ENERGY OBSERVER
A MONTHLY NEWSLETTER FROM AMERLUX®

SEP 2019

Retail

Like you, we don't measure retail success in lumens, but in sales.

Retail is about drama. It's about what the eye sees and translates to purchases. It's about a pulse that quickens when eyes see merchandise lit in brilliant colors and crisp whites. It's about emotional and physical responses to controlled, correctly lit displays. Amerlux® retail lighting speaks to these goals as we pursue ever-smaller, more powerful, better-performing in-store LEDs.

Our Hornet® and Cylindrix® families are among our flagship retail lines. For a complete listing of our products for Retail application: https://www.amerlux.com/products?f=22

LED Energy Market Observer:

1. **LEDs Escape +10% Tariffs Until Dec. 15** - In an Aug. 13 announcement, the United States Trade Representative (USTR) delayed the 10% tariffs on LEDs imported from China until Dec. 15, 2019. Many lighting execs had expected that LED lamps would be on the list of products slated for tariffs on Sept. 1 on the USTR List 4A. https://www.electricalmarketing.com/

2. **Administration's Newest 10% Tariff Will Affect Bulbs & Ballasts** - The Administration announced a new 10% tariff on $300B in goods manufactured in China, which will take effect Sept. 1, 2019. Michael Weems, VP, Government Engagement for the American Lighting Association sent a message yesterday that the tariffs will be on List 4, which includes ceiling fans and finished LED goods. Weems also states, "Lighting fixtures and traditional lamps, which have already been impacted by the 25% will not be further impacted. But the products on the 4th list, which includes incandescent lamps and LED lamps will now be hit with 10% tariffs." See List 4 at: https://edisonreport.com/american-lighting-association-administrations-newest-10-tariff-will-affect-bulbs/

3. **CNET: Best Smart Lights of 2019: Bulbs, Light Strips, Switches, Panels and More** - From color-changing bulbs to motion-sensing switches, smart lighting is everywhere these days. It's become a key entry point into the connected home, and as a result, you've got more options than ever. Even better: the uptick in competition means that you've got plenty of options that are easy to afford, too. All of those options mean that you've got a lot of products to sort through once you're ready to make the upgrade -- and that's where we come in. Whether it's bulbs, wall panels, switches, light strips or accessories that you're after, here are all of our top smart lighting picks after years spent testing the things out. Check it out: https://www.cnet.com/news/best-smart-lights-of-2019-bulbs-switches-colors-light-strips-panels-and-more/

4. **LIGHTFAIR Announces Call for Speakers** - LIGHTFAIR has issued a Call for Speakers for the 2020 event, which will be held May 3-7, 2020 at the Las Vegas Convention Center. The submission deadline is September 9, 2019 at 11:59 PM EST. LIGHTFAIR International 2020 offers a collaborative platform where experts demonstrate their unique perspective to instill best practices and inspire. As the world's largest annual lighting-related conference, LIGHTFAIR provides you the opportunity to directly engage with invested individuals representing multiple disciplines and varying experience levels. Share your expertise in design, process, application and technology to provide attendees with skills and knowledge that elevate current and future generations of professionals. Your speaking engagement will help to cultivate the collective body of knowledge that we rely on to be relevant in an ever-changing and technical field. https://www.lightfair.com/call-for-speakers

5. **LEDucation 2020 Announces Call for Speakers** - LEDucation 2020, the trade show and conference organized by the Designers Lighting Forum of New York (DLFNY), is accepting submissions for presentation proposals to be given during the 2020 conference taking place March 17–18, 2020, at the New York Hilton Midtown in New York City. Proposals will be accepted through the online submission portal. All submissions must be received by October 15, 2019 at 11:59 p.m. EST. https://leducationcfp2020.hubb.me/

6. **DesignLights Consortium Seeks Comments on Updates to Horticultural Lighting Technical Requirements** - The DesignLights Consortium (DLC) today released for comment several draft changes to its performance specification for horticultural lighting products, an industry benchmark designed to boost efficiency and reduce electricity consumption in the expanding and energy-intensive indoor/vertical horticulture and cannabis cultivation markets. Importantly, the proposed changes would include a previously ineligible segment of the grow-light market, increasing the quantity and variety of products on the DLC's Horticultural Qualified Products List (QPL). The DLC today proposed updates to three aspects of the specification. The changes would take effect on Oct. 15, following consideration of stakeholder input gathered during a 35-day comment period that runs from today through Sept. 3, 2019. The DLC will host a webinar at 1 p.m. EDT on Aug. 6 to review the proposed changes. https://www.designlights.org/workplan/horticultural-lighting-V1-2/

