ENERGY OBSERVER
A MONTHLY NEWSLETTER FROM AMERLUX®

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Connecting All The Dots.

Slots & Dots
48V Track lighting system connecting all the dots for architects and lighting designers

Slots and Dots is an easily configurable 48V track lighting system that creates visual ambience for hospitality and retail environments. Featuring surface, recessed or pendant mounting options, with magnetic lighting modules so light sources can be easily snapped in and out as needed.
Slots & Dots, a 48V Track lighting system connecting all the dots for architects and lighting designers: color, comfort, controls and configurability. Slots & Dots is an easily configurable low voltage track lighting system that creates visual ambience for hospitality, residential, commercial and retail environments. Featuring surface, recessed or pendant mounting options, with magnetic lighting modules so light sources can be easily snapped in and out as needed. Slots are made up of linear modules to create visual interest, wall grazing and glare free accent. Dots deliver focused beams of light from either an accent, pendant or surface mounted accent that bring items into focus.

SPEC Files

http://www.amerlux.com/

National LED Market Observer:

1. **Lighting Leads 21st Century Reduction in Use of Electricity by Clark R. Silcox, General Counsel, NEMA** - Over the first 18 years of the 21st century, lighting products contributed more than any other product to reducing the demand for electricity in the United States, according to data published by U.S. Energy Information Administration (EIA) in their Annual Energy Outlook (AEO) from 2004 – 2019. Overall annual electricity use from lighting — in both the residential and commercial sectors — fell 57% from 2001 – 2018 from an estimated 1.82 quads in 2001 to an estimated 0.79 quads in 2018. A quad represents a quadrillion BTUs of energy and is equivalent to 293 billion kilowatt hours of electricity. Lighting led all other product categories both in terms of the absolute reduction in estimated electricity use and in percentage reduction. No other category of appliances or equipment came close the reduction in electricity use that lighting contributed. https://blog.nema.org/2019/08/27/lighting-leads-21st-century-reduction-in-use-of-electricity-in-residential-and-commercial-buildings/

2. **Apple Granted 64 New Patents Including a Mass Transfer System for Micro LED Displays** - The patent, titled "Optical Verification System of verifying Micro Device Transfer," focuses on mass transfer process, which has been one of the most challenging issues that slow down Micro LED commercialization. In the patent, Apple described an optical verification method and mass transfer system which includes optical imaging and inspection for monitoring Micro LED transfer between donor substrate and receiving substrate. After picking up an array of Micro LEDs from the donor substrate, an optical verification process would scan the surface of the picked Micro LEDs and identify the presence, absence or global offset of the pixels. After repeatedly operate the process utilizing Micro LED detection algorithm, different image captured with the optical verification system can be compared to optimize of the transferring process. https://www.ledinside.com/

3. **Apple Reportedly to Launch AR Glasses in 2020, Maybe with Micro LED Displays** - Apple likely to introduce AR headset which synchronize the new 5G upgraded iPhone in 2020. The glasses will wirelessly connected with iPhone to show information over users' field of vision, displaying texts, emails, maps or even games. Apple was also said to include an App Store with the headset.The Apple's AR glasses are expected to have holographic displays to deliver information, which goes in line with Apple's patented technologies revealed in the past year. In November 2018, Apple was granted with a patent of Micro LED displays with integrated holographic technology. The patent described an adjustment layer on Micro LED display pixels to enrich users viewing angle. The company won other two patent in May 2019 that are related to Micro LED and a head-mounted system with a holographic element. With these technology developments, it is expected that Apple will adopt Micro LED in its AR glasses. The company is believed to begin its Micro LED development since the acquisition of LuxVue in 2014. https://www.ledinside.com/

4. **In Unprecedented Move, PG&E Cuts Power to 800,000 Customers** - Sometimes, it's good to have backup power, and for 800,000 customers of PG&E, that time would be now. California's Pacific Gas and Electric Company (PG&E) confirmed that it has implemented the first phase of a Public Safety Power Shutoff (PSPS) across significant portions of its service area in response to a widespread, severe wind event. The utility calls the move a Public Safety Power Shutoff (PSPS). While most of the regions affected are rural, the outage will also impact California's wine country, as well as portions of Oakland, Berkeley and San Jose. https://www.ecmag.com/

