

ENERGY OBSERVER

A MONTHLY NEWSLETTER FROM AMERLUX®

AUG 2022

**Make lighting, HVAC, security and efficiency come together.
Under one roof, one network, one company.**

Easily make disparate building systems come together and streamline the next generation of smarter buildings with one quick call—to us.

Amerlux's suite of intelligent lighting solutions integrates with Delta's comprehensive portfolio of IoT-enabled solutions to automate superior quality and unparalleled comfort in any room, level or building.

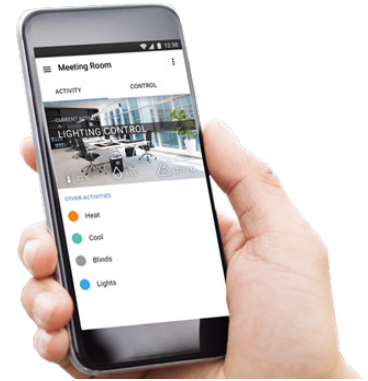
Architectural lighting. Adaptive climate control. Enhanced security. A reduced environmental footprint. A better bottom line. Altogether, under one network, from one family of companies. Greater comfort and personalized experiences. Increased value and security. Improved energy efficiency and workplace productivity. Throughout a space, a floor, even a building—naturally, just like that.

And we can't wait to show you how.

Don't hit the lights or adjust the thermostat. Our IoT suite of controllers, sensors and software have that covered. Get ready to see what the best lighting and building management system will do for you.

Easily make disparate building systems come together and streamline the next generation of smarter buildings with one quick call—to us. Amerlux's suite of intelligent lighting solutions integrates with Delta's comprehensive portfolio of IoT-enabled solutions to automate superior quality and unparalleled comfort in any room, level or building. Architectural lighting. Adaptive climate control. Enhanced security. A reduced environmental footprint. A better bottom line.

Altogether, under one network, from one family of companies. Incredible things automatically happen in the right environment—your environment, lit by **Amerlux**, connected by the **Delta Business Automation Group**. [Building Automation|Commercial Lighting \(amerlux.com\)](https://www.amerlux.com)



National LED Energy Market Observer:

1. **Wholesale Inflation Surges to 11.3 Percent** - Inflation at the wholesale level climbed 11.3% in June compared with a year earlier, the latest painful reminder that inflation is running hot through the American economy. The Labor Department reported Thursday that the U.S. producer price index, or PPI — which measures inflation before it hits consumers — rose at the fastest pace since hitting a record 11.6% in March. Last month's jump in wholesale inflation was led by energy prices, which soared 54% from a year earlier. But even excluding food and energy prices, which can swing wildly from month to month, producer prices in June jumped 8.2% from June 2021. On a month-to-month basis, wholesale inflation rose a substantial 1.1% from May to June. [Wholesale Inflation Surges to 11.3 Percent | Newsmax.com](https://www.newsmax.com)

2. **US Inflation Spikes to 9.1 Percent Amid High Gas Prices** - U.S. consumer prices accelerated in June as gasoline and food costs remained elevated, resulting in the largest annual increase in inflation in 40-1/2 years and cementing the case for the Federal Reserve to hike interest rates by 75 basis points later this month. The consumer price index increased 1.3% last month after advancing 1.0% in May, the Labor Department said on Wednesday. This brings the June year-over-year inflation figure to 9.1% — the highest since November 1981 and another 40-year high. High inflation and rising borrowing costs are stoking fears of a recession by early next year. [US Inflation Spikes to 9.1 Percent Amid High Gas Prices | Newsmax.com](https://www.newsmax.com)

3. **'Big Plumbing' Muscling into Lighting** - Perhaps the most recent and largest move was [Ferguson's recent acquisition of Minka Group](#), a major decorative lighting manufacturer for the residential and resimercial markets. Ferguson is a \$24 billion company, the largest wholesale distributor of residential and commercial plumbing supplies and pipe, valves and fittings in the U.S. The company has 245 Ferguson Bath, Kitchen & Lighting Gallery locations in the United States that sell lighting and fan products. The Minka Group acquisition was just the latest move by Ferguson into lighting. Back in January of this year, [Ferguson quietly acquired RP Lighting + Fans](#), another decorative manufacturer of lighting and ceiling fans. It's not just Ferguson, either. [Kohler Company introduced its Kohler Lighting line in 2020](#), in order to provide decorative luminaires that pair with its plumbing fixtures. Moen also offers decorative lighting. Keep your eye out for continued moves by Big Plumbing. ['Big Plumbing' Muscling Into Lighting | LightNOW \(lightnowblog.com\)](#)

