ENERGY OBSERVER

A MONTHLY NEWSLETTER FROM AMERLUX®

DEC 2019

Amerlux *Quick*-Line Recessed 4" Linear Reduces Installation, Upfront Costs

Amerlux's new *Quick*-Line Recessed 4" Linear is an architectural-grade LED fixture that delivers on the promise of speed, low cost and high quality, while adding another design option. Sold in middle-of-run segments, ***Quick***-Line is stocked on the shelf in standard lengths, standard color temperatures and standard lumens per watt, which allows the product to ship in as little as 72 hours. "***Quick***-Line Recessed delivers faster to the job site, saving time and money," said Amerlux President Chuck Campagna. "It's also easier to install and provides much better control of the light, compared to commodity goods, which is highly beneficial for contractors and owners."

Quick-Line Recessed 4" (QLR4) delivers your design scenario seamlessly, shipping within 3 days, everytime. Streamlined and flexible, these architectural 4" recessed linear fixtures provide the freedom to create truly dynamic spaces in a fraction of the time, on 9/16" slot grid and 9/16" or 15/16" flat tee ceilings. The ***Quick***-Line family delivers on its promises by the power of disciplined design.

https://www.amerlux.com/products/interior/linear-systems

National LED Market Observer:

1. **The IES Visionary Challenge: Beyond 2030: What Do You See?** - The IES and the lighting industry expect big news in 2020, but how will we keep that momentum going? For the first time, the IES is holding a white paper challenge. Beyond 2030: What Do You See? imagines what the state of the lighting industry will be in 2030, what our biggest challenges might be during this next decade, and how we should focus our energy in order to continue to move forward as an industry. Selected articles will be published in a limited-edition hardcover book. To Apply: https://www.ies.org/research/opportunities/visionary-challenge/

2. **DOE Announces Request for Information on Lighting Research and Development Opportunities** - The purpose of the RFI is to better understand how lighting research goals can be refined to reflect evolving technology needs and inform related R&D activities. BTO's Lighting R&D Program aims to drive the development of advanced lighting solutions through innovative, early-stage R&D. This research supports BTO's overall goal to improve the energy productivity of buildings without sacrificing occupant comfort or product performance. The program is guided by the Lighting R&D Opportunities (RDO) report, which is updated annually with input gathered from the U.S. lighting science R&D community, the annual DOE Lighting R&D Workshop, and ongoing engagement with lighting researchers. https://eere-exchange.energy.gov/#Foald4a24a80b-5b8f-435c-9c3d-322157fad550

3. **GE Current Changes Name, Restates Revenue** - American Industrial Partners (AIP), the New York private-equity firm that acquired GE's smart lighting operations earlier this year has quietly changed the company's name while also shaving 6% off the revenue description. The change came over the last several weeks, with AIP re-dubbing the group "GE Current, a Daintree company," (a moniker that shorthand can now easily recast as "GE Current". The continuing use of "GE" was not a surprise, as AIP clearly thinks there is still plenty of cachet in the GE brand, which AIP has licensed. Daintree is certainly at the core of one of Current's two main missions, which is to digitally connect lighting and other building operations in order to operate them more efficiently and gain data and insights from them. https://www.ledsmagazine.com/

4. **Leviton Acquires Canada-Based Viscor** - Leviton today announced the acquisition of Viscor, Canada's largest independent lighting manufacturer, which specializes in lighting for architectural, commercial, medical, institutional and industrial applications. This latest acquisition reiterates Leviton's commitment to strategically expand its lighting and controls product offering. Established in 1952, Viscor is a family-owned and customer focused company that is committed to manufacturing LED lighting products. With more than 150 product families, 300 employees and a state-of-the-art, 200,000 square-foot facility, Viscor brings tremendous expertise, innovation and passion to the Leviton team. KPMG represented Viscor in the sale, which officially closed on November 1, 2019. https://www.leviton.com/en/company/news-events/press-releases/viscor

5. **WHITE PAPER - Measuring Color Uniformity by Luger Research** - The color uniformity of light generated by LED luminaires plays a major role in many lighting applications. This makes it an important parameter to measure in both the R&D stage and during the quality assurance process. MKS Instruments has stayed abreast of this challenge by developing a new feature for its FluxGage photometrical system: the color uniformity measurement function. It allows quick evaluation of optical assemblies for color mixing and beam shaping. This whitepaper presents this novel feature of the system. https://www.led-professional.com/resources-1/white-papers/WHITE_PAPER_Measuring_Color_Uniformity

