ENERGY OBSERVER
A MONTHLY NEWSLETTER FROM AMERLUX®

JULY 2021

Wireless, Bluetooth LED Lighting Amerlux - Bluetooth LED Lighting

Seemingly everything can be done on a phone or tablet now—talk, shop, email, play music, check the weather—you name it. With Bluetooth LED lighting, you can control your lights better than ever and turn humble lighting fixtures into the foundation of your Smart Building and Smart City. Office, government, commercial, retail, hospitality and health care industries are transitioning from traditional fluorescent lighting to Bluetooth LED light fixtures, enjoying the new ways they can control their lighting, save on energy costs, optimize their buildings and even monitor towns and communities. This digital transformation includes swapping legacy analog controls with state-of-the-art, scalable digital controls that can be operated via wireless technologies such as Bluetooth connectivity. Bluetooth LED lights are controlled with an app software on a phone, tablet or computer, or via a specifically designed remote control. As the popularity and implementation of Smart Cities and Smart Buildings grows, the demand and adoption of advanced, smart lighting solutions like Bluetooth LED lights will continue to grow from outdoor lamp post to indoor downlight.

Data-driven lighting

Bluetooth LED lighting applications do more than just turn on and off the lights at specific times. They increase the resiliency and adaptability of an entire lighting system. Intelligent, advanced lighting sensors on LED Bluetooth lights connected to a network of devices allow building and city operators to collect important information about their environment via software analytics. The type of data that can be collected includes occupancy, sunlight, temperature, security and traffic, all which shape how the building and community is operated and optimized in real time.

Lower energy and operational costs

Industry and governmental studies show that adopting smart lighting solutions conserves and saves energy and money. LED lights with automated Bluetooth controls also have a substantially longer life span than legacy-controlled fluorescent lights, reducing reoccurring labor and maintenance costs.

Unlimited options

With just a simple push of an app or a set preferred preference, the ways you can control your light are limitless. Instantaneously create stunning, dynamic lighting with full-color LED pixel nodes. Leverage white-tuning sensors for human-centric lighting or photocells for energy-efficient dimming. Increase safety in higher-crime areas. With wireless Bluetooth control, utility-grade power monitoring, continuous status monitoring, intelligent on/off switching and automatic dimming, you have unparalleled speed and control over your light, your building, your design and your surroundings.

National LED Energy Market Observer:

1. **DOE Energy Conservation Program: Backstop Requirement for General Service Lamps** - The U.S. Department of Energy ("DOE") is re-evaluating its prior determination that the Secretary of Energy ("Secretary") was not required to implement the statutory backstop requirement for general service lamps ("GSLs"). Under the Energy Policy and Conservation Act, as amended, if DOE fails to complete a rulemaking in accordance with certain statutory criteria, or if a final rule for GSLs does not produce savings that are greater than or equal to the savings from a minimum efficacy standard of 45 lumens per watt ("lm/W"), the Secretary must prohibit the sale of any GSL that does not meet a minimum efficacy standard of 45 lm/W. This request for information ("RFI") solicits information from the public regarding the availability of lamps that would satisfy a minimum efficacy standard of 45 lm/W, as well other information that may be relevant to a possible implementation of the statutory backstop. Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at https://www.regulations.gov D.O.E. Contemplates a New U.S. Light Bulb Standard (inside.lighting)

2. **Human-Centric Lighting Market Size Exceeded $1 Billion in 2020** - The growing popularity of new lighting innovations and initiatives toward replacing conventional lights is likely to drive industry growth. The human-centric lighting market size exceeded $1 billion (USD) in 2020 and is expected to grow at around 25% compound annual growth rate (CAGR) between 2021 and 2027, according to a study by Global Market Insights. The growing popularity of new lighting innovations and initiatives toward replacing conventional lights is likely to drive industry growth. Human-centric lighting refers to lighting solutions designed specifically to produce a beneficial psychological and/or physiological effect upon humans. It supports human health, well-being, and performance through deterministic and holistic planning and implementation of the visual, emotional and, in particular, biological effects of light. Human-Centric Lighting Market Size Exceeded $1 Billion in 2020 | EC&M (ecmweb.com)