5. **Samsung's LED Display Becomes NBA's Largest Centerhung Scoreboard** - Samsung announced that it has helped the Golden State Warriors tip off the 2019-20 NBA season with a partnership that is revitalizing sports venues. Samsung Electronics America has installed more than 64 LED video displays including the largest centerhung video display at Chase Center to offer audience unique game experiences. Samsung LED technologies showcase a detailed and realistic picture, ensuring each fan is immersed in the action every seat. The new Warriors centerhung main videoboard adds up to a massive 9,699 square feet (900 square meters) of active video display, making it the largest LED video display centerhung installed in a sports arena. The centerhung integrates 15 displays varying from 6.7mm pixel pitch on the main displays and upper halo ring, to 4mm pixel pitch on the underbelly displays, amassing a total of more than 26.3 million individual LEDs.

https://www.ledinside.com/news/2019/10/samsung_led_display_nba_largest_centerhung_scoreboard

6. **VODAFONE and Signify Have Joined Forces to Combine 5G Communications and Li-Fi** - The union of 5G, the new generation cellular platform, with Li-fi, the delivery of data via LED luminaires, will enable ultra high-speed wireless broadband connectivity, say the companies. The deal, announced at the IEEE 5G Summit in Dresden today, should help to develop applications that deliver secure and reliable two-way wireless communication at speeds well beyond traditional wireless technologies such as Wi-Fi. Together, the two companies have pledged to explore ways in which LiFi technology in local networks will be used in conjunction with 5G, so that Vodafone and other customers can benefit from the speed of the new technologies. https://luxreview.com/article/2019/10/vodafone-adds-5g-boost-to-li-fi

7. **Lutron Electronics New Commercial Experience Center in Manhattan** - "Experience" is the operative word at the flagship center, located just off Fifth Avenue at 3 E. 28th Street in New York's lively NoMad neighborhood. At the core of the center is a broad philosophy of human-centric lighting that deftly employs four elements of lighting design—natural light, quality light, connection to the outdoors, and adaptive and personalized control—to help people be, work, and feel their best. The new center, which opens for business on September 17, offers architects, designers, contractors, developers, and building owners an inclusive vision of Lutron lighting and control capabilities. http://www.lutron.com/en-US/Experience-Light-Control/Pages/Inspiration/ExperienceCenter.aspx

8. **DLC Second Draft SSL Technical Requirements V5.0: Overview Webinar** - Wed, Oct 16, 2019 1:00 PM - 3:00 PM EDT. The Version 5.0 revision to the SSL Technical Requirements is the first of a series of V5 specifications designed to improve the quality of light and connectivity of DLC listed products. As a whole, V5's phased approach to incorporating quality of light and controllability metrics on the QPL will help ensure only high-quality products are listed, superior performing products can be differentiated, and additional energy savings are realized. The initial draft Technical Requirements V5.0 laid out the DLC's broad vision for improving the quality of light and controllability of products on the SSL QPL. Draft 2, and future Technical Requirements releases in the V5 program, will focus on implementing these requirements on a timeline that aligns with industry development cycles and current research. Attend this webinar for an overview of the second draft of V5.0. The last 30 minutes of the webinar will be reserved for stakeholder Q+A. Register at: https://register.gotowebinar.com/register/1892211534772236811

9. Signify to Acquire Cooper Lighting Solutions from Eaton for USD 1.4 Billion in Cash - Closing is subject to regulatory approvals and other customary conditions and is expected to take place in the first quarter of 2020. Clear strategic fit: strengthening Signify's market positions in North America, with increased innovation power and more competitive offerings; improving the business mix with Professional revenues increasing from 42% to 53% of total sales. Together, the two businesses will be better positioned to benefit from the growing USD 12 billion professional lighting market in North America, driven by the continued conversion to LED and the increased demand for connected lighting systems and controls. Signify and Cooper Lighting will maintain separate front offices: sales forces, agent networks, product and brand portfolios, marketing and product development teams. Both businesses will be able to strengthen their respective product portfolios, benefitting from an increased power of innovation as well as more competitive and cost-efficient offerings. https://finance.yahoo.com/news/signify-acquire-cooper-lighting-solutions-202409196.html

10. **DOE's Manufacturing Innovator Challenge** - Moving the DOE contest, the announcement came from the Building Technologies Office as opposed to the SSL program. The agency's office of Energy, Efficiency and Renewable Energy (EERE) had partnered with the website freelancer.com to encourage a grass roots response focused on manufacturing challenges — the program was called the Manufacturing Innovator Challenge. Now EERE has announced the Sustainable Manufacturing of Luminaires Prize as part of the Manufacturing Innovator Challenge. The announcement noted that most luminaires today relay on aluminum and other dense structural and thermal elements. Meanwhile, the transition to LED and SSL sources allows the usage of more innovative materials. Entry is on: https://www.freelancer.com/contest/US-DEPARTMENT-OF-ENERGY-Sustainable-Manufacturing-of-Luminaires-USA-CONTESTANTS-ONLY-1622038

