

WHITE PAPER



Projectors Create New Opportunities for Museum Displays

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By Richard Slawsky | Contributing writer, Digital Signage Today

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Museums are the anchor of many communities, with many business and lifestyle publications ranking the livability of cities in part on the number and quality of the museums they host.

According to the American Alliance of Museums, there are around 850 million visits each year to U.S. museums, more than the attendance for all major league sporting events and theme parks combined. Museums are considered the most trustworthy source of information in America, the AAM says, rated higher than local newspapers, nonprofits researchers, the U.S. government, or academic researchers.

But museums face a number of challenges today. Chief among them are finding ways to create immersive experiences for a population accustomed to video games, large-screen TVs and digital signage.

Many museums are taking advantage of projector technology to create the immersive experiences that attract and engage visitors. Here are some examples of the technology that is advancing projection technology and making them suitable for all types of applications in a museum environment:



Laser light source

One of the biggest issues concerning projector technology has been the cost and reliability of projector bulbs, with replacement bulbs often costing \$500 or more. In addition, traditional projector bulbs take time to warm up, generate a great deal of heat and come with high energy usage.

Many newer projector models use lasers to generate light. In addition to improved picture quality, lasers last longer than traditional projector lamps and aren't as fragile, resulting in lower maintenance costs. They also offer nearly instant on/off, reducing the need for museum staff to come in early and/or stay late to prepare the displays.

Thanks to their long life and consistent output, a laser light source eliminates concerns that an image may appear different after changing a projector bulb. They also generate less heat and come with lower power consumption.

The global No. 1 DLP projector brand BenQ, for example, offers a number of laser light projectors featuring intense BlueCore laser-powered brightness for 20,000 hours of 24/7 maintenance-free operation, DLP picture quality and a variety of resolutions up to and including 4K. Projectors also feature HDMI out for multiple-screen applications and the installation flexibility of extended horizontal and vertical lens shift along with big zoom and digital image resizing and memory. Other features include 360-degree projection for projection onto ceiling, walls, floors or angled signage.

BenQ's BlueCore projectors are designed with sealed laser modules and enclosed light engines to protect the DMD chip, color wheel sensor, laser bank and other optical

components to seal the engine from dust. In addition, the projectors' cooling system includes a high thermal conductivity metallic fluid that controls engine operating temperature to prolong projector lifespan.

Improved image quality

Consumers today are becoming accustomed to seeing images of 4K resolution. Newer ultra-high definition projectors reproduce 4K resolutions with a display smoother and more lifelike than the best HD projectors.

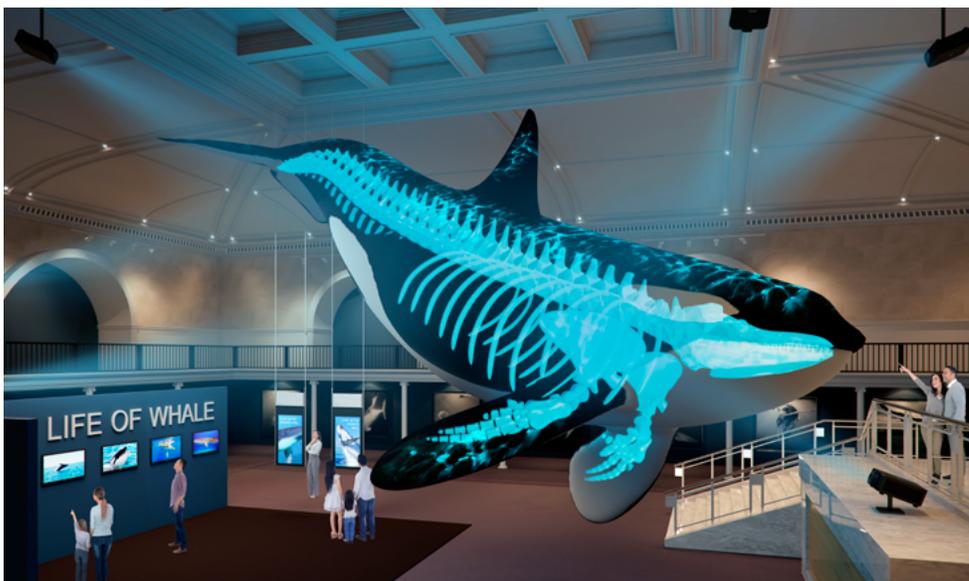
One such entry in the UHD arena is BenQ's LK970 4K Laser Projector. Precisely visualizing 8.3 million distinct pixels, the LK970 brings together true 4K UHD detail and the power of maintenance-free BlueCore laser light source. Ideal for entertainment simulators and gallery exhibitions, the LK970 generates supreme picture quality to reproduce true-to-life images for totally immersive experiences for audiences.

