

# ENERGY OBSERVER

A MONTHLY NEWSLETTER FROM AMERLUX®

NOV 2021

## Discover our turnkey smart building portfolio offerings

Our family of companies have come together to develop a complete building automation solution that keeps building owners and their occupants front of mind.



Amerlux's suite of intelligent LED lighting solutions illuminates Delta's portfolio of IoT-enabled solutions for automated, sustainable buildings and cities. Our lighting solutions integrate seamlessly with our Delta partners to create an experience that yields greater productivity and comfort on top of bottom-line savings. Design a building that makes everything inside and outside look good and feel good by sensing, responding and adapting to the people inside with scalable building automation systems and connectivity solutions from Delta Electronics' family of companies.

<https://bestlight.amerlux.com/building-automation/>

## National LED Energy Market Observer:

1. **WHITE PAPER: Supply Chain Disruptions Affect Viability of U.S. Manufacturing Sector** - This white paper illustrates the supply chain disruptions that are lowering the competitiveness of our combined industries and hindering our members' U.S. manufacturing capabilities. Trade distortions and the COVID-19 pandemic have resulted in shortages of essential components, the effects of which have exposed the severe and worsening deficiencies in the U.S. logistics network and have led to delays and costly inflation at every stage of the manufacturing supply chain. These issues are made worse with ongoing labor shortages, and added together, they disrupt domestic production, result in temporary shutdowns, reduced sales, increased consumer costs, and delayed delivery of critical products. All of this combines to stall the U.S. economy. [Joint Association Final Draft Supply Chain White Paper FOR MEMBER REVIEW \(00105598\).DOCX \(informz.net\)](#)

2. **Backlog of Cargo Ships at Port of LA Reaches Boiling Point** - As an estimated 500,000 containers are sitting on cargo ships off the Southern California coast, many are wondering how to handle the backlog. Few are more frustrated about the backlog at the Port of Los Angeles and Long Beach, than truck drivers in the chaos. They say that a trucker shortage is not the problem, instead, the port needs to speed up wait times and have more dock help ready to offload. Some blame outdated infrastructure, importers with nowhere to store the containers, and dock help not keeping up with demand. [Backlog of Ships at Port of LA Reaches Boiling Point - CBS Los Angeles \(cbslocal.com\)](#)

**3. Manufacturers and Customers Grapple with Supply Chain Challenges** - The way to really get a lighting customer's attention these days is seemingly the ability to ship lighting products in a reasonable timeframe. Today in 2021, almost every lighting person we know would sign up for a steady diet of 7 ½ week lead times. Quick ship programs are widely scaled back and paused. Standard products that once shipped in 4 weeks are now experiencing 4-month lead times. Companies with less dependency on Asian manufacturing and components will have an easier path to overcoming these challenges. Given the need for semi-conductors and electronics in LED lighting and controls products, it's extremely difficult to escape long-term supply chain peril. Furthermore, Mexico and U.S. manufacturing is not the right answer for many lighting manufacturers – and a company can't exactly relocate a factory overnight in order to sidestep supply chain issues. The widespread challenges continue, with many predicting a late 2022 recovery – and possibly longer – to truly return to pre-pandemic levels of component manufacturing and commerce. [“We Can Ship” is the New Way to Delight Customers \(inside.lighting\)](#)

**4. New York State Reaches Milestone in Streetlight Retrofitting** - Governor Kathy Hochul announced that New York has now replaced more than 286,000 of its streetlights with LED fixtures, surpassing the halfway milestone in the state's goal to replace at least 500,000 streetlights with LED technology by 2025 under Smart Street Lighting NY. The Power Authority has installed more than 71,000 LED streetlights statewide, with nearly 60,000 lighting replacements currently being installed. Some of the more than 100 municipalities that have already converted to LED streetlights in collaboration with NYPA include Syracuse, Albany, Rochester, and White Plains. [New York State Reaches Milestone in Streetlight Retrofitting – lightED \(lightedmag.com\)](#)

