

## PROFILE

**Name:** BASE Hologram Productions, a division of BASE Entertainment

**Location:** Los Angeles, CA & Houston, TX

**Founded:** 1983

basehologram.com

## CHALLENGE

Bring back the excitement and thrill of live musical performances featuring legendary artists, such as Roy Orbison and Maria Callas, giving a new generation of audiences an electric and spellbinding experience.

## SOLUTION

Tap the remarkable sharpness and brightness of Epson's new Pro L25000U laser projectors to create a realistic and believable image of the artists on a three-dimensional stage.

# Holograms Changing the Landscape of the Live Theater Experience

## Roy Orbison and Maria Callas Tour Once More in a Unique, Digital Form

When we talk about the immortality of great artists, we don't usually mean it literally.

Yet with Roy Orbison and Maria Callas each on tour this year, we are seeing something close, considering that Orbison passed away almost 30 years ago and Callas more than 40.

Each artist appears on stage in a digital form while accompanied by a live orchestra. The digital artists are difficult to distinguish from the living performers. The songs are old standards, but the productions are brand new, giving diehard fans, as well as those who never saw them in life, a new experience, and one that no one could have ever expected.

"We launched these tours with the hope of bringing back the excitement and thrill of live musical performances for a new audience, people constantly immersed in our technology-advanced world," says Marty Tudor, executive producer and CEO of BASE Hologram Productions. "To bring legends like Roy Orbison and Maria Callas to life, we required visual display technology that would allow the audience to truly feel they were experiencing these electric and spellbinding performances live."

The tours would not be possible, Tudor adds, without Epson's new Pro L25000U laser projectors. "Without the quality we're



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getting from these new projectors, we don't think we could do what we're doing. The audiences are really surprised when they see the show."

## Bringing Hologram Technology on Worldwide Tour

The choice of Roy Orbison and Maria Callas as the subjects of the first live tours by BASE Hologram makes complete sense. Both were iconic performers, and both are sorely missed by worldwide audiences.

Callas, considered the greatest soprano of the 20<sup>th</sup> Century, still sells millions of copies of her live performances, in particular in the operas *Tosca*, *Lucia di Lammermoor*, and *Carmen*. Orbison's hits include *Oh, Pretty Woman*, *Crying*, *Only the Lonely*, and *In Dreams*.

**"The tours would not be possible without Epson's new Pro L25000U laser projectors."**

— MARTY TUDOR, EXECUTIVE PRODUCER AND CEO,  
BASE HOLOGRAM PRODUCTIONS

The Orbison tour began April 8 in Cardiff, Wales, with the Royal Philharmonic Orchestra accompanying him. It then moved on to venues across Great Britain, Europe, and, in the fall, in the United States. The Callas tour launched in Davis, California in September, with additional venues booked in the Americas and Europe in the fall and next year.

Bringing these two performers to the stage was a job for a seasoned and unusually creative production crew. BASE Hologram is a new division of BASE Entertainment and its leadership, who have been producing live concerts, theatrical performances and all types of other entertainment events in Las Vegas and worldwide for more than 30 years.

The effects at the heart of these shows are not holograms, in the strict sense: not 3D images. And unlike traditional holograms, you cannot walk around them to see the sides or the back of the images.

Instead, the images are produced by using Epson laser projectors and other production elements. It's a variation of Pepper's Ghost, a special effects technique used in theaters since 1862 to create semi-transparent images of actors that can instantly appear on stage and instantly disappear. The images of Callas and Orbison are convincingly three-dimensional because they stand out in front of the live orchestra. Our eyes perceive them as taking their proper place on a three-dimensional stage.

***“We’re pushing these projectors to the limit, beyond their specifications, and our experience has been really good.”***