7. **Current Places Bets on Cannabis Lighting in Distribution Deal** - With high hopes for the cannabis market, GE's former lighting company Current has struck a distribution deal with Hort Americas to sell Current's latest LED grow light. Now the distribution deal with Fort Worth, TX-based Hort Americas marks the light's commercial arrival in North America, "including the booming regulated cannabis growing industry," Current pointed out in a press release announcing the partnership. Hort Americas is Current's exclusive North American distributor and is encouraged by the marijuana prospects for LED technology, which it says yields plants with higher THC and CBD (tetrahydrocannabinol and cannabidiol — the active chemicals in the cannabis plants) than do HPS lamps. THC is generally associated with inducing intoxicating or euphoric effects and CBD more with pain relief; however, both compounds are being utilized to varying degrees in legalized medical operations. https://www.ledsmagazine.com/

8. **Osram Invests in Driverless Car AI Company** - As Bain and Carlyle try to complete their takeover, Osram itself continues reshaping itself as a high-tech outfit, taking a venture stake in Silicon Valley startup Recogni. The company's Fluxunit venture capital arm joined with other firms to place a combined $25 million round of Series A funding in Recogni, a San Jose, CA-based startup with operations in Osram's home city of Munich. Recogni describes itself as "designers of a vision-oriented artificial intelligence platform for autonomous vehicles." Its mission includes helping to process data collected from optical and other sensors to help vehicles makes decisions in real time. Such artificial intelligence today requires energy-intensive processing that has "hit the efficiency wall," Recogni claims, noting that is own focus is "on creating high-performance and low-power AI processing to help make autonomous vehicles a reality." https://www.ledsmagazine.com/

9. **New Property of Light Discovered** - A team of researchers affiliated with several institutions in Spain and the U.S. has announced that they have discovered a new property of light—self-torque. In their paper published in the journal Science, the group describes how they happened to spot the new property and possible uses for it. Scientists have long known about such properties of light as wavelength. More recently, researchers have found that light can also be twisted, a property called angular momentum. Beams with highly structured angular momentum are said to have orbital angular momentum (OAM), and are called vortex beams. They appear as a helix surrounding a common center, and when they strike a flat surface, they appear as doughnut-shaped. In this new effort, the researchers were working with OAM beams when they found the light behaving in a way that had never been seen before. https://phys.org/news/2019-06-property.html

10. **Defending the Light: Cybersecurity for Lighting and the IoT by Craig DiLouie** - Networked lighting controls connect luminaires in a programmable system to offer exciting and robust capabilities. Connected lighting packages of luminaires and controls are increasingly touted as "internet of things (IoT) ready," which means they have connectivity, intelligence, sensors and bidirectional data communication. A networked lighting control system is a communications network between devices that are becoming more intelligent as they are increasingly built around microprocessors. As such, it is vulnerable to the same hackers who attack corporate networks. As a result, cybersecurity is emerging as a significant issue for the IoT and connected building systems such as networked lighting. https://www.ecmag.com/section/integrated-systems/defending-light-cybersecurity-lighting-and-iot

11. **Building Your Business with Smart Lighting Control by Tom Perich, Director of Marketing, Lutron Electronics** - Five years ago, the concept of a smart home may not have been on the minds of most consumers. But that's changed. According to the Consumer Technology Association (CTA), consumers are expected to spend $4.6 billion on smart home products and technologies in 2019. In fact, Mordor Intelligence projects nearly 30 million U.S. households will add smart home technology in the near future. Smart lighting is an obvious starting place because one, lights are arguably the most used thing in your home and two, peace of mind tops the list of smart lighting benefits. Smart light bulbs, dimmers and inter-connected group of dimmers and switches are the core of most smart lighting installations. Some brief definitions of each at: https://www.ewweb.com/lighting/building-your-business-smart-lighting-control