**5. WHITE PAPER: Germicidal Ultra Violet (GUV) Light Systems by Light Plan Design** - The goal of this white paper is to examine the benefits and risks of using Germicidal Ultra Violet (GUV) light systems in fighting the transmission of infectious diseases. These systems have been used for over a century in water treatment, air systems, and for disinfecting surfaces. GUV has been most commonly used in hospitals, pharmaceutical, manufacturing and clean room applications. It is a proven technology for disinfection and killing of viruses, bacteria and fungal organisms. GUV is becoming increasingly well known to the general public due to the COVID-19 outbreak. Download at: [Germicidal-Ultra-Violet-Light-Systems\\_White-Paper.pdf \(lightplan.com\)](#)

**6. CASE STUDY: FSG - New LED Lighting and Controls at Allen High School, Texas** - <https://vimeo.com/597419065> The exterior lighting upgrade for new LED lighting and controls is a great way to make the most of your annual budget. The FSG exterior lighting upgrade for Allen High School looks amazing and they will immediately see a 57% energy reduction. Along with a well-lit campus, these are some other great benefits they get with this project. Your lights matter. Improving or upgrading your commercial lighting is the key to lower costs and a facility that customers and employees love. Our commercial lighting products and services provide our clients with complete lighting solutions including lighting expertise and design services that will take their facility above and beyond. [Commercial Lighting Products & Services | FSG](#)



**7. Cree, Inc. Officially Changes Company Name to Wolfspeed, Inc.** - Following a massive four-year transformation, involving the divestiture of two-thirds of the business and a repositioning of the company's overall core strategy, today marks the creation of Wolfspeed, Inc. (NYSE: WOLF), the global leader in Silicon Carbide technology and production. The company, formerly known as Cree, Inc. (Nasdaq: CREE), officially launches under its new name with the support of a comprehensive, multi-channel, integrated marketing campaign. Wolfspeed has served as the brand for the company's Silicon Carbide materials and semiconductor devices business unit for the past six years. Wolfspeed's technology is key to the electrification of the drivetrain to support the shift to electric vehicles, wireless infrastructure to unlock the potential of smart cities, and power storage to enable broader adoption of renewable energy. [Cree, Inc. Officially Changes Company Name to Wolfspeed, Inc., Marking Successful Transition to Global Semiconductor Powerhouse | Wolfspeed](#) Cree | Wolfspeed to transfer to the New York Stock Exchange and trade under new ticker symbol "WOLF" on Wednesday, Nov. 17, 2021.

8. **Energy Focus's Robot Chosen to Disinfect LightFair by Randy Reid** - The [mUve™ Robo-Disinfector](#) will disinfect surfaces throughout the Javits Center exhibit hall, moving around autonomously during conference after-hours. Moving and disinfecting at a speed of 18 inches per second (or 90 feet per minute), mUve™ will be pre-programmed with its advanced mapping technology to record the floor plan of the conference and use a powerful beam of UVC-254nm light to disinfect surface pathogens, including SARS-CoV-2 and its variants, at a targeted 99.9%+ efficacy rate within a one-meter radius. mUve™ will help provide an additional layer of safety measures through autonomous surface disinfection to LightFair, in conjunction with the conference's "Safer Floor. Safer Show." protocols. [Energy Focus's Robot Chosen to Disinfect LightFair - EdisonReport](#)

9. **EW's Top 10 LED Lighting Picks for October 2021** - Congratulations to the project managers and marketing teams of Acuity Brands, Alloy LED, Emerson, ERCO, Generac Mobile, LEDVANCE, Leviton, MaxLite, Topaz Lighting and Universal Douglas Lighting Americas for having their products selected for this month's Top 10 LED Lighting Picks. Do you have a product you would like us to consider for our future monthly picks? Send a brief description of the product and a high-resolution image (300 dpi or better) to Jim Lucy, Editor-in-Chief, Electrical Wholesaling, at [jlucy@endeavorb2b.com](mailto:jlucy@endeavorb2b.com). [Top 10 LED Lighting Picks for October 2021 | Electrical Wholesaling \(ewweb.com\)](#)