Global LED Market Observer:

11. **AMS Failed with Takeover of Osram** - The Austrian sensor manufacturer AMS has missed its self-imposed target to bring 62.5 percent of Osram shares under his control, as the company announced. AMS chief executive Alexander Everke only brought the owners of slightly more than half of the Osram shares on his side, who accepted the offer of 41 euros per share. The Osram share subsequently slid off in off-exchange trading immediately. However, AMS does not want to give up its plans: "Our vision with Osram is to create a global leader in sensor solutions and photonics based on European technology, ensuring that Europe maintains its world-leading position in optical technologies," said the manager. But Osram would prefer to remain independent. https://www.tellerreport.com/

12. **AMS Launches New Takeover Offer to Osram with Same Price and Lower Acceptance Rate** - AMS re-approached Osram with a new bidding offer launched on October 18. With the new offer, the Austrian company aims to acquire Osram with a price of EUR 41 (US$ 46) per share with the minimum acceptance rate of 55%. The sensor maker failed the first attempt to takeover Osram in the beginning of October as it did not reach the minimum acceptance threshold of 62.5%. Within two weeks, AMS keeps its words of continuing the acquisition plan and proposed the new offer with the same price of EUR 41 per share but a lower acceptance rate of 55%. The offer values Osram with EUR 4.6 billion (US$ 5.13). https://www.ledinside.com/

13. **German Research Project to Develop 3D Printing Process Using UV LED Curable Material** - According to the researchers, the new project, named BUERMa, aims to simplify 3D printing manufacture. The process uses synthetic resins to replace the common material which is difficult to manage during the heating and cooling process. Synthetic resins can be cured by UV irradiation and will hardly change shape once formed; thus, the material serves as better component for 3D printing. The team explained that in the BUERMa process, a viscous reactive resin is mixed with a photoinitiator, introduced into a metering unit and pressed through a nozzle with a diameter of 0.1 to 0.6 millimeters. The material is then deposited in pre-programmed tracks and directly irradiated with UV LEDs. This process ensures that the resins cross-link with the aid of the photoinitiator and form an extremely stable polymer network - they cure immediately in a controlled manner. https://www.ledinside.com/news/2019/10/3d_printing_process_uvled_curable_material

14. **Everlight Pushes Automotive Applications with Mini LEDs and IR LED Products** - LED packaging company Everlight has been expanding business in automotive applications covering automotive display, IR LED sensors and interior lighting products. Everlight has launched a wide range of automotive products including Mini LED taillight, Mini LED automotive displays, IR LEDs for face recognition in automotive environments and interior lighting LEDs. The Taiwan-based LED packager has proactively pushes interior LED applications and joined ISELED alliance which integrates the supply chain to boost innovative automotive applications. For exterior automotive products, Everlight introduced a taillight with fine-pitch Mini LED to show personalized information. The company also teamed up with Hella to develop matrix LED headlight. https://www.ledinside.com/

15. **Telensa and Eaton Lighting Partner to Create Smart City Solutions with Smart Streetlights** - The UK-based smart city solution provider Telensa announced that it has teamed up with Eaton Lighting to deliver connected solutions for outdoor LED lighting and related smart city applications. With the partnership, both companies hope to expand integrated lighting installation and smart city solution application. They are working on implementing easy deployed intelligent solutions connecting lighting networks, transport and other function in cities across the world. Connected street lighting serves as the gateway to a range of smart city applications, from traffic analytics to air quality. Outdoor lighting is one of the largest, most energy intensive elements of city infrastructure, and is rapidly converting to LED technology. Adding wireless controls to LED conversion projects saves money, improves service levels and provides sophisticated lighting adaptation and automation. https://www.ledinside.com/news/2019/10/telesa_eaton_lighting_partner_smart_city_solutions_smart_streetlights

