
COLORKINETICS
Chromasync Pro
Gets the light right by optimizing color consistency and saturation
a signify brand

Taking color consistency even further

We introduced Chromasync output optimization technology more than a decade ago with a clear goal—ensuring color consistency across multiple LED luminaires. We continue to strengthen and enhance its capabilities to meet the evolving needs of lighting professionals and the clients they serve.

While precise color targeting is critical to some lighting implementations, color saturation is more important in others. Accuracy and saturation can often be mutually exclusive goals. Not anymore.

Chromasync Pro achieves remarkably accurate color targeting, resulting in color variation of less than 2 MacAdam ellipses (2 SDCM) across luminaires. By providing access to the full gamut of your luminaires, it lets you achieve deep, saturated reds, greens, and blues as well as everything in between—amber, yellow, cyan, magenta, purple, and more. That's Chromasync Pro—pinpoint accuracy and deep saturation across the full gamut.

The result? Consistent color reduces visible color variations from luminaire to luminaire, bringing new uniformity to even the most ambitious lighting project.

Optimized light output ensures maximum performance. To simplify commissioning, Chromasync Pro enables you to use traditional three-channel values to leverage the full gamut of your luminaires—no matter how many output channels they have. And it works seamlessly with third-party controllers and software.

At Color Kinetics, we're committed to bringing you the advanced capabilities you need to design and implement dynamic color lighting installations that get attention, inspire interaction, and achieve impressive results. All with exceptional color consistency, optimized light output, and simplified color targeting. Chromasync Pro offers powerful proof of our ongoing innovation in all critical aspects of lighting technology.

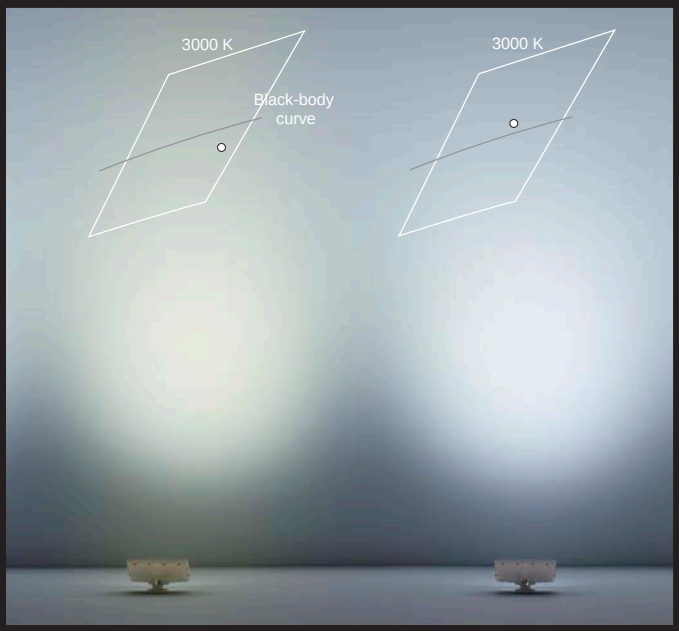
Color accuracy and saturation can often be mutually exclusive goals.

Not anymore.

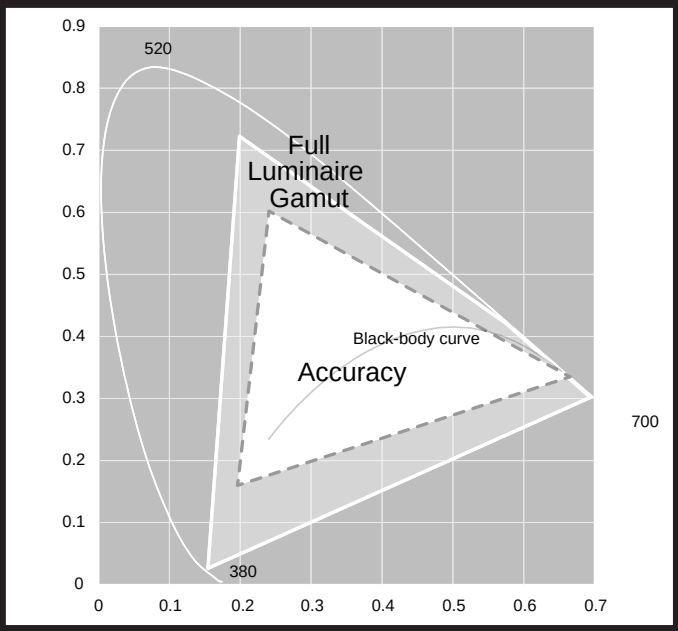
How Chromasync Pro Works

It's a fact—manufacturing variation is unavoidable within LED technology. Like snowflakes, no two LEDs are exactly alike. So, no two LED light sources produce exactly the same gamut of colors.

