

CASE STUDY: INTERNATIONAL CRUISE & EXCURSIONS

ICE Unveils 9'x12' See-Through Video Screen

Challenge

To complete the award-winning design of its lobby area, ICE sought a creative way to display “never-before-seen” technology in the form of an attraction that would seamlessly fit into the space but would also act as a focal point in the impressive lobby area, instantaneously grabbing the attention of any onsite guests and visitors entering the campus.

Solution

Installation of a nine foot by twelve foot sheet of oversized and fully translucent glass that transports guests into a world of technology and innovation from the moment they step foot in the door. A show stopping display, the Panasonic Solid Shine PT- RZ12K Laser video projector and custom Panasonic ultra-short throw lens, is a remarkable “floating in air” transparent display panel with electrically adjustable opacity levels ranging from 7 to 100 percent.

Result

“It’s something very unique, something visitors have never seen before, so it’s really quite the attention getter. The minute people open the door it shows them what a creative, forward-looking company ICE is. [...] Clients looking through the conference room’s glass wall at the rear projection view of cruise ships or resorts start off by talking about the technology, but eventually gravitate to discussing the service being shown. It’s a conversation piece every day,” notes Dan Howard, ICE Vice President, Information Technology.

For two decades, Arizona-based, International Cruise & Excursions, Inc. (ICE) has been the world’s leading creator of unique integrated vacation adventures, customized travel programs and private-branded benefits and redemption options for major businesses in the U.S. and abroad. What makes ICE a “world leader?” In ICE’s case it means, among many other things, enabling its global roster of blue-chip clients the ability to leverage the power of travel and provide access to unique, once-in-a-lifetime experiences to more than 55 million people annually.

“We wanted something very high-tech that would immediately show a potential customer the services and travel opportunities we produce for our clients,” Howard says of the incredible 12-foot long and nine-foot high projection screen that dominates the atrium-style lobby of ICE’s new corporate headquarters building with unending views of beautiful ships, sand and sun provided by a Panasonic PT-RZ12K 3-Chip DLP Solid Shine laser video projector.

“A screen should basically be invisible, all you should be able to see is the image on the screen, the screen itself should not impose on your vision.”

– Walter P. Siegmund, co-developer of the Todd-AO 70mm, 6-track audio system for projecting single-camera images on an immersive, radically curved screen similar to those used in the three-camera Cinerama process.

“As much as possible, we wanted to create a kind of ‘rolling free’ presentation where the videos displaying our services were the only things reaching visitors’ eyeballs,” Howard added. “That’s why we wanted the screen to appear as if it was floating without any supporting hardware, without the images being constrained by frames or bezels. Whether you were looking at it from the front or the back we didn’t want anything to be visible except that big hunk of glass and we wanted every square inch of that glass covered by part of an image.”

According to Howard, the screen’s translucent ‘behind-the-looking-glass’ technology was the deciding factor in favor of using a jumbo-sized video display as the lobby’s centerpiece.

“It’s something very unique, something visitors have never seen before. So it’s really quite the attention getter, the minute people open the door it shows them what a creative, forward-looking company ICE is. I’ve stood in the lobby and watched people walk toward the reception desk while looking at the screen. You’d be surprised how many change direction and duck behind the screen. They walk behind the screen, see the same image they were watching in front, look up and down and around and obviously can’t figure out how it’s being done, comments Howard.”

Impressing random visitors is, of course, always desirable, but businesses run on done deals not on high-tech imagery. And helping get deals done is a major part of the screen’s mission.

“When you look through the screen from the front, you can see our CEO’s office and the front entrance to the company boardroom, but you probably won’t notice that the exterior wall of the boardroom that faces the screen is all glass. When clients and potential clients sit in the boardroom they can see right through that glass and watch all the



content playing on the screen. They’ll start off talking about the technology, how we made this part or that work, how we can instantly change the degree of translucency to compensate for the sun’s position relative to the lobby windows and the resultant changes in ambient light levels. That’s what they start talking about. But meanwhile all those cruise ship and resort images are penetrating their consciousness and they eventually gravitate to discussing the particular service we’ve been showing them,” further notes Howard.

According to Rob Sherman, Senior Sales Engineer for the Commercial Division of ExhibitOne Audiovisual Technologies and the man charged with making chunks of glass ‘float’ and solid images turn see-through, making the screen translucent was a minor challenge next to meeting ICE’s spec for a screen that “appeared to be floating in space.”



