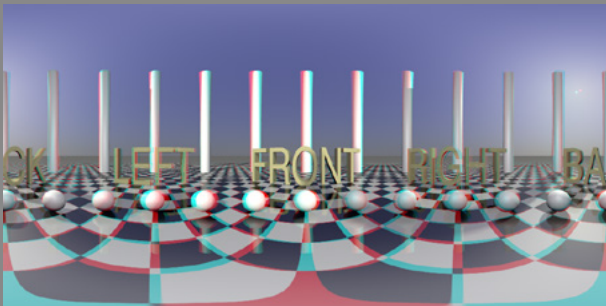$r = (\ 0,\ Lb * 0.7,\ Lb * 0.3)$
$g = Rg$
$b = Rb$

(Color)
$r = Lr$
$g = Rg$
$b = Rb$

(Half Color)
$r = (\ Lr * 0.299,\ Lb * 0.587,\ Lb * 0.114)$
$g = Rg$
$b = Rb$
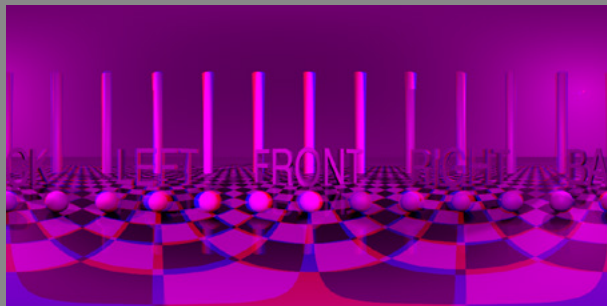
(Full/True)
$r = (\ Lr * 0.299,\ Lb * 0.587,\ Lb * 0.114)$
$g = 0$
$b = (\ Rr * 0.299,\ Rb * 0.587,\ Rb * 0.114)$
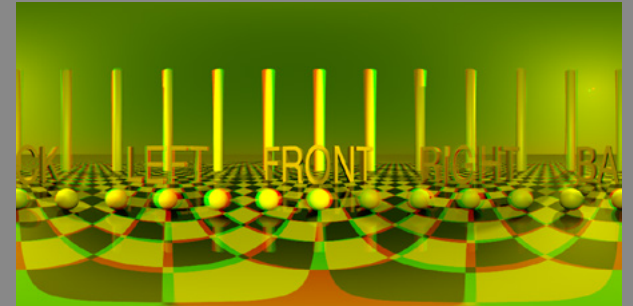
(Red/Green)
$r = Lr$
$g = Rg$
$b = 0$

