

# DIGISTAR<sup>®</sup>

A Universe of **Possibilities**

in

# 3D



EVANS & SUTHERLAND

*Digital Theater*

# Spherical 3D™

## A revolutionary new approach to fulldome 3D

Accurate wraparound stereo imagery regardless of where you look in the dome. Even behind you. Prerendered video 3D and real time graphics in 3D. Available only in Digistar 4.



Every Digistar 4 system has the amazing ability to process real time graphics in our patented fulldome Spherical 3D stereo, making the entire dome an immersive 3D environment. Other systems can only display stereo in the front of the dome. E&S' exclusive partnership with Micoy provides show producers with powerful software to create prerendered 3D scenes that jump off the screen in every direction. It's an unforgettable experience that you have to see for yourself!



# Supported 3D Display Methods



## Anaglyph

- Most affordable method
- Works on all Digistar 4 systems
- Works with all projectors\*
- >50% loss of brightness
- Reduced color palette
- Some loss of stereo effect in larger domes

This method for displaying 3D imagery on the dome uses a single set of projectors. The projected image contains a composite of left eye and right eye information overlaid together. The left eye image is tinted one color and the right eye image is tinted another color. Using inexpensive glasses with color filters, the left filter cancels the right image only allowing this eye to see the left eye information and vice versa. In this way both eyes combine to see 3D; however the color palette is greatly reduced and brightness drops by over 50%.

## INFITEC 3D

This method uses two sets of projectors to display the 3D image. One set of projectors displays the left eye image and the other displays the right eye image. Using a set of filters in the projectors, the left eye image shows the lower frequencies of the RGB colors and the right eye image shows the upper frequencies of the RGB colors. Filters in the glasses cancel the right image in the left eye and vice versa. The combined images re-join both halves of the RGB colors, providing full color fidelity and the full brightness of a single set of projectors.



- Full color fidelity
- Projectors: DLP, SXRD, D-ILA
- Brightness: equal to one set of projectors
- Most expensive method
- Requires 2 sets of projectors



## Active Stereo

- Single set of projectors
- Full color fidelity
- Works with all projectors\*
- NEW Affordable glasses
- ~50% loss of brightness

This method uses one set of projectors to display video that runs at over twice the normal frame rate. Left and right eye imagery is interleaved on every other frame and displayed in one video stream. Glasses with LCD shutters that are timed to the frame rate of the video, blank one eye at a time with refresh rates up to 120 Hz. In this way both eyes see stereo imagery running at 30-60 frames per second in each eye. This technique offers full color fidelity at about 50% brightness. Glasses contain electronics and batteries but still can be machine washed.

\* Because 3D glasses reduce image brightness, CRT projectors may be too dim for 3D effects to display properly.

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## Technical Specifications



- Spherical 3D real time processing capability included with every Digistar 4. Digistar 4 software natively supports all listed display methods.
- Anaglyph Stereo and Active Stereo require only one set of video projectors. Refresh rate of active stereo may be limited by video projectors.
- INFITEC 3D Stereo requires a second set of video projectors.
- Micoy 3D is pre-rendered into fulldome video, and must be prepared specifically for Anaglyph, INFITEC 3D, or Active Stereo presentation. Please specify which display system you are using when licensing 3D shows.
- Anaglyph glasses are available in inexpensive cardboard frames with plastic lenses, or in plastic frames that can be machine washed.
- INFITEC glasses are machine washable and are available in a variety of lens sizes in plastic frames.
- Active Stereo glasses are available in plastic frames with electronic components built-in to the glasses themselves. These glasses are also machine washable.
- Specifications are subject to change as more technology becomes available.

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