EnergyWatch

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Your work is going to fill a large part of your life, and the only way to be truly satisfied is to do what you believe is great work. And the only way to do great work is to love what you do. **Steve Jobs**

How you gather, manage, and use information will determine whether you win or lose. **Bill Gates**

If the rate of change on the outside is greater than the rate of change on the inside, the end is near.
Jack Welch

One of the great mistakes is to judge policies and programs by their intentions rather than their results. **Milton Friedman**

Something to Think About…

Logistics as a Service, L(o)aaS by Steve Bryne, COO at Facility Solutions Group - LaaS may not be what you think it is. In the disrupted world of lighting distribution, the paths to market are ever changing. Manufacturers find themselves partnering with end users and traditional supply chain customers to bring products and solutions to the market in new and innovative ways.

National projects for LED lighting and controls have inherent complications and challenges that go beyond the capabilities of traditional Third-Party Logistics (3PL) providers. FSG's experience in material management for end user national roll-outs provide a base line for Logistics as a Service, L(o)aaS. By helping manufacturers manage material and last mile coordination with select installation partners, thousands of sites across the country are reaping the rewards of reduced energy consumption and better line of site into operations. Key elements of FSG's L(o)aaS program include dedicated warehousing, material tracking, last mile coordination, inventory reporting and reconciliation, and live data integration at the systems level.

While the paths to market may be changing, the collaboration of key elements in the supply chain, namely manufacturing, distribution and installation still provide the back bone for delivering real value and results to the end user.

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LED EnergyWatch…

1. **LIGHTFAIR APP -** Use this tool to navigate the show floor, search the exhibitor directory, view networking events, create your own show agenda and review the Conference schedule.
Android: http://app.core-apps.com/lfi2018
iPhone: https://itunes.apple.com/us/app/lightfair-international/id963905683?mt=8

2. ***Lighting Update May Eliminate Popular Lamps -*** The lighting energy efficiency standard that takes effect on Jan. 1, 2020, will eliminate most of the existing incandescent and halogen light bulbs in the U.S. from the market. The standard is part of the Energy Independence and Security Act of 2007, which introduced a two-tiered set of lighting mandates. The first tier was phased in between 2012 and 2014 and required bulbs to use 25-30% less energy than the original incandescents. The second tier, which becomes effective in 2020, requires general service light bulbs to achieve 45 lumens per watt. That means low wattage light bulbs must use about 65% less energy to create the same amount of light as a comparable predecessor. Most compact fluorescent lamps can meet the efficacy requirement, but are losing market share to LEDs anyway. https://www.buildings.com/

3. ***Special Tax Deductions Extended to Cover 2017 Tax Year -*** Recent legislative activity around the Bipartisan Budget Act of 2018 has resulted in (once again) extending the commercial energy efficiency tax deduction for another year, through the 2017 tax year. Even if your business has to file an extension, it might be worth it to receive these special tax deductions. FYI, because this extension of this special tax benefit has been enabled in 2015, 2016 and now 2017, one could guess that it might happen in 2018, too. You might use that information to help you justify more projects to get approved in 2018. The 179D commercial energy efficiency tax deduction is a special tax break that's not linked to assets, but related to square footage of a building that installed energy-efficiency equipment. https://www.buildings.com/

4. ***The Changing Rules of the Lighting Game by Jim Lucy -*** LED technology has unleashed new market realities that change how distributors, reps and manufacturers attack the lighting market. In the lighting industry of years gone by, electrical distributors typically would choose one of the "Big Three" lamp manufacturers (GE, Philips and Sylvania), partner with a ballast company, pick and choose lines from one of the big lighting fixture packages and fill in as needed with the next tier of bulb manufacturers. The lighting industry still has its giants, with eight companies bringing in sales of more than $1 billion: According to EW's research into SEC filings and annual reports, at least eight companies do more than $1 billion in lighting sales: Philips Lighting ($8.7 billion); Osram ($3.4 billion); Acuity ($3.5 billion); LEDVANCE ($2.4 billion); GE ($2 billion); Zumtobel ($1.6 billion); Cree ($1.1 billion); and Eaton (estimated $1.5 billion to $2 billion). On the next tier are companies doing at least $100 million in sales, including several public companies for which sales revenue data is available: Hubbell Lighting ($729 million); Panasonic's Lighting division ($307.9 million); LSI Industries ($239 million); and Revolution Lighting ($152.3 million). While the sales volumes may drop once you get past this tier of lighting manufacturers, the number of manufacturers increases. http://www.ewweb.com/lighting/changing-rules-lighting-game