4. **DLC Completes Transition of Solid-State Lighting Program** - The [DesignLights Consortium \(DLC\)](#) announced it has completed the transition to the newest version of its [Solid-State Lighting \(SSL\) Technical Requirements \(Version 5.1\)](#) – a policy designed to increase efficacy and improve quality of light and controllability of qualified fixtures and lamps. Any products that have not been updated to meet V5.1 requirements have been removed from the Qualified Products List (QPL). Under the SSL V5.1 requirements, almost all products are now dimmable and must report on integrated controls, which enable strategies to save additional energy. Since LED luminaires installed today may last for a decade or more, strengthening controllability requirements looks in potential energy and oost savings for years to come. [DLC Completes Transition of Solid-State Lighting Program – lightED \(lightedmag.com\)](#)

5. **The 2023 Cadillac Lyriq Is 'Sold Out'** - If you want to buy Cadillac's first electric car, you'll now have to wait for the 2024. According to Automotive News, Cadillac has closed the order book for the 2023 Lyriq, with every example of the Debut Edition of the upcoming electric car now spoken for. For anyone in the market for its first EV, Cadillac is now accepting pre-orders for the 2024 model. These can be secured with a \$100 deposit. But, the report adds that when the 2024 model does reach dealers it could be at a higher price point, due to "surging costs for commodities, logistics and technology." The Lyriq starts at \$62,990 for the rear-wheel drive model, which will go on sale in the fall. Power for the electric SUV comes from a single electric motor that produces 340 hp and 324 lb-ft of torque. Energy is stored in a 100.4 kWh battery pack, which Cadillac says is enough to give you a range of 312 miles. [The 2023 Cadillac Lyriq Is 'Sold Out' - LEDinside](#)



6. **On the Bright Side: Best Practices for Applying Effective Lighting and Control Solutions in the Field** - The information and trends offered within these pages should be essential reading for any electrical professional looking to stay on top of the latest lighting intelligence and trends. The pieces hand-selected for this e-book address how to handle insufficient lighting in the workplace, control tunable white lighting, understand load calculations and the 2020 National Electrical Code, the difference between switches when working on industrial or commercial systems and equipment, the safest way to dispose of different types of lighting fixtures, and how to implement a successful lighting retrofit project or upgrade. Read all of the articles as you continue to look on the bright side, adopting best practices for applying effective lighting and control solutions in the field. [On the Bright Side: Best Practices for Applying Effective Lighting and Control Solutions in the Field | EC&M \(ecmweb.com\)](#)

7. **TRAINING: Lighting Controls Association Offers New Course** - The [Lighting Controls Association](#) now offers EE302, Part 4: Luminaire-Level Lighting Controls (LLLO) as a new course in its popular Education Express program. Luminaire-level lighting controls (LLLO) are a lighting control option in which sensors and control functions are embedded in luminaires to enable individual luminaire control. By integrating control functionality into each luminaire, control is highly flexible, responsive, and therefore generally highly energy-saving. Additionally, significantly detailed space use data can be generated as a potential feature of centralized systems. Authored by Craig DiLouie. [Education Express | \(aboutlightingcontrols.org\)](#)

8. Applied UV Granted Patents for Device Sterilizing ATM Surfaces - Applied UV, Inc., a pathogen elimination technology company that applies the power of narrow-range ultraviolet light (“UVC”) for surface areas and catalytic bioconversion technology for air purification to destroy pathogens safely, thoroughly, and automatically, announces that its wholly owned subsidiary SteriLumen has been notified that the US Patent and Trademark Office (USPTO) has granted the patent pertaining to a system to neutralize pathogens on ATM surfaces. On a daily basis, consumers globally interact with numerous surfaces that need to be touched during normal uses, including ATMs with keyboards and interactive touch screens. As an example, according to the Company’s internal research, as of 2018, there were approximately 470,000 ATMs in the U.S. alone. These surfaces are touched daily by an inordinate number of people that can harbor and transfer pathogens highly associated with illnesses and diseases.