6. **Bipartisan Legislation to Reintroduce Energy-Efficient Incentives** - At the end of 2017, two energy-efficient tax incentives expired. Section 25C and section 45L of the tax code. The Home Energy Savings Act would reinstate and extend the energy-efficiency tax credit through 2026 and establish higher goals for home upgrades by modernizing the product-specific efficiency standards in section 25C. It would also increase homeowner incentives to make these upgrades by increasing the credit from covering 10–15% of the cost. The New Home Energy Efficiency Act would reinstate and extend the new home energy-efficiency tax credit in section 45L through 2022. It would establish higher goals for new homes by modernizing the efficiency standards and increasing homebuilders' incentives by expanding the credit from $2,000 to $2,500. Given the bipartisan nature of both of these pieces of legislation, and the mood nationwide for energy efficiency, experts predict that both bills are likely to pass in the House and Senate. https://www.ecmag.com/section/green-building/bipartisan-legislation-reintroduce-energy-efficient-incentives

7. **Environmental Groups in the US Sue the Government over Light Bulb Standard Rollback** - Environmental Groups in the U.S. filed a lawsuit against the U.S. DOE for challenging the recent rollback of energy-saving light bulb standard. In September 2019, the Trump's administration withdrew the Obama's decision in 2017 which added additional light bulb types to the lighting efficiency standard. By doing so, it is analyzed by American Council for an Energy-Efficient Economy (ACEEE) that the U.S. consumer will spend US$ 15 billion on electricity annually and the environmental impact will be intensified with more carbon emission. The Non-Governmental Organizations (NGO) lawsuits contend the Trump administration's DOE acted illegally in reversing its 2-year-old rules expanding the types of bulbs required to become more energy efficient as of Jan. 1, 2020, under a law passed by Congress in 2007. https://www.ledinside.com/

8. **Wage Growth in Construction Outpacing National Average** - For all industries, annual wage growth in October was 2.1%, unchanged from a month earlier, according to Glassdoor. However, annual wages for construction workers rose the most of any profession tracked by the jobsite provider, increasing 6.1% year-over-year to a median pay of $42,942. Electricians are really feeling the increase. In Portland, Oregon, for example, the base wage for journey-level inside electricians is up by more than 5% since 2018. Pretty much anyone who wants to work is working, added Bridget Quinn, the center's workforce development coordinator. https://www.ecmag.com/section/your-business/wage-growth-construction-outpacing-national-average

9. **Midstream Rebates by Craig DiLouie** - In 2018, LED rebates began to level out after years of declining amounts in line with declining product costs. According to BriteSwitch, an environmental consultant, LED rebates are increasing, with the majority of growth stemming from higher LED luminaire rebates. Meanwhile, a number of utilities have begun offering rebates for networked lighting controls, with the majority offering an amount per luminaire connected to the control system. Another emerging trend is midstream rebates. Typically, rebates are paid by the utility directly to the purchaser (downstream), with a lengthy process of qualification, approval and payment. With a midstream or instant rebate, the customer receives the benefit directly from a distributor. In a typical program, at the end of the month, the distributor reports sales to the rebate provider and receives its own payment. For the electrical contractor, allying with a distributor participating in a midstream rebate program means being able to purchase or recommend energy-efficient lighting at a resulting cost discounted by a built-in rebate. https://www.ecmag.com/section/lighting/midstream-rebates

10. **ASE LIGHTING SAVINGS REPORT** - Limitations of state efficiency policies routinely result in understated energy savings potential of lighting systems, and particularly advanced lighting control technologies, inadvertently leaving substantial savings on the table. Efficiency programs that capitalize on system-level lighting efficiency measures – combining lighting technology upgrades with networked lighting controls – could see an additional 22 percent lifetime energy savings on average. These are findings from a new report, Commercial & Industrial Lighting Lifetime and Peak Demand Savings Analysis published jointly by the Alliance (funded by GE Current, a Daintree company) and the DesignLights Consortium (DLC). The report, prepared by Energy Futures Group as a component of the Alliance's Systems Efficiency Resource Hub project, additionally provides a first-of-its-kind compilation of estimates related to peak demand impacts possible through such a systems approach, noting that peak savings available for targeting from commercial and industrial lighting technologies by 2035 could be over 37,000 megawatts. https://ase.org/lighting-savings-report

