



Designed for flawless color mixing, the LUXEON C Color Line has one focal length for all colors, which provides consistent radiation patterns from secondary optics and maximizes optical efficiency.

### Challenge

To develop state-of-the-art stage lighting spotlights capable of delivering high flux density, excellent color mixing, rich colors and high efficiency in the smallest form factor.

### Solution

Yajiang chose the LUXEON C Color Line for its new Stager line of LED spotlights. The LEDs small light emitting surface (LES) and low dome design produce the best color mixing, while also enabling smaller optics and a smaller overall system.

### Results and Benefits

The Stager Fresno and Stager Profile spotlights deliver color tunable RGB spectrum and the highest quality whites (2700K-6500K) with CRI of 85 and above. The Stager Fresno features a flood-to-spot capability of 15 to 60 degrees. Both spotlights achieve the highest system efficacy of 100 lm/W for low energy usage.

# Superior Color Mixing Debuts on Stage and Screen

Innovative color mixing LEDs enable compact, state-of-the-art stage lighting fixtures that deliver the best quality white light and rich, saturated colors.

## Challenge

Performance arts have traditionally required lighting units that reproduce colors reliably, switch rapidly between colors and realistically depict white light. With the transition to LED lighting instruments, all of this is achieved, along with the substantial advantage of longer unit life across installations and drastically reduced power usage. However, today's stage lighting professionals continue to demand higher performance from these systems, including improved color mixing, depiction of richer, more saturated colors, higher flux and cooler operation in a small, compact instrument.

So, when Yajiang set out to upgrade its successful Stager line of lighting equipment, the company sought LED technology capable of delivering vibrant, saturated colors with a high color gamut, as well as fully tunable whites over a wide range of color temperatures. For its high efficiency, high flux density fixtures, the company also sought LEDs that deliver the highest flux densities from a small LED form factor.

“Fresnels are defined by their flood-to-spot capability. The LEDs' small light emitting surface allows us to use smaller optics and achieve a beam angle of only 15 degrees.”

— Alex Wong, President of Yajiang



The Eclipse Profile spotlight uses Lumileds LEDs for state-of-the-art stage lighting.

## Solution

Yajiang evaluated the color LED options available and determined that Lumileds offered the best solution in terms of wide color options, color consistency, quality of white light and friendliness to secondary optical design. The first two products developed in the Stager line are the Fresno Fresnel spotlight and the Eclipse Profile spotlight. The Fresno utilizes RGBLA LEDs with a single optic per LED for maximum color control. The Eclipse Profile spotlight is a LED module spotlight with RGBLA LEDs.

The LUXEON C Color Line is specifically designed for flawless color mixing. Each LED, regardless of color, has the same focal length, leading to a consistent radiation pattern from secondary optics. The LED source size is 2mm x 2mm, enabling compact design on the PCB. A low dome over the LED improves light extraction and maximizes punch in spotlights.

The LUXEON C Color Line also features the industry's lowest thermal resistance substrate (2.8 °C/W), which allows the LEDs to be driven harder or heatsink costs to be reduced. In stage lighting applications, sometimes a quiet set is needed and lighting fans must be shut off. The cooler operation enabled by the LUXEON C, together with Yajiang's heatsink design, provide such system flexibility during performances.

## Results and Benefits

The Stager spotlights are designed to exceed user expectations for state-of-the-art stage lighting. By combining the color richness of the LUXEON C Color Line with the Stager optics, heatsink and overall sleek design, lighting professionals enjoy the highest quality color mixing and white light in a compact form factor.

The Stager spotlights are an excellent example of adaptiveness in a single platform for multiple stage lighting applications. The product series can deliver consistent color, flawless color mixing and a high color gamut due to the expansive color options in the LUXEON C Color Line. The quality of white light is critical, as well, and the spotlights deliver a wide color temperature range (2700K-6500K) with CRI greater than 85 for accurate white light depiction.

**“The color richness of the LUXEON C Color Line brings flexible color mixing and a high color gamut. It also delivers the best quality of white illumination with high CRI.”**

— Alex Wong, President of Yajiang

## About Lumileds

Lumileds is the global leader in light engine technology. The company develops, manufactures and distributes groundbreaking LEDs and automotive lighting products that shatter the status quo and help customers gain and maintain a competitive edge.

With a rich history of industry “firsts,” Lumileds is uniquely positioned to deliver lighting advancements well into the future by maintaining an unwavering focus on quality, innovation and reliability.

To learn more about our portfolio of light engines visit [www.lumileds.com](http://www.lumileds.com).

## About Yajiang

Guangzhou Yajiang Photoelectric Equipment CO., Ltd. was founded in 1985 and headquartered in Huadu District, Guangzhou, with a total area of more than 30 acres. For 30 years, as one of the world's leading Photoelectric equipment suppliers, Yajiang has been committed to high-power LED lighting and stage performing product development, production and sales. Yajiang already has two well-known brands—“Silver Star” and “ARCTIK”—covering culture, performing arts, landscape architectural and commercial lighting products series. Yajiang Photoelectric engaged in the study and application of new light source LED professional manufacturers, but also the Chinese film and television LED stage lighting industry standard drafting and formulation of one of the units. For now, Yajiang products are warmly welcomed and praised highly by the professional users from all over the world.

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