[Applied UV Granted Patents for Device Sterilizing ATM Surfaces - LEDinside](#)

9. Vermont Phases Out Fluorescent Tubes in Favor of LEDs - ACEEE explores how a Vermont policy to phase out most fluorescent tube lights in favor of LEDs is a guide for other states to reduce energy costs, greenhouse gas emissions, and mercury pollution. Signed by Governor Phil Scott on May 19, Vermont’s law will end the sale of four-foot fluorescent tubes by 2024. California lawmakers are considering enacting similar legislation this year, and other states may do so when their legislatures reconvene in 2023. (In Rhode Island, one chamber passed such a bill this year.) The four-foot tubes at issue in the Vermont law are often found in commercial buildings and in some kitchens, basements, and garages. They are the most common type of linear fluorescent light, representing about 90% of installations.

[Vermont Phases Out Fluorescent Tubes In Favor Of LEDs \(facilityexecutive.com\)](#)

10. Registration is Open for the September 15-16 ArchLIGHT Summit at the Dallas Market Center - ArchLIGHT Summit is a new commercial and architectural lighting event dedicated to delivering a dynamic, interactive, inclusive and collaborative experience for lighting designers and specifiers, interior designers and architects. Created and hosted by [Dallas Market Center](#), ArchLIGHT Summit will showcase new products from leading commercial brands reflecting the latest lighting trends and technologies, combined with a full slate of accredited educational and hands-on experiential sessions facilitated by the sharpest minds in design and lighting. Check out the latest featured speakers at: [ArchLIGHT Summit: Directory \(sched.com\)](#)

11. Register to Attend the 3-Day AEE World Conferences - The Association of Energy Engineers is celebrating its 45th year, culminating at the AEE World to be held at the World Congress Center in Atlanta, GA. The conference runs September 21-23 while the expo is held September 21-22. Key energy professionals and key decision makers from industry, commercial business, institutions and government, utilities and power, military, hospitality, education, and healthcare. They are looking for the latest solutions and technologies for energy management, energy efficiency, sustainable and renewable energy, building and facility management. Check out the latest featured speakers at: [Stars of Energy Keynote Speakers at AEE Events | AEE® \(aeecenter.org\)](#)

12. ABC: Construction Materials Prices Up 20% from a Year Ago - Construction input prices are up 20.1% from a year ago, while nonresidential construction input prices are 20.3% higher. On a monthly basis, input prices were down in four of 11 subcategories in June, with the largest decline registered in the softwood lumber category (-24.8%). All three energy subcategories experienced price increases, with natural gas prices rising 24.3% for the month.

[ABC: Construction Materials Prices Up 20% From a Year Ago – tEDmag](#)

Producer Price Index, June 2022

	1-Month % Change	12-Month % Change	% Change Since Feb 2020
Inputs to Construction	1.9%	20.1%	46.0%
Inputs to Nonresidential Construction	1.8%	20.3%	46.4%
Plumbing Fixtures and Fittings	0.4%	11.0%	14.9%
Fabricated Structural Metal Products	0.6%	26.2%	55.8%
Iron and Steel	-2.9%	16.3%	97.4%
Steel Mill Products	-1.8%	22.4%	124.3%
Nonferrous Wire and Cable	-0.6%	15.1%	50.7%
Softwood Lumber	-24.8%	-38.1%	48.4%
Concrete Products	1.9%	13.5%	18.8%
Prepared Asphalt, Tar Roofing & Siding Products	3.2%	22.2%	37.5%
Crude Petroleum	19.4%	77.1%	152.6%
Natural Gas	24.3%	224.5%	517.9%
Unprocessed Energy Materials	20.4%	126.8%	236.4%

Source: U.S. Bureau of Labor Statistics

13. **New Horticulture Lighting Distributor Sees Big-Time Growth** - You may have met Chris Brown during his 40 years as a senior executive with Wiedenbach-Brown, Purchase, NY, a full-line distributor with a specialty in lighting solutions now owned by CED's U.S. Electrical Services. Over the past year, Brown has been busy building a new lighting-based venture — Ultra Yield Solutions, a specialist in horticultural lighting with offices in Reno, NV, and Mamaroneck, NY. Fueled in part by a surge in cannabis farming in warehouses and vertical greenhouses, the horticultural lighting market will reach \$7.9 billion by 2026 powered by a CAGR exceeding 16%, according to a report published on the Ultra Yield Solutions website [Home - Ultra Yield Solutions](#) by Market Research Future (MRFR). Ultra Yield Solutions made news recently when the Edison Report reported that Acuity Brands, Inc., Atlanta, signed it as its first distributor for the company's new Verjure horticulture LED lighting solution. [New Horticulture Lighting Distributor Sees Big-Time Growth | Electrical Marketing](#)