3. **Audi Goes with OLED Taillights on Electric Concept Car** - Benefits include aerodynamics and thus improved mileage range, the automaker says, as it confirms Rochester's OLEDWorks as a supplier on future models. The A6 e-tron being electric, Audi also singled out another advantage provided by the OLEDs, known to be thinner than LED lighting units which are common on cars today. That thinness translates into a more aerodynamic design, which in turn plays into the overall aerodynamic design of the car as a whole, aimed not just at aesthetics but also at motor efficiency and speed. The A6 e-tron will range over 435 miles and accelerate from 0 to 62.1 mph in less than 4 seconds, according to Audi. Audi goes with OLED taillights on electric concept car | LEDs Magazine

4. **LD+A Research Matters: Outcome-Based Codes Offer a New Path** - Outcome-based energy codes are relatively new. They incorporate strategies that quantify a building's actual energy performance over time to demonstrate code compliance. The term "outcome-based" refers to the fact that compliance is linked with a building's actual energy "outcome" which may be measured post-occupancy. Outcome-based compliance can be accomplished by establishing energy-use intensity targets, which may vary based on the building type, its installed equipment, operational parameters and similar characteristics. Energy use, or similar metrics, are then measured periodically and reviewed by enforcement authorities to determine compliance with energy standards and requirements. LDA_May_2021-OBC Article-Final.pdf (ucdavis.edu)

5. **WHITE PAPER: Socketed vs Integrated LED Luminaires by ALA** - Selecting the proper light source for a luminaire has become a complex and confusing choice for many luminaire manufacturers. In particular, when developing LED luminaires the designer is faced with the choice of whether to create a luminaire with integrated LEDs, or utilize sockets that can accept a standard lamp. This decision becomes even harder as the prices of LED lamps become lower and availability of lamp options increases. The purpose of this guidance document is to provide helpful information that will assist manufacturers of residential and hospitality luminaires make the choice between socketed and integrated design approaches. This document is not intended to support or favor any particular design. Manufacturers can use this as a resource to carefully select the proper light source design based on the customer, product, and application needs. Socketed vs Integrated Guidance Document – FOR MANUFACTURERS Draft 2-Rev 12/27/2 (alamembers.com)

6. **IES RP-45-21 Delivers Guidance for Horticultural Lighting in Design Terms** - The Illuminating Engineering Society has announced its publication of IES RP-45-21, Recommended Practice: Horticultural Lighting. If you are unfamiliar with the topic, you might think of horticultural lighting as row upon row of high-pressure sodium (HPS) or LED luminaires in greenhouses, or perhaps LED strips illuminating stacked micro greens in vertical farms, with no particular lighting design involved. If so, IES RP-45 with its 80-plus pages of design information will surely convince you otherwise. The document, written over a period of two years by 26 experts in lighting design, horticulture, botany, radiometry, and other fields, covers all aspects of horticultural lighting. Its primary purpose is to provide both lighting professionals and horticulturalists with a common understanding of the topic, and a means of communicating effectively. This article provides a quick overview of the document's contents: IES RP-45-21 delivers guidance for horticultural lighting in design terms (MAGAZINE) | LEDs Magazine

7. **Building Efficiency Begins with Lighting Design and Controls in Step with the Space by Tom Cashman** - At the surface level, lighting is the application of light to spaces and simply serves as a prerequisite for visualization. However, because our impression of a space happens via sight, lighting not only becomes a necessity for vision but a medium for perception. This means the type of lighting fixtures selected, in what location they are installed, and at what light levels they are set can drastically impact people's perception of a building and the work being done within it. At this point in LED technology development, there is no shortage of literature on the many benefits of LED lighting. Objectives of LED lighting increasing comfort in spaces, boosting morale, and reducing energy waste have been well documented and the evidence in favor of LED solutions over outdated fixture types is overwhelming. The lighting designer/specifier or installer needs to clearly align the objectives and the value of each criterion considered for the space in collaboration with the facilities manager or building owner. Building efficiency begins with lighting design and controls in step with the space | LEDs Magazine