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5. ***Trump's Tariff Would Have Limited Impact on LED Companies in China and Taiwan -*** The Trump administration on April 4, 2018 published a list of 1300 Chinese exports and proposed to apply a 25% tariff on these products. However, the proposal would have limited impact on <u>LED</u> companies in China and Taiwan, according to LEDinside, a division of TrendForce. This is because the LED products included in the list are mainly intermediate goods, including wafers and backlight products. These products account for only a small proportion of all the LED products that China exports to the US market, while most of these intermediate goods produced by Taiwan LED companies are shipped to China. https://www.ledinside.com/

6. ***Price Fear as Trump Hits Chinese LEDs -*** Light emitting diodes, filament lamps and arc lamps as well as aluminum and solid-state electronic parts are all included on a proposed list of 1,200 products issued by the Office of the United States Trade Representative. The stand-out item from the list from the industry's point of view is item number 85414020, light-emitting diodes. The presumption is that this extends to components including LEDs such as arrays, modules and possibly even lamps. The inclusion will be a blow to the Chinese government, which has for over a decade identified the LED lighting industry as a key strategic sector for support. It, and the regional authorities, have given grants and state aid, including discounts on machinery such MOVCDs, used in the manufacture of LEDs, and other incentives such as free land. While it appears that prices in the US will rise when the tariffs are implemented, what's not clear is what will happen to prices in Europe. http://luxreview.com/article/2018/04/price-fear-as-trump-hits-chinese-leds

7. ***Tariff List: 85414020 ……….. Light-Emitting Diodes (LED's) -*** We have quickly scanned the list of 1200 products that are on the proposed tariff list from China and LEDs are included. You can view the entire list: https://assets.documentcloud.org/documents/4430282/Office-of-the-United-States-Trade-Representative.pdf There are many components that will affect our industry on the list: steel, aluminum, resistors, diodes, etc. Some legacy products are on the list as well:
   - Electrical filament lamps, voltage not exceeding 100 V, having glass envelopes n/o 6.35 mm in diameter, suitable in surgical instruments
   - Electrical filament lamps nesi, designed for a voltage not exceeding 100 V, excluding ultraviolet and infrared lamps 85394100
   - Arc lamps 85399000 ……….. Parts of electrical filament or discharge lamps

   http://edisonreport.com/tariff-list-85414020-light-emitting-diodes-leds/

8. ***Retrolux and Greenlight IoT Partner -*** According to Retrolux, the new alliance with the help of its software will enable lighting retrofit companies, energy service companies (ESCOs), and contractors to fully prepare, accurately quote and streamline the commissioning of smart lighting systems. The company contends that its lighting retrofit software allows electrical contractors, Value-added Resellers (VARs), and ESCOs to save time and money and close deals faster. The software features audit, proposal, and ordering functions. GreenLight IoT serves as a smart building commissioning, servicing, and support agent for both North American and international markets. GreenLight IoT says its patent-pending system integration technologies and deployment processes streamline the commissioning of networked control systems. GreenLight IoT also says it acts as a bridge between smart device manufacturers and device installers and is committed to remaining controls agnostic. Furthermore, Greenlight IoT points out it has secured alliances with many leading smart-device makers. http://www.solidstatelightingdesign.com/retrolux-greenlight-iot-partner/

9. ***LEDs Light More Baseball Venues for 2018 MLB Season -*** Musco Lighting has announced a number of new LED sports-field lighting projects in time for what was the earliest full-league start ever on Mar. 29 to a Major League Baseball (MLB) season. MLB ballparks in Philadelphia, Cincinnati, and Kansas City have new solid-state lighting (SSL) systems for the playing surface that should provide a superior visual experience for players, fans in the stands, and TV viewers at home. The broad move to LEDs in baseball venues began in 2016. That year the San Padres' Petco Park, the Houston Astros and NY Yankees installed LED stadium lighting. http://www.ledsmagazine.com/

