

EnergyWatch

 Attardi Marketing

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<http://attardimarketing.com/>
<http://energywatchnews.com/>

If you're not humble, it's hard to be coached. If you can't be coached, it's hard to get better.
Jay Wright, head basketball coach at Villanova

Something to Think About... <http://ewweb.com/management/rethinking-lighting>



Rethinking Lighting - Digital IoT control, continuing advances in the solid-state technology and new business models for installing and selling lighting are rewriting the rules of the lighting game. Electrical Wholesaling magazine has published in their April issue the quandary we in lighting are living thru.

- *The End of Lighting As We Know It?* - Wiedenbach-Brown's Chris Brown likes to stir the pot in the lighting market with his sometimes-controversial posts on what it will take for distributors to survive an onslaught of new lighting technology. He's at it again in this article.
- *Welcome to Lighting's Innovation Era* - Evolving LEDs and other solid-state lighting products are racing down the same roads other high-tech products took when they revolutionized their markets. Yours truly thinks there may be room on the trip for savvy lighting distributors.

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LED EnergyWatch...

1. ***Current, Powered by GE, Acquires Daintree Networks to Transform Buildings from Idle to Intelligent*** - Current, powered by GE, announced the acquisition of Daintree Networks, an Industrial Internet provider of building controls solutions for commercial facilities. This acquisition will enable Current to expand its building automation platform and its energy-as-a-service offering to small- and medium-size facilities through the deployment of Daintree's open, standards-based wireless control systems. Today, 90 percent of the world's small- to mid-sized buildings do not have building automation systems. Integrating Daintree Networks' open-standard networked wireless control solution, ControlScope, into Current's building automation portfolio addresses that problem. The joint solution links data from lighting and HVAC systems directly to Predix, GE's Industrial Internet software platform – allowing customers to analyze their energy consumption and identify data patterns to increase efficiency and reduce power levels. Current plans to announce at Lightfair adding 15 application vendors and SI partners to its Intelligent Ecosystem. These partners will assist Current in bringing a holistic, energy-as-a-service solution to help commercial and municipal customers meet their energy goals. Current will also announce three new intelligent LED deployments, as Current is helping Tianjin, China; Schenectady, NY; and Cleveland, OH improve traffic patterns, pedestrian safety, WiFi signals, and find other innovative ways to service their citizens and businesses. 4/21 PRNewswire/

2. ***Lighting up data - Visible Light Communications (VLC) by Sohrab Modi – VLC = Illumination + Communication*** - The exponential growth of data has placed significant demand for a flexible, reliable, secure, high bandwidth, low cost network medium. While wireless provides flexibility, radio does not have unlimited bandwidth. Also the cost, security and reliability requirements of radio remain a challenge. Visible light communications may provide us with an answer to this conundrum with 4 unique characteristics.
 1. Visible light has much higher available bandwidth than radio frequency (RF) systems (Wi-Fi).
 2. Visible light exhibits higher security than radio frequency (RF) systems.
 3. Like all wireless, visible light is flexible.
 4. Has lower deployment costs. <https://www.linkedin.com/pulse/lighting-up-data-visible-light-communications-vlc-sohrab-modi?trk=prof-post>

3. ***LEDucation Celebrates a Decade of Record Breaking Numbers for Annual Event on SSL Technology*** - The event this year surpassed all previous records and hosted over 4,200 attendees in a packed expo hall and over 30+ well attended educational sessions. Presentation from the educational sessions will be posted to the website within this month. A variety of high res images: https://www.dropbox.com/sh/tm05wv4z5ftlk0z/AACEZrc118AhaAF3S_M0a7fXa?dl=0

4. ***Siemens Presents the World's Thriftiest Traffic Light*** - This has been made possible by installing so-called "1-watt technology". One-watt technology uses digital LED driver modules. This eliminates the need for load resistors and switching elements in the signal light units which until now have consumed most of the energy. Compared with the 60 watts sometimes consumed by incandescent bulbs, the electricity required by individual traffic light signals can be slashed to just one or two watts. State-of-the-art LEDs with extremely low power consumption still retain full light intensity. In addition to power costs, the 1-watt light units also reduce service costs. Optical monitors continuously check the state of the LEDs. <http://www.tedmag.com>



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5. ***DOE Rulemaking Could Dash California Title 20 Sting*** - The US Department of Energy (DOE) is purportedly readying regulations on general service lamps, including both LED-based products and compact fluorescent lamps (CFLs) that would in part negate the widely-criticized California Title 20 rulemaking. Evidently, the DOE policy will require a minimum CRI of 80 for all general-service lamps whereas the California Energy Commission (CEC) has effectively mandated a CRI of 90, and the higher CRI could equate to higher-cost lamps for consumers and slightly greater energy usage. It appears that the federal policy will rule with solid-state lighting (SSL) products, at least in terms of the ubiquitous A-lamp. <http://www.ledsmagazine.com/articles/2016/04/doe-rulemaking-could-dash-california-title-20-sting.html>