10. **VIDEO: Telensa Demonstrates TALQ Interoperability on Georgia Street Lights** - Smart-city-focused Telensa has announced that it has successfully deployed the PLANet central management system (CMS) for connected outdoor solid-state lighting (SSL) over "hundreds of thousands" of streetlights in Georgia. The installation covers luminaires and other nodes from multiple vendors and based on varying network connections — proving out the TALQ (not an abbreviation or acronym) value proposition of interoperability in multi-vendor scenarios. Telensa has long been an advocate of TALQ and of smart city technology, although the company was acquired by Signify this past summer and Signify has its own proprietary smart-city offering in Interact City. Georgia Power is the only utility in Georgia with hundreds of thousands of connected street lights. [Telensa demonstrates TALQ interoperability on Georgia street lights | LEDs Magazine](#) Video all about the TALQ Consortium: <https://www.youtube.com/watch?v=mmwngqpwzQQ&t=166s>

11. **The Future of Street Lighting in Smart Cities by TE Connectivity** - The idea of smart cities is built on the importance of connection — the connection between the components themselves and to the people who use them. This hyper-connection is often described as the industrial internet of things (IIoT), which is quickly and powerfully changing how data is shared and managed. Using IIoT for smart cities is a promising solution for sustainable urban growth. Data-driven decisions reduce environmental footprints, improve infrastructure, and enhance the overall quality of life. With context-specific information, municipalities can determine how to efficiently allocate energy and plan for population growth. However, city decision-makers must also consider the most viable way to start building out a smart city infrastructure. Building and creating a new system from scratch takes a significant amount of time and money. A more realistic first step is to use existing assets — streetlights and poles, for example. Rather than viewing streetlights as just luminaires, let's reimagine their functionality as EV charging stations, Wi-Fi towers, and pollution monitors. Adapting this existing streetlight infrastructure opens new doors of possibility and has the potential to dramatically improve the efficiency and roll out of new technologies to smart cities. [The Future of Street Lighting in Smart Cities | EO&M \(ecmweb.com\)](#)

12. **Apple Rumored to Launch 27-Inch Mini-LED iMac with ProMotion in Early 2022** - According to Display Supply Chain Consultants CEO Ross Young. Young added that the 27-inch iMac display will feature ProMotion, allowing for an adaptive refresh rate between 24Hz and 120Hz. At the time this story was published, Young did not say what the display's resolution would be, but the current 27-inch iMac has 5K resolution. Apple has introduced a few other products with mini-LED displays, including the 12.9-inch iPad Pro earlier this year and the 14-inch and 16-inch MacBook Pro this week. Young expects Apple's recent leadership with mini-LEDs to continue with the new iMac. [Apple Rumored to Launch 27-Inch Mini-LED iMac With ProMotion in Early 2022 - LEDinside](#)

13. **Seven Trends Shaping the Lighting & Control Industry Today by Devis Mulunda** - Lighting was in the midst of a substantial transformation long before March 2020. Smart lighting control systems introduced us to the opportunity for more dynamic, responsive environments, and wireless solutions began making design, installation, and management easier, faster, and more future-proof. Although intensified and accelerated by the pandemic, these changes will continue to shape the industry for years to come. We can step back and consider two common themes that continue to surface — demand for flexibility and a desire for enhanced user experiences through light. In response, electrical contractors and engineers can add value for their customers by delivering effective, quick solutions through smart design and responsive, scalable technology. Seven trends in the lighting and controls arena to watch for at: [Seven Trends Shaping the Lighting & Control Industry Today | EC&M \(ecmweb.com\)](#)

