



## Classic 3D Recording & iPhone Pro as 3D Camera

Photography & Computer graphics



### 3D Photography

There is 3 different ways of making a classic 3D recording

#### 1. With a stereo camera



This can be used for general 3D photography with a near point distance of approx. 2,5 meter to infinity depending on the focal length of the lenses and the camera base.

#### Important

- Always use a small aperture (f/8 or smaller) to keep everything sharp in the stereo pair.

#### 2. With two ordinary single lens cameras on a bar



This can be used for general 3D photography with a near point distance of approx. 3 - 4 meter to infinity depending on the focal length of the lenses and the camera base.

#### Important

- It's recommended to mount the bar on a tripod.

- The camera axes must always be parallel to avoid geometric distortion.
- The focal length of the two camera lenses must be equal.
- Use a 3D Calculator to determine the camera base (The camera base is the horizontal distance between the center axis of the two camera lenses).
- Always use a small aperture (f/8 or smaller) to keep everything sharp in the stereo pair.
- Use a LANC controller or a Bluetooth shutter to ensure synchronised release of the two cameras.

### 3. With one ordinary single lens camera on a slide-bar



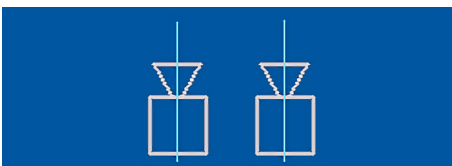
This can be used for non-moving objects with any near point distance.

#### Important

- Always mount the slide-bar on a tripod.
- The camera axes must always be parallel to avoid geometric distortion.
- Use a 3D Calculator to determine the camera base (The camera base in this case is the horizontal distance between the left and right camera position).
- The objects in the scene to be photographed must not move.
- The light source must not move and the flash must not be mounted on the camera.
- Always use a small aperture (f/8 or smaller) to keep everything sharp in the stereo pair.

### 3D Computer graphics

Setup of a virtual 3D camera rig



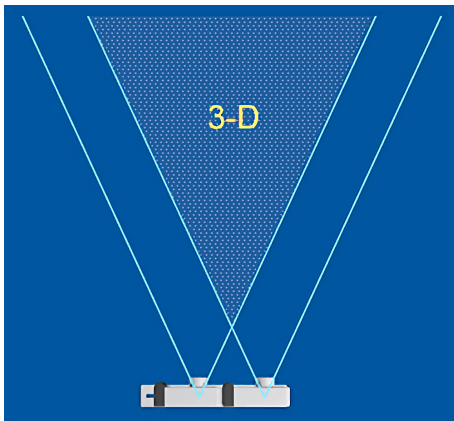
This can be used for general 3D recording with any near point distance.

#### Important

- The camera axes must always be parallel to avoid geometric distortion.

- The FOV of the two cameras must be equal.
- Use a 3D Calculator to determine the camera base (The camera base is the horizontal distance between the center axis of the two cameras).
- The cameras must never be vertically displaced.
- The cameras must always be locked together when they are positioned correctly according to the calculated camera base.

### Area with 3D information



Apart from stereo pairs recorded with a true stereo camera there will always be a loss of information in both sides of the final 3D image.

This phenomenon is caused by the fact that a smaller part of the Left and Right image in a stereo pair doesn't contain the necessary common information to make the 3D effect. A true stereo camera has a built-in Stereo Window to take care of this problem.