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ICE Vice President, Information Technology

As Sherman describes it, two bits of “magic” were required to achieve the desired “floating” effect: 1. Mounting the huge screen so that every square inch of it was visible and filled with an image; 2. Concealing the Panasonic PT-RZ12K projector from people walking behind or looking through the screen.

Moving and mounting the huge glass in place without any framing on the top and bottom and no attachments at all on either side was accomplished by mounting a small (approx. one-inch) 12-foot-long C channel atop a three-inch

pedestal built onto the lobby floor. A matching C channel was attached to a small soffit built on the ceiling and the top and bottom channels were meticulously aligned to ensure that the screen would fit straight, true and without any tendency to bend. Finally, both channels were rubbed down with lubricant and the screen was slowly, very slowly, slid into place leaving all four sides of its edges free of any frames or bezels.

“ICE was adamant about using as much of that piece of glass as they could,” Sherman says. “They weren’t going to stand for any gray bars or black bars or empty space, they wanted the image to encompass the entire surface. We had to do a lot of math to make sure the aspect ratio of the screen, the size of the projection lens, and its distance to the screen were absolutely on the mark.”

Hard enough to accomplish under any circumstances, achieving a perfect relationship between a screen, projector, projection lens and the distance between the rear lens element and the front of the screen was rendered just this side of impossible by the necessity of allowing people to move 360-degrees around the “floating in space” screen.

“Typically, a lot of people walk up to it and immediately recognize what it is; media, digital content, or a video presentation,” Sherman notes. “But then they realize they have no idea how that content got there. They do not see a projector or projection beams coming toward the front screen. So they walk around the back and see the image shining through and start looking for a projector hanging on the ceiling somewhere. But they won’t find one there either because we installed the PT-RZ12K above the finished ceiling. The only visible clue is if you walk behind the screen, look up and notice the open slot where the image beams emanate from.

Another issue facing Sherman and his team, one he believes to be insoluble with non-Panasonic projectors and lenses, was eliminating the possibility that someone would cast a silhouette on the image by deliberately or inadvertently getting in the projector’s image path.

“What Panasonic created for us was a method to install one of their laser projectors and one of their extremely short throw lenses, in an application unlike any other that we have seen to date,” Sherman says. “This screen can be filled with the rear element of the lens only 48 inches away. Since the projector is about two feet long, the total length

of the projector/lens combination is 36 inches. This enables us to maintain the proper lens-to-screen distance while mounting the rear of the projector less than 12 inches from the glass. If they tried hard enough, a person could still get between the beam and the screen but they'd have to be virtually standing on top of the glass to do it."

Making the screen translucent is accomplished by coating it with a specially treated plastic membrane which gets brighter or dimmer in response to low-level electrical charges.

"In physical terms the easiest way to describe it (plastic membrane) is to say it looks like an oversized cell phone screen protector, only a little bit thicker," Sherman noted. It also applies like a screen protector, which means that the most important thing is making sure there are no particulates on the screen when you start and that you've gotten all the bubbles squeegeed out when you stop. "Of course," Sherman added, presumably with tongue firmly in cheek, "the degree of difficulty is somewhat greater with a 9x12 ft. piece of glass than a smart phone screen."

To handle the "degree of difficulty" confronting them, Sherman's crew spent a week taping off all the areas that could possibly generate or emit dust or dirt in the screen's direction with plastic and used fans to exhaust air from either side of the glass, which was then hand cleaned "at least" five times. Finally, the plastic membrane was slowly and (you better believe) carefully applied using an alcohol-based liquid which provides adhesion and activates the molecular crystals in the membrane.

At the end of the day, Team Exhibit One achieved somewhat of a miracle by having to pull up, clean out a bit of refuse and reapply only about a foot and a half of the membrane at the bottom edge of the screen. Though no sanctioning body keeps official statistics on this kind of thing it is generally believed that getting a job of this type done without destroying at least one membrane is considered Grade A work.

Summing up the display's impact on the day-to-day ambiance of ICE's lobby, Dan Howard says, "you know, there's a big 'wow' factor involved here and a lot of that 'wow' is being provided by Panasonic. The Panasonic projector (PK-RZ12K) provides the extreme clarity and detail reproduction we need to showcase the ships, the seas, the warm sunny resorts. The Panasonic projector also has the power, the extremely high output we need to retain perfect color and saturation levels even when the screen is in a highly transparent mode.

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