10. ***3D Printing Could Push New Frontiers in SSL Manufacturing*** - Although LED lighting has become a mature technology, a new technology is quickly rising as a potential benefit to the LED and SSL industries. Additive manufacturing is the fabrication of a 3D object by depositing a polymer-based material using print heads, nozzles, or other material deposition or solidification processes using a layer by layer approach with digital information from a computer-aided design (CAD) model. The ability to achieve product customization and design uniqueness is the primary reason for merging lighting with additive manufacturing. The benefits of additive manufacturing for SSL include custom fixtures and components, improved visual appeal and functionality, rapid prototyping, faster new product introductions, and reduced fixture cost. In terms of fixture manufacturing, the use of additive manufacturing would allow lighting professionals to manufacture custom lighting fixtures on-site during new construction and retrofit building projects. Past investigations have demonstrated successful additive manufacturing of attractive lighting fixture enclosures. http://www.ledsmagazine.com/

11. ***Philips Lighting (Signify) Whitepaper Establishes "EyeComfort" Parameters and Trademarks -*** Nowadays, light quality is a key differentiator in lighting. In general, quality of light refers to the visual aspects of light and its dependencies on and interaction with people and the environment. LEDification gives us endless possibilities to differentiate in spatial, spectral, and temporal light quality. It forces us to revise our traditional way of evaluating light quality. Philips Lighting continuously optimizes its products by bringing together in-depth understanding of user needs, lighting application knowledge, and scientific insights. We have created the EyeComfort trademark based on the following selected parameters: Flicker, Stroboscopic effect, Photobiological safety, Glare, Dimming, Tunable, Color rendering, and Audible noise. Our LED lamps and LED luminaires product portfolio is evaluated using these parameters. This white paper explains these parameters and, accordingly the importance of optimizing lighting. https://www.philips.co.uk/c-dam/b2c/en_GB/marketing-catalog/lighting/led-lights/eye-comfort/Philips_EyeComfort_whitepaper.pdf

12. ***Long Tail Markets by Ted Konnerth -*** The bulk of the sales in the lighting industry appears to have shifted from handful of dominant players to a constantly growing number of smaller players emboldened by the lower barriers to entry offered by LED technology and new online channels of distribution. Long tail markets are characterized as a niche market. We have more than 1,500 lighting manufacturers in the Egret Consulting database. Of those 1,500 lighting manufacturers, the vast majority are small companies from $5 million to $50 million. We have been tracking lighting companies more than $100 million and we're confident there are less than 25 companies that sell more than $100 million of lighting fixtures in the U.S. market. This is an exact model of a long tail market. my suggestion is that the long tail market is larger than the short tail "Hits" market, which is largely dominated by what has become the "Big 5" lighting players — Acuity, Eaton, Hubbell, Philips and Cree. http://www.ewweb.com/lighting/long-tail-markets

13. ***Lighting Controls Association's 2018 LIGHTFAIR Product Guide -*** The Lighting Controls Association offers an advance look at a selection of new products that will be displayed by members at LIGHTFAIR International May 6-10, 2018 in Chicago. While some can be seen here, many more await at member booths, so be sure to visit! http://lightingcontrolsassociation.org/

14. ***LED Rebate Amounts Start to Level Out -*** Historically, rebates for LED lighting have decreased 10 - 20% every year. This year, the rebate amounts have started to level out; the average prescriptive rebate for LED only went down 1% across all product lines. That being said, some specific products saw some big changes. LED Linear Tube Replacements dropped by 19% and screw-in HID replacement lamps by 35%. These decreases likely reflect the changing price in the marketplace as the costs of those solutions have also decreased significantly in the past year. In contrast, rebates for LED downlights and linear panels (2x4's) went up 5% and 10% respectively. Over the past few months, rebate organizations across the country have been busy updating their programs for 2018. BriteSwitch offers the following trends for this year: http://briteswitch.com/news/2018RebateTrends.html

15. ***LRC Professor, Working with UL, to Develop Circadian Lighting Recommended Practice -*** Mark S. Rea, Professor of Architecture and Cognitive Sciences at the Lighting Research Center (LRC) at Rensselaer Polytechnic Institute has agreed to chair a task group with Underwriters Laboratories Inc. (UL) working to develop a recommended practice for the specification, measurement, and application of lighting to support circadian entrainment of individuals in daytime work environments. The task group will produce a set of practical recommendations and methods, grounded in science, that can be broadly implemented by addressing how to specify lighting for daytime applications, how to accurately measure circadian light, and how specification can be achieved, not only through the use of ceiling fixtures, but also by windows, skylights, luminous panels, and plug-in lighting. http://www.lrc.rpi.edu/