12. **Testing and Reporting Requirements for DC and PoE Lamps, Luminaires, and Retrofit Kits** - Products powered by Direct Current (DC) and Power over Ethernet (PoE) must comply with the provisions of this document to be eligible for listing on the DLC Solid-State Lighting Qualified Products List (SSL QPL). DC/PoE products are defined as SSL lamps, luminaires, and retrofit kits that are powered by a DC voltage. DC and PoE systems have the potential to reduce electrical losses from AC to DC conversions, integrate directly with DC generation sources such as solar and batteries, reduce installation costs, and connect more readily to IT infrastructure for advanced lighting control. These Requirements for DC and PoE Products enable high quality DC and PoE lighting products to be qualified and listed on the DLC SSL QPL. https://www.designlights.org/solid-state-lighting/testing-reporting-requirements/dc-poe-products/

13. **San Diego Smart LED Street Lights Help Police, Garner ACLU Interest** - the smart LED street light project ongoing in San Diego has likely now stretched to 4000 poles. The lights are networked using a relatively lower-speed scheme for on/off and dimming controls, but the city also mounts a smart network node from Current, powered by GE on the poles. That smart node includes a 360° camera and connects to a central management system via a higher-speed 4G cellular network. The city installed the cameras primarily to monitor pedestrian and vehicular traffic, enforce parking regulations, monitor the environment, and more. Form the start, however, some privacy advocates have been concerned about how the cameras might be used. The capability has been vital for the police in solving a number of crimes and, in some cases, clearing the accused of wrongdoing. The ACLU is suggesting that the system needs procedures in place for oversight and accountability. https://www.ledsmagazine.com/

14. **DOE Launches Next Phase of Connected Indoor Lighting Tests** - The U.S. Department of Energy's Next Generation Lighting Systems (NGLS) program, managed by the Office of Energy Efficiency and Renewable Energy, is launching the next phase of evaluations of indoor connected lighting systems. The initial phase, which began in 2017, evaluated 12 systems installed in working classrooms at New York City's Parsons School of Design, The New School. The new phase will include the upgrade of the existing systems, as well as the addition of new systems that are also marketed as easy to install and configure and consist of LED luminaires with integral, luminaire-level sensors and controls. The systems will be evaluated over a two-year period for installation, configuration, control operation, lighting quality, energy savings, and user satisfaction. Connected lighting has the potential to improve lighting control, saving 30–40% of lighting energy use in buildings through dimming, occupancy sensing, and other optimization functions. http://lightedmag.com/doe-launches-next-phase-of-connected-indoor-lighting-tests/

15. **DOE LED Driver Tests Validate Improving Reliability and Testing Methodology** - The US DOE has tested LED drivers in a stressed environment for as long as 7500 hours; and while there have been failures, the accelerated stress testing is said by the researchers to demonstrate improving driver reliability in the SSL sector. The US Department of Energy (DOE) has released its third report on LED driver reliability based on long-running accelerated life testing. The agency's solid-state lighting (SSL) researchers believe the latest results both validate the accelerated stress testing (AST) methodology and show the drivers tested to be relatively robust to the adverse conditions. Moreover, the results and identified causes of failure can inform driver developers on strategies to further improve reliability. https://www.energy.gov/eere/ssl/downloads/accelerated-stress-testing-results-single-channel-and-multichannel-drivers

16. **DOE Evaluates Tunable-White Classroom Lighting** - In May 2019, the Department of Energy (DOE) published a Pacific Northwest National Laboratory (PNNL) report evaluating a trial installation of tunable-white lighting systems at three classrooms in an elementary school in Folsom, California. Using monitoring, the researchers found the new LED lighting generated 46% energy savings compared with the existing fluorescent system at full output, while producing similar light levels. Energy savings increased to 48% to 69% during a typical day based on how teachers used the controls. Teachers valued the ability to dim the lights and change color output via tuning. https://www.energy.gov/

17. **Advanced LED Technology Enables Next Generation Automotive Applications** - Many LED producers have turned their focus to automotive applications for higher profit. The ongoing development of autonomous driving technology and next generation automobile also creates new requirements for automotive lighting as well as automotive displays, leading to new opportunities for LED makers. Exterior lighting becomes even more important for driverless cars, as they need to pass information and communicate with each other as well as remind pedestrians of their movement. Deployment of advanced LED technology enables cars to provide details when they are about to turn or stop. For example, tail lights using Mini LED module can deliver personalized and diversified information. LED manufacturers including Everlight, Lite-On and Lextar have showcased their conceptual Mini LED tail light products at international shows since 2019. https://www.ledinside.com/