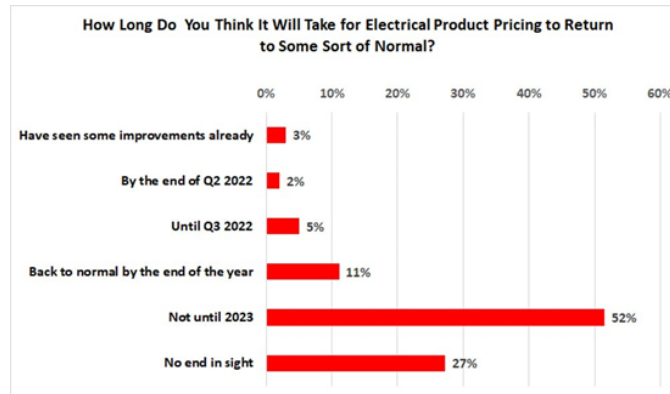
14. **Louisiana Clears New Bill to Improve Energy Efficiency Codes Statewide** - New law will require jurisdictions to update to the 2021 International Residential Code and the 2021 International Energy Conservation Code. The new legislation comes as the U.S. Department of Energy (DOE) is standing up a grant program to assist with the implementation of updated energy codes. Louisiana's new legislation also aligns with the Code Council's [Code on a Mission](#) campaign. This campaign aims to have over a third of the U.S. population covered by energy codes that meet or exceed the 2021 IECC by the end of 2023. The Code Council is already halfway to achieving its goal. More details about the recently passed legislation can be found at: [ViewDocument.aspx \(la.gov\)](#)

15. **DOE Announces \$18.4M in Funding to Streamline Path to Market for Energy Technologies** - The U.S. Department of Energy (DOE) today announced \$18.4 million through the Technology Commercialization Fund (TCF) for seven national laboratory projects with the goal of getting more clean energy technologies to the marketplace. The selected national laboratories will address barriers, gaps, and root causes of commercialization challenges for emerging clean energy technologies. Read the full [announcement](#) of the TCF selectees.

- Lawrence Berkeley National Laboratory (1)
- National Renewable Energy Laboratory (1)
- Pacific Northwest National Laboratory (2)
- Sandia National Laboratories (3)

16. **Builder Confidence Plunges** - Builder confidence plunged in July as high inflation and increased interest rates stalled the housing market by dramatically slowing sales and buyer traffic. In a further sign of a weakening housing market, builder confidence in the market for newly built single-family homes posted its seventh straight monthly decline in July, falling 12 points to 55, according to the most recent release of the [National Association of Home Builders \(NAHB\)/Wells Fargo Housing Market Index \(HMI\)](#). This marks the lowest HMI reading since May 2020 and the largest single-month drop in the history of the HMI, except for the 42-point drop in April 2020. All three HMI components posted declines in July: Current sales conditions dropped 12 points to 64, sales expectations in the next six months declined 11 points to 50 and traffic of prospective buyers fell 11 points to 37. [Builder Confidence Plunges – tEDmag](#)

17. **Electrical Wholesaling's 2022 Top 150: The Story Behind the Numbers by Jim Lucy** - Wondering what Top 150 are thinking about economic conditions in the electrical market, lead times, price increases and new revenue opportunities? This gallery offers a quick overview. Here's what they think about pricing: [Electrical Wholesaling's 2022 Top 150: The Story Behind the Numbers | Electrical Wholesaling \(ewweb.com\)](#)



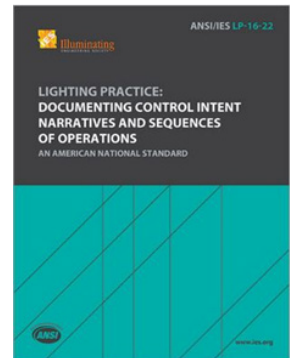
18. **Researchers Discover Pathway to Explain Light's Effect on Mood** - From changes in daylight across seasons to the artificial lighting choices in workplaces, it's clear that the quantity and quality of light that a person encounters can significantly impact mood. Now, scientists at Brown University think they know why. In a new study published in the Proceedings of the National Academy of Science, the research team used functional MRI to reveal how light-intensity signals reach the brain, and how brain structures involved in mood process those signals. The study demonstrated that some regions of the cerebral cortex involved in cognitive processing and mood show sensitivity for light intensity. [Researchers Discover Pathway to Explain Light's Effect on Mood - lightED \(lightedmag.com\)](#)