8. **Satco Expands Strategic Partnership with Tuya Smart** - SATCO Products, Inc. announces its partnership with Tuya Smart, a global IoT cloud platform. The newly expanded partnership will feature the Powered by Tuya badge on SATCO's STARFISH™ smart lighting brand which enables interoperability of STARFISH™ smart products with other brands Powered by Tuya. SATCO's long-term consumer loyalty and extensive sales distribution network bring great opportunity for rapid brand awareness for the Powered by Tuya ecosystem via SATCO's STARFISH smart products. Starfish By SATCO (satcostarfish.com)

9. **Supporting Human Health with Circadian Lighting Design by Naomi Millán** - Our bodies are tuned to operate optimally under the natural cycle of bright daylight during the day and inky darkness at night. But many Americans these days are exposed to unnatural light conditions. Since the late 1980s, we spend at least 90 percent of our time indoors, according to studies done by the U.S. EPA. Much of that time we are bathed in artificial light, especially at night when it is most detrimental. Among the results is a disruption to our circadian rhythms, which can lead to a range of negative effects to our bodies and minds. The lighting industry is working to rectify the situation with lighting and lighting design that can provide a beneficial health outcome by supporting the circadian system. Supporting Human Health With Circadian Lighting Design - Facilities Management Insights (facilitiesnet.com)

10. **EW Executive Insights Podcast: A Look Inside the 2021 Top 150 Electrical Distributors** - Sponsored by Epicor, this podcast with Jim Lucy, EWs editor-in-chief, explores some interesting findings from this year's ranking, including which companies are investing in their businesses, the surge in M&A activity, and who is opening up new branches. Despite the tumultuous market conditions in 2020, many of the largest distributors on the continent continued to make major investments in their operations. 2106EW_Top150-Marketing_Solutions.pdf (endeavorb2b.com)

11. **WHITE PAPER:10 Predictions for Smart Building Technology in 2021 and Beyond** -Download this free report and explore the key trends that will impact the smart building space in 2021 and beyond. This white paper builds on the research conducted by Verdantix over the last year. The report addresses the major trends that are expected to influence the smart building technology market in the next 12 months and beyond, enveloping many of the influencing factors in this space, including the effects of the COVID-19 pandemic. Read this white paper and find out answers to the following questions: 10 Predictions For Smart Building Technology In 2021 And Beyond

- What will be the key objectives of building managers?
- Which technology areas will see strong levels of investment?
- How will integrated platform solutions fare?

12. **Signify Launches New and Future-Ready Philips Hue App** - Signify is further enhancing the user experience of millions of Philips Hue users around the globe as it launches the fourth generation of the Philips Hue app. Rebuilt from the ground up, the all-new Philips Hue app has been designed as the foundation for the future of smart lighting. New technologies improve app performance both in overall function and in communication with your smart lighting system, while also delivering an intuitive and enhanced user experience. https://www.ledinside.com/node/32023

- Improves app performance and enhances the user experience with easier automations, a new Hue scene gallery and more
- Serves as the foundation for the future of smart lighting
- Includes familiar user interface elements from the previous Philips Hue app and has been transformed to become sleeker than ever before.

13. **TRAINING: Lighting Controls Association Bolsters Education Express with Summary Sheets** - The Lighting Controls Association's Education Express is the lighting industry's leading online platform for free, instant, 24/7 education about lighting controls. The LCA is pleased to announce that a majority of courses now feature downloadable one-page summary sheets students can download, print, and use as a quick reference. Education Express | (aboutlightingcontrols.org)

14. **Which Lighting Products Get the Highest Rebates?** - As LED lighting continues to penetrate the market, people assume rebates for these products must be dwindling. In reality, commercial lighting rebates continue to be strong as ever. While rebates for some upgrades, like screw-in A19's and PARs, have decreased over the years, some product categories can still receive very significant incentives. **Looking through all the programs across North America, we've determined the 4 lighting products with the highest average rebate amounts.** Which Lighting Products Get The Highest Rebates? (briteswitch.com)