STEREOSCOPIC MODE: SIDE BY SIDE

• **Side By Side** mode is the best way to pack stereo channels, keeping full resolution of both.
• Use the **Alignment** parameter to arrange the channels **vertically** (left/right) or **horizontally** (top/bottom) in one frame.
• **Panorama** renders are usually aligned vertically. **Fisheye** and **Fulldome** renders, horizontally.
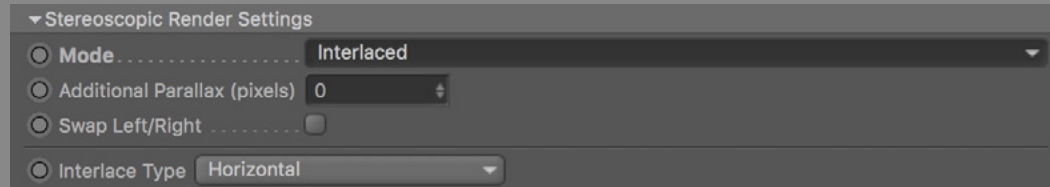• If needed, use **Mirror** to flip each channel.
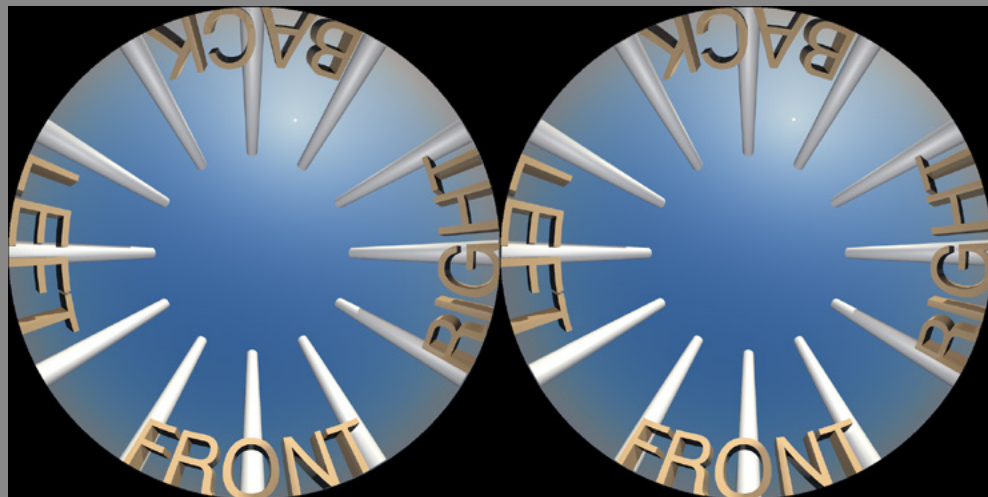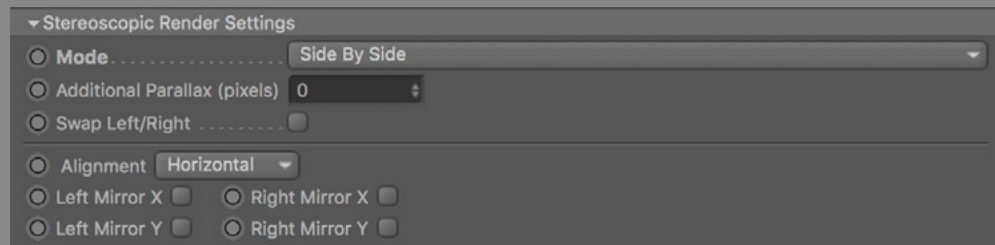
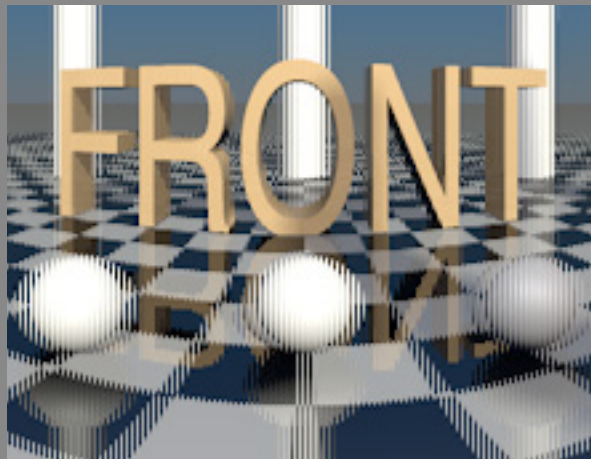Fulldome, Side By Side, Horizontal
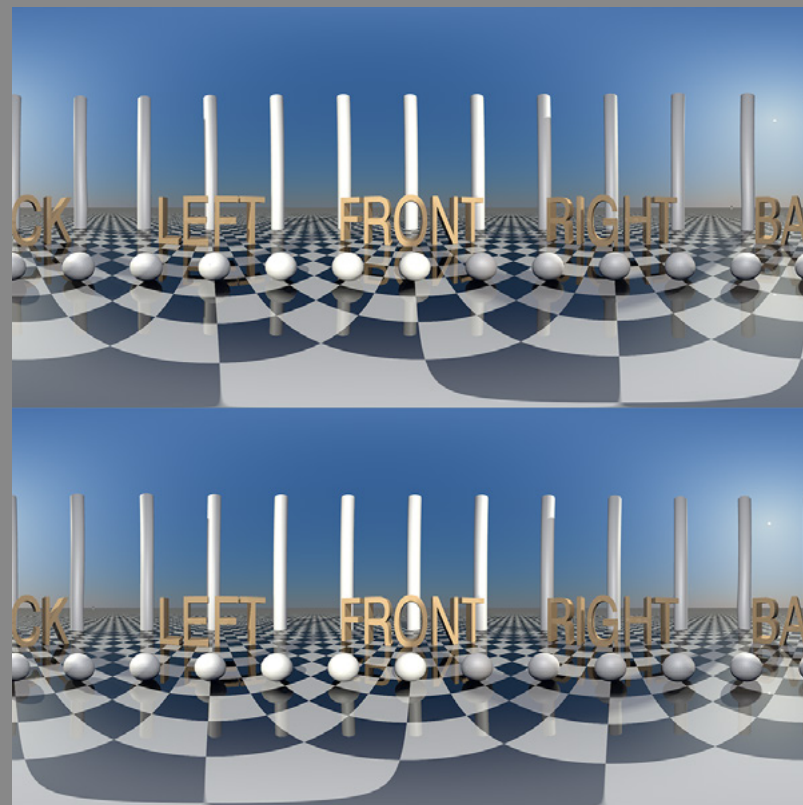
Panorama, Side By Side, Vertical