19. **Tunable Lighting for Health: Remember, It Also Saves Energy by Mark Halper** - While a couple of Wisconsin care homes continue to examine the sleep/wake benefits, they have certainly cut their electricity bills. The U.S. Department of Energy has a strong inkling that the tunable LED illumination it helped install at two Wisconsin nursing homes is improving the sleep and health of the senior residents. But it knows this much for sure: The lights have slashed energy use compared to fluorescent technology. DOE's Pacific Northwest National Laboratory compared the electricity consumption at the two locations to two other care homes in the same state which continued to use conventional lighting. The savings were as high as 79% in corridors and dining rooms according to PNNL. [Tunable lighting for health: Remember, it also saves energy | LEDs Magazine](#)

20. **Hawaii Proposes Outdoor Lighting Restrictions Bill** - The bill in Maui County, Hawaii is supposed to keep native Hawaiian birds from becoming confused by artificial light during flights from their nests to the ocean. It calls for all outdoor lighting to contain less than 2% of blue light, which would limit the short wavelengths that distract the birds. It also requires all outdoor lighting to be fully shielded and facing down, with no light shining above them. It also says if any light hits a wall surface, the wall must be non-reflective. All newly installed outdoor lighting will have to comply with the ordinance, while existing lights will have three years to comply. The county plans to create a list of compliant light fixtures under the new bill, and continuously update the list as new products hit the market. [Hawaii Proposes Outdoor Lighting Restrictions Bill - lightED \(lightedmag.com\)](#)

21. **WHITE PAPER: Revenue Intelligence: The Defining Advantage in Post-Pandemic Markets** - This report distills Modern Distribution Management (MDM) research from the past two years to provide a roadmap for how distributors can apply best practices in using advanced analytics to drive revenue growth and profit despite (and often because of) a volatile market environment. Since the onset of the pandemic, Modern Distribution Management has identified key differentiators between distribution organizations challenged to tread water and those able to strengthen profitability and customer loyalty. The biggest differentiator is how the successful organizations effectively use data analytics tools across operations, sales and marketing, while struggling organizations are holding on to the status quo. And the gap is widening. [Revenue Intelligence: The Defining Advantage in Post-Pandemic Markets - Modern Distribution Management \(mdm.com\)](#)

22. **Best Practices for Lighting Control Narratives by Craig DiLouie** - As lighting controls become more sophisticated in application and capabilities, properly documenting the system's intent and settings becomes critical. One of the most important documents is the control narrative joined to a detailed sequence of operations. Though required by commercial building energy codes as documentation for many new construction and major renovation projects, aside from the Lighting Controls Association, manufacturers, and a few other sources, there are few resources providing guidance about how to write them. Enter the Illuminating Engineering Society (IES), which took on the challenge by publishing ANSI/IES LP-16-22, Documenting Control Intent Narratives and Sequences of Operations in June 2022. [Best Practices for Lighting Control Narratives \(lightingcontrolsassociation.org\)](#)



23. **SATCO/Nuvo Approved by the NLB's Trusted Warranty Program** - Satco/Nuvo has recently been approved by the National Lighting Bureau's Trusted Warranty Evaluation Program. This program awards certificates to lighting and lighting component companies that meet the NLB's objective quality standards and practices for warranty administration. The National Lighting Bureau assesses companies based on five criteria: formal warranty process, warranty language, length of business/warranty insurance, technical evaluation, and claims review evaluation. In demonstrating quality and reliability across these 5 categories, Satco's approval into the program further gives their partners confidence in their selected lighting supplier. [SATCO/Nuvo Approved by the NLB's Trusted Warranty Program – lightED \(lightedmag.com\)](#)