To understand the technology behind Chromasync Pro, first we need to take a brief look at the specific challenges of LED lighting.



These color differences, identified by the two slightly different gamuts shown above, can be noticeable even by the untrained eye, especially between different luminaire types and LED manufacturers. But lighting professionals—and their customers—want consistency, which requires being able to specify exact colors—particularly for white light. So it's important to standardize how color points are handled by different LEDs.



One solution is to restrict output to a common color gamut subset of the specified LED. This approach ensures accuracy within the carefully defined, smaller gamut. But this restricted color gamut is limited to white and pastel colors, as we see above.

Photography: Chengdong Deng

Chromasync Pro and Optibin

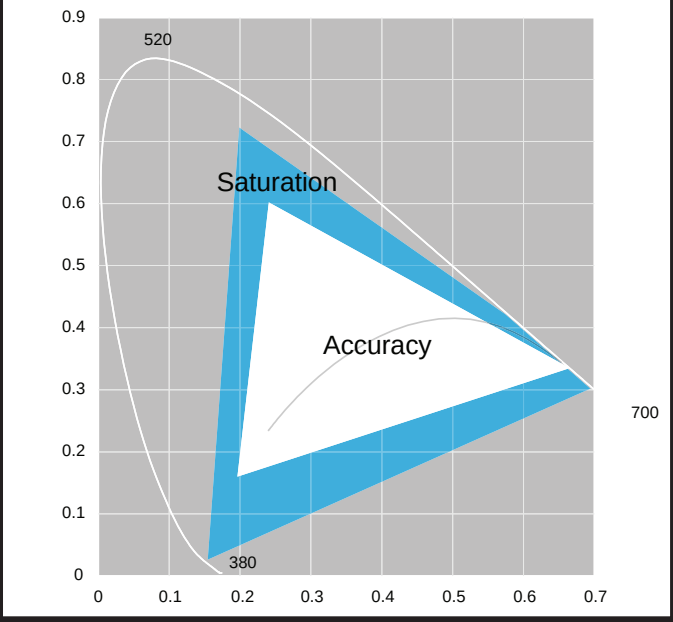
Selecting the correct LEDs at the heart of Color Kinetics luminaires requires a process called binning. The goal? To maximize the consistency of white or color output by reducing LED variations. Color Kinetics pioneered advanced binning with Optibin®, our proprietary binning optimization process, introduced more than a decade ago. And we continue to evolve and expand the capabilities of Optibin so you can achieve new levels of consistency with our white and dynamic color luminaires.

Optibin begins the process of ensuring color consistency of Color Kinetics luminaires. Chromasync Pro takes it even further with improved color targeting, greater color consistency, access to the full gamut of the luminaire (including full saturation)—and simple commissioning.

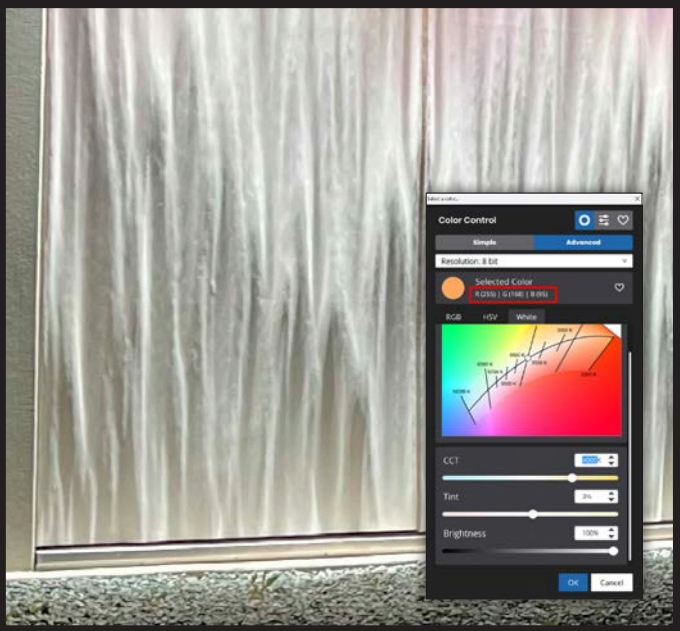
Chromasync Pro delivers accuracy and saturation

Because today's customers want more.