6. ***NEMA's Publishes ANSI C78.374-2015: Light-Emitting Diode Package Specification Sheet for General Illumination Applications*** - The purpose of this new standard is to specify the standardized white light-emitting diode (LED) package specification sheet, or data reporting format, as the means of communication between LED package producers and users in general illumination applications. The minimum defined contents and format of the specification sheet are provided. Available in hard or electronic copy for \$75 on the NEMA website. <http://www.nema.org/Standards/Pages/Light-Emitting-Diode-Package-Specification-Sheet-for-General-Illumination-Applications.aspx>

7. ***APS First US Utility to Use Advanced Technology to Help Manage Solar Generation*** - Meaning that the utility can operate the solar installations as they would a power plant, ramping up or curtailing power based on customers' real-time energy needs. The device is called an advanced inverter. Inverters are installed with solar panels to convert the electricity from a one-way flow of energy (direct current) to a two-way flow of energy (alternating current - which matches the current on the electric grid). The advanced inverters used as part of APS's Solar Partner Program (SPP) just received their UL certification, allowing the utility to start full command and control of the device. These advanced inverters will help APS regulate the amount of energy flowing into the grid in neighborhoods with participating SPP customers. <http://pro.energycentral.com>

8. ***Philips Said to Name Banks for Possible Lighting Unit IPO*** - Royal Philips NV has named six banks and filed draft documents to the Dutch market regulator for a possible initial public offering of its lighting division even as a process to sell the business through an auction continues, according to people familiar with the matter. The move is part of Philips Chief Executive Officer Frans van Houten's plan to sell the lighting division, which makes products such as street lights, and focus the company on health care. The Amsterdam-based manufacturer has kept its options open so far as to how the sale will be carried out. U.K. investment company Melrose Industries Plc pulled out of the running, increasing the likelihood of an IPO. <http://www.bloomberg.com/news/articles/2016-04-04/philips-said-to-name-banks-for-possible-lighting-unit-ipo>

9. ***Celebrating Earth Day with Low-Cost ENERGY STAR Certified LED bulbs*** - In celebration of Earth Day, more consumers will benefit from lower utility bills and discover the simple choice for energy savings—ENERGY STAR! Beginning this spring and continuing through Earth Day, Greenlite and the Dollar Tree are launching a nationwide promotion to highlight the benefits of energy-efficient lighting and the value of ENERGY STAR. This campaign presents an opportunity to bring high-quality ENERGY STAR certified LED light bulbs to the Dollar Tree consumer. Limited-time \$1-per-bulb pricing on Greenlite ENERGY STAR certified LED lamps is made possible by 20+ private, public, and municipal utilities: <https://www.energystar.gov>



- 10. ENERGY STAR Lighting Webinar Series** - In recent years, EPA has worked with stakeholders to raise the bar for efficient lighting. Building on more than 20 years of partnership to foster the future success of the ENERGY STAR program for lighting, EPA is hosting a webinar series in 2016. These interactive webinars will serve to further the technical discussion, understanding, importance and relevance of key technical topics to the ENERGY STAR program and lighting specifications. Each session will feature presentations by multiple technical experts who will speak on the designated topic and provide a forum for open discussion among ENERGY STAR lighting stakeholders. https://www.energystar.gov/products/spec/energy_star_lighting_webinar_series_pd
- 11. DOE Announces Lighting Alternatives Maximizing Performance & Suitability (LAMPS) Funding Opportunity** - The U.S. Department of Energy's Building Technologies Office Emerging Technologies (ET) program is announcing the availability of up to \$3 million for a new program focused on developing higher-efficacy and cost-effective replacement lamps in general illumination applications. ET's program seeks to accelerate the development of replacement lamps that meet or exceed 45 lumens per watt, maintain the needed performance attributes of the incandescent lamps they replace, eliminate or minimize any performance compromises, and create suitable lighting options for incandescent lamps where none exist today. <https://eere-exchange.energy.gov/Default.aspx#FoaIda1ce1963-a1bf-491c-94a0-9dbbaa20da67>
- 12. Big Threat or Big Opportunity by Gary Thomas** - There are growing discussions in the electrical distribution community about the threat of select manufacturers and certain mega-Internet companies circumventing existing distribution channels by selling direct to end-users. It is referred to as "disintermediation", and some fear that such a trend could disrupt the traditional flow of lighting products and services, invite new nontraditional competitors, jeopardize the stability of many electrical distributors, and even force some to shut their doors. http://www.tedmagazine-digital.com/tedmagazine/april_2016?folio=78
- 13. Sensity Systems Joins Panasonic's CityNow Initiative to Accelerate the Transformation of Smart Cities** - Today, about 50 percent of the world's population lives in urban environments. By 2050, an estimated 70 percent will live in these areas, putting cities under even greater pressure to modernize their private and public infrastructure and services. Sensity's Internet of Things (IoT) Platform is the latest addition to a growing portfolio of solutions that Panasonic is bringing to city and state governments, universities, corporations, and sports and entertainment venues. By working with Sensity, Panasonic is building upon its position as a global leader of sustainable energy with high-efficiency LED lighting modules and solar energy generation, storage, and management, as well as in public safety with video capture, analytics, and management solutions — key areas of focus for cities around the world. <http://www.facilitiesnet.com>
- 14. Circadian Lighting Is Developed to Help Dementia Patients at UK Hospital** - UK smart lighting and LED specialist PhotonStar said it has completed a circadian lighting installation at a dementia ward in London where the dynamically changing light levels are expected to improve patient health. The system of 56 LED downlights at St. Mary's is tied into a wireless PhotonStar control system called Halcyon that simulates daylight during normal waking hours by providing high visual and non-visual light levels. The non-visual frequencies, also known as "melanopic" lighting, includes light in the blue wavelength spectrum, which is associated with daylight and which suppresses the sleep-inducing hormone melatonin. <http://www.ledsmagazine.com>



