

GET LIT

A PRIMER IN LED TECHNOLOGY

THE BASICS: LED stands for “light-emitting diode”—essentially an electrical current passed through a microchip that results in visible light. (A more scientific version: Light is created by a semiconductor when a current is passed through a positive-negative junction.)

ONE DIRECTION: LED bulbs emit light in a specific direction. Traditional incandescent bulbs, on the other hand, emit light (and heat) in all directions—they release 90 percent of the energy they use as heat; only the remaining 10 percent actually creates light. This is why LEDs are more energy efficient, but it also means that more sophisticated engineering is required to produce LEDs that mimic the performance of light-diffusing bulbs.

SAVING GRACE: All of that heat emitted by incandescent bulbs takes a toll on the environment. A building can reduce its carbon footprint by up to 85 percent by switching to LEDs. Consumers who make the switch also see a drop in their energy bills.

SEE THE LIGHT: A list of light bulb stats can quickly become overwhelming. Angling for an apples-to-apples comparison? Look for the bulb’s Color Rendering Index, or CRI. It’s the quantitative measure of a light source’s ability to replicate natural light, which clocks a perfect CRI of 100. As some of the top LED producers make bulbs with CRIs in the mid-90s, much of the focus is on how the bulb allows one to see true white and shades of deep red and violet, which the average LED bulb does not accurately render.



SCIENCE-BACKED BULBS

The Nobel Prize-winning inventor of the high-brightness LED has spent the past decade transforming museums, galleries and luxury retailers with his bulb company Soraa. Now, he is poised to revolutionize the way consumers think about light.

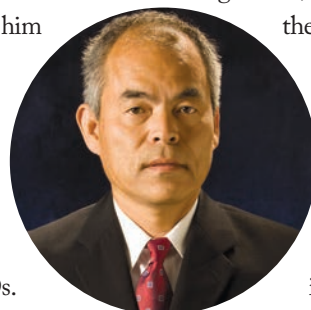
When early LEDs hit the market in the 1980s, they were used for traffic lights, video screens and electronic billboards but weren’t yet bright enough for residential use. But in 1993, after years of research, Shuji Nakamura (below) succeeded in creating the first high-brightness blue LED—an invention that led to the rollout of the technology for residential and commercial use, and that earned him the Nobel Prize in Physics in 2014.

Nakamura didn’t stop there: He also created the white LED (actually a combination of red, green and blue light that reads as white), and the blue laser diodes used in Blu-ray discs and HD DVDs. In 2007, he co-founded Soraa with two colleagues, making a bet on the future of LED technology that ran counter to industry trends: All of the company’s products use red, green and violet LEDs to produce full-spectrum light rather than the industry standard of red, green and blue. “We believed that we could create the LED that most closely matches light found in nature,” recalls Nakamura. “I knew there was a way to commercialize leading-edge lighting techniques that went beyond current industry practices.” The resulting products render truer whites and deep reds—hues that blue LEDs struggle to

illuminate accurately—and were an immediate hit. “When Soraa delivered its first product, lighting designers told us they were seeing color, and white, like never before,” he says.

For the past decade, Soraa lighting has been widely adopted by a discerning clientele: professional lighting designers outfitting museums, galleries, luxury retail and restaurants. Now, the pioneering company moves into the consumer space with two new bulbs: Soraa Radiant, which offers museum-quality, full-spectrum light for the home (above, from \$13.95); and Soraa Healthy, the only LED that eliminates all invisible blue light (above, from \$18.95). A bulb that incorporates both technologies is on the horizon.

“Bringing quality light into everyone’s lives is so important, and helping people have healthier lives through the lighting choices they make is really profound and motivating,” says Nakamura. Although he is currently researching laser lighting, he continues to refine and improve the brand’s product line. “We are working to ensure that the light that people are installing will give them the truest and most healthy light possible, in their homes and their businesses.”



