SORAA healthy

The Zero-Blue, Sleep-Friendly Light That Looks as Good as it Feels

Shuji Nakamura Soraa Founder, Board Member, and Nobel Laure AND AND

From the time we wake up to the time we go to sleep, we spend the majority of our waking hours indoors, which means we're constantly being exposed to artificial light with a blue spike in the spectrum. This is great for daytime hours when we want to be productive and alert, but as the day progresses into the evening, blue light becomes a melatonin inhibitor, which isn't good in supporting proper sleep and overall health.

To address this challenge, we're now entering a new era of healthy lighting options— first, with our completely blue-free products and soon we'll start to see dynamic lighting solutions enter the market, taking our technology one step further in developing products that most closely match light found only in nature.

—Soraa Founder, Board Member and Nobel Laureate, Shuji Nakamura

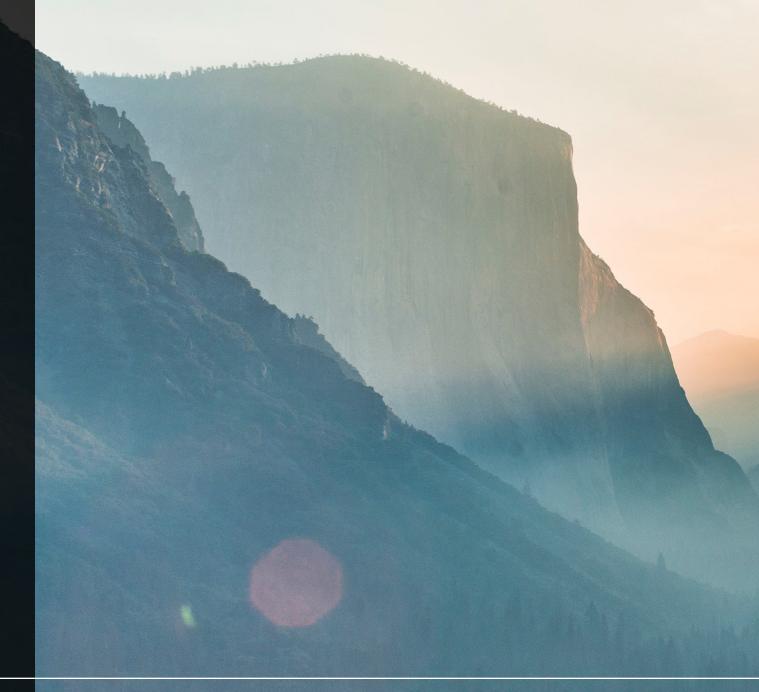
HEALTHY LIGHT MATTERS

Until now, all artificial light sources emitted blue light, including sleep-friendly LEDs that simply lower blue light, rather than eliminating it. That's why we developed Soraa HEALTHYTM, the world's first blue-free lamp portfolio, designed with our proprietary ZEROBLUETM technology.

Lighting designers now have the ability to fully outfit spaces with our growing portfolio of bluefree lighting solutions to help people get the sleep they need and deserve. By replacing blue content with Soraa violet phosphor, people can enjoy beautiful white light without the yellow found in other LEDs that attempt to lower blue content.

Support health and well-being with Soraa HEALTHY, the first LED of its kind.

Learn more at: www.soraa.com/soraa-pro/technology/zeroblue



MEET THE FIRST & ONLY BLUE-FREE, SLEEP-FRIENDLY LED

100% BLUE-FREE LIGHT

Enjoy more restful sleep with the only completely blue-free LED in the market. No color schemes, no dimming, no sacrificed light quality.

SUPERIOR LAMP QUALITY

Flicker-free, dimmable and suitable for dry and damp locations, Soraa HEALTHY lamps are designed to emit sleep-friendly light anytime, anywhere.

HEALTHY MR16-GU5.3:

Dimmable to <20% Flicker Index: 0.02 Percent Flicker: 5% CCT: 2700K Output range: 400 lumens

HEALTHY MR16-GU10,

A19, A60, BR30: Dimmable to: <20% Flicker Index: <0.08 Percent of Flicker: <30% CCT: 2700K Output range: 400-650 lumens

LIFETIME & WARRANTY

Rated lifetime to L70: 25,000 hours Warranty: 3 years or 25,000 hours whichever comes first.

Detailed warranty information available at: soraa.com/resources/legal

CERTIFICATIONS

+ UL/CUL + FCC Title 47

+ Part 15B RoHS

POWERFUL COLOR RENDERING

With high CRI and R9 values, Soraa HEALTHY lamps render colors beautifully even with the absence of blue spectral content.