11. **AEE Currently Scheduled U.S. Live Training Programs in 2020** - The Certified Energy Manager (CEM®) accreditation is one of the most globally respected in the field of energy management. Since 1985, professionals from over 100 countries have participated in AEE's approved CEM training programs. The Certified Energy Manager is an individual who optimizes the energy performance of a facility, building, or industrial plant. The CEM is a systems integrator for electrical, mechanical, process, and building infrastructure, analyzing the optimum solutions to reduce energy consumption in a cost-effective approach. CEM's are often team leaders and help to develop and implement their organizations' energy management strategies. CEM's have gained increased recognition within the energy industry and by companies looking to strengthen their competitive position by having responsible energy strategy and operational practices. https://education.aeecenter.org/pages/program-schedule

12. **LRC Announces New Webinar Series** - The Lighting Research Center (LRC) at Rensselaer Polytechnic Institute is presenting a series of monthly webinars on a variety of leading-edge topics in lighting. The live, one-hour webinars will include information on the latest research in lighting and will be interactive to allow participants to ask questions of LRC researchers about each of the topics presented. The webinars will be held from 1:00 to 2:00 PM Eastern Time from January to May 2020.

- Lighting Controls: What works? Lessons from the Field
- Light and Health: Cutting through the Noise
- Outdoor Lighting: Making Uniformity a Priority for
- Lighting: Red, White, and Blue
- UV: Beyond Red, White, and Blue

Register today by calling (518) 276-7100 or download the registration form

13. **Apple Granted a Patent for In-Vehicle Lighting System** - Last week the U.S. Patent and Trademark Office published 59 patents of Apple including one patent named "Lighting Systems of Vehicle Seats," which is believed to be part of Apple's autonomous vehicle project "Project Titan," according to the report of Patently Apple. Apple's new patent of vehicle lighting systems noted that the lighting system can be integrated into a seat, door panel, dashboard, or other interior portions of a vehicle. These interior parts of car would be illuminated with the light systems for providing icons, text, and other information. https://www.ledinside.com/news/2019/11/apple_patent_interior_lighting

14. **LIGHTFAIR™ International (LFI) 2020** - Trade Show: May 5-7, 2020; Conference: May 3-7, 2020; Las Vegas, NV: Las Vegas Convention Center. New programming and amenities plus a reimagined trade show layout and streamlined conference will invigorate the 31st staging of the world's largest annual architectural and commercial lighting trade show and conference.

15. **LightFair to be Staged During New York Design Week in 2021** – The annual architectural and commercial lighting tradeshow and conference will be located at the Jacob K. Javits Convention Center. The location places it alongside international high-end and contemporary furnishings tradeshow ICFF for its five-day conference and three-day tradeshow. https://www.lightfair.com/press/lightfair-new-york

16. **Businesses Across the US Can Get Rebates for Installing LED Lighting** - LED lighting can save a lot of energy but also qualify for valuable rebates. The problem is they can be hard to find and a pain to get. Rebates and incentives can be from the power company, municipality, state, a non-profit organization or the electric grid. Right now, 75% of the country is covered by an active commercial lighting rebate program. BriteSwitch specializes in helping businesses find all rebates and incentives for LED lighting. https://briteswitch.com/about.php

17. **ASHRAE Releases 2019 Energy Standard** - ANSI/ASHRAE/IES Standard 90.1-2019 Energy Standard for Buildings Except Low-Rise Residential Buildings is now available. The new standard contains more than 100 changes from the 2016 version, including numerous energy-saving measures. Some significant changes at: https://www.techstreet.com/ashrae/standards/ashrae-90-1-2019-i-p?gateway_code=ashrae&product_id=2088527

