Dual Projector 3D Demonstration 2025

Preface: On July 5, 2025 a demonstration of a dual projection stereoscopic 3D setup was conducted. The demonstration included 4 viewers with varying experience and opinions on stereoscopic 3D. These viewers will be called Viewer 1, Viewer 2, Viewer 3, and Viewer 4. The viewers were placed at different seating positions and angles and alternated seating three times during each movie.

The System: 11.5 footlamberts (40 nits) dual projector 3D on a 100 inch screen, color calibrated, with circular polarization.

The Viewers

1. **Viewer 1**: Has a lot of experience with stereoscopic 3D and enjoys 3D, this viewer is categorized as a “3D Enjoyer”
2. **Viewer 2**: Has little experience with 3D other than the occasional movie in the past and Nintendo 3DS console, having no positive or negative opinion on 3D other than past discomfort on the 3DS. This viewer is categorized as “3D Neutral”
3. **Viewer 3**: Has little experience with 3D other than the occasional movie in the past and having no positive or negative opinion on 3D. This viewer is categorized as “3D Neutral”
4. **Viewer 4**: Is very familiar with 3D and has strong negative opinions on 3D, viewing it as a gimmick, unnecessary, and that 3D can be harmful to the viewing experience. This viewer is categorized as “3D Reluctant”.

Demonstration Part 1: Movies

The first part of the demonstration consisted of three movies. The three movies were Avatar Way of Water, Mad Max Fury Road, and Moana, shown in that order. The entire length of the first part of the presentation was 90 minutes

The feedback was very consistent from the four viewers. The first major piece of feedback from four viewers all did not enjoy native 24fps stereoscopic 3D, finding the motion to be uncomfortable and distracting. Within one minute of the demonstration we enabled motion interpolation on the projectors and all four viewers unanimously agreed it was a significant improvement and immediately lost any visual discomfort. We watched 30 minutes of Avatar, 30 minutes of Mad Max, and 30 minutes of Moana in a row.

Viewer 1 heavily enjoyed the 3D, leaving the presentation with a much more positive view of 3D than he had before and left with excitement to see more content in 3D. Viewer 2 and Viewer 3 who had a “Neutral” opinion of 3D before the demo left the demonstration having a much more positive view of stereoscopic 3D, stating their desire to see more content in 3D on this dual projection 3D setup. Viewer 4 who is “3D Reluctant” stated that this experience made him “seriously reconsider” the value of stereoscopic 3D for movies, still saying it’s not necessary for movies but that he really enjoyed the 3D, specifically for Mad Max, where at one point while watching Mad Max, Viewer 4 was so engaged with the movie that he didn’t notice his name being called or his chair being nudged.

Multiple times throughout the demonstration and at the very end of the 90 minute demonstration all four viewers were asked “Are you experiencing any discomfort, nausea, or headaches?”, all four viewers answered “No” to these questions every time they asked, even at the end of the 90 minute demonstration none of them experienced any discomfort.

Demonstration Part 2: Video Games

The second demonstration consisted of watching two video games natively rendered in stereoscopic 3D. The first video game was a 3D platformer and the second video game was a flying spaceship game.

All four viewers really enjoyed stereoscopic 3D gaming, including Viewer 4 who stated “Although I don’t need stereoscopic 3D for movies, stereoscopic 3D in video games here greatly enhances the immersion and experience”.

All four viewers stated that they didn’t have any headaches, nausea, or discomfort after seeing video games in stereoscopic 3D.

Findings

1. 48 frame per second 3D frame interpolated 3D was universally preferred over 24 frame per second 3D, with all four viewers saying the higher framerate was much easier on their eyes.
2. The importance of clean glasses, at one point Viewer 3 had a smudge on her 3D glasses which made the viewing uncomfortable, once she cleaned it with a micro fiber cloth she resumed having an excellent experience
3. Viewing position greatly impacts one's experience watching 3D, with the four viewers changing viewing positions, they all agreed that center seating as a significant improvement over sitting off to the side, while in 2D sitting off to the side is much more tolerable.
4. Long 3D viewing (90 minutes) does not appear to cause headaches, nausea, or discomfort on a dual projection setup with 48fps or higher content.
5. Stereoscopic 3D gaming was more exciting and impressive to the four viewers, implying that 3D gaming can become an enticing new medium.
6. People who have a reluctancy towards 3D movies (Viewer 4) do not share that same reluctancy towards 3D gaming.
7. Viewers who experienced discomfort from 3D from the Nintendo 3DS (Viewer 2) stated to have no discomfort when viewing 3D on this setup
8. It appears that people who have more visual sensitivities are more likely to have a negative view of 3D. Viewer 4 had issues that the other 3 viewers did not have such as not being able to see detail, sensitivity to color saturation, and rendering issues in 3D gaming. Viewers' 1-3 didn't have the same issues.

Overall Conclusion

Stereoscopic 3D often has a reputation of providing the viewers with headaches and discomfort. The purpose of this demonstration was to see if proper stereoscopic 3D without the compromises found in cinema would replicate the discomfort. All four viewers did not suffer from any discomfort after 2 hours of viewing stereoscopic 3D, and all four viewers left the demonstration being greatly excited about 3D. Viewer 1 left eager to see more demonstrations, Viewer 2 and 3 left very interested in seeing more 3D, and Viewer 4 stated "this demonstration is making me reconsider my opinion on stereoscopic 3D" while also stating strong interest and excitement for seeing other video games in stereo 3D.

This demonstration shows that a proper stereo 3D setup can make a stereo 3D fan more excited about 3D, someone who is "3D Neutral" gain significant interest in stereo 3D, and someone who is "3D Reluctant" reconsider their negative opinions of 3D.