

PROFILE

NAME: Images On Screen

LOCATION: Los Angeles, Calif.

FOUNDED: 2016

WEBSITE: www.imagesonscreen.com

CHALLENGE

Create complex on-camera real-time projection playback while navigating space restraints, quick content changes and budget requirements

SOLUTION

Epson 3LCD laser projectors offered flexible, reliable and consistent projection with solid color and light output needed to transform the “*Star Trek: Picard*” sound stage



Projection Mapping the Final Frontier

Powerful 3LCD laser projection technology used to boldly go where no one has gone before

“*Star Trek*” has been pushing the boundaries of futuristic display technologies for decades. Reconnecting with older fans and inspiring next generations, “*Star Trek: Picard*” sets off to take viewers, young and old, on a new adventure beyond the 21st century.

Tasked with bringing innovative big screens into *Starfleet’s* recently upgraded Federation Constellation-class starship, the **U.S.S. Stargazer**, as well as illuminating gala moments, Images On Screen sought out projection technology that could stand up against ambient light, handle continuous play and allow flexible placement. Simulating technology still light years away, owner Todd A. Marks turned to Epson projectors.

Returning to the “*Star Trek*” Universe

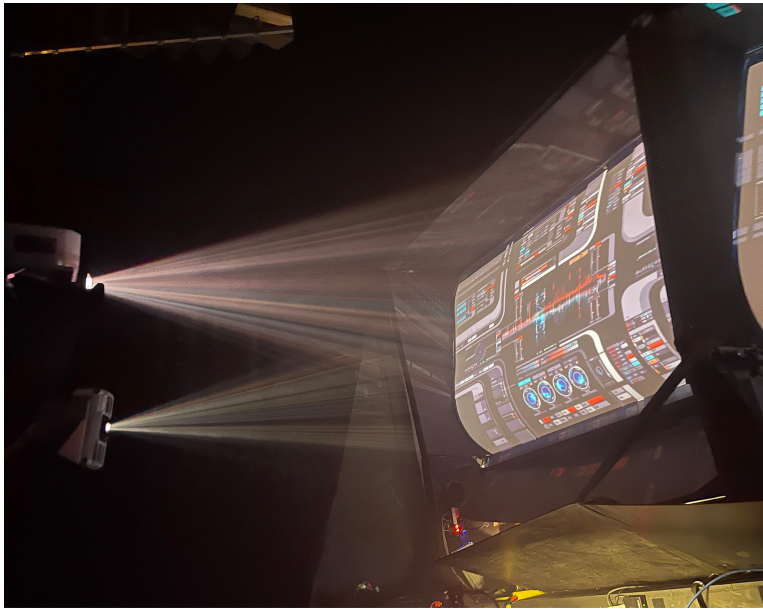
While new to the set of “*Star Trek: Picard*,” this isn’t the first time Marks and his team set foot on a spacecraft.

A veteran in computer/video playback and specialty projection, Marks has worked on nearly 50 feature films, including “*Star Trek Nemesis*” in 2002, which gave him an idea of the work he’d need to produce, and how he could bring back some old tricks with new, updated techniques and higher resolution.

Turning to Epson to meet the demands of this updated vision, Marks made note of the advantages projectors have over other visual display mediums. Having previously used Epson’s family of ultra-short throw projectors and digital signage solutions to create stunning effects, like Pepper’s ghost holograms and floating image effects, Marks reached out to the product management team who pointed him in the direction of Epson’s high-lumen Pro Series laser projectors.



Computer Playback Supervisor: Todd A. Marks (center); Playback Team, L to R – Larry Markart, Peter Macaluso, Ben Betts, Rick Khan, Andrew Miller



At right: Epson's projectors' dynamic imagery lit up Screen Innovations' Flex Glass curved rear-projection screens, which melded with OLED displays to create the stunning curved consoles onboard the ship. Left: Behind the screens, Epson's projectors illuminate the complex curves of the wrap-around console screens

"The high-lumen Epson projectors were the perfect fit for the complex effects we needed to create," said Marks. "We had access to built-in tools like edge-blending, and the projectors have a uniform chassis across different lumen outputs with a range of lens options for tricky positioning and angles. Plus, the support from Epson was invaluable for the success of this project with the team providing quick attention to our needs and assistance when we found ourselves in a tricky spot."