STEREOSCOPIC MODE: INTERLACED

• **Interlaced** mode packs both channels in a single frame, alternating pixels from each channel.
• Type **Horizontal** will alternate lines. First line is from left channel, second is from right channel, and so on...
• Type **Vertical** will alternate **columns**. First column is from left channel, second is from right channel, and so on...
• Type **Checkerboard** will alternate **pixels**. First pixel is from left channel, second is from right channel, and so on...

▼ Stereoscopic Render Settings	
⊙ Mode	Interlaced
⊙ Additional Parallax (pixels)	0
⊙ Swap Left/Right	
⊙ Interlace Type	Horizontal

Panorama, Interlaced, Horizontal

Panorama, Interlaced, Vertical
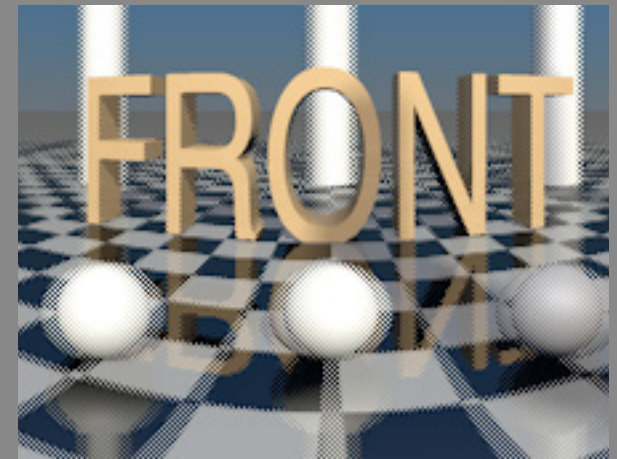

Panorama, Interlaced, Checkerboard

REAL TIME PREVIEW

Blendy 360 Cam
for **Cinema4D**

SYPHON

It is possible to share the actual render from Cinema 4D with other video applications by creating a Syphon server (mac only).

• Enable **Syphon Server** on the tag or on Render Settings. Both are synchronised.
• The **Real Time** mode will send each line rendered in real time, making the render slower.
• The **Full Frames** mode is faster, but will only publish the completed frames.
• This is great for previewing, but make sure to turn it OFF when making your final renders to speed it up.
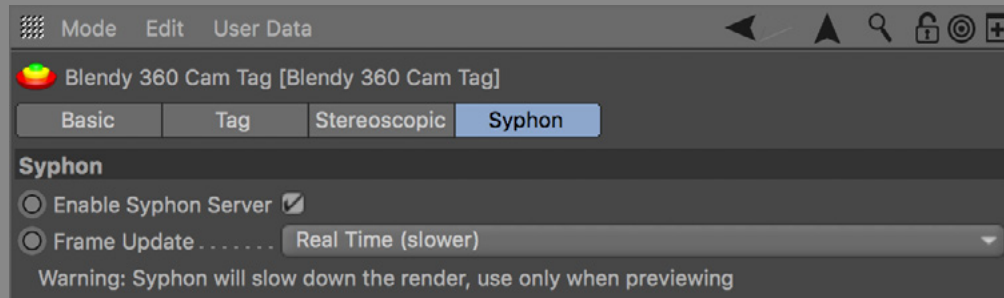
We also released the standalone SyphonC4D plugin containing only the Syphon output. Use it if you need Syphon output with any other non-immersive Cinema 4D project.
https://github.com/rsodre/SyphonC4D

There are many applications compatible with Syphon, find them all and here:
http://syphon.v002.info/

VR WITH OCULUS RIFT

Get inside, man!