18. **Shining a Light On Li-Fi: Could It Work in The Data Center? by David McCall** - Given the amount of data handled within the walls of the average data center facility, it's not a surprise that many in the industry can get a bit obsessed with the subject of data — how much is being generated, how it's transmitted, how secure it is, etc. Anytime there is innovation that has the potential to change the way the world consumes data, data center vendors, partners, and customers must take note and determine its ultimate impact on the industry — positive or negative. Such is the case with 5G wireless, high-fiber count undersea systems or any next-generation technology that's designed to handle the unceasing flow of data in today's world. Upon that innovation stage steps Li-Fi — and it has a chance to be the next step in the natural evolution of wireless internet technology — at least indoors. https://facilityexecutive.com/2019/11/shining-a-light-on-li-fi-could-it-work-in-the-data-center/

19. **Connecting End-To-End Systems In Buildings Through Smart Lighting by Trevor Palmer** - Lighting has evolved enabling us to see beyond the dark for a greater purpose. It is more than the bulbs or fixtures select for buildings based on budget or aesthetics. When paired with controls, smart lighting technologies are gaining a larger role than illumination in many industries including healthcare, office, education, aviation, retail and even residential. Today, lighting with smart light technologies are changing the way we manage facilities; it is impacting our routines, helping us to conserve energy and be more productive. When lighting is connected, its possibilities are vast through the digitally connected end-to-end system. An end-to-end system starts with local networked solutions and can expand to system-wide, unified building automation solutions. https://www.buildings.com/news/industry-news/articleid/22137/title/connecting-building-systems-smart-lighting

20. **T-Mobile Park, Home of the Seattle Mariners, Becomes a Bright Spot in the City Skyline** - Signify's Connected LED Lighting, a colorful architectural LED lighting will allow the ballpark to enhance the experience of every fan and visitor as well as showcase it as a beautiful landmark within the city skyline all year round. The lighting system includes more than one mile of high-quality and energy-efficient Color Kinetics iColor Accent Compact fixtures. These exterior, linear LED luminaires shine long ribbons of white or colored light, and support intricate, color-changing effects. With remote control management of the connected lighting, T-Mobile Park can easily showcase Mariners blue and northwest green, T-Mobile's signature magenta and other vivid hues. It can also produce custom light shows using animated image effects and geometric patterns, suitable for all types of events. Additional details: available in the press release here.

21. **The 2019 IES Progress Report Is Here** - The Progress Committee's mission is to keep in touch with developments in the art and science of lighting throughout the world and prepare a yearly report of achievements for the Society. Acceptance is based on an impartial judging process used by the committee to evaluate each submission on its uniqueness, innovation and significance to the lighting industry. There were 129 submittals in 2019; 72 were accepted into the report. Download the 2019 Progress Report [PDF 940KB]

Global LED Market Observer:

22. **Lux Awards 2019: Winners Announced** - The best lighting products, projects and companies leading innovation were recognised at the 2019 Lux Awards in London last night. The Awards were presented in front of senior lighting professionals, specifiers and major clients at a gala event at the London Hilton Park Lane on the final night of the LuxLive 2019 exhibition. From over 200 nominations, the judges drew up the initial shortlists, tested products and visited projects the length and breadth of the UK to see them in action for themselves. Check them out at: https://luxreview.com/article/2019/11/lux-awards-2019-winners-announced-

23. **Seoul Semiconductor's SunLike LEDs Adopted for LED Light Bulbs of Human-Centric Lighting Design** - The SunLike Series LEDs (REMEZ) adopted by RemiLicht GmbH for LED light bulb used for residential lighting and desk lamp achieved color temperatures of warm white (3000K) and cold white (5700K), optimized to natural light spectra by reaching lower blue light peak similar to sunlight's spectral curve in order to reduce scattered reflection and glare common in conventional LEDs. Seoul's SunLike Series natural spectrum LEDs have been identified as a key light source for promoting human well-being, based on a recent sleep study conducted by a research team at the University of Basel in Switzerland. https://www.ledinside.com/news/2019/11/seoul_semiconductor_sunlike_leds_remes

24. **Ruggedized Laptop Maker Set to Embed Li-Fi Chips** - Taiwan's Getac is working with pureLiFi and looks likely to do away with dongles in transmitting information via lightwaves. One of the main things holding back Li-Fi from general adoption is the absence of any end user devices that embed the technology, which currently requires attaching a dongle to a laptop, tablet, or other personal electronics. Now, Scottish pioneer pureLiFi has taken a step toward resolving that issue. The Edinburgh company said that Taiwan's ruggedized laptop and tablet maker Getac is considering embedding pureLiFi chips into products that Getac makes for harsh physical settings including military and workplaces where gadgets can take a beating. General acceptance by device makers in the consumer market probably won't happen until a standards battle settles down. https://www.ledsmagazine.com/

