

Passive vs Active 3D

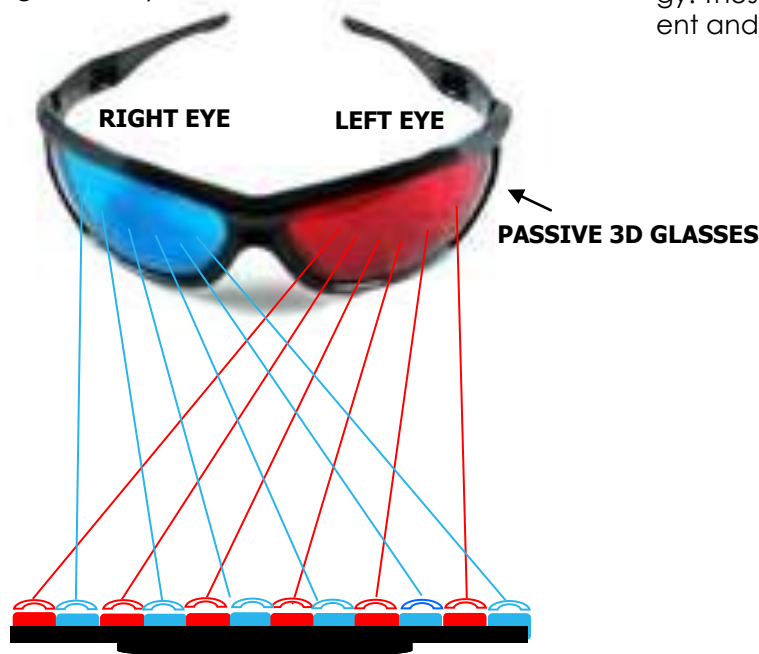
In this document we will be discussing passive polarized 3D systems that require a specialized screen to function properly.

Passive (polarized) 3D

3D viewed images. This has been a popular term that many manufactures and product developers have pursued for several years using several methods. We now hear about 3D from virtually every projected or viewed media. The cinemas and gaming world definitely use the 3D hook as an up sell to the viewing experience. Many suppliers are using passive 3D technology because it's easier and the glasses you have to wear are relatively inexpensive.

In a cinema, two images that are polarized in different directions. These images are then projected onto the screen. A special set of 3D polarized filters are used to create a left and right eye opposing polarized image for each. The polarization of the glasses result in your eyes seeing only the corresponding image for your right and left eye. Your right eye would only see the right image because the right lens will block the left image, and your left eye would only see the left image because the left lens will block the right image.

(see image below.)



Active 3D

In contrast to the 3D, active 3D is literary active. The technology used in Active 3D is different from Passive 3D in that it also has the concept of the left image and right image. This system requires power for the projector, glasses and the shutter.

The lens shutter on the projector refreshes at a significant rate that is displaying the left and right images alternatively. The refresh rate is more than 100Hz and therefore you are not going to notice the change.

The rest of the job is up to the glass you are wearing. You have to wear a Active Shutter glass are the next part of the system. The glasses act as two shutters that are synchronized with the shutter on the projector. The right lens shuts off when the projector is showing the left image and the left lens shuts off when projector is showing the right image. You may think that this glass should look bulky with shutters, but it actually achieves this task using a liquid crystal technology. These lenses can switch between being transparent and opaque silently in a fraction of second .



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