• Enable the tag's Syphon Server
• Connect the Oculus Rift to the computer
• Download and open BlendyVR_C4D:
  http://download.studioavante.com/Blendy360Cam/BlendyVR_C4D.zip
• Start a **Panorama** or **Fulldome** render and watch.
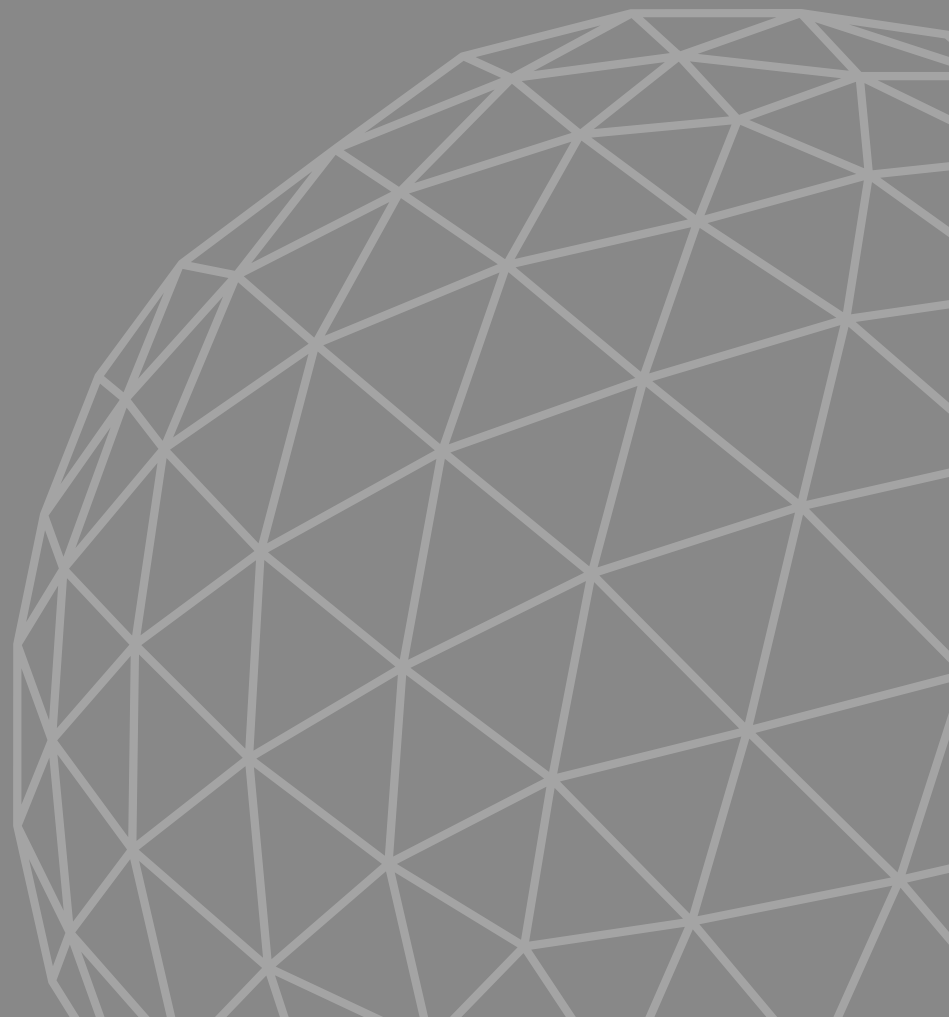• Works with Oculus Rift DK2 on macOS only.