16. **Increasing Demands for High Contrast Display Drives Mini LED Commercialization** - As display technology continues to progress, worldwide big names have launched innovative displays that the resolution has evolved from full HD to 4K. Nevertheless, without high contrast, the refined display performance of high resolution would not be fully presented. High contrast intensifies the brightness and darkness of images and videos on TVs and gaming monitors and enables AR wearables or automotive displays to deliver clear picture under sunlight. Thus, the demands for high contrast display keep rising. LEDs, with its self-emitting feature, can be adopted to various applications in backlight and RGB module after shrinking. LED also outpaces OLED in contrast, brightness and reliability. With the strength, Mini LED backlight technology has been adopted in gaming and other high-end display since the second half of 2018. Mini LED technology applications continue to increase in 2019 and are expected to boom in 2020. https://www.ledinside.com/

17. **Pro Sports SSL: Signify and Orange Velodrome, Zumtobel and Signal Iduna Park** - LED-based lighting continues a march into pro sports venues with stadiums in Dortmund, Germany and Marseille, France getting lighting upgrades from Zumtobel and Signify, respectively. The lighting must meet the needs of the players but also the fans in the stands and the high-definition (HD) TV broadcast. With SSL maturity, the field is broadening. https://www.ledsmagazine.com/

18. **10 Brands Not to Miss at LuxLive 2019** - This year's LuxLive 2019 exhibition will feature a raft of new and regular exhibitors, including familiar names and challenger brands, many with exciting and innovative technologies. Here's our top 10 picks of suppliers you need to check out at ExCeL London on Wednesday 13 November and Thursday 14 November 2019.
https://luxreview.com/article/2019/10/10-brands-not-to-miss-at-luxlive-2019

1) Bluetooth
2) Enlighted
3) LED Flex
4) TLS International
5) Recolight
6) Signify
7) Thorlux
8) EnOcean
9) Seoul Semiconductor
10) Gooee

19. **HUDs with LED and Laser Light to Become a Trend in Automotive Application** - Automotive applications mark a niche market for global LED makers. While the developing electronic vehicle and autonomous driving technology with higher requirement for power saving open more opportunities for LED producers, LED technology progress also supports more application options for automobile manufacturers. Head up display (HUD) which enables drivers to obtain information while looking the frond is an application that can be enhanced through advance LED technologies. A HUD system usually include a picture generating unit (PGU) consisting of an LED array, a thin film transistor production display, a lens system and beam splitter. Power LED or laser lights are critical for HUDs as they need to deliver light that is bright enough for drivers clearly see the projected images and information. Suppliers of the light source components of HUD include OSRAM Continental, Nichia and Episar.
https://www.ledinside.com/

20. **Smart Lighting Products as the Focus on 2019 Hong Kong International Lighting Fair** - The 21st HKTDC Hong Kong International Lighting Fair (Autumn Edition), as well as the Hong Kong International Outdoor and Tech Light Expo kicked out on October 27 and 29 at the Hong Kong Convention and Exhibition Centre and at AsiaWorld-Expo. Together the two events hosted more than 3,100 exhibitors from 35 countries across the world to showcase innovative, fashionable and practical lighting products. https://www.manufacturer.lighting/expo/19/

21. **Apple Reportedly Building a New Facility in Taiwan for Micro LED** - Apple is currently constructing a new facility in Taiwan, next to Apple's Taoyuan plant opened in 2015, reported Taiwan's Wealth Magazine. According to the report, Apple is building the third plant in Taiwan which is scheduled to be finished in December 2019. Many believe that the new facility, like the old ones, are for Micro LED. Taiwan has been a key place for Apple in developing Micro LED technology where the iPhone maker strategically collaborated with local supply chain. Last week, Bloomberg once again reported that Apple will debut Micro LED-based AR glasses to pair with its new 5G iPhone in 2020. https://www.ledinside.com/

22. **Li-Fi on Planes: Is It the Killer App?** - Three major firms are betting that commercial aircraft represents a major opportunity. Signify, Latécoère, a French supplier to plane makers, and Korean communications specialist Huneed Technologies have teamed up to develop Li-fi for passenger use. The plan is that Li-fi will be used for the connection of the media players in the headrests. In the next phase, it will enable passengers to connect their personal devices to the onboard media and Internet, but also interact with each other and have the same connectivity experience on board as on the ground. https://luxreview.com/article/2019/10/li-fi-on-planes-is-it-the-killer-app-

Monthly Feature:

TrendForce Announces Top 10 Trends in Information and Communication Technology Industry for 2020 - In this press release, TrendForce provides predictions of the information and communication technology industry for 2020, focusing on 10 key themes.
https://www.ledinside.com/node/view/30747