14. **Signify Revamps LA 2nd Street Tunnel with Light** - Dubbed the most recognizable city landmark that most Americans have never heard of, Los Angeles' 2nd Street Tunnel has been featured in a variety of music videos and movies, making it a well-known landmark. It recently underwent a major lighting upgrade with Signify's Color Kinetics and Lumec solutions, blending the city's historical lighting with dramatic color on the west end of the tunnel. The fixtures give the tunnel a vintage LA aesthetic, while improving the safety and coverage of the tunnel. [Signify Revamps LA 2nd Street Tunnel with Light | Electrical Wholesaling \(ewweb.com\)](#)



15. **Makers of Lighting Products Adjust Pricing and Terms to Offset Continuously Increasing Supply Chain Costs** - A leading maker of lighting controls told us that to help a customer meet a deadline they recently paid \$86 for components that normally cost around \$8. There are likely dozens (or possibly hundreds) of similar stories experienced by other lighting makers during this challenging year that have sourcing departments facing one supply chain hurdle after another. Consequently, lighting industry price increases have become commonplace and more companies seem to be adjusting their terms in conjunction with raising prices. Here's a roundup of many recent price increases and term announcements we received from manufacturers and their representatives: [Prices, Terms and Surcharges Steadily Increase \(inside.lighting\)](#)

16. **Lighting as a Service by Roshni Nair** - The LaaS model offers several advantages. First, without the need for capital investment, the owner can install or upgrade its lighting system with the help of a LaaS provider who offers a multi-year contract on a subscription basis for the services provided. This can translate into substantial long-term savings, as the cost incurred for lighting products and services can be shown as an operating expense. With these savings come the potential for technology enhancements including: [Lighting as a Service – Illuminating Engineering Society \(ies.org\)](#)

1. Germicidal UV
2. Asset Management
3. Solar Lighting
4. Wayfinding Software & Hardware
5. Wireless Sensor-Based Network

17. **GE Current, a Daintree Company, Announces Plan to Acquire Hubbell Commercial and Industrial Lighting Business** - The deal was agreed upon a \$350 million cash purchase price. The Hubbell C&I lighting business, based in Greenville, South Carolina, offers a comprehensive range of indoor and outdoor lighting products for industrial, commercial, and institutional applications. The Hubbell C&I lighting business has a strong collection of trusted brands including Area Architectural Lighting, Beacon, Litecontrol, Kim, Columbia, Prescolite, Alera, Dual-Lite, Compass, Hubbell Outdoor Lighting, and Hubbell Controls Solutions. Progress Lighting is not part of the deal. After closing, Current and the Hubbell C&I Lighting business will maintain separate agency networks with dedicated resources and distinct brands. [GE Current, a Daintree company \(Current\)](#)

18. **TRAINING: Lighting Controls Association Bolsters Education Express with Summary Sheets** -The Lighting Controls Association's Education Express is the lighting industry's leading online platform for free, instant, 24/7 education about lighting controls. The LCA is pleased to announce that a majority of courses now feature downloadable one-page summary sheets students can download, print, and use as a quick reference. All courses are required reading to prepare for NALMCO's Certified Lighting Controls Professional (CLCP) certification exam. [Lighting Controls Association Bolsters Education Express with Summary Sheets](#)

19. **DOE Commercial Buildings Energy Consumption Survey (CBECS)** - Commercial buildings in the United States are getting larger and more commonly include energy-saving features like LED lighting and occupancy sensors, according to the U.S. Department of Energy's 2018 Commercial Buildings Energy Consumption Survey (CBECS), published in September 2021. The CBECS is a survey conducted roughly every five years by the Energy Information Administration at the DOE. A large sampling of buildings are used to generate data that is then extrapolated for national estimates covering a wide range of building characteristics, such as region, activity, size, age, and equipment. What does the data tell us about the estimated 5.9 million commercial buildings in the United States? Available free, check it out at: [Energy Information Administration \(EIA\)- Commercial Buildings Energy Consumption Survey \(CBECS\) Data](#)