Color Rendering Index (CRI): 80 Deep Red (R9): 90

HEALTH & WELL-BEING



SORAA ZEROBLUE™

Soraa ZEROBLUE technology emits white light without the presence of blue light that has been shown to have a negative impact on sleep cycles. Our industry-leading violet LED light makes it possible to render colors and whites beautifully, even with a wide gap in the blue range, with a CRI value of 80 and an R9 value of 90.



SORAA FLICKER FREE

Many LED lights have an invisible flicker that the eye is not able to detect. This is called a "stroboscopic" effect and has been shown to cause headaches, eye-strain and fatigue. Soraa HEALTHY™ is built to the highest standards to prevent the negative side effects of invisible flicker in both dimmed and undimmed states.

NO BUZZ

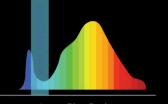
We use high-quality materials and construction to soundproof the light emitted by Soraa HEALTHY. We also test at every level of power to make sure there is zero buzz, even when dimmed.

DIMMABLE



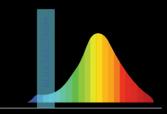
Not all dimming is created equal. Low-quality LEDs might buzz or visibly flicker at low power. Soraa HEALTHY lamps dim smoothly and look beautiful at any level of power, so people can enjoy blue-free light tailored to any ambience.

STANDARD LED



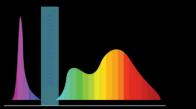
Large Blue Peak

SLEEP LED



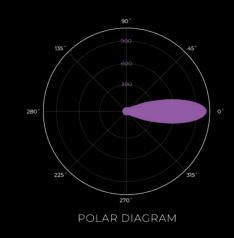
Reduced Blue, Unnatural Yellow

SORAA ZERO BLUE LED



Soft White with No Blue











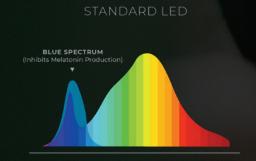
CHASING THE BLUES AWAY

THE SCIENCE BEHIND SORAA ZEROBLUE™

Our ZEROBLUE technology is the secret to helping people relax, ease into the evening, and enjoy more restful sleep. With this innovative technology, Soraa HEALTHY[™] lamps emit a completely blue-free spectrum reducing melanopic lumens by ~40% compared to conventional LEDs, while also retaining a beautiful, soft white light quality, making them functional for any space.

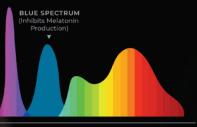
Our meticulously engineered mix of green and red phosphors produces a spectrum with a wide gap in the sleep-hindering blue range. Other LED manufacturers rely on dimming or color schemes to mask blue content in their products, but science proves the ineffectiveness of these methods. Only Soraa HEALTHY LEDs emit light with a completely blue-free spectrum. Not dim light, not color schemes, just healthy, blue-free white light.





Large Blue Light Peak





Zero Blue Light

SLEPING BEAUTY.



Finally, circadian-friendly light that looks as good as it feels.

SORAA SPA APPLICATIONS City of Dreams Manila // Manila, Philippines

LOOK GOOD, FEEL GOOD

Soraa is chosen for hotels, health and wellness facilities, hospitals, workplaces, residences, and schools because we offer industry-leading products for illuminating spaces where health is of utmost importance.

Our expanding portfolio of Soraa Healthy™ lamps are designed with proprietary blue-free LED technology aiding lighting designers to illuminate spaces without sacrificing exceptional light quality.

Introduce the power and beauty of Soraa HEALTHY to spaces where improved rest and sleep can lead to daytime productivity.