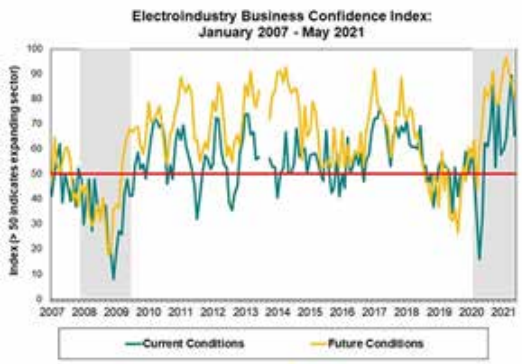
- High Bay Fixtures
- Pole Lights
- Parking Garage Lighting
- Wall-mounted Outdoor Fixtures

15. **Cathy Choi to Receive Women in Lighting Leadership Award** - The American Lighting Association's Women in Lighting Committee has announced that the 2021 recipient of the Women in Lighting Leadership Award will be Bulbrite President Cathy Choi. The award will be presented during Lightovation in Dallas at the Women in Lighting Reception, taking place at 5pm on Wednesday, June 23, and hosted by Allegri (TM 4915). The presentation will also be streamed via Facebook Live on ALA's page for anyone who is unable to attend in person. Home - American Lighting Association (alalighting.com)

16. **New Thrillers by LightNOW's Craig DiLouie** - Many of you know I have a second career writing fiction, with books published by major publishers like Hachette, Simon & Schuster, and Blackstone. My latest, THE AVIATOR, is a military thriller that takes you aboard a modern aircraft carrier and into the cockpit of an F/A-18 Super Hornet fighter. In THE AVIATOR, the U.S. has fought a short, sharp war with China over Taiwan. In a prison cell in Beijing, Navy fighter pilot Jack Knapp tells his story about the war and how he ended up in a Chinese show trial, accused of crimes against humanity. With his life in the balance, Jack will have to choose between survival and participating in his captors' lies, and ultimately learn the true meaning of heroism in a war between superpowers where even stories are weapons. New Thrillers by LightNOW's Craig DiLouie – LightNOW (lightnowblog.com)

17. **Westinghouse Lighting Marks 75 Illuminating Years** - Founded initially as Angelo Brothers, the company has been family-owned since its creation in 1946. The original Angelo Brothers, Romolo and Stanley Angelo seized the opportunity to go into business together after WWII. While any business experiences bright upturns and dim downturns, the company has enjoyed steady growth over the years. The current company leader attributes this long-term success to the company's core values of excellent customer service, quality products, and sustainability. In 2003, the company re-branded as Westinghouse Lighting through a license agreement with Westinghouse Electric Corp. This agreement allowed the company to solidify its business in the United States and helped to expand opportunities in international markets, as the Westinghouse brand name is well-known worldwide and has symbolized quality and innovation for years. https://www.westinghouselighting.com/

18. **Cracking the IECC 2021: A Lighting Code Update by Craig DiLouie** - Many states use the International Energy Conservation Code (IECC) as the basis for their commercial building energy code, which regulates the energy-efficient design of new construction and renovations. Regarding lighting, the 2021 version of the IECC reduces lighting power allowances, expands mandatory controls requirements and issues clarifications. The most significant changes from the 2018 IECC are tighter interior lighting power allowances and the addition of daylight-responsive control for secondary daylight zones, plug load controls and parking garage control requirements. Let's take a look at some of the other big changes. Cracking the IECC 2021: A lighting code update | Electrical Contractor Magazine (ecmag.com)



19. **Current and Future Electroindustry Business Conditions Pull Back but Remain at Expansionary Levels** - The National Electrical Manufacturers Association (NEMA) recently reported its Electroindustry Business Confidence Index (EBCI) dipped 24 points from a high-water mark in April to 65.4 in May 2021, a significant decline but still solidly in expansionary territory. Comments, largely focused on labor and materials shortages and resultant inflationary pressures, were suggestive of constrained growth. News & Trends (nema.org)