20. **DOE Energy Conservation Standards for Metal Halide Lamp Fixtures** - DOE has issued a pre-publication Federal Register notice of final determination pertaining to energy conservation standards for metal halide lamp fixtures (MHLFs). The Energy Policy and Conservation Act (EPCA), prescribes standards for various consumer products and certain commercial and industrial equipment, including MHLFs. EPCA also requires DOE to periodically determine whether more-stringent, standards would be technologically feasible and economically justified, and would result in significant energy savings. In this final determination, DOE has determined that the energy conservation standards for MHLFs do not need to be amended because they are not economically justified. [Appliance Standards Rulemakings and Notices \(energy.gov\)](#)

21. **15 States Rally to Reinstate Light Bulb Bans** - The Attorneys General from 15 states and two major cities have collaborated in support of the [U.S. Department of Energy's \(DOE\) proposal](#) to strengthen energy efficiency requirements for certain light sources. DOE's proposal would reinstate expanded product definitions, originally defined in 2017, to include a wide range of light sources commonly used in homes and businesses, such as 3-way bulbs, cone-shaped reflector bulbs used in recessed and track lighting, candle-shaped bulbs used in chandeliers and sconces, and round globe-shaped bulbs often used in bathroom lighting fixtures. The states and cities that filed the joint statement are listed at: [States Rally to Reinstate Light Bulb Bans \(inside lighting\)](#)

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## Global LED Energy Market Observer:

22. **RESEARCH: Decorative Lighting Market Size to Grow by \$6.91B** - The decorative lighting market is set to grow by USD 6.91 billion at over 4% from 2021 to 2025, according to the latest research report from [Technavio](#). The report on the global decorative lighting market provides a holistic update, market size and forecast, trends, growth drivers, and challenges, as well as vendor analysis. Technavio analyzes the market by product (ceiling, wall-mounted, and others), distribution channel (offline and online), and geography (APAC, Europe, North America, South America, and MEA). The development of smart cities is expected to have a positive impact on the growth of the decorative lighting market during the forecast period. [Decorative Lighting Market | Size, Share, Growth, Trends | Industry Analysis | Forecast 2025 | Technavio](#)

23. **LED Streetlights Reduce Insect Populations by 50%** - 'Eco-friendly' LED streetlights are even more harmful for insect populations than the traditional sodium bulbs they are replacing, a new study has shown. The negative impacts of light pollution on insects including moths - which provide essential food sources for a variety of animals and are important pollinators - are well known. However, scientists behind this latest research say it is the first investigation into the effects of the whiter outdoor LED lights on insect populations in 'real world' conditions. Field studies by the UK Centre for Ecology & Hydrology (UKCEH), Newcastle University and Butterfly Conservation found the abundance of moth caterpillars in hedgerows under LED street lamps was 52 per cent lower than in nearby unlit areas. This compared with a 41 per cent lower abundance in hedgerows lit by sodium lighting. [LED Streetlights Reduce Insect Populations By 50% - LEDinside](#)

24. **Coalition Calls for Global Fluorescent Ban by 2025** - [A new report](#) released by the **Clean Lighting Coalition** highlights the environmental and health risks posed when fluorescent lamps break, especially to vulnerable populations. The report provides concrete steps government, industry, consumers, and others, like childcare providers, can take to accelerate the transition to LED lighting, which is mercury-free, more energy-efficient, more cost-effective, and widely available. To mitigate the risks posed by mercury, the Coalition is calling on the Biden Administration to support the global phase-out of fluorescent lighting by 2025 at the upcoming meeting of the United Nation's Minamata Convention on Mercury in March 2022. Furthermore, the Coalition notes that phasing out fluorescent lighting aligns with the Administration's Executive Order on Tackling the Climate Crisis at Home and Abroad issued earlier this year. [Coalition Calls for Global Fluorescent Ban by 2025 \(inside.lighting\)](#)

