The Importance of Quality LED Design

Human-Centric Lighting From Tri Lite

LED Light Basics

LED's start with a die that only emits blue light. To convert to white, a phosphorus coating is placed on the LED lens. The thickness, type of phosphor, and application method influence the CRI, lumen output, and color temperature.

Common LED Challenges

Color Shift

Heat and time can degrade cheap phosphor causing a color shift ranging from a haze of color around the beam or slight shift in color, to the light changing from white to purple in extreme scenarios.

Color over Angle (CoA)

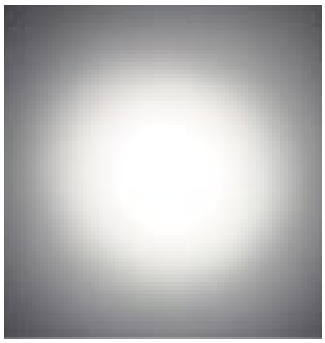
is a gradual change in chromaticity from the beam center to edge due to the angle of the rays passing through the phosphor, causing a yellow ring.

Light Engine Design

Ensuring proper thermal management, reliable circuitry, quality drivers and stringent supplier choice is vital.

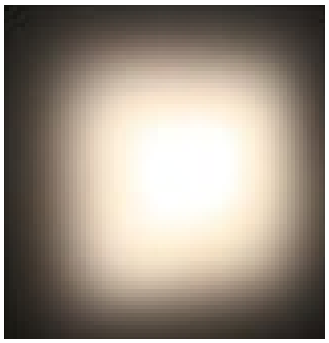
Optics

Quality optics are critical to avoid a prismatic effect that seperates certain colors out of the light when projected.



Tri Lite Inc.

Tri Lite utilizes the highest quality LED's and optics to provide the smoothest beam distribution.

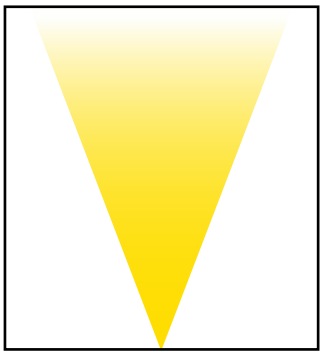


Competitor 1

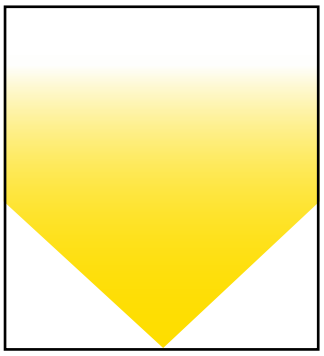
This optic gives a poor beam distribution.

Competitor 2

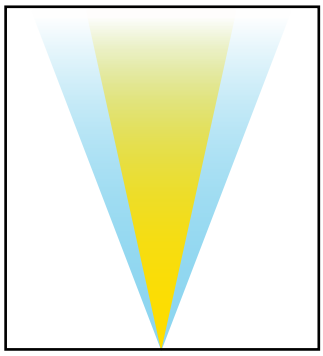
Here you can see what happens when an optic splits the blue out of the source.



Tri Lite optics are designed to minimize glare while directing the most light at the target.



Wide optics increase the glare angles and reduce the amount of light on the target.



Poor LED light engines or optics result in light wave color seperation along the edges, reducing visibility in the trailer or container.