16. ***The Human-Centric Lighting Debate by Tom Zind -*** No matter which side of the blue light fence you sit on, this new frontier has some designers taking a more enlightened approach to illumination. Blue light, whether delivered naturally via the sun or artificially via luminaires, has been the subject of growing scientific interest for its influence on people's sleep patterns, alertness, mood, overall health, and even susceptibility to disease. A growing body of research affirms that blue light is particularly potent, impacting the human biological clock and the body's mysterious circadian rhythms both positively and negatively, depending on the timing, intensity, quantity, and overall quality of the exposure. Continued advances in LEDs and lighting sensor/control technology, is opening a new frontier in lighting solution design. http://www.ecmweb.com/lighting-control/human-centric-lighting-debate

17. ***Tridonic and Universal Lighting Technologies Support IoT Functionality in Luminaires -*** It was at LFI 2017 when a group of companies announced the formation of the IoT-Ready Alliance led primarily by Enlighted and Tridonic. Integration of features that support sensor-enabled connected lighting are a backbone for the Internet of Things (IoT). Tridonic and Enlighted have continued to push the IoT-Ready Alliance encouraging solid-state lighting (SSL) manufacturers to future proof their products, and Tridonic has added such support in a new driver. Tridonic also has a new multi-channel driver for direct/indirect luminaires. Universal Lighting Technologies has announced a new driver that in addition to powering an LED light engine can also power sensors and electronics that are integrated into smart luminaires. http://www.ledsmagazine.com/

18. ***Lutron Electronics Acquires Ketra, Maker of Smart Lighting and Controls -*** Lutron Electronics, the leader in smart lighting controls and automated shading solutions, has signed an agreement to acquire Ketra, whose Natural Light solutions provide the highest-quality light -- light that seamlessly emulates daylight in interior spaces. Founded in 2009 in Austin, Texas, Ketra offers lighting and control solutions that deliver beautiful, customizable light in residential and commercial environments. Ketra's selection of light sources creates high-quality white, pastels and saturated colors, which enhance the look of any space and allow you to precisely tailor the light to meet the needs of the space. Ketra light sources are compatible with the Lutron HomeWorks QS total home control system and Lutron Quantum total light management system. http://www.lutron.com/en-US/Company-Info/Pages/News/Media-PressCenter/welcome.aspx

19. ***State of Tennessee Partnering with Osram on Upgrading Lighting of Government Buildings -*** In a series of projects in the state of Tennessee, German firm, Osram' is supplying new energy-efficient lighting systems for government buildings throughout the state and Sylvania Lighting Solutions is helping to install the lighting upgrades. These buildings that will get new LED lighting included many of the state's biggest, most renowned and historic offices and agency sites. http://www.solidstatelightingdesign.com/

20. ***Gooee's IoT Test Lab -*** Based in St. Petersburg, Florida, the test lab is a purpose built 14,000 sq. ft testing facility, designed to test all aspects of the wireless mesh network + develop a suite of test programs to validate cloud and gateway functions, along with building data analytics simulations. Established in 2017, the US$1 million installation uses six miles of cabling to conduct over 500 different tests on the lights and their various controls platforms. A team of six engineers conduct round-the-clock tests on the units, measuring 3,400 individual data points. This year alone, they've taken 150,000,000 readings. It's not just Gooee hardware that gets tested here. Luminaire makers who have signed up to Gooee's partnership programme have their kit evaluated here too, as do end-user customers such as retail and hospitality chains exploring using IoT lighting on their estate. https://gooee.com/test-lab   Watch the video: https://www.youtube.com/watch?time_continue=165&v=gGfc0X8SvAI

21. ***5 Tips for Choosing a Smart Lighting IoT Platform -*** Smart lighting is playing a pivotal role in unlocking the power of the IoT and smart building applications beyond lighting. An intelligent, sensor-laden lighting system can form the central nervous system of a building, enabling smart lighting and other current and future IoT applications. Selecting an infrastructure that will support the IoT can be an overwhelming task. There are still many unknowns about what the exact requirements will be and no one wants to make an investment mistake. Here are 5 fundamental tips when choosing an intelligent lighting system infrastructure as your platform for IoT:
    1. Be Prepared to Scale
    2. Stay Flexible and Agile
    3. Go Wireless
    4. Stick with Non-proprietary
    5. Make the Experience User-Friendly
    While smart lighting is able to bring efficiencies and automation to the lighting system, the addition of IoT tells a broader story about the space, the occupants, and the building itself. https://www.ledinside.com/news/2018/4/5_tips_for_choosing_a_smart_lighting_iot_platform

