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# How Laser Impacts the Movie Going Experience

*By Richard McPherson*

## The Benefits of Laser Cinema Projectors

With the number of different formats available today it is becoming increasingly difficult to fill seats in the theater. Exhibitors are looking for ways to bring in new customers while retaining their current customer base. Laser projectors can help exhibitors meet this objective. Among its many benefits, laser technology creates vibrant images and provides higher color saturation. Even better, the latest generation of high-lumen laser projectors provide incredible brightness levels that last longer, providing more consistency. Most importantly, they create a viewing experience so incredible that it keeps movie-goers coming back for more.

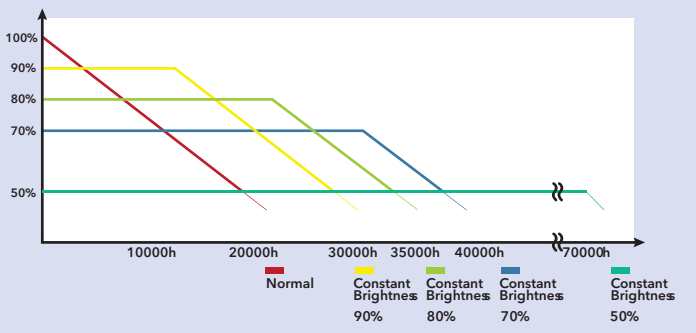
Digital projection technology now accounts for more than 95 percent of all 163,000 cinema screens around the world. Exhibitors who have invested in up-to-date laser projection are enjoying greater operational and organizational efficiencies, and they're better able to deliver the types of engaging experiences that today's audiences demand. Cinema operators who have installed the newest generation of laser solutions have also achieved lower total cost of ownership (TCO). Some of these projectors support 3D, live streaming, and other cutting-edge display technologies. If you're considering moving to a laser solution for the first time or are looking to upgrade from your aging projector, keep the following benefits in mind.

## Long-lasting brightness

All projector light sources fade over time, but a laser projector's brightness does not decay at the same rate as that of a lamp-based projector. Laser solutions provide more stable brightness over time than equivalent lamp-based models, and they also offer much greater contrast and resolution for a longer period of time.

The number-one factor to look for in a digital projector is its lumen rating. Digital laser projectors offer an impressive 20,000 hours of use when used at full brightness. They also have another major advantage: Projectors with 10,000 ANSI lumen light output or higher also provide better flexibility in controlling brightness on the screen for 2D and 3D content. Using constant brightness control to lower the light output of the projector results in two key benefits. First, the images on the screen stay brilliant while producing an amazing effect on a projector's light decay. Second, you can extend your projector's life even further, resulting in lower TCO.

Research has demonstrated that setting a laser projector at 80 percent brightness can slow light decay and extend its life to 35,000 hours – while keeping the projector set at a 50-percent brightness setting can slow light decay even more and extend its life to as many as 70,000 hours of use. In the following graph, the red line indicates the normal light decay and life expectancy of a laser projector set at full (100%) brightness. The green line shows the light decay and lifespan of a laser projector set at 80% brightness, and the cyan line demonstrates the light decay and life expectancy of a laser projector set at 50% brightness.




## Light Decay Curves of Normal vs. Constant Brightness Settings

Buying a laser projector with a high lumens rating can enable you to extend your projector's life by adjusting the brightness setting to less than full brightness – while still projecting an image that will be bright enough to support the DCI standard and beyond. And if you host an event that requires ambient light, you have the ability to project images effectively by using your projector's full brightness setting.

## Cost, efficiency and versatility

To maximize profits, it's crucial for exhibitors to invest in a projector with a low TCO. Unlike traditional projectors, digital laser projectors never require replacement lamps, thus lowering labor and lamp replacement costs. This benefit alone adds up to significant cost savings over your projector's life, especially when considering cinema projectors may operate for 10 hours or more hours every day.

Some new laser projectors integrate media servers and internal cooling systems, eliminating the need for costly external chillers. They provide greater installation flexibility and lower installation costs and infrastructure needs. For new theater builds, these models may even eliminate the need for projection booths because a laser projector does not require the same heating ventilation system required for lamp-based projectors. This also means you may be able to pare down your entire projection staff to better suit the laser maintenance requirements.

All these benefits, taken together, add up to one clear fact: Laser projectors do much more than just provide audiences with unparalleled viewing experiences. They also increase operational efficiencies for exhibitors, while remaining adaptable enough to support emerging technologies poised to enter the market over the next several years. The bottom line is that they provide a better long-term investment solution than lamp-based solutions.

*Rich McPherson, senior product manager at NEC Display Solutions, has more than 25 years experience in the projection industry. He oversees marketing for projectors, including installation and digital cinema projectors.*