25. **LED Light Replacement Saves Energy and Helps to Slow Down Climate Change** - CEO of Signify spoke on this year's Climate Week in New York calling for action against climate change and underlined that switching conventional lighting into connected LEDs is part of the solutions. Lighting makes up 13% of global electricity consumption and 5% of global greenhouse gas emissions. Phasing out energy inefficient lighting like the incandescent light bulbs and halogen lamps and switching to energy-efficient LEDs can have significant environmental benefits. By 2030, the global tally of light points will have increased to 60 billion. Simply replacing inefficient conventional lighting with LEDs would reduce energy consumption by a remarkable 53% and making the system intelligent could further improve savings up to 80%. https://www.ledinside.com/

26. **Osram Hopes Bluetooth Enlivens Wireless, as Lightelligence Comes Under Review** - Osram hopes that the recent addition of Bluetooth to its product portfolio will spark what has been lagging interest in its wireless lighting controls in Europe, a development that has fueled questions regarding the future of the company's broader Internet of Things (IoT) scheme, Lightelligence. What was not clear at the time was how Bluetooth would fit into the mix at Osram, which has for some time been offering wireless lighting controls using Zigbee, a wireless technology that has been around longer than Bluetooth. Osram is not abandoning Zigbee. In fact, with its gateway, Zigbee can be a better fit with wireless systems. Whether or not ams completes the acquisition, LEDs has learned that the status of Lightelligence is under internal review, and that Osram could restructure its approach to IoT. https://www.ledsmagazine.com/

27. **AMS Launches New Osram Bid** - AMS launched a renewed $5 billion takeover bid for Osram on Thursday, hoping its latest offer would convince investors with a lower acceptance rate and concessions to the German lighting group's management and trade unions. The Austrian sensor maker failed with a first offer at the same price of 41 euros ($45.38) per Osram share last month, a setback for Chief Executive Alexander Everke's plan to form a European leader for integrated sensor and lighting solutions. AMS collected 51.6% of shares, including its own nearly 20% stake, short of the required 62.5%. Some investors had hoped for a higher offer from private equity groups Bain Capital and Advent, which they had signaled but then refrained from after AMS's miss. After the finance duo's exit, Everke continued to negotiate with Osram management and labor representatives to overcome their opposition. They had voiced doubts regarding the ability of AMS with 8,500 staff to integrate Osram's more than 24,000 employees. https://de.reuters.com/article/us-osram-licht-m-a-ams-idUKKBN1XH0QA

28. **Osram Partners Silvair to Integrate Bluetooth Technology with Lighting Control** - Osram's HubSense® is designed to enable easy and time-efficient retrofitting of existing lighting installations into flexible wireless control systems based on the globally interoperable Bluetooth mesh standard. The system also allows quick and effortless modification of settings and lighting arrangement without bearing the costs of recommissioning. With Silvair as its Technology Partner, OSRAM gains access to the company's wireless know-how and unmatched Bluetooth mesh expertise. https://www.ledinside.com/news/2019/11/osram_silvair_bluetooth_lighting_control

29. **pureLiFi Raises US$18M in Series B to Bring LiFi to Mass Market** - Scottish LiFi company pureLiFi announced that it has completed a US$18 million in its Series B fundraise. The funding round includes Temasek, an investment company headquartered in Singapore, and the Scottish Investment Bank. The investment will allow the company to further develop Gigabit LiFi components and make them available in form factors ready for mobile device integration. LiFi enables the transfer of the internet through light without the use of radio frequencies used by other technologies such as Wi-Fi and Cellular. By using the light, spectrum LiFi can unleash faster, more reliable and more secure wireless data communication. https://www.ledinside.com/news/2019/11/purelifi_fundraise_lifi