24. **UC Davis Launches the Color Lab at CLTC** - At UC Davis, the California Lighting Technology Center is establishing "The Color Lab" in collaboration with the Center for Mind and Brain to explore the impact of discrete color spectra on stress, mood, and alertness. A recurring question asked by building owners during human-centric lighting design is "which light colors should I use to optimize the space for the well-being of occupants?" Today, there is little data to support the use of specific light colors for increased wellness; however, with commercially available color-tuning lighting technologies—and the new color lab—answers to this question and more are now being addressed. The Color Lab will be available to all UC Davis researchers and partners interested in studying the interactions between discrete spectra and humans. [UC Davis Launches New Color Lab at CLTC | California Lighting Technology Center](#)

Global LED Energy Market Observer:

25. ams OSRAM and Teknikue Form New Partnership to Accelerate Deployment of Advanced 2D/3D Sensing and Imaging Systems - ams OSRAM provides imaging components and camera sensor board and Teknikue will provide a ready-to-use reference design which will enable customers to develop products for face authentication, machine vision, robotics, or navigation/SLAM. Together, ams OSRAM and Teknikue provide manufacturers with advanced vision technology tailored to the needs of their application, eliminating the need for customers to develop or acquire vision systems expertise, and accelerating their time-to-market. The two companies have demonstrated their joint capabilities by developing a complete system reference design for active stereo vision and structured lighting. [teknique | ams OSRAM \(ams-osram.com\)](https://www.amerlux.com/2022/08/15/ams-osram-and-teknique-form-new-partnership-to-accelerate-deployment-of-advanced-2d-3d-sensing-and-imaging-systems/)

26. Skyrocketing Energy Costs Hasten Strawberry Grower's Switch to LED - With energy prices soaring, a year-round Dutch strawberry grower has wasted no time deciding that its first voyage into LED lighting merits more of the same. Kwekerij Loos plans this September to replace all high-pressure sodium (HPS) lights in two greenhouses — one at its home base in Moerstraten and the other in nearby Lepelstraat — covering about 4 hectares, and bringing its total LED lighting area to 6 hectares. The company will install a combination of LED toplights and LED flowering lights from Signify. Loos anticipates energy savings of around 40% compared to energy consumption with the HPS lights. [Skyrocketing energy costs hasten strawberry grower's switch to LED | LEDs Magazine](https://www.amerlux.com/2022/08/15/skyrocketing-energy-costs-hasten-strawberry-grower-s-switch-to-led/)

27. PureLiFi Gets £10M Boost from Scottish Government - With Li-Fi long approaching the cusp of going mainstream but never quite getting there, it's welcome news for vendors when they receive funding to help things keep going. To that end, pioneer pureLiFi has landed £10 million (\$11.9 million) from the Scottish government. The company did not elaborate on the technologies it will pursue with the backing, but presumably they will include the development of laser chips to replace the LEDs that pureLiFi has used. It is a light-based alternative to Wi-Fi, Li-Fi works with a combination of transmitters and receivers in luminaires and gadgets such as phones, laptops, and tablets. Some Li-Fi pundits believe that uptake will accelerate when lasers replace LEDs, offering exponentially faster data rates. [PureLiFi gets £10M boost from Scottish government | LEDs Magazine](https://www.amerlux.com/2022/08/15/purelifi-gets-10m-boost-from-scottish-government/)

28. UVDI Awarded Agreement for UV-C Indoor Air Quality Technology with Premier, Inc. -UltraViolet Devices, Inc. (UVDI), a leading manufacturer of advanced Ultraviolet technology for Indoor Air Quality and Hospital Room Disinfection, announced that it has been awarded a group purchasing agreement with Premier, Inc. in the category of Indoor Air Quality products. Effective July 1, 2022, the new agreement allows Premier members, at their discretion, to take advantage of special pricing and terms pre-negotiated by Premier for UVDI's proven UV-C Air Disinfection, Air Purification and HVAC Coil Cleaning products. The agreement will provide Premier's 4,400 hospital members in the United States with even greater access to UVDI's proven Indoor Air Quality products, which are installed in more than 10,000 commercial facilities worldwide, including in leading Healthcare systems. Premier is a leading healthcare improvement company, uniting an alliance of more than 4,400 U.S. hospitals and approximately 225,000 other providers and organizations. [UVDI Awarded Agreement for UV-C Indoor Air Quality Technology with Premier, Inc. - LEDinside](https://www.amerlux.com/2022/08/15/uvidi-awarded-agreement-for-uv-c-indoor-air-quality-technology-with-premier-inc.-ledinside/)

Monthly Feature:

Cisco: Li-Fi Can Reach Around Corners by Mark Halper - Wireless light-based communication does not have to be limited to line of sight, the networking giant says.