—MICHAEL RAHR, TECHNICAL DIRECTOR,  
BASE HOLOGRAM

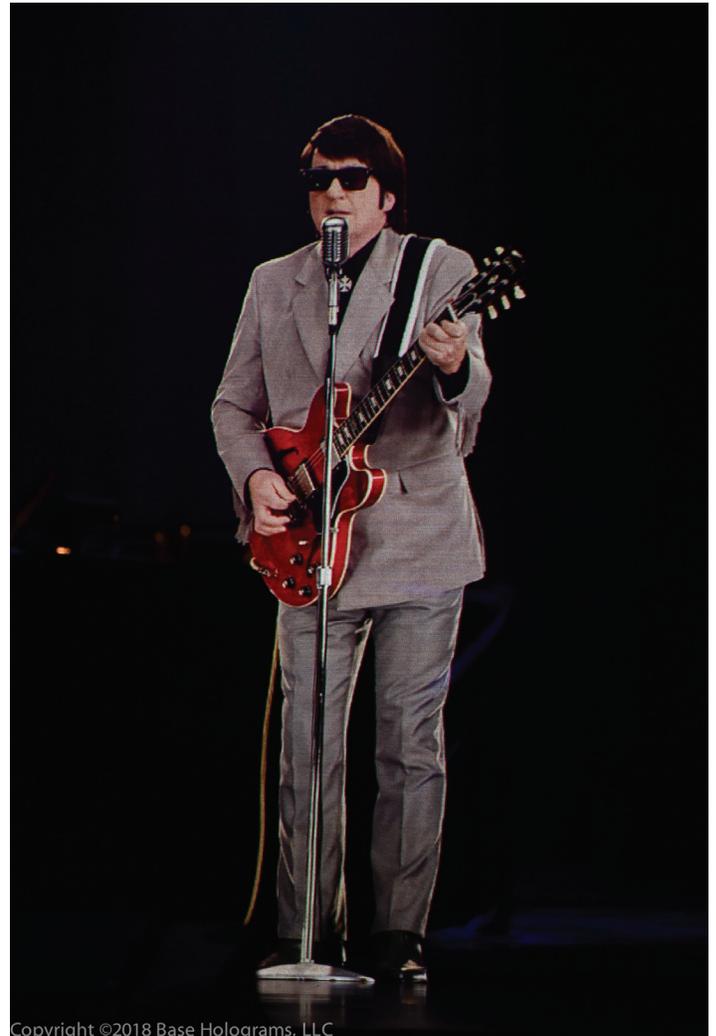
The key difference between this modern illusion and the traditional Pepper's Ghost is that the figures are not ghostly; the extreme sharpness and brightness of the Pro L projector is able to create a full-bodied image.

### **Warping and Edge-Blending the Images**

An added challenge for the producers was the desire to allow the performers to move naturally in front of the audience.

Orbison, in life, tended to stay fairly stationary on stage, so recreating his image required just one Pro L projector. Callas, however, would usually move back and forth across almost the entire stage, requiring the use of more than one projector.

To maximize the brightness and thus the realism of the performers' images, the producers, working closely with the engineers at Epson, chose the new Pro L25000U, which provides up to 25,000 lumens of color/white brightness<sup>1</sup> and remarkable sharpness and color depth. This projector, and the others in the Pro L series, have edge-blending and warping features built in, making them relatively easy to set up as required.



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Still, Michael Rahr, the technical director for BASE Hologram, says “We’re pushing these projectors to the limit, beyond their specifications, and our experience has been really good. The built-in camera Epson uses for calibration is unbelievable, allowing us to set up in a new theater far faster than we ever thought possible.”

### **The First of Many**

Rahr says he was introduced to Epson by a colleague who said the new Pro L projectors “would give us an image quality that

exceeds any other... We spent the last year with Epson projectors, and I'm quite impressed with them. We've tried everything you can imagine with them."

Tudor says he was as impressed with Epson's staff as much as their technology. "They've been fantastic—unbelievably attentive and amazingly collaborative and supportive in helping us achieve what we needed to achieve."

While the Callas tour is just getting underway, audiences were treated to a partial performance of her concert, together with Orbison's, on January 14 at the Rose Theater at Jazz at Lincoln Center in New York.

The critics were impressed. Rhian Daly writes in the NME Blog (published by Time UK), "We got a sneak preview of Roy Orbison's hologram tour and it's pretty mind-blowing...so impressively lifelike that it's easy to suspend your disbelief and cynicism, and forget what you're watching isn't totally real."

Daly quotes Roy's son Alex Orbison: "It really took my breath away,' he says...'At the end of the day, it just looked like my dad standing on the stage. It was a huge, huge success."

Anthony Tommasini, the theater critic for the New York Times, writes, "The respected stage director Stephen Wadsworth... is the creative director for this 'Callas in Concert.' In introductory comments, Mr. Wadsworth said that the project has tried to present Callas with 'restraint, subtlety and delicacy.' The notion of a singing hologram might seem incompatible with such a goal. Yet moments during Sunday's preview were surprisingly affecting..."

"There were several stretches during Lady Macbeth's sleepwalking scene that got to me, mostly because the real Callas's singing on the recording was so honest and revealing. At her best, Callas redefined what it meant to sing beautifully. Her deeply emotional, sometimes delicate, sometimes frayed singing of the Verdi Aria was the essence of truth, something that cut through all the holographic stage tricks."

Tudor says he hopes to bring many more performances to the stage using this holographic projection technique. "We hope to have a long and very profitable relationship with Epson. And as we grow and push the envelope, and as they grow and push the envelope, I think we're going to be able to explore new techniques and ways of presenting more and more spectacular shows."

He adds that "Audiences are looking for that unique hook to get them out of their homes and into communal experiences. These productions do that in an innovative, creative and immersive way that will change the live show landscape."

***"...the new Pro L projectors would give us an image quality that exceeds any other..."***

—MICHAEL RAHR, TECHNICAL DIRECTOR,  
BASE HOLOGRAM

<sup>1</sup> Color brightness (color light output) and white brightness (white light output) will vary depending on usage conditions. Color light output measured in accordance with IDMS 15.4; white light output measured in accordance with ISO 21118. Some lenses will not support the maximum brightness level of this projector.

*Disclaimer: The views and opinions expressed in this article are those of the individual. Individuals were not compensated for this article.*