30. **After Airplane, Signify's Trulifi will be Available on Buses** - Signify has been proactively expanding its LiFi services via cooperation with partners in different fields to provide reliable, secure and fast connectivity everywhere. The company announced a pilot project with Ellamp Spa, an Italian designer and manufacturer of interior systems and components for public and private transport by road and rail, to provide Trulifi systems to buses. The move follows a recent similar announcement with Latécoère to provide Trulifi for passenger aircraft. Signify launched its Trulifi systems earlier this year and has installed more than 100 projects worldwide, showing a growing demand for the technology in offices, the hospitality sector, government institutions and industry. https://www.ledinside.com/news/2019/11/after_airplane_signify_trulifi_on_buses

31. **Office Lighting Should Be CRI 90, Says Signify** - The company says a move to the higher metric would support the trend to put health and well-being in the workplace at the top of the agenda and tie in the increasingly widely-adopted WELL Building Standard. The company has upgraded all luminaires in its European specification portfolio for office applications from CRI 80 to CRI 90. It emphasises that this transformation will not entail any significant loss of efficiency and lumen output will not be compromised. This step-up in Colour Rendering Index will more accurately render object colours – displaying them even more precisely – compared to the standard CRI 80 products. https://luxreview.com/article/2019/11/office-lighting-should-be-cri-90-says-signify

32. **Outdoor Lighting Standards Illuminate the Road to Smart Cities** - Enhancing community safety, accelerating progress toward sustainability goals, and delivering predictable return on investment (ROI) are the key drivers behind the rapid adoption of LED-based solid-state lighting (SSL) systems. Cities from Chicago to Copenhagen to Christchurch are showcasing a variety of social, environmental, and economic benefits realized from upgrading their outdoor lighting networks to intelligent street lights that enable remote connectivity and control by municipalities and consumers (Fig. 1). Although the benefits of LED lighting are myriad, the true power of these systems lies in the underlying technology standards that enable transformation beyond the light, with smarter, digitally-connected services. https://www.ledsmagazine.com/

Monthly Feature:

Smart Home Statistics & Predictions by Kimberly Alt - From appliances to lighting to speakers, everything connects to the internet, and there's no stopping the Internet of Things (IoT). Smart home equipment is becoming more affordable and less avoidable on the market as a result. Everything from our dishwasher to our cars will be "on the grid," i.e., connected to the internet (and many devices and appliances already are).

A smart home product is anything that makes your home, i.e., your appliances, etc. smarter. Usually, this involves connecting them to the cloud or some software component that lets them function on their own or based on a pattern or intelligence algorithm.

Home automation is something that smart homes can do. It involves the automation of appliances and gadgets that you otherwise would have had to operate manually. For example – setting light switches on a schedule to turn off at sunrise and on at sunset is an example of a home automation feature that makes your home smart.

STATISTICS:

- 43% of smart home technology users are between 18 and 34 years old.
- The average monthly savings from using smart home products is $98.30, which adds up to an average of $1,179.60 each year.
- 81% of smart home users said they would be more apt to purchase a home that has connected technology.
- The U.S. is the largest consumer of smart home technology with a market volume of $23.5 billion in 2019, followed by China with $12.9 billion and Japan with $4.19 billion.
- Revenue in the smart home market increased 15.4% from 2018, totaling US $23.5 billion in 2019.
- The most popular products in 2019 are video entertainment (43%), followed by smart speakers (17.3%) and home monitoring and security (16.8%). Lighting and thermostat were lower on the list with 6.8% and 2.3% respectively.
- In 2017, 80% of broadband households with 10 or more smart home devices have professionally monitored security.
- In 2017, 66% of broadband households have interactive services attached to their security system.

PREDICTIONS:

- Overall the smart home market is expected to grow from $76.6 billion in 2018 to $151.4 billion by 2024, at a CAGR of 12%.
- Predictions suggest there will be 70.6 million smart home households by 2023 (nearly double from 34.8 million in 2018).
- Household penetration of smart homes is 33.2% in 2019 and is expected to hit 53.9% by 2023.
- By 2020, more than 152 million cars will connect to the internet compared to 23 million in 2014.
- An approximate 100 million light bulbs will connect to the internet by 2020, which is up from 2.4 million in 2013.
- In 2013 the smart home automation market was valued at 4.4 billion dollars and was estimated to be valued at 21 billion dollars in 2020.
- 2020 estimates state the internet of things will generate revenue exceeding $300 billion.

https://www.safesmartliving.com/smart-home/statistics-and-predictions/