DREAM ON

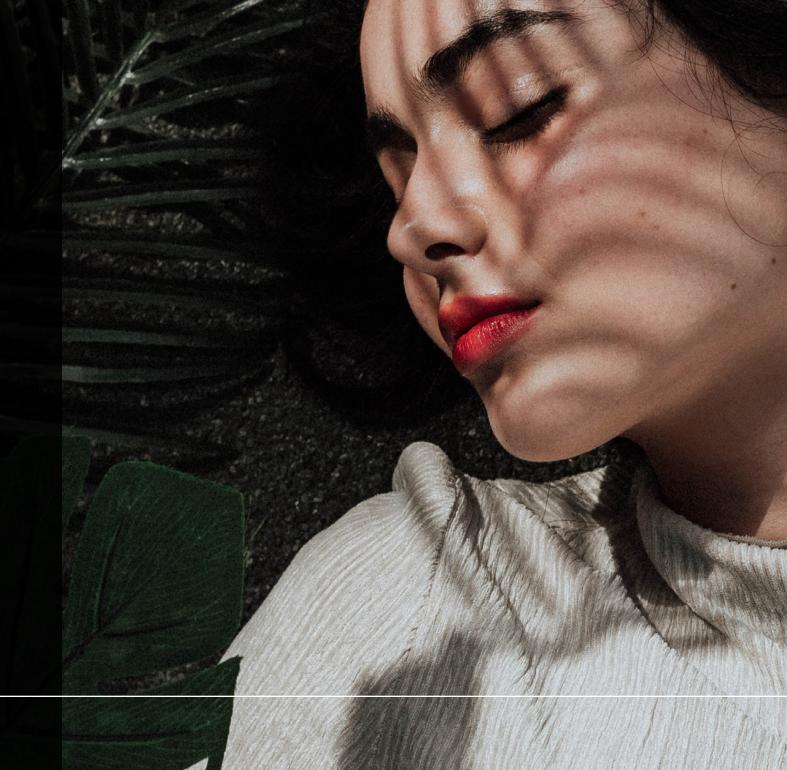
THE FIVE-STAR SECRET

Fostering healthy sleep gives hotels an edge when seeking solutions that support healthier environments for their guests.

Distinguished and conscientious hotels put their guests' needs first. They know that business and leisure travelers need energy to accomplish everything on their lists, from leading successful meetings to unwinding in the most serene of settings.

Exposure to blue light in the evening, however, can get in the way of a good night's sleep. Outfitting the spaces they spend time in with Soraa HEALTHYTM lamps limits the possibility of blue light overexposure, helping them make the most of each moment.

Leave blue light to the sun so you can deliver the five-star hospitality your guests expect.







— Rebecca Robbins, PhD, Sleep Researcher & Author of *Sleep for Success!*





SORAA HEALTH & WELLNESS APPLICATIONS Gravity Club // Singapore

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SORAA HEALTHY™ LAMPS

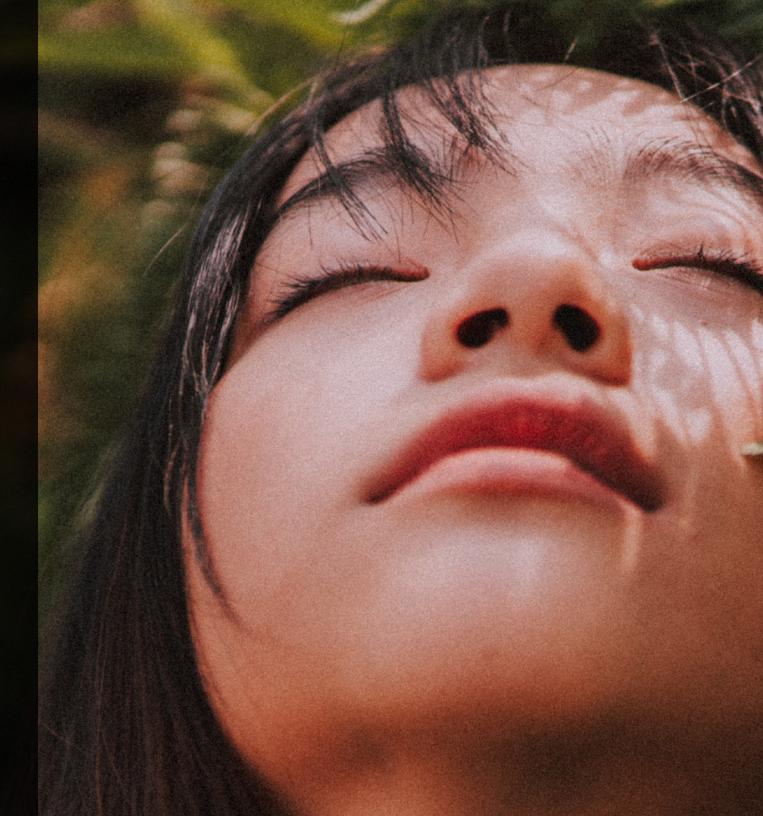
Soraa HEALTHY lamps provide optimal lighting solutions for spaces where promoting healthy rest and sleep yields daytime focus and productivity.

Lighting designers, architects and specifiers can completely outfit a range of applications with the expanded collection of blue-free LED lamps. Dimmable and highly energy-efficient, Soraa HEALTHY lamps can be used in fully enclosed fixtures in both indoor and outdoor spaces:

Soraa HEALTHY MR16-GU5.3 Soraa HEALTHY A19 (E26) Soraa HEALTHY BR30* Soraa HEALTHY MR16-GU10* Soraa HEALTHY A60 (E27/B22)*

Learn more about Soraa HEALTHY and detailed specifications at: <u>www.soraa.com/soraa-pro/</u>technology/zeroblue

*Healthy 230V & Healthy 120V BR30 lamps coming 2H 2019.



soraa healthy[™]



MR16 GU10

OVERVIEW

We designed Soraa HEALTHY[™] lamps with our unique Soraa ZEROBLUE[™] technology, which means your body gets the biological benefits of blue-free light in the evening as nature intended. Nights are more restful, your body relaxes, and sleep comes more easily.