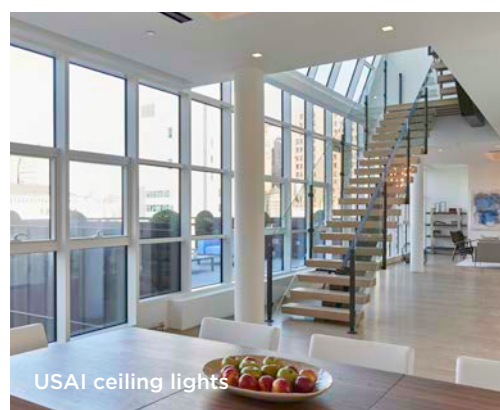
OVERHEAD LIGHT DONE RIGHT

How USAI stays firmly rooted in the 21st century.

There’s nothing inherently sexy about a can light. But for the family whose first foray into the lighting business was the fluorescent fixtures that debuted to the public at the

World’s Fair in 1939, LEDs are the future. Their third-generation lighting brand, USAI, has retooled its business to specialize in LED downlights—ceiling lights in a variety of shapes and styles for residential and commercial uses—with a combination of technical expertise and aesthetic prowess. Many of USAI’s commercial-focused innovations—like changeable light temperatures originally pioneered for hospitals to mimic

natural light throughout the day, or customizable hues that brands have long employed (think: Target red, Victoria’s Secret pink), are now making their way into the home. The options are endless—and technical. In the company’s immersive Manhattan showroom, designers can experience the different fittings, fixtures and temperatures to find the right match for their projects.



USAI ceiling lights

PHOTOGRAPHY: SHUJI NAKAMURA, COURTESY OF SORAA; USAI: JESSE ROSS

FIRST-TO-MARKET FIXTURES

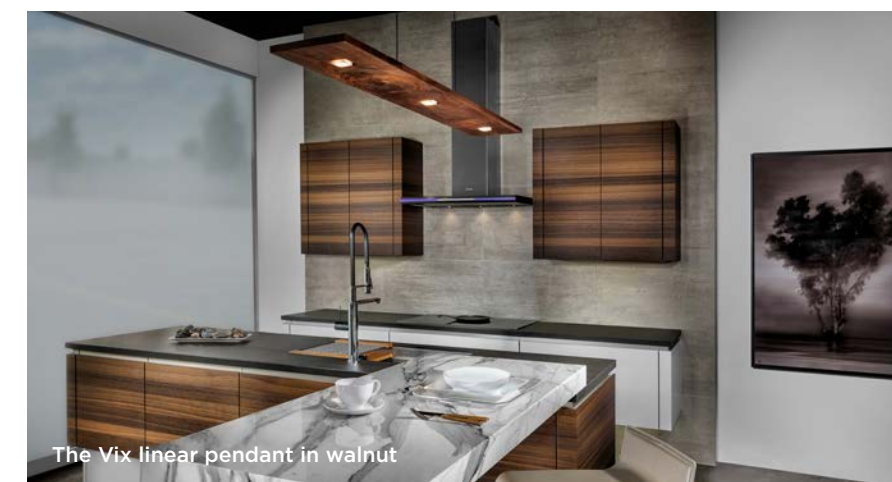
Lighting brand Cerno packs material innovation into modern forms.



The boat-inspired Lenis fixture

In 2009, three childhood friends banded together to found the lighting firm Cerno (which means “fully resolved” in Latin). Their contemporary LED fixtures are a celebration of the technology they employ. “The first year we showed in New York, we were the only lighting company using exclusively LEDs,” says co-founder Bret Englander, Cerno’s director of sales and marketing. The trio has made a name for itself not only with the brand’s striking rectilinear walnut forms, but also for its devotion

to high-CRI LEDs in a variety of temperatures: warmer for residential and hospitality, cooler for commercial and office projects. At ICFF this year, they debuted the Lenis fixture, which utilizes a modular LED board designed from scratch to achieve the light’s undulating look. “Today, the novelty has to come through innovating beautiful forms,” explains Englander. The Lenis form feels especially personal: “The shape was inspired by the boats we built together as kids.”



The Vix linear pendant in walnut

HIGH POINT MARKET

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