18. **Signify Supports LED Lighting System to US-based AppHarvest for Its 25-hectare Greenhouses** - Signify announced its partnership with AppHarvest, a controlled-environment growing facilities builder to help the company increase efficiency and boost yields using fewer resources in their 25 hectare greenhouse in Kentucky, USA. With the partnership, the greenhouse will be fitted with a hybrid LED lighting system, utilizing Signify's Philips GreenPower LED toplighting compact and Agrolux high pressure sodium lighting. AppHarvest will grow tomatoes and cucumbers in its facility, which will be completed in the second half of 2020. The facility uses a unique LED and HPS hybrid lighting system, to significantly reduce energy while increasing yield over the year. https://www.ledinside.com/press/2019/8/signify_supports_led_lighting_system_greenhouses

19. **2019 ENERGY STAR Products Partner Meeting Update** – REGISTRATION EXTENDED TO SEPTEMBER 6 - EPA is pleased to provide you with the following updates for the 2019 ENERGY STAR Products Partner Meeting, which will be held September 10 – 12, in Charlotte, North Carolina. For full meeting details, please visit the 2019 ENERGY STAR Products Partner Meeting webpage.

20. **Addressing the Inevitable by Susan Bloom** - Earlier this month, following unsuccessful negotiations with China, President Trump announced via Twitter that he plans to levy an additional 10% tariff on certain imports from China beginning on September 1, and on others (including many consumer electronics as well as LED fixtures/lighting products and components) on December 15th. With this latest round of tariffs, all imported goods from China, with very few exceptions, will have tariffs levied against them. In retaliation for announcing additional tariffs, the Chinese government further devalued their currency in relation to the U.S. dollar, prompting the U.S. Treasury Department to officially label China as "a currency manipulator." According to Alex Ayers, executive director of the Washington, D.C-based Family Business Coalition, "this escalates our trade war with China to the highest level of tension we've seen so far and it's now far more likely that we'll see this trade dispute continue into 2020, where it will become an election issue." http://lightedmag.com/addressing-the-inevitable/

21. **University of Oregon Publishes Paper on Workplace Light and Views** - The University of Oregon (UO) has published a new white paper, "The Impact of Lighting and Views in the Workplace of the Future." The Impact of Lighting and Views in the Workplace of the Future."* The paper concludes that daylit spaces with controlled lighting and views can improve occupant well-being, workplace productivity, and satisfaction by positively influencing various physiological and psychological processes. Lighting and views also impact property value and employee recruitment and retention. Light and the visual environment impact nearly every facet of an employee's life. Lighting directly influences mood and performance during the day and the quality of sleep at night. As new evidence expands the understanding of how specific characteristics of light and views affect human behavior and health, the emergent consensus is that increased access to light, particularly bright daylight, and views during the day can improve productivity and well-being. Occupant interactions with light and views also significantly influence the user experience within the built environment, impacting interrelated physiological and psychological responses. http://lightedmag.com/university-of-oregon-publishes-paper-on-workplace-light-and-views/

22. **Record Grant for Scientists to Study Light and Health** - The US-based National Institute on Aging is giving $3.8 million to top researcher Dr. Mariana Figueiro, professor and director at the Lighting Research Center (LRC) at Rensselaer Polytechnic Institute in New York state. The institute wants Figueiro to probe if installing so-called 'circadian lighting' for elderly people can improve sleep, perception and memory. It especially wants to see if it helps individuals with mild cognitive impairment, which is a potential early stage of dementia. Dr. Figueiro is among the world's top experts in the area of light and health, with a focus on bridging science to practical applications aimed at improving human quality of life. https://www.lrc.rpi.edu/

23. **Philly to Switch All 100,000 Streetlights to 'Smart' LEDs; Expect Some Debate** -Philadelphia was the first city in America with public streetlights, thanks to Ben Franklin's introduction of the oil candle in colonial times. But the city has been a little slower than others to switch its public streetlights to modern energy-saving LEDs, mostly because the conversion costs are high.That's about to change. The city's Energy Office is preparing to issue a call for vendors who can convert all 100,000 city streetlights to LEDs in two to three years. Converting the city's streetlights to LEDs would cost $50 million to $80 million, said Adam Agalloco, the city's energy manager, who is organizing a formal request for qualifications from potential vendors. The city likely would issue a bond for the project and repay the debt under Pennsylvania's Guaranteed Energy Savings Act, which allows public entities to finance projects with the savings generated over current energy costs. https://www.inquirer.com/business/philadelphia-streetlight-conversion-smart-led-savings-20190822.html