Yes, they want accurate shades of white and pastels. But they also want fully saturated colors. They want seamless, simple color point specification that lets them get exactly the colors they want—without reconfiguration. And they want consistent behavior of DMX values and color temperature.



Chromasync Pro takes a new approach, one that continues to define a subset of the full LED gamut to output white and pastel colors accurately. But it also stretches the edges of the gamut to tap the luminaire's maximum capabilities, producing saturated colors. In short, Chromasync Pro delivers the best of both worlds—accuracy and saturation. How? By dividing the gamut into an Accuracy region and a Saturation region—and providing a smooth transition between these regions.



Chromasync Pro-enabled luminaires can use simple DMX values for white points and saturated colors, without requiring you to change the way you choose colors. So you get color accuracy, color saturation—and simple commissioning. And Chromasync Pro provides the same capabilities when you use luminaires with more than three LED colors.

What Chromasync Pro means for lighting professionals

At a high level, lighting professionals all share a common goal—for their designs to look fantastic, perform flawlessly—and to get a positive response from their clients and the public. Behind that desire is a strong need for accurate, consistent color. Chromasync Pro represents a major leap forward in the quest for color consistency and accuracy. But it also brings another much-needed benefit—simplicity.

Making color consistency simple
Chromasync Pro makes it easier by ensuring the best possible color matching no matter how many channels your luminaires use—3, 4, 5, or more. And it achieves color consistency no matter what the LED mix, output, beam angle, or luminaire type. You simply choose three DMX values and let Chromasync Pro do the rest. **LEARN MORE >**

Chromasync Pro eliminates the tedious adjustments that plague and delay lighting installations, small and large. It takes the hard work (and often, guesswork) out of attaining the high levels of color matching that help a lighting project achieve consistency—and the designer's vision.

That's what lighting professionals want. And that's what Chromasync Pro delivers—no matter what.

You get access to the entire gamut of your luminaires, so you can target white points accurately—and saturated colors easily. All with DMX sliders.

L to R: Blast Powercore, IntelliHue, Optifield showing saturated colors and accurate 4000 K light from the same luminaires with Chromasync.

