

Tried, tested and true:
Why Xenon illumination
is the preferred choice
over laser phosphor for
mainstream cinema

Xenon - cinema's workhorse

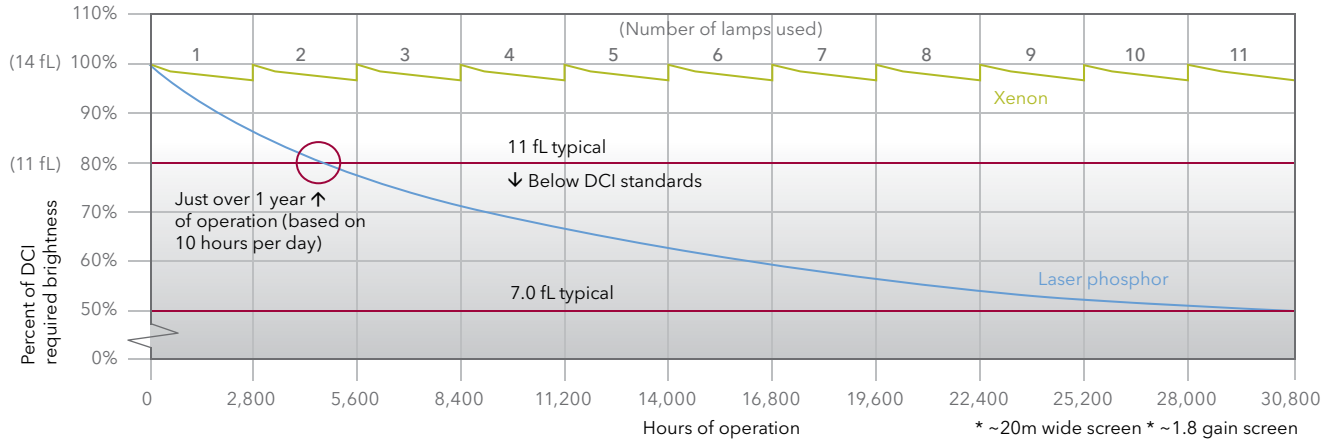
With 45 years of use and 1.5 million installations worldwide, Christie® Xenolite® lamps are a constant in the cinema industry. Producing impressive light output, accurate color reproduction and boasting 99.999% reliability, this "lightning in a bottle" technology is the dependable workhorse trusted by exhibitors everywhere.

Laser phosphor cinema projectors - not to be confused with RGB laser projectors - have been touted as a viable option to replace Xenon-based systems. This has resulted in cinema owners being faced with a decision. Should they continue using Xenon lamps, or make the switch to laser phosphor?

Our answer to this is simple. For mainstream theatres, laser phosphor cinema projectors do not provide the performance advantages to justify them as an acceptable option over Xenon-based systems.

CHRISTIE®

Brightness over 30,000 hours 20K lumen-class, Xenon versus laser phosphor*



Laser phosphor - not suitable for cinema

Laser phosphor projectors have their place. It's just not cinema.

In order to be DCI-compliant, projectors are required to produce a specific color gamut and achieve minimum brightness levels. Anytime these parameters drop below the specified limits, the quality of the presentation - and experience for the customer - suffers.

The above chart shows on-screen brightness you can expect using Xenon lamps compared to laser phosphor over 30,000 hours of use. When following the Christie recommended best lamp practices, Xenon lamp projectors easily maintain DCI-specified brightness and color levels for 30,000 hours, and beyond.

Comparatively, after only a little over a year of typical usage, the brightness of a laser phosphor cinema projector drops below DCI specifications. This leaves the operator with the undesirable prospect of replacing the laser phosphor light module, or worse, the entire projector, to maintain acceptable show quality. What's more, unlike lamps, laser phosphor components and light modules are very expensive and not easily swappable, resulting in a high replacement cost and downtime while the projector is being serviced. Meanwhile, the Xenon lamp projector continues to produce industry standard brightness, day in and day out.

Producing the correct color space for cinema (DCI-P3) without sacrificing brightness and efficiency is a significant problem for

laser phosphor projectors. Xenon lamps natively output colors much closer to DCI-P3, which means there is more usable, unfiltered light to project on screen resulting in a brighter presentation. Comparatively, the native output of a laser phosphor projector is inherently blue and yellow dominant and deficient in red and green. As a result, to achieve the DCI-P3 color space, a laser phosphor projector needs to filter light more aggressively, drastically reducing brightness and efficiency. To compensate for this loss in brightness, manufacturers are required to add additional, costly laser devices, increasing overall cost and complexity of the projector.

RGB laser projection - worth the wait

It is inevitable that laser illuminated projectors will become the platform of choice for cinema operators. They just won't be laser phosphor.

While already making significant, successful inroads into Premium Large Format theatres and giant screen cinemas, it's only a matter of time until RGB laser projectors become the standard for mainstream cinemas.

As a leading manufacturer of cinema projectors, we are motivated to offer the absolute best technology that allows exhibitors to provide the absolute best cinematic presentation possible. That's why we're taking the stance that, when compared to laser phosphor, Xenon projection still offers the best option for the mainstream cinema operator.

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