CASE STUDY: THE KENTUCKY DERBY MUSEUM

Panasonic Laser Projectors Create a 360° Visual Experience of *The Greatest Race*

History

The Kentucky Derby Museum, a premier visitor attraction in Louisville, KY, is the showplace for all things Kentucky Derby. Known as "The Greatest Two Minutes in Sports", the thrill and excitement of the Kentucky Derby is re-created in the museum's Great Hall, a large 360-degree theater laid out in a racetrack oval configuration comprised of 211 linear feet of screen surface, standing 10 feet tall. The AV presentation, aptly named *The Greatest Race*, has enjoyed a long history from its inception as a 96-projector slideshow in 1985. Since its beginning as a multi-image slide presentation to its current form as a seamless ultra-high definition video presentation, the Derby Museum has retained the media design team of Donna Lawrence Productions (DLP) and technology integrator, Communications Electronic Design (CED), both located in Louisville, KY. In early 2000, the presentation underwent a major technology and media upgrade to 720P high definition video utilizing nine Panasonic projectors, making it the first permanent HD 360 video presentation in the world. In 2009 the media and projection systems were once again upgraded to a nine-projector 1080p format utilizing Panasonic projectors.

Solution

During the 2018-2019 racing season, plans were put in place for yet another major upgrade to *The Greatest Race*. New ultra-HD 360 footage was being acquired by DLP and new projection geometry and design was undertaken by CED. CED's new design would require a seamlessly blended and warped projection grid at a resolution of 27,000 by 1200 pixels, mapped onto the complex geometry of the Great Hall's racetrack-style oval. DLP, CED and the Derby Museum staff agreed on a system requirement that demanded uncompromising quality, reliability, ease of use and support.

CED again reached out to Panasonic for its industry leading laser projection technology, as their new design would call for fourteen of Panasonic's PT-RZ12K 3-Chip DLP SOLID SHINE laser projectors.

As part of the final phase of installation, CED and Panasonic's team of experts worked together to finalize development and implementation of the Panasonic Geometry Pro Software option for the 360 Seamless Projection Environment.

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Result

Once again, the Panasonic-based upgrade to *The Greatest Race* resulted in a truly remarkable improvement in all parameters of projection quality. With previous technology projecting across the 360-degree screen, there were noticeable errors in color matching in the image-blended boundaries. However, with the installation of Panasonic's PT-RZ12K 3-Chip DLP® SOLID SHINE laser projectors, the increased quality and performance was immediately noticed to the production team and museum staff. Brilliant Color, Contrast, and Resolution...Panasonic once again has exceeded the expectations of *The Greatest Race* team.

Seamless Integration Right Out of the Gate

When experiencing *The Greatest Race* presentation you can readily understand what it's like to be at Churchill Downs on Derby Day and what Thoroughbred racing is all about – from the first steps of a newly-born foal to the pageantry of the Kentucky Derby itself. *The Greatest Race* immerses visitors in the excitement and history of the Kentucky Derby. "All while experiencing what it's like to stand on the track itself with horses and jockeys racing around you," said Jeff Kennedy, Director of Technology for the Kentucky Derby Museum.

What was once a multi-image slide show has now evolved into a powerful Ultra-High Definition Experience. "As the actual race happens so quickly, we needed the exhibit to be as seamless as the real thing," said Jeff.

With this goal in mind, Jeff turned to the design team at CED which included Mandie Creed, AV Entertainment Engineer.

To deliver the seamless, warped and edge-blended installation that *The Greatest Race* team was looking for, CED worked with the Panasonic team to ensure that their