Global LED EnergyWatch…

22. *MLS Becomes Sole Owner of LEDVANCE -* LEDVANCE GmbH is now 100 percent owned by the leading Chinese LED lighting company MLS. MLS has taken over the full ownership of LEDVANCE by means of a share deal with the strategic investor IDG Capital and the financial investor Yiwu. As part of the deal, IDG Capital and Yiwu will become shareholders of MLS via a joint investment. The change in ownership has no impact on LEDVANCE's legal form as a German GmbH. The company will continue to be an entity under the principles of German codetermination with its global headquarters to remain in Garching near Munich. www.ledvance.com

23. *University Hospital in Poitiers, France Uses Human-Centric Lighting -* The newly-installed

lighting installation at the university hospital in Poitiers, France supports the health and well being of cancer patients at the hospital in a special room that employs human-centric lighting. The special room uses tunable white LED technology and a custom-designed ceiling to simulates a natural environment. For the installation, Tridonic QLE PREMIUM modules with tunable white technology were mounted on the ceiling. The tunable white technology of these square LED modules can adjust the color temperature of 3,000 to 6,000 K at constant luminous flux and can dim the lights down to 10 of their intensity without changes to the chosen color temperature. The printed light ceiling shows a picture of the sky. The ceiling luminaire is controlled via the Tridonic connecDIM light management system. http://www.solidstatelightingdesign.com/

24. *Death of Tungsten: Another Top Museum Goes All-LED -* Located inside the Louvre's Palace, the Musée des Arts Décoratifs is the sixth most visited museum in France and one of the most important

in the world. Founded in the nineteenth century, it houses thousands of collectors' objects and artworks, offering a complete overview of arts from the Middle Ages to the 21st century, ranging from toys to jewels, ceramics to furniture. The ageing lighting installation has been long overdue an refit, but the task was challenging. The artworks had been illuminated with halogen fixtures, and while halogen boasts a theoretical perfect colour rendering, the team was agreed the source was inappropriate for the art. Working with engineers from US LED

manufacturer Cree, the team developed a chip-on-board array using the just-launched Ultra HD CXB 1816 diodes. These have an average colour rendering across reference colours of 98.7 per cent and, importantly, a specific rendering index of red of 89, a very high number for an LED source. http://luxreview.com/article/2018/04/death-of-tungsten-another-top-museum-goes-led

25. ***Park's Lighting Responds to Noise to Beat Vandals -*** The lighting in a public park in Austria has been fitted with acoustic sensors to respond to noise. The innovative installation at the People's Garden in Graz is designed to respond to anti-social behavior at night and increase feelings of safety and security. Six outdoor luminaires, equipped with a combination of motion detectors and noise sensors, are dimmed to 20 per cent as standard. But as soon as one of the four fittings with a motion detector senses any kind of movement, the output is raised immediately to 50 per cent. If one of the two acoustic sensors picks up any noise, the fittings illuminate the area to 100 per cent. The lights – Supersystem luminaires from Zumtobel – may become even more intelligent in the future, as the Graz authorities have the option to control the lighting centrally and remotely using dedicated software. http://luxreview.com/article/2018/04/park-s-lighting-responds-to-noise

26. ***LEDinside UV LED Market Value in 2022 will Increase to $1.224 Billion*** According to the latest report from LEDinside, a division of the market research firm TrendForce, 2018 UV LED Application Market- Curing, Medical and Sterilization, the projected UV LED market value was reach to USD 223 million in 2017 and will spring up to USD 1.224 billion in 2022, with 2017-2022 CAGR of 33%. Except for steady curing market growth, surface sterilization, static water sterilization, and flowing water sterilization will drive the growth of UV LED market in 2018-2022. Korean manufacturers positively focus on UV LED market. https://www.ledinside.com/node/view/29240

27. ***LEDs 'Astonishing' for Winter Tomatoes, Says Top Supplier -*** Flavourfresh, which produces nearly three million kilograms of tomatoes a year for the likes of Asda and Marks & Spencer, introduced LED lights two years ago at its greenhouses in Southport, to keep production going during the winter months. Production manager Andy Roe says the results have been 'astonishing'. Roe says the quality of tomato that can be produced in the UK in winter under artificial lights is 'identical to the quality that can be produced in summer. There's a cost to achieving it, but the UK customers are prepared to pay for it'. LEDs are increasingly replacing high-pressure sodium. http://luxreview.com/article/2018/04/leds-astonishing-for-winter-tomatoes-says-top-supplier