20. **Sneak Peek: MDM's Top Distributors 2021 Rankings** - During a June 17 webcast, MDM's Elizabeth Galentine, editor-in-chief, and Senior Editor Eric Smith discussed the Top Distributors 2021 rankings. The rankings are based on 2020 reported and estimated revenues. For the full version of the list, as well as interviews with some of the top distributors, check out the next issue of MDM Premium — out on Friday, June 25. Meanwhile, here's a snapshot of the top-10 distributors overall. The top three spots did not change from 2019 to 2020, with Ferguson Enterprises, W.W. Grainger and Amazon Business, respectively, holding steady. Of note, all three posted increased revenues in 2020 versus 2019. With HD Supply out of the top 10, Winsupply (No. 9) and Core & Main (No. 10) joined the top 10. Airgas, an Air Liquide company (No. 4), Motion Industries (No. 5), The Fastenal Company (No. 6) and Watsco (No.7) all moved up one spot on the Top 10 leaderboard, while McMaster-Carr went from No. 10 in 2019 to No. 8 in 2020. Sneak Peek: MDM's Top Distributors 2021 Rankings - Modern Distribution Management

21. **Electrical Wholesaling's 2021 Top 150 Listing by Jim Lucy** - Despite the tumultuous market conditions in 2020, many of the largest distributors in Electrical Wholesaling Top 150 listing continued to make major investments in their operations. Sponsored by Epicor. The five largest full-line distributors in North America are:

1. WESCO Distribution Inc. (WESCO International) Pittsburgh PA $11,000,000,000
2. Sonepar North America Charleston SC $10,787,000,000
3. Graybar Electric Co. St. Louis MO $7,199,687,600
4. Consolidated Electrical Distributors (CED) Irving TX $6,000,000,000
5. Rexel Holdings USA (Rexel SA) Dallas TX $5,304,187,200

2106EW_Top150-Marketing_Solutions.pdf (endeavorb2b.com)

22. **The DLC Addresses Cybersecurity** - It seems we hear about a new cyberattack in the news almost every day. As networked lighting becomes more intelligent it also becomes more susceptible to hackers. Ensuring you have the right cybersecurity practices in place is more important than ever. The DLC invites you to join our upcoming webinar, What's next for cybersecurity at the DLC?, on Tuesday, July 20th at 1pm EST. Register Here Download DLC Cybersecurity Overview

23. **Supply Chain Might Be the Big Lighting Story of 2021** - Components shortages, price increases, freight delays continue to disrupt the lighting industry. The impact of COVID was clearly the most prevalent theme that affected lighting industry businesses last year. The same may be true in 2021, but the related impact of supply chain on the lighting industry continues to make headlines. Citing increased costs associated with components and shipping, multiple large, prominent lighting manufacturers announced a price increase in the first quarter of 2021. Some manufacturers even announced a second price increase this year. The recent report, 2020 LED Manufacturing Supply Chain, published by the U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy offers more insights into how supply chain affects our U.S. Lighting industry. Supply Chain Might Be the Big Lighting Story of 2021 (inside.lighting)

24. **RESEARCH: New Report Examines LED Manufacturing Supply Chain, Opportunities for Domestic Manufacturing** - The DOE report investigates the economic impacts of this supply chain on the United States and identifies opportunities for increased domestic manufacturing. The new report details the manufacturing process for typical LED products, identifying what proportion of LED products are manufactured and assembled in the United States and internationally, and analyzes the value added for a typical LED luminaire manufactured in the United States versus internationally. The report also examines recent macroeconomic events that have impacted the global supply chain for LED products, including tariffs and the COVID-19 pandemic. The analysis uses international trade data, market reports, and interviews with LED die, package, and lamp/luminaire manufacturers. New Report Examines LED Manufacturing Supply Chain, Opportunities for Domestic Manufacturing | Department of Energy

25. **2021 Sapphire Awards Finalists Build Out SSL Roadmap Toward Design Flexibility** - LEDs Magazine is pleased to announce the 7th annual Sapphire Awards finalists. For 2021, 17 product categories were recognized, with submissions delineating a clear path toward solid-state lighting (SSL) and systems that do more than illuminate spaces. Review the shortlist of 2021 LEDs Magazine Sapphire Awards finalists at: BREAKING NEWS: 2021 Sapphire Awards finalists build out SSL roadmap toward design flexibility | LEDs Magazine

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Global LED Energy Market Observer:

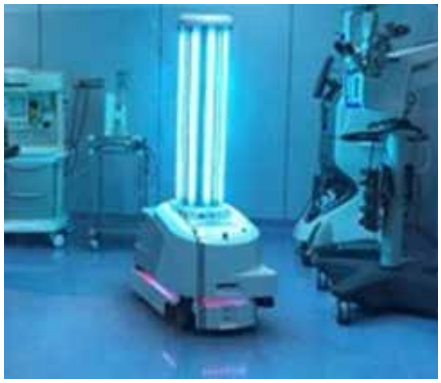
26. **Global Shipping Situation: China Port Faces Substantial Backlog** - The price to ship a 40-foot-container by sea from China to U.S. West Coast ports have risen by 57% compared to the start of the year and up 386% compared to January 2020. Retailers and manufacturers are finding no other option but to raise the prices of their merchandise, as this huge rise in shipping costs is simply too much for companies to absorb. Many believe that consumers should expect their Christmas shopping lists to come up short due to monetary strain and unavailability of merchandise. A lot of pieces need to fall into place in order for the global supply chain to see recovery. You can read our previous articles on the global shipping situation: Update on the Global Shipping Situation: 22 Ships Waiting Outside of LongBeach/LAX and The Global Supply Chain Continues to Struggle with Demand Global Shipping Situation: China Port Faces Substantial Backlog - EdisonReport

27. **RESEARCH: Smart Lighting Market Growth Driven by Government Initiatives** - Rapid growth in investments for energy efficient solutions in the infrastructure industry is expected to drive the smart lighting market in the forecast period. Supportive government initiatives in developed and emerging markets also drive the growth of the smart lighting market across the globe. This emerging growth of the smart lighting market is supported by the rise in disposable incomes, regulatory restrictions in using energy-consuming lamps, and the integration of advanced technologies. The global smart lighting market size is expected to grow from $11.07 billion in 2020 to $12.62 billion in 2021 at a compound annual growth rate (CAGR) of 14%. The global smart lighting market is segmented by product into smart bulbs, fixtures, lighting controls, by application into commercial, government, residential, others, by light source into LED, HID, others, and by communication technology into wired, wireless. Request a sample of the global smart lighting market report: Global Smart Lighting Market Report Opportunities And Strategies Sample (thebusinessresearchcompany.com)

28. **CASE STUDY: Grade Scores Improved by 12% After Using Biocentric Lighting™** - A field lab study was conducted to determine how much the indoor climate parameters, ventilation and lighting, influence children's academic abilities. The study involved 92 children, aged 10–12 years, who over four weeks answered a questionnaire and three different performance tests, which measured their processing speed, concentration, logical reasoning and math solving abilities. An experimental design was constructed to test the effect of changing the lighting from constant warm light to a dynamic cool light. The combination of dynamic lighting and increased ventilation rate indicated a boosted positive impact on the speed and concentration of the children which means that future renovations would benefit from a holistic design including both of these factors. A field study of the individual and combined effect of ventilation rate and lighting conditions on pupils' performance - ScienceDirect

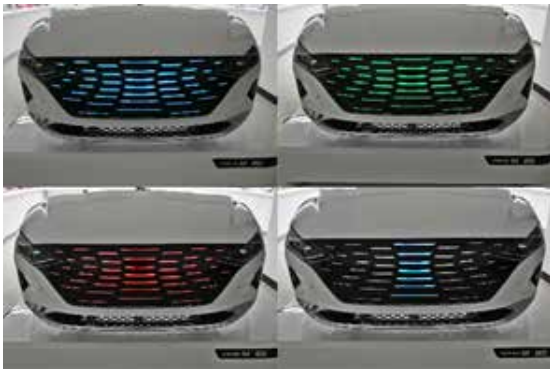
29. **Life with Biocentric Lighting™ by BrainLit** - Sweden's BrainLit's BioCentric Lighting™ system is an advanced, feedback-driven, self-learning system that creates natural light environments via a globally unique software patent. Indoor lighting is configured to mimic natural daylight using sensor-driven, LED lighting that is controlled by their software. BioCentric Lighting™ system ("BCL"), is an advanced, feedback-driven, self-learning system that mimics natural light on a personal level and as a result improves health, well-being, cognitive performance and sleep for humans. BioCentric Lighting™ is based on a deep understanding of human physiology that can fully promote the circadian alignment by synchronizing our biological needs with solar time. BioCentric Lighting™ • BrainLit