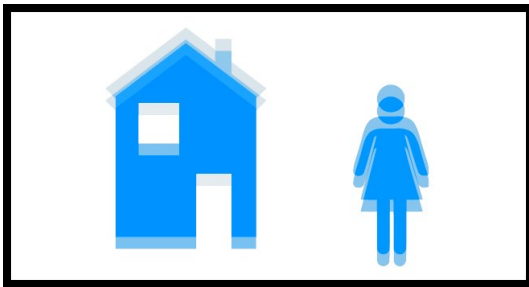
### Ten basic 3D rules

1. Think 3-Dimensional when you compose or choose your scene • The scene should always contain foreground, middle-ground and background if possible.
2. The camera axes must always be parallel to avoid geometric distortion.
3. Never exaggerate your camera base (interaxial distance) • Use a 3D Calculator.
4. The near point distance has to be chosen very accurately.
5. The Left and Right image in a stereo pair must always be congruent in all aspects apart from horizontal parallax.
6. Never record stereo pairs with very high contrast.
7. Keep everything sharp in a stereo pair • The only exception is distant backgrounds.
8. Never violate the Stereo Window • The display screen frame must never cut off or touch an object in viewer space.

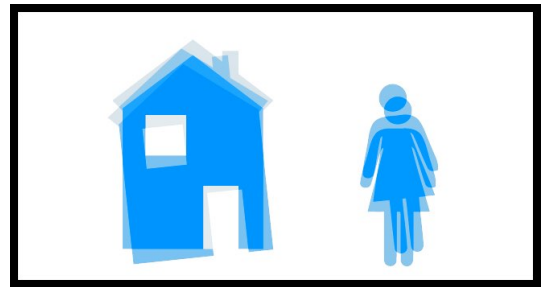
9. Never exceed 65 mm between the corresponding far points when you scale up a 3D image e.g. by projection • Adjust accordingly.
10. Always show 3D images and movies with a viewing distance of 1.5 to 2x the display width in a room with subdued ambient light.

### Typical errors in classic 3D Photography

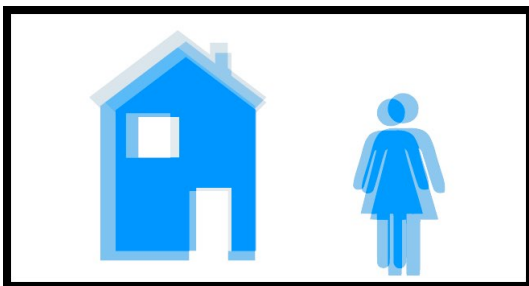
The errors shown below have to be corrected to obtain a pleasant viewing comfort



Vertical offset • Cameras are not correctly aligned



Rotation • Cameras are not correctly aligned



Scale difference • Camera lenses are not a matched pair



Too large camera base • Use a 3D calculator



Exposure and color mismatch • Camera sensors are not a matched pair



### Correcting errors in classic 3D Photography

The Left and right image in a stereo pair must always be congruent in all aspects apart from horizontal parallax. That means all geometric errors have to be corrected to obtain a pleasant viewing comfort. You can use the StereoPhoto Maker Pro app to correct these errors automatically. It's a Windows app, but it works with macOS as well.

[StereoPhoto Maker Pro >](#)



## iPhone Pro as 3D Camera



When you want to shoot Spatial 3D images to be used with Apple Vision Pro or classical SBS 3D images that can be used anywhere else. You can use an iPhone 15 Pro or later with the SpatialCamera app installed. This app captures stereo pairs with the Left and Right images simultaneously. To ensure optimal results, choose scenes with good light conditions.

To ensure a comfortable viewing experience, please install the i3DSteroid app. This app automatically adjusts the Stereo Window (zero parallax point) in SBS 3D images. Further, it corrects geometric errors in classical SBS 3D images shot with SpatialCamera. You can view an SBS 3D image in Parallel- or Cross-Eye Free-View using L/R Swap in the app.

Alternatively, you can use any iPhone Pro to record 3D images by installing the DepthCam app. This app allows you to record 3D images using Depth Maps, which eliminates geometric errors that may be present in classic 3D recordings. For best results, choose scenes with good light conditions and avoid thin lines and tiny details in your scene.



[SpatialCamera >](#)



[DepthCam >](#)



[i3DPortrait >](#)



[i3DSteroid >](#)

## SBS 3D images for Cross-Eye Free-View shot with iPhone Pro



[Learn Cross-Eye Free-View of 3D images >](#)

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