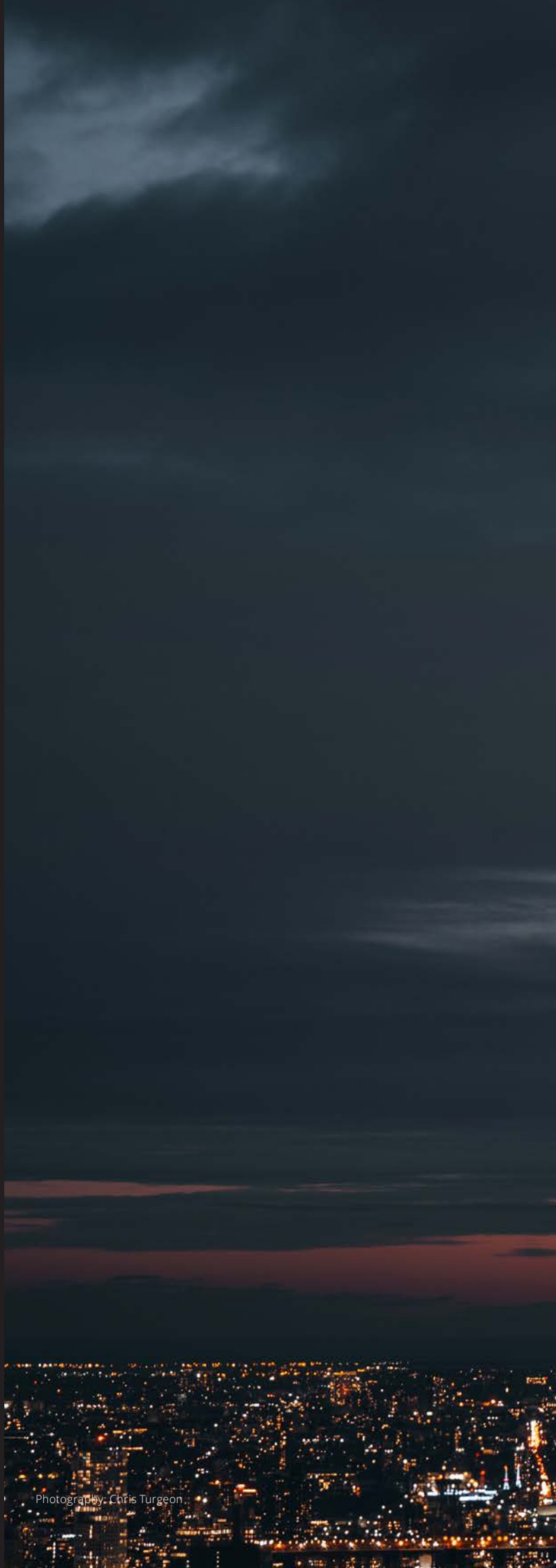
Your eye doesn't lie

With LED lighting becoming more commoditized and standardized, there's a general perception that most LED lighting (with some exceptions) provides "good enough" color consistency. That may be the case for some projects—but definitely not all.

Why not?
Because the evolution of advanced LED lighting inspired exponential growth in the sophistication of lighting designs. Like special effects in movies, LED technology has enabled lighting that was never before possible. Fueled by new levels of luminaire performance and lighting control capabilities (e.g., dynamic lighting), lighting professionals pushed their artistic visions further in a creative evolution that continues today.

Simplifying color consistency
When you set a color, you should expect that your luminaires achieve consistent, beautiful color. With some solutions, that's not the case—requiring a lot of time and effort to make adjustments to get every color until everything looks just right. Chromasync Pro eliminates the need for these annoying adjustments. It takes the guesswork out of color consistency and automatically gets the light right—every time.

The right choice for exceptional results
For high-end, high-impact installations—from iconic historic buildings to the hottest retail stores to the latest sports stadiums—good enough isn't enough. These showcase projects demand the highest levels of color consistency and maximum performance. To achieve the highest levels of color consistency, they need advanced luminaires from the Color Kinetics portfolio—and Chromasync Pro.



Photography: Chris Turgeon

Why Chromasync Pro?

Chromasync Pro is the result of countless hours of engineering time spent experimenting and innovating, resulting in an enhanced color optimization. As the latest, most sophisticated generation of Chromasync, Chromasync Pro delivers these benefits:

Faster and easier commissioning.

Simple commissioning lets you use one target for all luminaire types, no matter how many channels.

Fewer control channels.

With Chromasync Pro, there's no need to use more than three DMX addresses per control pixel. You get more resolution and more luminaires per DMX universe.

Accurate, precise whites and colors.

Advanced color targeting lets you achieve accuracy and precision with the same target for all LED mixes and luminaire types.

Improved and expanded color consistency.

You get color consistency within and across luminaire families—and improved precision for the full luminaire gamut.

Color saturation.

Chromasync Pro's expanded gamut provides access to full, saturated colors.

Maximized output.

Chromasync Pro and FluxBoost—our intelligent algorithm that boosts the output of multi-channel LED luminaires—give you significantly more output, saturation—and value.

Flexible control.

Chromasync Pro delivers color consistency and other advanced capabilities even if you are using third-party controllers and software.

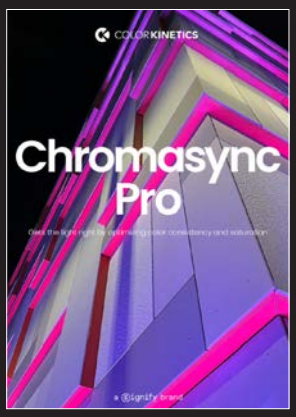
Explore the Color Kinetics technology portfolio

Our extensive technology portfolio brings you new capabilities and powerful benefits.

Optibin

Where consistency begins.

Our LED optimization technology begins the color consistency process by grouping (or binning) LEDs by flux as well as center wavelength.



Chromasync Pro

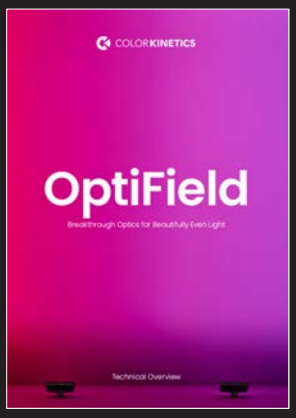
Optimize color consistency and saturation.