Offering up to 20,000 hours of perfect performance, the LK970's flexible installation features such as H/V lens shift, big zoom, 360° projection and portrait capability make it a versatile projector perfect for diverse applications.

Throw ratio options

A projector is a great way to create an immersive experience in a museum display, but people often assume that doing so requires a large space.

The size of the space needed to create an immersive image is determined by the projector's "throw ratio," an equation that explains the distance from projector to screen compared to the screen size. For example, a standard projector might have a 1.5:1 throw ratio. To create a 60-inch image, the projector would have to be 7.5 feet back from the screen or approximately 1.5 inches back for every 1 inch of screen.





Standard throw projectors are fine for large spaces where the projector is a long distance from the screen. For smaller spaces, though, a short throw projector might be the best solution. A short throw projector allows a user to create that experience without requiring that the projector be a long distance from the area where the image will be displayed. Short throw projectors have lenses that can create a much larger picture from shorter distances, or a 100-inch image from a distance of 4 feet or less in some models.

Producing larger-than-life images in tight spaces with a 0.8 short-throw ratio, BenQ's LU951ST projector eliminates distracting shadows and glare, enabling viewers to move freely in front of the screen while enjoying immersive viewing experiences in small rooms.

The LU951ST delivers breathtaking WUXGA images with pristine DLP picture quality, with 20,000 hours of guaranteed maintenance-free high brightness output from its BlueCore laser light source.

Customization offers flexibility

For many museums, projectors often are installed once in a simple application that doesn't require advanced features. For those applications, a basic fixed-lens projector might be the best choice.

Many museums, though, change their displays on a regular basis to help maintain visitor interest. To make the most of an investment in projector technology, an optional lens projector might be in order.

BenQ offers several projectors that can be used with a variety of lenses. Its LU9915 BlueCore Laser Projector, for example, is compatible with eight different lenses for a wide

range of installation possibilities. Users can project a 200-inch image at distances ranging from 1.5 meters to 35.6 meters with different lens options.

The LU9915 also features motorized lens control and lens memory functionality.

The motorized lens control offers basic remote control commands for omnidirectional adjustments to projection targets, eliminating the labor required to relocate or reconstruct mounting locations. The lens memory feature offers 10 customizable memory settings for lens position, zoom and focus, allowing users to easily recall lens settings optimized to a variety of source content without tedious re-adjustments.

Users can maximize installation options and projection layout with a quick one-button release. The ability to swap lenses quickly makes the LU9915 and related models a suitable projector for nearly any museum application.

About the sponsor:

Whether it is a smartphone, a computer monitor, or a television screen, the world is constantly shaped and moved by display technology. As a leader of this digital transformation, BenQ endeavors to explore all possibilities to develop comprehensive display solutions that create value for your customers in diverse fields. With over 30 years heritage of technical-know-how under its belt, BenQ prides itself on serving business professionals across various vertical markets including visual display, corporate, education, and specialty display. Above all, from offering design expertise, futureproof solutions to world-class service, BenQ establishes itself as the most complete business solution provider in the industry. BenQ makes change visible.