Last month, LEDs Magazine noted that networking giant Cisco is now talking up Li-Fi. At the time, we did not report on the extent of the enthusiasm. So we thought we'd add this: The engineer behind the push is encouraged by a science that could overcome Li-Fi's line-of-sight limitations.

Because Li-Fi remains a relatively lesser known technology, we offer our usual refresher: Li-Fi, or light fidelity, is a technology that uses modulated light waves from LEDs to transmit data. It is like Wi-Fi in that it provides wireless internet connections. But where Wi-Fi uses radio waves (RF), Li-Fi uses light. [Lasers are waiting in the wings](#), according to technology proponents.

Overcoming Li-Fi limitations?

[Li-Fi enthusiasts such as Cisco principal engineer John Parello](#) point out that the technology has great potential to offload the overcrowded radio spectrum, which in its own right comes with many benefits including avoidance of network clashes that cause Wi-Fi signals to drop. They also note that Li-Fi does not interfere electromagnetically with other radio equipment such as hospital gear or factory floor robots, a key concern in those environments.

Furthermore, Li-Fi is considered more secure than Wi-Fi because Li-Fi requires line of sight, which is a big reason why the U.S. Army is using it in a couple of known locations, buying both from Edinburgh, Scotland-based [pureLiFi](#) and from [Signify](#). An intruder cannot hack it from outside the walls of a building, because the light is blocked by walls.

But that same of line of sight is typically also regarded as a limitation. Li-Fi can only reach so far, and users must be underneath the lights and electronics that transmit it, without wandering far to either side.

But Cisco's Parello reminds us that there is a way around that restriction.

"Typically, people think that light communication means you need a direct line of sight to the transmitter," Parello noted [in the same blog post](#) from which we quoted last month.

It doesn't have to be that way, he notes, citing work by the Piscataway, N.J.-based Institute of Electrical and Electronics Engineers (IEEE).

"The IEEE has been working on a standard for Reconfigurable Intelligent Surfaces (RIS) as a way to intentionally redirect radio signals in complicated deployments," Parello said.

[LEDs wrote about nascent RIS work a year ago](#).

Since then, efforts to develop the technology seem to have picked up. Parello references a March 2022 paper published by IEEE detailing the technology's potential. The paper's authors include Harald Haas, who is regarded as the "father of Li-Fi." Haas cofounded Li-Fi pioneer pureLiFi in 2012 and continues to serve as chief scientific officer, while also wearing many other hats. He is distinguished professor of mobile communications at the University of Strathclyde in Glasgow; he is the director of the university's LiFi Research and Development Centre; and he is an advisor to Santa Barbara, Calif.-based Kyocera SLD Laser (KSLD), helping the company [to develop laser-based Li-Fi](#).

While the prospect of widening a Li-Fi zone might seem to be a good thing, does it undermine the inherent security benefit? In the paper we cited last summer, the authors — again, including Haas — noted to the contrary.

As we wrote then:

“They claim that RIS-equipped Li-Fi environments ‘can lead to enhanced physical layer security’ in several different ways. For example, somehow an RIS system can detect intruders, and then emit artificial noise in the intruder’s direction as a jamming technique. RIS elements can be precoded in a way that only legitimate users can decode, the authors state.”

Cisco’s Parello seems to convey something similar.

“With Li-Fi, it’s possible to direct data at targeted devices,” he said. “You can create a wireless network that only works with devices you designate, allowing for an ‘intentional’ approach to network design. Radio waves don’t offer this type of precision.”

Prospects for commercial application

This detail could finally launch Li-Fi into the mainstream. The technology’s gestation period has been a long one, which has been hindered by a standards debate as well as by gadget makers’ reluctance to embed the technology into devices.

Some Li-Fi supporters believe lasers will make the difference by providing huge speed advantages compared to Li-Fi and Wi-Fi, as [demonstrated by KSLD earlier this year](#).

[PureLiFi recently received £10 million from the Scottish government](#) to further develop Li-Fi.

Follow the links in this story for more of the trials, tribulations, and future of the communications technology and application.

[Cisco: Li-Fi can reach around corners | LEDs Magazine](#)