30. **ISS Picks UVD Robots to Provide Autonomous Disinfection** - Blue Ocean Robotics, manufacturer of UVD Robots for autonomous UV-C disinfection, has been selected by ISS World Services to provide autonomous robots for disinfection as part of ISS' global offering. The agreement allows ISS to offer hospital-grade disinfection to its more than 60,000 customers in 30+ countries in the healthcare, pharmaceutical, life science, banking and financial services, industry and manufacturing sectors. UVD Robot is helping to ensure outstanding cleaning and disinfection excellence. Unlike many stationary disinfection systems, the UVD Robot is a mobile, fully autonomous robot that integrates UV-C light to disinfect against all known bacteria and viruses including Covid-19 not only on surfaces, but the air as well, providing a fully comprehensive infection control and prevention solution. ISS Picks UVD Robots To Provide Autonomous Disinfection (facilityexecutive.com)



31. **UK: End of Halogen Light Bulbs Spells Brighter and Cleaner Future** - The UK government has announced plans on Wednesday 9 June that halogen light bulbs will be banned from September 2021. In addition, the government also plans to start phasing out the sale of high-energy fluorescent lightbulbs, with a view to bringing an end to their sale from September 2023. Currently, around 2 thirds of bulbs sold in Britain are LED lights, making a considerable impact in improving the energy efficiency of the country's buildings. The UK began phasing out the sale of higher-energy halogen lightbulbs in 2018. The new legislation would mean retailers will no longer be able to sell the majority of halogen bulbs for general household use in the UK from 1 September. This measure is expected to mean that LED light bulbs will account for 85% of all bulbs sold by 2030. End of Halogen Light Bulbs Spells Brighter and Cleaner Future - LEDinside

32. **RESEARCH: LED Downlight Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2021-2026** - The global LED downlight market reached a value of US$ 20.6 Billion in 2020. Looking forward, the publisher expects the market to grow at a CAGR of 9.2% during the forecast period (2021-2026). LED downlights refer to recessed light fixtures which are installed into a hollow opening in a ceiling. These lights are extensively used across residential and commercial spaces. The competitive landscape of the market has also been analyzed in the report with the detailed profiles of the key players operating in the market. The report has been added to ResearchAndMarkets.com's offering at: LED Downlight Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2021-2026 (researchandmarkets.com)



33. **Hyundai Mobis Develops New Lighting and Movable Grill Technology** - Over the years, the automotive grille has been regarded as a vent for cooling the engine and as a design element that determines the first impression of the vehicle. However, as electric vehicles have been becoming more popular in recent years, the existing grille is being transformed to have different uses including lighting systems, sound systems and displays. For starters, Hyundai Mobis' 'lighting grille' is a technology that can use the entire front grille of the car as a lighting device. It is characterized by being able to implement various scenarios such as the autonomous driving mode, the EV charging mode, the welcome light function, the sound beat display, and an emergency warning light display. The 'lighting grille' can be used as a means of communicating with other vehicles or pedestrians and it can also create strong and unique design effects depending on how the lighting patterns are applied. https://www.ledinside.com/node/32066

34. **Europe's Big Soccer Tournament Kicks Off Under LED Lighting** - When Italy plays Turkey tonight (6/11) in Rome, Signify's ArenaVision will help deliver high resolution broadcasts and other advantages. Signify has also upgraded the competition's venues in Budapest and St. Petersburg. The quadrennial month-long soccer tournament that pits Europe's top national teams against each other kicks off tonight (6/11), and with it, some new LED lighting will take the field in at least three of the eleven stadiums, including one in St. Petersburg where the high-intensity discharge (HID) lights lasted only two or three years. Europe's big soccer tournament kicks off under LED lighting | LEDs Magazine