Soraa's patented ZEROBLUE technology advances LED science by creating an emitter of high-quality white light without blue radiation. Based on Soraa's world leading violet LEDs, Soraa combines an engineered mix of green and red phosphors to produce a spectrum with a wide gap in the blue range.

COMMERCIAL APPLICATIONS:

General Purpose Lighting, Schools, Hotels, Offices, Hospitals, and Healthcare Facilities.

HOME APPLICATIONS:

Areas where you spend time in the evening after sundown.

SPECS & FEATURES:

- + Integrated Soraa ZEROBLUE Technology
- + 2700K, Soft White, 36° LED
- + Output Range: 400 lumens
- + CRI 80, R9 90
- + Replaces 50W halogen bulbs
- + Can be used in fully enclosed fixtures, in both indoor and outdoor locations
- + Dimmable and highly compatible
- + Flicker: Soraa Healthy demonstrates low levels of flicker in both dimmed and undimmed states.
- + Suitable for damp locations
- + Rated lifetime: 25,000hrs

GU MEASUREMENTS:

D 49.9 mm (1.96") H 53.5 mm (2.1") W 61g (2.15oz)

MR MEASUREMENTS:

D 50.1 mm (1.97") H 45.5 mm (1.79") W 47g (1.66oz)

soraa healthy^m



BR30

OVERVIEW

We designed Soraa HEALTHY[™] lamps with our unique Soraa ZEROBLUE[™] technology, which means your body gets the biological benefits of blue-free light in the evening as nature intended. Nights are more restful, your body relaxes, and sleep comes more easily.

Soraa's patented ZEROBLUE technology advances LED science by creating an emitter of high-quality white light without blue radiation. Based on Soraa's world leading violet LEDs, Soraa combines an engineered mix of green and red phosphors to produce a spectrum with a wide gap in the blue range.

COMMERCIAL APPLICATIONS:

General Purpose Lighting, Schools, Hotels, Offices, Hospitals, and Healthcare Facilities.

HOME APPLICATIONS:

Areas where you spend time in the evening after sundown.

SPECS & FEATURES:

- + Integrated Soraa ZEROBLUE Technology
- + Replaces 65W incandescent bulbs
- + 2700K, Soft White, 120° LED
- + Output Range: 650 lumens
- + CRI 80, R9 90
- + Can be used in fully enclosed fixtures, in both indoor and outdoor locations
- + Dimmable and highly compatible
- + Flicker: Soraa Healthy demonstrates low levels
- of flicker in both dimmed and undimmed states.
- + Suitable for damp locations
- + Rated lifetime: 25,000hrs

BR30 MEASUREMENTS:

D 95 mm (3.74") H 129 mm (5.08") W 110g (3.88oz)

*Available Second Half of 2019

SORAA healthy™



A19/A60

OVERVIEW

We designed Soraa HEALTHY lamps with our unique Soraa ZEROBLUE™ technology, which means your body gets the biological benefits of blue-free light in the evening as nature intended. Nights are more restful, your body relaxes, and sleep comes more easily.

Soraa's patented ZEROBLUE technology advances LED science by creating an emitter of high-quality white light without blue radiation. Based on Soraa's world leading violet LEDs, Soraa combines an engineered mix of green and red phosphors to produce a spectrum with a wide gap in the blue range.

COMMERCIAL APPLICATIONS:

General Purpose Lighting, Schools, Hotels, Offices, Hospitals, and Healthcare Facilities.

HOME APPLICATIONS:

Areas where you spend time in the evening after sundown.

SPECS & FEATURES:

- + Integrated Soraa ZEROBLUE Technology
- + Replaces 40-60W incandescent bulbs
- + 2700K, Soft White, Omnidirectional LED
- + Output Range: 550 lumens
- + CRI 80, R9 90
- + Can be used in fully enclosed fixtures, in both indoor and outdoor locations
- + Dimmable and highly compatible
- + Flicker: Soraa Healthy demonstrates low levels of flicker in both dimmed and undimmed states.
- + Suitable for damp locations
- + Rated lifetime: 25,000hrs

E26/E27 MEASUREMENTS:

D 63 mm (2.48") H 117 mm (4.61") W 30 g (1.06oz)

B22 MEASUREMENTS:

D 64 mm (2.52") H 118 mm (4.65") W 30 g (1.06oz)

*Available Second Half of 2019

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