28. ***Osram Cuts Earnings and Sales Forecast -*** The elephant came to the front of the IoT lighting room, as Osram warned that fiscal year 2018 revenue will grow only about half as much as previously forecast, hitting earnings and forcing layoffs that the company hopes to eventually reverse by recasting its workforce into a more high-tech gearing. The world's second-largest lighting company said that revenue for the year that ends Sept. 30 will now increase by 3–5%, down from its earlier guidance of 5.5–7.5%, based on current exchange rates. It lowered its forecast for adjusted EBITDA by around 9%, to about US$779.4 million from $852.4 million. The downward adjustment was a reminder that the lighting industry's attempt to transform itself from an illumination provider into an industry that establishes the lighting infrastructure as the backbone to data communications networks — making lights indispensable "things" within the Internet of Things — will not come easy. http://www.ledsmagazine.com/articles/2018/04/osram-cuts-earnings-and-sales-forecast.html

29. ***Nichia Expands Its Direct Mountable Chip Series with the Introduction of Single Colors -*** Nichia Corporation to introduce discrete color options in its Direct Mountable Chip series, a similar technology to the industry's Chip Scale Package (CSP). Nichia's Direct Mountable Chip color lineup, consisting of Royal Blue, Green, Amber and Red, along with its previously released white options, enables lighting customers to take advantage of Nichia's unique Direct Mountable Chip technology in a wide range of applications. https://www.led-professional.com/

LED TechnologyWatch…

30. EVERLINE PA LED Drivers Bring Auxiliary Output Power to 0-10V Outdoor and Industrial Applications - Universal Lighting Technologies, Inc., a member of the Panasonic Group, recently introduced its PA Series of LED drivers. Designed for the smart fixture, PA drivers eliminate the need for a separate power supply for sensors by providing 12 Volts DC (12Vdc) or 24Vdc auxiliary output power. These drivers are compatible with any standard 0-10V analog dimming control signal. They can be programmed down to minimum dimming level of 5 percent using the popular EVERset tuning software. The software allows designers to customize PA driver parameters, such as minimum and maximum output currents, dimming curves, dimming control voltages and a dim-to-off command. Specific configurations can then be saved for production use. PA drivers are well suited for industrial and outdoor applications with Class 2 output, Type HL rating and 6kV surge protection for extreme environments. The LED drivers are available in 55W and 95W. www.unvlt.com

31. The 10 Best Innovations from Light + Building - Fuelled by bratwurst and Mövenpick ice cream, Team *Lux* scoured Frankfurt's humungous Messe to bring you the outstanding kit from the global showcase of all things illumination that is Light + Building 2018. Hell, we even trekked to Hall 11 and survived to tell the tale… 1. Unico **-** XAL; 2. Dynamic beam shaper **-** LensVector; 3. Mito - Occhio; 4. Lightelligence **-** Osram; 5. True Presence **-** Steinel; 6. A1 track **-** Viabuzzuno; 7. GalaXi **-** Xicato; 8. LiFi platform **-** Philips; 9. HCL Control **-** LEDVance; 10. Deep UV LED **-** Stanley; http://luxreview.com/article/2018/03/the-20-best-innovations-from-light-building

32. Deco D821-LED Diamond Light - The D821-LED series features a heavy-cast aluminum housing designed with modern aesthetics in mind. The architectural luminaire provides brilliant illumination to walkways and other outdoor spaces, improving the visibility, safety, and overall look of any outdoor area. Powered by DECO's energy-saving LED technology, this high-powered outdoor luminaire is Dark Sky compliant and paired with state-of-the-art optics to restrict light trespass, glare and light pollution for neighborhood-friendly outdoor lighting. https://www.getdeco.com/product/d821-led/

33. Sigma Luminous 4' Vaportight LED Fixture - The Luminous Vapor Tight fixture is an energy efficient, low-maintenance alternative to traditional florescent in a variety of commercial uses. It can also be used in low bay lighting applications of 20 feet and lower. This fixture can be surface mounted or hung via chain. It features IK09 and 5VA rated shatter-proof optically enhanced diffusers, clear or frosted, with stainless steel clips. This fixture is IP65 rated and UL 1598 suitable for wet and industrial locations. With efficiencies of up to 154 lm/W it is DLC 4.2 Premium Rated This fixture also offers optional 1-10v dimming and battery backup options https://sigmaluminous.com/wp-content/uploads/2018/02/Vapor-Tight-Spec-sheet.pdf