24. **EPA Publishes Revised Luminaires Specification for Energy Star Compliance** - The US Environmental Protection Agency (EPA) has finalized Version 2.2 (V2.2) of the Energy Star Luminaires specification. Energy Star compliance gates many incentive and rebate programs and was one of the earliest market-transformation programs for LED-based lighting, although its future remains in question under the Trump administration. Still, V2.2 expands the scope of solid-state lighting (SSL) products covered by the specification and adds a new acceptable method of measurement for ANSI/IES (American National Standards Institute/Illuminating Engineering Society) LM-79-19. The changes in V2.2 are minor, although they do add a number of product types to the scope of Energy Star coverage. https://www.ledsmagazine.com/

25. **Cree Announces Fiscal 4Q19 and 2019 Financial Results with Increasing Wolfspeed Business** - For fiscal 4Q19 which ends on June 30, 2019, Cree registered a revenue of US$251.2 million for its fourth quarter of fiscal 2019, down by 5% YoY and 8% QoQ. GAAP net loss from continuing operations for the fourth quarter was US$34.6 million, or US$0.33 per diluted share. On a non-GAAP basis, net income from continuing operations for the fourth quarter of fiscal 2019 was US$11.5 million, or US$0.11 per diluted share, compared to non-GAAP net income from continuing operations for the fourth quarter of fiscal 2018 of US$14.5 million, or US$0.14 per diluted share. For fiscal year 2019, Cree reported revenue of US$1.1 billion, which represents a 17% increase when compared to revenue of US$0.9 billion for fiscal 2018. On a non-GAAP basis, net income from continuing operations for fiscal year 2019 was US$76.9 million, or US$0.74 per diluted share, compared to US$36.9 million, or US$0.37 per diluted share, for fiscal 2018. https://www.ledinside.com/

Global LED Market Observer:

26. **2018 Rankings for Global Automotive LED Package Suppliers** - According to the newly released 2019 Global Automotive LED Market Report- Passenger Car and Box Truck report by LEDinside, a division of TrendForce, the global automotive market has been showing declines since 2018 amid global trade frictions and economic recessions, and this also caused revenue for automotive LED products to grow at a slow pace. Global automotive LED revenue is forecast to register a CAGR of 7% during the forecast period 2018-2023. Despite the continual decline in car sales, the penetration rates of LEDs in various major automotive lighting products continued to rise. Looking at the automotive LED revenue rankings for major LED package suppliers worldwide, we see no noticeable differences in ranking between 2017 and 2018. https://www.ledinside.com/node/view/30630

Table: 2018 Global Automotive LED Revenue Rankings

Ranking	Supplier
1	OSRAM Opto Semiconductors
2	Nichia
3	Lumileds
4	Stanley
5	Seoul Semiconductor
6	Dominant
7	Samsung
8	Everlight
9	CREE
10	Citizen

Source: TrendForce, Aug., 2019

27. **LED-embedded Bandage Uses Blue Light to Heal Chronic Wounds** - Scientists have demonstrated blue light's antimicrobial and anti-inflammatory effects and they turned it into a flexible bandage to heal wounds. MEDILIGHT, a European research project which aims to develop smart and wearable medical devices, have presented a prototype of the LED embedded light solution for treating chronic wounds. According to MEDILIGHT, blue light illumination can offer much more than just antibacterial effects. The anti-proliferative functionality has been clearly proven, showing that blue light prevents an overshooting epimerization in premature healing stages. The consortium further showed that blue light can efficiently activate key cutaneous cells with another appropriate light dose and thereby accelerate the final wound-healing process. With the prototype of the LED-based smart wearable system, the research team believes that it further paves the way for the potential future commercialization of devices based on light therapy for monitoring wound healing. https://www.ledinside.com/news/2019/8/led_embedded_bandage_uses_blue_light_heal_chronic_wounds

28. **Strategies of Global LED Manufacturers during Challenging Time in the Industry [Part 1]** - LED manufacturers all over the world have suffered from low profit and market uncertainty due to continuous price competition and on-going trade dispute. Besides cutting off lighting business, LEDinside observed the strategies developed by worldwide LED companies under the difficult circumstance to alleviate impacts on their business. Available at: https://www.ledinside.com/news/2019/8/strategies_global_led_manufacturers_challenging_time