Voyages of the *U.S.S. Stargazer*

When building out the deck of the *U.S.S. Stargazer*, Images On Screen had to make do with the space they were provided. What initially was going to be monitors for the side consoles became an innovative and ground-breaking curved-screen concept. The sound stage was packed tight with limited room for projector throw distance, leaving the team with a complex area to work within. The bridge needed to be decked out with complicated moving visuals to show off the ship's supportive stations and master systems displays.

"Challenging is an understatement – the graphics in every episode could change drastically, but the projectors allowed for seamless content adjustments and were compact and light, making it easy to shift them to accommodate our needs while filming," said Marks. "As Captain Jean-Luc Picard so wisely once said, 'there is a way out of every box, a solution to every puzzle; it's just a matter of finding it,' and Epson projectors were our solution."

To create the illusion of the bridge's information centers, the team noted a big challenge. Using rear-projection techniques, Images On Screen projected from behind the set onto Screen Innovations' FlexGlass that was mounted into consoles on both sides of the bridge. About four feet off the ground and another three feet to the projection screens,

the team aimed to show off the monitored displays and ship metrics. However, the screens curved to meet with OLED video panels acting as computers just below them and there wasn't a huge throw distance from the projectors for a wide shot. This made it harder to map the displays effectively.

Marks leveraged the Epson Projector Management Software for monitoring and controlling the networked projector fleet. "The software allowed us to remotely control the projectors – turning them on and off, monitoring, adjusting, and controlling the projectors from our playback control room," said Marks. "It was especially useful on the set because we could instantly make changes, or black-out an individual or entire bank of projectors, if we needed to."

Utilizing six projectors ranging from 9,000 to 12,000 lumens, the team needed a wider focal area with the different short-throw lenses than what were available on hand. After reaching out to Epson for help, the team was able to acquire the optimal lenses, coordinate the right onboarding settings and utilize the impressive projection specs to dial in crisp images throughout the space without scrapping the effect. Epson's projectors were also quiet enough to be mounted close to the set without needing additional sound baffling.

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- TODD A. MARKS, OWNER, IMAGES ON SCREEN



Three stacked Epson Pro L 1750UNL laser projectors illuminate a 50-foot Peroni RNO – Notturmo rear screen outside the U.S.S. Stargazer observation lounge



Epson's Pro L 1750UNL 15,000-lumen projectors, mounted sideways on truss and MadMapper software pixel maps for precise placement

3, 2, 1 Lift Off... A Party Among the Stars

Marks' playback team utilized Epson's compact and versatile projectors and their extensive range of lenses during the Gala episode, showing off impressive displays of galaxies and stars, highlighting one of Images On Screen's bigger effects. Using two 15,000-lumen Epson Pro Series projectors, the team mapped video of two rockets taking off on the walls of the Biltmore Hotel in downtown Los Angeles.

"They looked phenomenal and worked perfectly – they practically blended into the set," said Marks. "A key advantage I've noticed with laser projection technology is that when matching multiple projectors, they're significantly superior to bulbs, which have a tendency to shift hues as they age. And Epson's 3LCD technology kept us worry-free of any image flicker or refresh issues when used on camera."

Using the same projectors, Images On Screen created similar effects discreetly across various locations in the show. Mounting the projectors into the sets, Marks showed off the work he and his team could do to enhance and upgrade the look and textures of multiple scenes.

Practical Tools for Believable Effects

Throughout season two of "Star Trek: Picard," Marks and his team noted the benefit of having real-time projection on the show. The projectors' ability to adjust in real time made them a dynamic visual effect tool.

"Unlike some other film and TV shows using expensive and significantly more complex LED walls, projectors allowed us to create visuals for a fraction of the price," said Marks.

Using MadMapper software to playback and change effects in real-time, Images On Screen could map out the visuals their graphics partner Twisted Media created and react quickly to cues to adjust for changing Hero shots and background effects. Marks notes, "The use of practical projection playback dramatically minimized the need to use more expensive post-production effects in many situations during production."

"Ultimately, we were able to bring a level of visual and creative expertise to the set that the production team didn't expect – things that normally would have to be done in post-production at an additional cost," said Marks. "This type of real-time adaptive effects really showed the value in projection and what it can bring to the screen. We couldn't have pulled off these types of effects at the cost we did with any other display technology."

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