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34. EW's Top 10 LED Picks for April, 2018 - Congratulations to the product managers and marketing teams from Acclaim Lighting, Amerlux, Bartco, Earthtronics, EPCO, Lightline, Milwaukee Tool, Shat-R-Shield, Thorn Lighting and Topaz for having their products selected for *Electrical Wholesaling's* Top 10 LED Picks this month. Have a product you would like considered for our future picks? Send along a press release or brief write-up, high-resolution image, and link to the products technical details to Jim Lucy at jim.lucy@penton.com http://www.ewweb.com/

35. EarthTronics Introduces Vapor Tight LED Series for Wet, Dusty and Dirty Environments - EarthTronics introduces its new line of IP66 wet location rated Vapor Tight LEDs to provide a low-cost solution for lighting parking garages, cold storage, walkways, stairwells, under canopy, exterior retail and other wet, dusty and dirty environments. The 48-inch long, Vapor Tight LEDs from EarthTronics are available in 30 and 40 watts, producing 4200 and 5600 lumens with a 150° beam angle. Both units feature a 5000K color temperature with a high 80+ CRI. They have a 0-10 Volt dimming standard and will perform in temperatures ranging from -20°F to 122°F. The Vapor Tight LEDs feature a fully gasket polycarbonate housing, which provides the IP66 wet location rating for wash down and dusty conditions. For more information about all EarthTronics products, visit www.earthtronics.com

36. Acclaim Lighting Dyna Drum HO Model: DDJ, DDK, DDM - The second generation of Dyna Drum HO is available in three configurations. The color version is available in Quad White RGBW or Quad Spectrum RGBW, the White version uses a new high power LED and optical system, and the SCS (single color series) features several color configurations such as RGBA, dynamic white, and RGBAW. All versions feature an internal 100-277VAC power supply, onboard DMX+RDM driver, new OLED display, and each unit carries Acclaim's Aria wireless DMX technology inside. The new optical system and high power LEDs provide exceptional output and efficacy. They come with a narrow beam standard, with optional quick-change spread lenses for wider applications.
http://www.acclaimlighting.com/index.php?id=132&tx_displaycontroller[product]=427

37. Prudential Stream Dot — Square Accent Lights Punctuate Architectural Interiors - Our veiled ambient Stream series of recessed and pendant fixtures now include 4″ round and square 'architectural accent' lights to complete a recessed line of light. Soft indirect hidden LEDs reduces glare and offer a wide, even distribution of light. Stream Dots have the same form factor as downlights, but look and perform uniquely Stream-like. Far more significant than their 4″ size may suggest, Stream Dots open up a new world of design possibilities. Arrange them in a line with the 4″ Stream recessed for a consistent "veiled ambient" look, or go crazy with elaborate graphic patterns.
http://www.prulite.com/product/dot-square/

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38. *2018 IES Progress Report Open for Submissions* - The Illuminating Engineering Society has announced its 2018 Progress Report is now open to submissions. IES is looking for significant new advancements in lighting products, research, publications, and design tools from the past year. https://progress.ies.org/

39. *Growing Up in Colorado* - Colorado was the first state to do so. In the years since, Alaska, California, Nevada, Oregon and Washington, D.C., have followed suit. Vermont recently legalized marijuana sales through legislative action. Massachusetts will join those states in July. Maine has proposed it. According to a report from New Frontier Data, legalized marijuana is expected to generate $600 million in state taxes. Other states can't ignore that and just might follow, even though marijuana is still illegal at the federal level. Pueblo Electrics favors LEDs since they produce significantly less heat and use less electricity than HPS lights. Other contractors prefer HPS lights, but they are moving to LEDs as the technology improves. In a room of clones where the lights stay on 24 hours a day, some ECs like to use high-intensity T5 fluorescent lighting. Growers cultivating specific marijuana strains can call for the color of the light spectrum to change during the day. The quality and amount of the harvest heavily depends on this proper, complicated lighting. https://www.ecmag.com/

40. *The Lighting Controls Association Education Express* - The Lighting Controls Association offers free, comprehensive online education about lighting controls technology and application. Courses are free and registered with CALCTP (CALCTP), NLCAA (NLCAA), NCQLP (LC LEU) and AIA (CES LU/HSW). CEUs are also available. Courses are recognized as preparation for CALTCP and NLCAA training and certification in California, and the NALMCO CLCP certification internationally. Take a course anytime. For education credit, take the online quiz. http://aboutlightingcontrols.org/EducationExpress/