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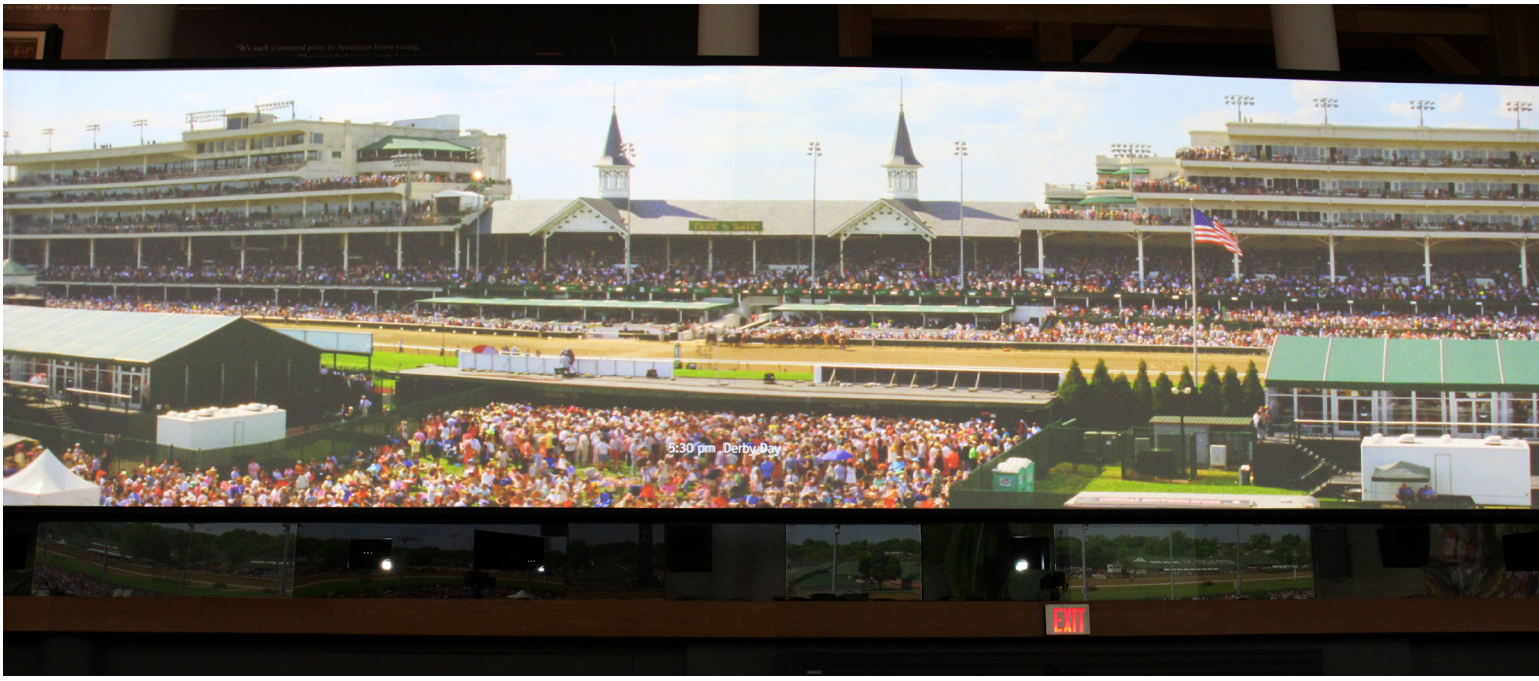

laser projectors would fit the requirements of the project – primarily color consistency along with seamless warps and blends across the entire circumference of the 360-degree oval screen in the Great Hall. "Since most of our museum visitors will only ever visit once or twice, we needed to hit this presentation out of the park from the start," said Jeff.

With this in mind, CED and Panasonic specified the PT-RZ12K 3-Chip DLP® SOLID SHINE laser projector series and optional Geometry Pro camera-based software. The built-in color correction, warp generation and image blending routines of the software/hardware combination ensures consistent performance show after show. And with proper color correction and blending, there is no discrepancy between images. Given that the exhibit hardware is located in a mezzanine level behind and below the oval projection screen, the team also had to account for the space's unique geometry and challenging angles. Working within the unique circular architecture of the Great Hall, the team went to great lengths to ensure that the exhibit, utilizing fourteen Panasonic laser projectors, would be so accurate that it would appear to be emanating from a single projection source.

"We love the PT-RZ12K laser projector because its color correction software executes the blending, warping and color matching," said Mandie, "and it all happens within the projector and exclusive of the server, which is not the case with many other manufacturers." Because Panasonic's hardware interfaces with the software directly and the color correction all takes place within the projector, as opposed to layering and integrating an independent software, this simplifies and reduces maintenance time when the film needs updating with new footage after each year's Kentucky Derby.

Additionally, the 360-degree display system is not only utilized for *The Greatest Race*. CED was tasked with providing software/hardware solutions that also makes the 360-degree display system available for third-party event utilization. This is a top priority for the museum as it helps bring in revenue, and the streamlined installation and programming has reduced setup costs for these special applications. "It used to take us hours upon hours to get the details right," said Mandie, "but now that everything is accessible within the projector, these presentation modifications happen with the push of a button."

Despite the large format and continuous projection in a 360-degree range, Panasonic delivers a projection experience for the Kentucky Derby Museum that is truly seamless, elegant, and immersive. For over 20 years, Panasonic has without exception proven to be the right choice for CED's most demanding presentation projects.

For more information about Panasonic Imaging & Visual System, please visit: na.panasonic.com/us/audio-video-solutions