FULLDOME OR PANORAMA WITH BLENDY DOME VJ

• Enable the tag's Syphon Server
• Download and install Blendy Dome VJ or Blendy Dome VJ Demo.
• Open the app with the Oculus Rift connected.
• Start a render.
• Open Blendy Dome VJ, SOURCE tab and select the CINEMA 4D Syphon.
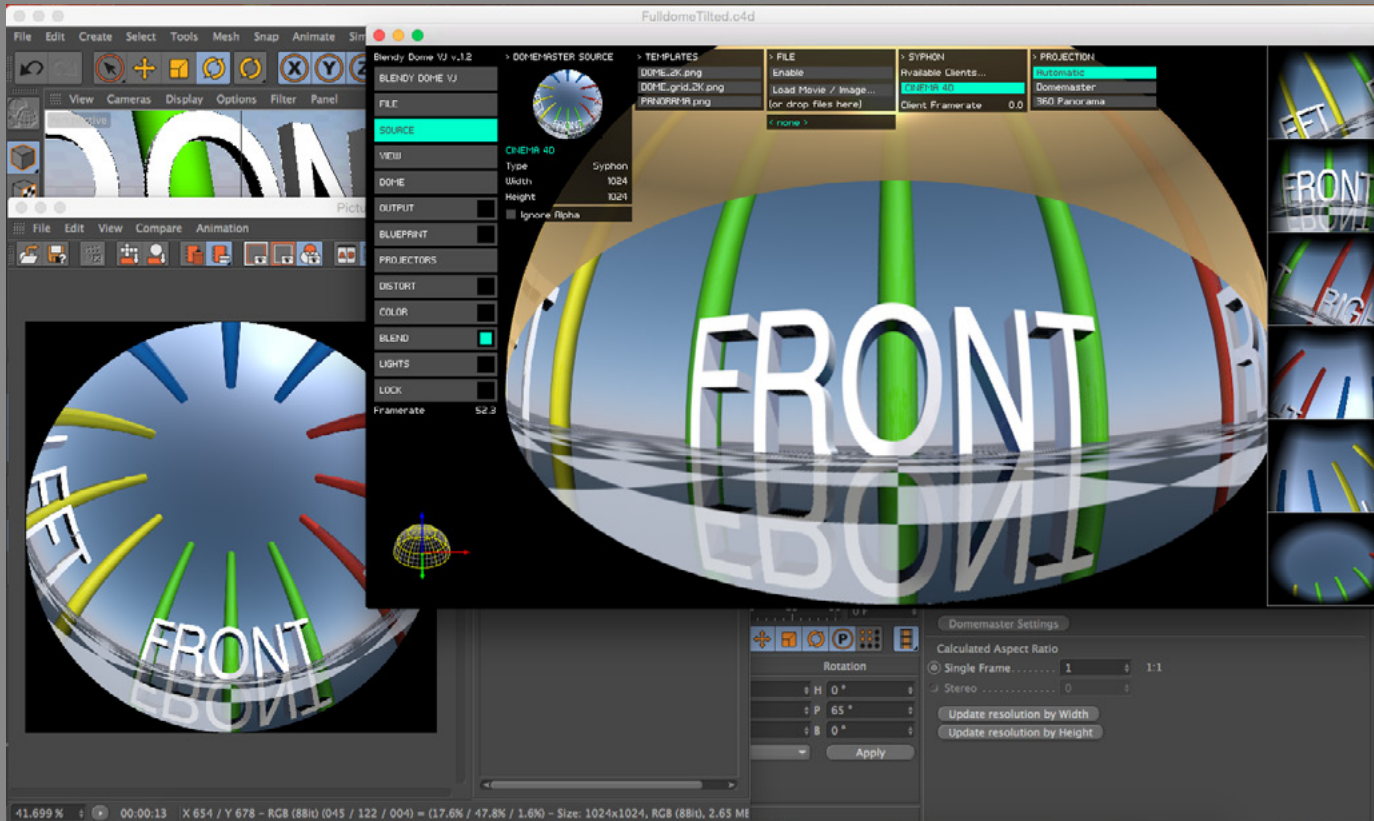
CREDITS

Blendy 360 Cam
for Cinema4D

HAVE A NICE RENDER!

Blendy 360 Cam
for Cinema4D

Blendy 360 Cam

*for **Cinema4D***