29. **Strategies of Global LED Manufacturers during Challenging Time in the Industry [Part 2]** - Facing the difficulties in the industry, global LED companies developed their strategies trying to keep their business prospering. LEDinside analyzed the different approaches of worldwide LED manufacturers. https://www.ledinside.com/news/2019/8/strategies_global_led_manufacturers_part2

30. **New EU Project ELIoT Aims to Commercialize LiFi** - The European Union announced an establishment of a new three-year project, ELIoT (Enhance Lighting for the Internet of Things), which aims to develop mass market Internet of Things (IoT) solutions using LiFi. With LiFi, the ELIoT consortium will explore a networked wireless communication technology operating in the previously unused light spectrum, besides Wi-Fi and cellular radio. LiFi can be used in environments where certain radiofrequencies are not possible or allowed. For outdoor usage, it could offer high bandwidth point-to-point links from rooftops, between streetlights or to consumers' homes for next generation networks. Higher network demands might come from software-controlled production, virtual and augmented reality and autonomous driving where LiFi could prove useful.
https://www.ledinside.com/news/2019/8/new_eu_project_eliot_aims_commercialize_lifi

31. **Dublin's Aviva Stadium Goes LED** - The venue - famous for Six Nations Rugby clashes and international football fixtures – is a venue for Euro 2020 matches, and the new lighting needs to meet the distinctive lighting requirements of UEFA, FIFA, and World Rugby. Musco installed the original lighting system at Aviva when it was built in 2010, which utilised a HID light source. While that system was still performing well, the technology of Musco's system using the LED light source offers a number of key new benefits, including the ability to turn the stadium's lighting on and off instantly, improving match continuity and efficiency. The lighting at Aviva is Musco's same system-based LED technology that's been installed at other venues throughout Europe and around the world, including Tottenham Hotspur Stadium, Emirates Stadium, Manchester Arena, Twickenham Stadium, and Wimbledon's Centre Court. https://luxreview.com/article/2019/08/dublin-s-aviva-stadium-goes-led

32. **London's Illuminated River Project is Now On** - A year since London's Illuminated River project was revealed; first four bridges on the River Thames were lit on at 10pm on July 17th, 2019. The four bridges, London, Cannon Street, Southwark and Millennium, were illuminated with a massive cheer when project leaders pressed the button. Signify, who is the lighting partner of the project, has programmed nearly 2,000 light points to display over 16.9 million different light colors for each bridge It's estimated the artwork on the first four bridges will be seen more than 60 million times each year by Londoners and visitors alike. And that number, like the project itself, will continue to grow. https://www.ledinside.com/lighting/2019/8/london_illuminated_river_project

33. **KKR to Buy Majority of NVC China Lighting Unit for $794 Million** - KKR & Co. said it will pay NVC Lighting Holding Ltd. $794 million for a majority stake in its China lighting business. The companies said in a statement they will set up a strategic partnership for the business. Once completed, KKR will own 70% of NVC China and NVC Lighting will hold the remaining 30%. KKR said the investment is from its flagship Asian Fund III and that it's invested more than $4.5 billion in China since 2007. https://www.bloomberg.com/

34. **Osram Waives Standstill Agreement with AMS** - Osram announced that its Managing Board and Supervisory Board have waived the existing standstill agreement with AMS and signed a cooperation agreement. This clears the way for a voluntary public takeover offer by AMS. The offer, which is expected to be valid until the beginning of October, amounts to EUR 38.50 (US$ 42.70) in cash per share, with a minimum acceptance level of 70 percent. That compares with the 35 euros-a-share from private-equity firms Bain Capital and Carlyle Group. Olaf Berlien, CEO of OSRAM, commented, "Our shareholders now have two offers on the table, allowing them to choose between the different business concepts." https://www.bloomberg.com/

35. **Horticultural Lighting News: Seoul Boosts Lettuce Yield, Lumigrow Adds Products** - Seoul Semiconductor has released the results of a laboratory research project that compared lettuce yields under different solid-state lighting (SSL) spectra and that showed an advantage for its own SunLike LED technology. LumiGrow has announced a new luminaire family called BarLight intended to support cannabis growing operations in a vertical farm configuration. Moreover, LumiGrow is offering new sensors that can offer early detection of plant pathogens in commercial growing operations. https://www.ledsmagazine.com/