Our advanced output optimization technology takes a major leap forward in color consistency, accuracy, and simplicity.

IntelliHue

The smart way to deliver white & color light.

Our advanced approach to color mixing produces high-quality white light, subtle pastels, and fully saturated colors in the same precision-controlled luminaire.



OptiField

Uniformity never looked this good.

OptiField's freeform optic creates a breakthrough rectangular beam that covers large surfaces with full, bright, even light—covering more area with fewer luminaires.

Powercore

Power made simple.

Our power-control technology combines line voltage and control data in a single standard cable—simplifying installation and lowering total system cost.

FluxBoost

Unlock the full power of your luminaires.

With FluxBoost, your projects can use more of their allocated power budget, boosting output and efficiency while reducing waste.

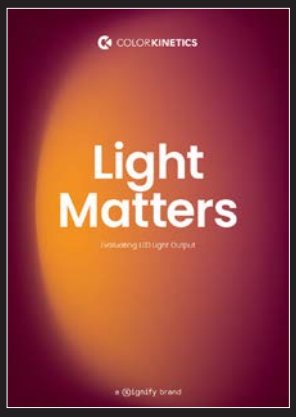
What matters in professional lighting?

Our series of guides explores key topics in professional lighting—color science, light, quality, optics, and more.

It's part of our commitment to passing on our deep technical knowledge and decades of expertise to help you achieve your vision.

Color Science

Color science serves as an underlying technical foundation for the entire lighting industry. It establishes a consistent way of thinking about light—how it is created, controlled, and delivered in real-world implementations. A core understanding of the science of color is critical to lighting professionals, who must be able to specify the right light—color, technology, luminaire, and more—clearly and accurately.



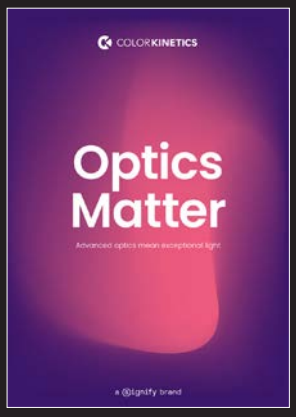
Light Matters

Traditional methods of evaluating light focused on lumen output, which was defined by the output capabilities of a light source, such as an incandescent lamp. The advent of LED lighting changed all that, since lumens were no longer the best measurement of a luminaire's capabilities. We explore some of the new ways lighting can be evaluated in the age of LEDs.

Quality Matters

What does quality mean to you? The answer depends on what you do within the lighting industry. Quality has different meanings for building and site owners/managers, lighting designers, and installers.

We delve into the needs of each of these groups as we take a holistic approach to quality, one that begins and ends with the customer.



Optics Matter

It's safe to say that few lighting designers, building owners/managers, or other lighting professionals have ever seen the optical system housed inside an LED luminaire. But the optical system, or optics, play a vital, but often hidden role in performance, efficiency, and more. The right optics within a luminaire make a big difference in the final results—for both interior and exterior applications.

Control Matters

Controlling light used to be simple. It was on or off.

Then came dimming, which raised or lowered the intensity of light. The invention of LED luminaires added another dimension, color—and new capabilities, such as the digitalization of lighting, including the ability to zone dimming and control the spectral content of color-changing light.

Sustainability Matters

By raising efficiency to new heights, our solutions help our customers do more with less energy. And since we design our solutions for long, useful lives, they create less waste. So, our customers get great results, year after year. All with less impact on the planet.

Choose the luminaire that meets your needs

Chromasync Pro is just part of the ongoing effort by Color Kinetics to set new standards for consistency, color accuracy, and light output optimization.

Our technologies work together to deliver the accuracy required by innovative and ambitious dynamic color applications.

To find out more about how to make Color Kinetics luminaires part of your next lighting design, visit www.colorkinetics.com.

Note: Chromasync Pro is available for specific Color Kinetics luminaire families, while other luminaires may use our core Chromasync technology, proven effective in thousands of installations. To find out the current availability status of Chromasync Pro, go to colorkinetics.helpdocs.io/article/oswsu43y9f.

Photography: thisisengineering

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www.colorkinetics.com

BRO-000239-00 R03 27 January 2025 Cover photography: Sestak Lighting Design