25. **NICHIA Launches High Power 200mW UV-C LED** - NICHIA has begun mass production of another new high radiant flux UV-C LED to help target the inactivation and sterilization of various bacteria and viruses, specifically industrial water and air applications. With a continued focus on 280nm to maximize the virucidal power and maintain practical reliability, the new 6.8mm x 6.8mm, Part Number NC4U334BR is one of the industry's highest output UVC LEDs. Yielding a typical performance of 200mW radiant flux at 7.8W of input power, the NC4U334BR significantly increases the available virucidal power without sacrificing lifetime, a critical balancing act that Nichia has succeeded in achieving. Nichia promises to continue its focus on developing deep-ultraviolet LEDs with improved performance and reliability. [NICHIA Launches High Power 200mW UV-C LED - LEDinside](#)

## Monthly Feature:

[Riding the Waves of Light: Li-Fi is transforming light and data | Electrical Contractor Magazine \(ecmag.com\)](#) by Jeff Gavin - It's a wireless world: our phones are mobile, we can take our laptops anywhere and building design programs are now tablet accessible. Heavy data demands, however, can often make wireless less nimble. Think of slower service, weak signals, video freeze-ups and other latency issues. Riding the waves of radio frequency can be great, until it isn't. Light fidelity (Li-Fi) is a different kind of wireless that uses LED light to transmit data. Early adopters are trying it out, but whether Li-Fi causes a revolution remains to be seen.

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Harald Haas, professor and chair of mobile communications at the University of Edinburgh, is considered the father of Li-Fi. He coined the phrase at his 2011 TEDGlobal talk in Edinburgh, Scotland. The following year, he co-founded a company now known as pureLiFi. Other players have since gotten involved from Europe, Australia, India, the Middle East and the United States. Signify (formerly Philips Lighting) is fully on board with its line of TruLiFi products. Ed Huibers is the company's segment leader for office and hospitality, TruLiFi. Huibers believes the technology creates another avenue for data transmission alongside Wi-Fi, since "the lighting spectrum and putting data in lights is something we've known about for years," Huibers said. "Maybe now its time has come."

## How it all works

Categorized as a visible light communication system, Li-Fi distinguishes itself through bidirectional transmission of light (uplink and downlink). A special LED luminaire with a signal-processing chip transmits data using emitted light. Current to the bulb modulates the light emitted at extremely high speeds imperceptible to the human eye. Data fed into the LED is sent to a photodiode (typically a USB insertable receiver) to be read and converted into a usable binary data stream. The photodiode can also uplink data back to the server. Li-Fi can run over visible light and infrared spectra. In lab testing, data transmission has been found to be 100 times faster than Wi-Fi.

The Li-Fi signal is stronger the closer it gets to a receiver. A ceiling distance of no more than 10 feet (6–9 feet ideally) from a Li-Fi-enabled device will offer a strong signal. An open office with the right ceiling height could be a good application, Huibers said. To add Li-Fi to a new light fixture, a transceiver is inserted in a cavity in the luminaire. "When added to an existing lighting installation, we typically put [the transceiver] separate from the fixture. It is using the invisible infrared spectrum, not adding or influencing the light level of a space," Huibers said. Any device that runs on a Li-Fi signal must be authenticated using a receiver device. Picture your laptop—to run on Li-Fi, it will need either a plug-in dongle or one that rests nearby. The laptop would also have to run where authentication between the signal and your laptop can be matched. A controller box rests in the ceiling and can accommodate ethernet ports, providing Li-Fi to several designated locations. A Li-Fi signal stays within the room it is operating, because it can't penetrate walls, so it is far less hackable than Wi-Fi. It could be used in a designated safe room where end-users are dealing with sensitive or confidential information.