



HIGHLIGHTS

Product Type

Clarity Matrix 3D
LCD Video Wall

Location

Chicago, Illinois

Industry

Higher Education

Application

Interactive Data Analysis



CLARITY MATRIX 3D IS BACKBONE OF NEW DATA VISUALIZATION ENVIRONMENT

The University of Illinois at Chicago is at the forefront of both 2D and 3D data visualization. Computer scientists in its Electronic Visualization Laboratory (EVL) have recently completed development of the CAVE2™ System – the next-generation virtual-reality environment – a nearly circular wall of Planar's Clarity™ Matrix 3D LCD Video Wall System. The CAVE2 System is the second major project completed in 2012 following the installation of a flat-wall configuration of Clarity Matrix 3D displays in the EVL Cyber-Commons, a 3D collaboration space completed earlier in the year.

"Our continued investment in 2D and 3D technology using Planar 3D display technology has allowed us to provide unique environments for interactive data analysis that are also more cost-effective to develop and maintain than other display technologies," says Jason Leigh, EVL director. "With this technology, our users are able to make better-informed decisions that can lead to significant advancements in fields such as science, medicine, energy exploration, transportation and other infrastructure planning."

"Clarity Matrix 3D is the backbone of the most exquisite virtual reality environment ever made."

- Jason Leigh,
EVL director and UIC professor of
computer science

A virtual-reality environment that immerses users in data

The CAVE2 System, approximately 24 feet in diameter, consists of 72 46" Clarity Matrix 3D displays. The ultra-thin displays are tiled edge-to-edge in a 18-wide by 4-high (18x4)

configuration that provides an almost seamless, color-matched digital surround. Upon entering the space, users are immediately immersed in data – a virtual-reality simulation delivered by the Clarity Matrix 3D displays in combination with other computer, audio, optical and Internet-connectivity systems. “We view this as one of the most exquisite virtual environments ever made, and Clarity Matrix 3D is its backbone,” Leigh says.

The CAVE2 System replaces the original CAVE™ which EVL invented in 1992 using projection technology. “When we saw the advancements Planar had made in the 2D and 3D flat panel arena, we knew our most advanced data visualization objectives could be met,” says Leigh. That was affirmed, he says, when Planar stepped up to accommodate off-axis vertical viewing. This eliminates image fuzziness or ghosting that had developed with the original CAVE projection system.

The CAVE2 System’s 320-degree panoramic environment displays information at 37 megapixels in 3D, or 74 megapixels in 2D, with a horizontal visual acuity of 20/20. “This crispness and clarity, which is delivered everywhere in the space, makes both virtual-reality and complex data analysis possible. You can be immersed within a molecule, for example, and also call up related data and display it in a 2D diagram, a spreadsheet, or a formula, and you’ll see everything at a level of detail and sharpness not possible until now,” Leigh adds.

A digital surround with nearly seamless imagery

Clarity Matrix 3D further supports the visualization requirements of the CAVE2 System with its slim profile and ultra-thin mullions. Clarity Matrix 3D is less than four inches in depth, which makes precise alignment possible in the circular configuration. Further, the display’s image-to-image gap is just 7.3mm. “Planar has made the mullions so thin, they’re almost imperceptible. This makes for a nearly 360-degree viewing area that appears to be almost seamless,” says Leigh.

“Planar’s 2D and 3D technologies enable users to make better-informed decisions that can lead to significant advancements in science and industry.”

-Jason Leigh

Finally, Leigh points to the reliability and cost-of-ownership aspects of Clarity Matrix 3D. “The life of an LCD backlight is 50,000 hours, which is 25 times that of a bulb in our previous projection system. Also, Clarity Matrix 3D is installed with Planar’s EasyAxis™ mounting system, a unique solution that facilitated precise alignment of all 72 panels in the CAVE2 System video wall. It would have taken us days, if not weeks, longer to achieve the alignment without EasyAxis, which would have cost us much more in labor.”

Leigh adds that without EasyAxis, they also wouldn’t have the ability to quickly and easily access any panel for service or maintenance. “With any other mounting system, we would have the downtime and cost of having to shut down the entire video wall to diagnose or service even a single display.”

Planar provides custom engineering, unique support

When asked to describe what it’s like working with Planar, Leigh has a one-word answer: “Fantastic.” He continues with a comparison: “Most mass-producing display companies are only interested in display designs that support their business interests. Planar, on the other hand, is unique in that it will build a custom display video wall that meets your needs. And they’ll work with you doing it; sharing knowledge and solving problems in a partnership. No other company has worked with us in this manner and, as a result, the experience has been more positive than we could have imagined.”

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