

# TECHNOLOGY

GAN ON GAN    VP<sub>3</sub> VIVID COLOR    VP<sub>3</sub> NATURAL WHITE    POINT SOURCE OPTICS

## VP<sub>3</sub> NATURAL WHITE™



Competitor LED

SORAA LED

### SIMPLY PERFECT WHITES

Violet light resides at the tail of the visible spectrum, and most of the time we do not think too much about it. After all, we were all taught that red, green, and blue makes white light. So we hardly noticed when blue-based LEDs killed violet.

But color scientists have long known that violet light plays an all-important role in our perception of another color – white. White in all its shades is ubiquitous in our environment. Whites convey the emotional meaning of clarity, brightness, and space. Manufacturers and marketers strive to create ever whiter whites. And the color of light that allows us to see true whites is violet.

Soraa offers a solution that is radical in its simplicity. Simply Perfect Whites. VP<sub>3</sub> NATURAL WHITE.

### THE SCIENCE OF WHITES

Our perception of whiteness is strongly influenced by the presence of fluorescent whitening agents in both natural objects (like teeth), and manufactured objects (like clothing and paints). These whitening agents are excited by the violet content in visible light, which our historical light sources – daylight, incandescents, and halogens – have contained. Thus, we live in a world with infinite shades of whiteness, determined by the level of fluorescence in each object.

Increasing adoption of blue-based LEDs now threatens this nuanced world. With their complete lack of violet content, peer-reviewed academic research shows that blue-based LEDs wash out the differences between whites. Bright or creamy, all whites look the same, yellowish and dull, and we lose the ability to tell one from the other.

The same research shows that with Soraa's violet-based LEDs, whiteness choices are as clear as the day.



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## SIMPLY PERFECT COLOR

In the past century, a parade of energy-efficient lighting technologies have held out the promise of earth-friendly light. But in this rush to energy-efficiency, we've forgotten something very basic: color is as ancient and as important as light.

Humans understand color – in the million years we've walked the earth, our eyes, our brains, and our bodies have learned what perfect, full-spectrum light means. Our behaviors, our emotional well-being, and our human interactions depend on seeing colors as we are meant to see them.

When all the technological complexity is said and done, Soraa offers you simplicity. Simply Perfect Light. Energy efficient AND true in every color of the rainbow. VP<sub>3</sub> VIVID COLOR.

## NUANCES OF COLOR IN WHITE LIGHT

Many lighting technologies, including blue-based LEDs, have reduced quality of light to the starkness of color temperature. In that world, your choice of white light simply comes down to: warm white or cool?

This ignores the importance of color rendering: do your colors appear as they would in natural, full-spectrum light? At the most basic level, color rendering of a light source is defined by CRI, which uses a defined set of 8 pastel colors and measures how true-to-natural they appear when illuminated by the source. Since most of us do not live in a pastel world, a practical and meaningful extension of CRI is to include deep colors, in particular a 9th color, red, whose rendering is defined by the metric R9.

Soraa abandons this one-color-at-a-time approach in favor of a unified idea. A continuous spectrum, in which all colors – pastels, vivids, and everything in between – appear as they are meant to be.

## Color Rendering Index



Superior rendering of all colors with Soraa VIVID