

Christie BoldColor Technology FAQ

Q. What is laser phosphor?

A. Laser phosphor is a lampless projection illumination platform that uses blue laser diodes as the primary light source. To generate the three primary colors – red, blue, green – the blue light from the laser diodes shines onto a spinning wheel that is coated in a phosphor compound. The blue light excites the phosphor, emitting yellow light. The yellow light is then segmented using dichroic coatings to create red and green light while the blue light component directly passes through a diffusion segment in the phosphor wheel. In some cases, designs can include one wavelength of low-cost blue laser diodes to excite the phosphor wheel and a different wavelength of blue laser diodes to inject directly into the optical path. The projector then sends the separated red, green and blue colors onto an imaging surface, such as a DLP® chip, which then sends the light through a lens and onto the projection screen.

Q. Why choose laser phosphor?

A. Christie® offers customers a variety of illumination platforms to choose from, including lamp-based, LED, laser phosphor and RGB laser, to match their requirements and budget. Christie works closely with customers, partners and industry experts to develop illumination platforms that address specific market needs and performance requirements.

When it comes to 1DLP projectors, laser phosphor illumination combines high-brightness capabilities with an extremely long operational life, low maintenance requirements and reduced downtime for a low total cost of ownership. The added benefit of eliminating filter replacements and reducing consumables makes laser phosphor projectors the ideal choice for high-use applications such as corporate spaces, educational institutions, retail, entertainment venues and government facilities.

Q. What is Christie BoldColor Technology?

A. In a [survey](#) Christie conducted with rAve Publications, members of the commercial AV industry were asked what the most important factor is when choosing solid state illumination projectors like laser phosphor and RGB laser, to which 78% of the respondents indicated “color fidelity.” Christie BoldColor Technology creates the color balance needed to accurately reproduce colorful visuals without sacrificing brightness. It achieves this by employing blue and red laser diodes as well as a patented optical chamber and specialized saturation software to produce enhanced color and saturation compared to typical laser phosphor projectors.

With Christie BoldColor, the perception that manufacturers of 1DLP laser phosphor projectors have to choose between accurate color and high brightness is eliminated. Christie BoldColor accurately reproduces colors with stunning brilliance and full brightness. Unlike other products in the market, there’s no need to oversaturate, boost greens, crush whites or blacks or play with gamma tables. Now that we can achieve even contribution from the primary colors, we are able to produce accurate colors and high brightness simultaneously.

Q. Why did Christie develop Christie BoldColor Technology?

A. As a developer of premium projectors, it is important for Christie to take a leadership position in accurately replicating color as it was intended while delivering full brightness capabilities. Other manufacturers choose to distort and modify the video information to achieve higher brightness and

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target more pleasing visuals (albeit inaccurate reproduction) by crushing whites and blacks and oversaturating colors. At Christie, we believe it isn't our place to modify the content. We believe that we should display content precisely as it was created so it appears exactly as intended. We've achieved the most natural, accurate colors at very high brightness levels through our proprietary BoldColor Technology.

Q. How is BoldColor Technology achieved?

A. We developed Christie BoldColor Technology to be a first in the industry. By starting with light from red and blue laser diodes to increase the color balance of the gamut, we're able to increase color accuracy as well as the efficiency of the system. This approach means that a smaller red segment is needed in the color wheel allowing more time for other segments to be exposed. The result is higher light output as well as accurate colors which meet the Rec. 709 standard for high-definition color reproduction.

BoldColor Technology is more than just the addition of red laser diodes, though. It is a fine-tuned combination of laser light sources, various optical components, video processing and software. Only when used in combination can all these design elements result in the premium performance of Christie BoldColor Technology equipped projectors.

Q. How is BoldColor Technology different?

Unlike approaches taken by many competitors, Christie BoldColor Technology doesn't rely on distorting the signal. A common trick to achieve higher brightness is to boost yellows or greens, but this can ruin skin tones and white points. Another common technique is to boost whites and crush blacks which results in a perceived increase in contrast and gives the image a bit of "punch." The downside is that you end up losing detail in the highlights and lowlights.

Christie BoldColor Technology offers a premium viewing experience, taking color accuracy and image integrity to the next level for laser phosphor projected content. Images are bold and realistic at high brightness levels, resulting in richer, more appealing visual content and meeting the Rec. 709 standard for high-definition color reproduction.

Q. Why should dealers/customers want laser phosphor projection with Christie BoldColor Technology?

A. Christie BoldColor Technology enables laser phosphor projected images to be faithfully and authentically reproduced by meeting the Rec. 709 standard. This translates into practical benefits when setting projectors up in uncontrolled environments such as rooms where ambient light may fluctuate or in situations where you want to create a comfortable, well-lit space for business meetings and presentations. Christie BoldColor Technology also accurately replicates brand colors in environments that require full brightness mode, meeting the most stringent requirements.

Q. What is the return on investment for dealers/customers who purchase Christie laser phosphor projectors with Christie BoldColor Technology?

A. Overall, Christie 1DLP laser phosphor projectors provide significant benefit and return on investment in terms of brightness, long-life, ease-of-use, quiet operation and a compact design. When

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Christie BoldColor Technology is included, it offers a premium viewing experience, taking color performance and image quality to the next level and provides an even broader range of choice in projection solutions to ensure customers have the right technology for their application needs.