35. **Seoul Viosys and Seti Say UV-B LEDs Will Enhance Livestock Production** - Sensor Electronic Technology Inc (SETi) and Seoul Viosys, ultraviolet (UV)-focused business units of Seoul Semiconductor, have announced the results of research from Iowa State University that indicates UV-B-band (280–315-nm) energy might enhance pork production. Many piglet farrowing facilities operate indoors today, and the piglets are not exposed to sunlight, resulting in vitamin D deficiency. Daily UV-B exposure can raise vitamin D levels and specifically prompt natural production of vitamin D3. Seoul and SETi say the results may suggest that other livestock as well as fish, birds, and more might be positively impacted by UV-B exposure. Seoul Viosys and SETi say UV-B LEDs will enhance livestock production | LEDs Magazine

36. **Intelligent Forward Lighting (FWL) and Projection by Osram Opto Semiconductors** - Intelligent FWL lifts car saftey to another level. ADB systems or multipixelated single LEDs eliminate the risk of dazzling oncoming traffic and by projecting warning symbols on the road car2x communication is enabled. Applications like permanent glare-fee high beam, projections of driver track assistance can even be realized by just one component. In future multifunctional, intelligent headlamps will illuminate the road and communicate with the environment around at the same time. It enhances the drivers' visibility while simultaneously reducing glare for other road users. As soon as oncoming traffic is detected the appropriate pixels are automatically switched. https://www.youtube.com/watch?v=p7w7ZQVjq2w

Monthly Feature:

Which Lighting Products Get the Highest Rebates?

As LED lighting continues to penetrate the market, people assume rebates for these products must be dwindling. In reality, commercial lighting rebates continue to be strong as ever. While rebates for some upgrades, like screw-in A19's and PARs, have decreased over the years, some product categories can still receive very significant incentives. The dollar amounts typically relate to the potential energy savings, product cost, complexity of installation and adoption levels in the marketplace. Rebates exist to help utilities get their customers to save energy, so the types of upgrades that would get the best rebates are pretty obvious; it's the ones that result in high energy savings.

Looking through all the programs across North America, BriteSwitch has determined the 4 lighting products with the highest average rebate amounts.

1. High Bay Fixtures

High bays have the highest average rebate across North America at **$120 per fixture**. It's easy to understand the logic; these fixtures often replace HIDs and save anywhere from 40% to 60% in energy. Even when replacing more efficient T5HO and T8 options, users can still achieve measurable energy savings. Therefore, it makes sense that rebate programs incentivize these types of fixtures so highly. Rebates for high bays can range depending on wattage or lumen output, but don't usually vary based on the type (i.e., a linear fixture and a round/UFO fixture would have a similar rebate if they're similar wattage/lumens). LED high bay fixtures have the highest average rebate in North America

2. Pole Lights

Because of the high energy savings, LED pole lights can receive the 2nd highest rebate
Similar to LED high bays, LED pole lights offer huge energy-saving potential and, therefore, can receive high rebates as well. The average incentive for an LED Pole Light is **$97 per fixture**. While screw-in mogul-base upgrades are also an option, the rebates for those are considerably less, only $53 per lamp. There are two DLC categories for pole lights: "Area and Roadway" and "Decorative." Very few rebate programs distinguish between the two, so customers can go as traditional or creative as they want when choosing an LED option. Make sure to check the program you're planning to use; some utilities only incentivize daytime peak demand reduction, meaning exterior lighting is ineligible.

3. Parking Garage Lighting

Parking garage fixtures are a no-brainer when it comes to incentives. The lighting operates 24/7 in many cases, making it an excellent opportunity for savings, and therefore rebates. In addition, these facilities traditionally have HID or Fluorescent solutions. The average rebate for parking garage fixtures across North America is **$94 per fixture**. One property management company received $100 per fixture for 5 of its parking garages

4. Wall-mounted Outdoor Fixtures

LED Wallpacks get the 4th highest rebate in North America
Most commercial buildings in the US have wall-mounted light fixtures around the perimeter, making them a great target from a rebate perspective. The existing fixtures are typically HID and operate around 4,100 hours a year on average. By switching to LED, users can save a lot in this type of application. Because of this potential, the average incentive for LED wall-mounted fixtures is **$91 per fixture**.

Exterior lighting has been one of the segments to adopt LED lighting quickly, but there are still many potential projects. According to the most recent DOE estimate, only 45.8% of exterior lighting has upgraded to LED so far. Which Lighting Products Get The Highest Rebates? (briteswitch.com)