41. *Philips Lighting Closing Fall River Manufacturing Facility* - Employees in the manufacturing end of the Philips Lighting in the Industrial Park, known in 1982 as Lightolier Lighting, were given notice on Friday that production will end at the facility beginning the third quarter of this year. The closure of the manufacturing side of the facility will affect 160 workers and the transfer will be completed by the end of the first quarter in 2019. Production will be transferred to their facility in Monterey, Mexico. Research and Development will move to Boisbriand, Canada. http://www.heraldnews.com/

42. *Steve Mesh on California's Title 24 Energy Code and Lighting Controls* - California has been a historical leader in terms of state energy codes. California's Title 24 has led the way by restricting allowable LPDs (Lighting Power Density) as well as mandating specific types of lighting controls. However, in the past 5-10 years, other codes have made great strides in catching up to the stringency of California's Title 24. Both ASHRAE 90.1-2016 as well as IECC 2015 have provisions that are much more closely aligned with Title 24 than they used to be. This should make life easier for both specifiers as well as manufacturers since required control equipment doesn't vary as much based on the project location as it used to. This article by Steve Mesh introduces the Title 24 energy code and its lighting control requirements. http://lightingcontrolsassociation.org/2018/04/23/12744/

Monthly Special Feature…

Ground Planes for LED Drivers — Part 1 of 3 Philip Keebler - In this article, we continue our discussion on the importance of grounding when installing LED lighting equipment. Part 1 of this three-part series focuses on the ground plane of the printed circuit board (PCB) used in the LED driver. We'll touch on the importance of the relationship between power quality in the facility electrical and grounding system and the LED driver's PCB ground plane in Part 2. Part 3 of this series will explain how strategic power quality monitoring can identify disturbances that can cause premature failure of digital-based LED drivers. http://www.ecmweb.com/lighting-control/ground-planes-led-drivers-part-1-3

Ground Planes for LED Drivers — Part 2 of 3 by Philip Keebler - How grounding and bonding connections in facility power systems affect LED driver ground stability. In Part 2, we take a look at how facility power systems should provide a consistent, reliable, and conductor-dependent grounding and bonding system from the electric utility service transformer to the LED drivers. We'll also discuss a recommended design for grounding and bonding that helps ensure good power quality in facility electrical systems with disturbance-generating loads and electronic equipment. With respect to power quality for customer facilities, especially industrial plants, and the need to support a growing number of electronic loads, older facilities — some dating back to the 1920s and 1930s — still lack a consistent, reliable, and conductor-dependent grounding and bonding system across the entire facility power system. What do we mean by this? How do facility power systems in older facilities increase the likelihood of malfunctions and failures to LED drivers and other electronic equipment? http://www.ecmweb.com/lighting-control/ground-planes-led-drivers-part-2-3

Ground Planes for LED Drivers — Part 3 of 3 by Philip Keebler - Strategic PQ monitoring can help identify disturbances that cause premature failures of digital-based LED drivers. In this third and final part, we'll look at how advanced power quality (PQ) monitoring can be used to identify disturbances that cause premature failures of LED drivers installed in luminaires. Aside from knowing how to read and interpret PQ monitoring data, the biggest mistake one makes during a PQ investigation is selecting the most appropriate location to monitor. One must realize the PQ monitors are not simple digital voltmeters (DVMs). PQ monitors are sophisticated instruments designed to record detailed information regarding the voltage and current occurring at the monitoring point and graph that information with respect to time and frequency. Good PQ monitors do more than graph voltage and current trends against time and frequency. Humans like to see images, especially when trying to analyze and solve a problem. Therefore, being able to view and dissect waveforms of voltage and current disturbances is valuable when trying to determine where disturbances are coming from and how they get to electronic equipment. http://www.ecmweb.com/power-quality-reliability/ground-planes-led-drivers-part-3-3

The unmanaged risks are many, and the likelihood of driver failures needs attention. Hindsight shows us that the costs of proactive monitoring before LED lighting is installed is much less than the cost of cleaning up these problems after the fact. A recommended monitoring period of at least a week at different panel locations will provide limited but somewhat informative data, revealing the disturbances occurring on these panels. Two to three weeks of monitoring helps to capture disturbances from cyclical loads. Dedicated grounds to these panels and EGCs to each lighting branch circuit will help reduce the unmanaged risks of damaging new electronic LED drivers from disturbances caused by electronic switching in VFDs and from power system-level switching as well.

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