36. **Zumtobel Group to Set Up 11,000 LED Streetlights in Mongolia with a Million-euro Contract** - Austria-based lighting group Zumtobel Group announced it has secured a contract with the Mongolian government for installing approximately 11,000 LED streetlights of the Thorn brand in the north of Mongolia's capital. Zumtobel said that the contract is in the low double-digit million euros range. The Mongolian government aims to use light to reduce crime rate and enhance safety of the area on a sustained basis. In addition, the provision of essential infrastructure such as lighting is a key factor for attracting companies and therefore serves the overall economic upswing in the region. https://www.ledinside.com/press/2019/7/zumtobel_group_set_up_led_streetlights_in_mongolia

37. **Telensa Supports Smart Street Lighting System in New Zealand City** - Telensa, the UK-based smart street lighting and smart city solution provider, announced that its smart streetlight system has been selected by Dunedin City Council (DCC) in New Zealand as part of a contract with Broadspectrum to upgrade Dunedin's streetlighting network. There are approximately 15,000 high-pressure sodium streetlights on the Dunedin streetlight network. These lights are reaching the end of their useful life and are being converted by Broadspectrum to LEDs, which will be wirelessly connected and managed by Telensa's PLANet system. https://www.ledinside.com/

38. **Brazil City Saves 50% Electricity Cost with LED Streetlights** - Belo Horizonte, one of Brazil's largest cities, is realizing 50% electricity cost savings by upgrading 182,000 streetlights with new LEDs. The new LED lights also improve the safety of the citizens on the streets of Belo Horizonte. The LED upgrade project is part of Brazil's first major public lighting public-private partnership between Belo Horizonte Iluminaçao Publica (BHIP) and Signify. The project started in 2017 with a survey of all the public light points, providing information of each street and scheduling their timely delivery and installation. Until now, 90% of the installation has been completed. https://www.ledinside.com/press/2019/8/brazil_city_saves_electricity_cost_led_streetlights

Monthly Feature:

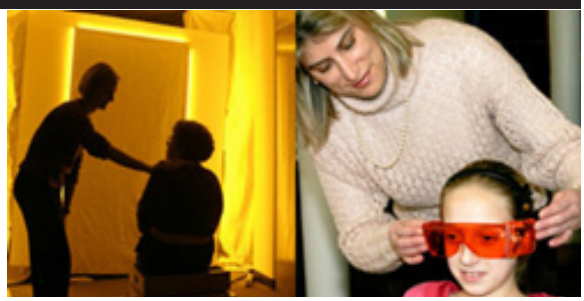
The Light and Health Alliance of the Lighting Research Center (LRC) at Rensselaer -
https://www.lrc.rpi.edu/programs/lightHealth/alliance.asp
Contact: Dr. Mariana G. Figueiro, Light and Health Program Director (518) 687-7100 figuem@rpi.edu

The **Light and Health Alliance** is a collaboration among Members (manufacturers, government organizations and NGOs, codes and standards bodies) and practitioners, including architects, specifiers, medical facility managers and physicians, to enable the broad adoption of lighting for human health by producing factual information grounded in basic and applied research and by visualizing future applications.

LIGHT AND HEALTH ALLIANCE

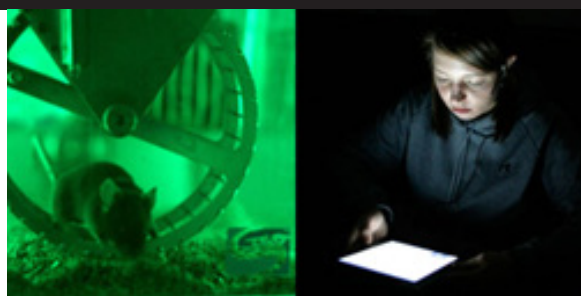
Goals

- Conduct evaluations, demonstrations, and research projects to develop practical devices and applications.
- Institutes to educate key audiences on light and health with a particular emphasis on developing quantitative lighting specifications.
- Presentations at conferences to promote the topic of light and health, and the Light and Health Alliance.



Mission

To bridge the science of light and health to practical applications, and to provide objective information grounded in basic and applied research.



Member Benefits

- Meetings to inform Members of the latest research activities, and discussions that would advance attention to light and health in the public sector.
- Forums to provide an intellectual and physical meeting place — a neutral ground for Members and practitioners to share important insights.
- Influence to shape the research agenda.
- Early presentations of research results.
- Generation of pilot data — an essential requirement for funding from the National Institutes of Health.
- Confidential research sponsored under separate contract and IP agreement.