15. Osram Unveils Laser Spotlights and LED Stage Lighting - Osram is migrating their laser-phosphor headlight technology over to entertainment lighting. Will it make it to general lighting? At Prolight + Sound Osram is presenting its phaser laser technology for the first time with a luminous flux of up to 18,000 lumen (lm). Phaser is a compound of phosphor and laser. It will enable lighting solutions in future to offer the maximum available luminance. Innovative LARP technology (Laser Activated Remote Phosphor), which was developed for automotive applications, has been on the roads also since 2014 as laser front lighting on various series models. Now this technology is being used in the entertainment sector for the first time. BizLED Magazine

16. Next Generation Luminaires Design Competition Announces 2016 Winners at Lightfair - Sponsored by DOE, the Illuminating Engineering Society, and the International Association of Lighting Designers, NGL promotes excellence in the design of energy-efficient LED products for commercial lighting applications. Twenty-five products—16 for indoor use and nine for outdoor use—were recognized as meeting the competition's rigorous requirements. Of those 25 winners, five—coming from five manufacturers—received the additional distinction of being considered Outstanding:

- **Focal Point:** Awarded Outstanding for its Nera linear pendant luminaire.
- **Eaton:** Awarded Outstanding for its Portfolio dim-to-warm downlight.
- **Kenall Lighting:** Awarded Outstanding for its MedMaster Balance white-tunable luminaire.
- **Landscape Forms, Inc.:** Awarded Outstanding for its FGP Path Light bollard.
- **Cree:** Awarded Outstanding for its RSW Series LED Street Luminaire.

17. Differing Paths to Lighting Success by David Gordon - Acuity and Cree shared calendar Q1 lighting success. So, let's look at what they said and what it could mean. Acuity quarterly report (their Q2 fiscal year)

- Overall “outstanding results”
- Net sales increased 26% to \$787M! 12th quarter in a row for double-digit volume increase. This increase excluded Juno and Distech (recent acquisitions)
- Operating profit margin was up 250 basis points to 16.4% (*overall, not necessarily, but could be, for electrical distribution channel*). Overall gross profit margin is 43.5% vs last year.

Last week wasn't a good week on the stock market for Cree. Why? They are projecting that Q3 (for them) revenue would be \$367M vs guidance of \$400-430M. Let's delve into some of the analyst insights. Here's observations from one analyst:

- All three company segments had declines, including the lighting division (and remember, Acuity was up 26%).
- Lighting Products division revenue is projected at \$187M, down from an initial guidance of \$235 ... and down \$37M from last year, so off 20% (again, Acuity was at \$787M and up 26%)

<http://www.electricaltrends.com/2016/04/differing-paths-lighting-success.html>

18. DOE Publishes GATEWAY Report on OLED Lighting in an Office Setting - The U.S. Department of Energy has released a report on the first GATEWAY demonstration involving OLED lighting. Aurora Lighting Design, Inc., in Grayslake, IL, installed Acuity Brands' Trilia™ OLED lighting system in September 2014. The new report recounts the experiences of this pioneering project and provides valuable feedback to OLED and component manufacturers as well as luminaire manufacturers. If OLEDs continue to increase in efficacy, longevity, size, and flexibility, designers and engineers will have a new tool for creative and effective lighting. For the complete findings:

<http://energy.gov/eere/ssl/downloads/oled-lighting-offices-aurora-lighting-design-inc>



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Global LED EnergyWatch...

19. Top 7 Global LED Industrial Lighting Vendors - Technavio's market research analysts have considered the top contributors to the overall revenue of this market. To calculate the market size, the report covers the market for finished LED lighting products that are used for industrial applications only. The key leading vendors analyzed in this market study are:

- Cree
- GE Lighting
- LG Innotek
- Nichia
- Osram Opto Semiconductor
- Samsung Electronics
- Seoul Semiconductor

<http://bizled.co.in/7-leading-global-led-industrial-lighting-vendors/>

20. LEDinside Reports Global LED Market Posts First YoY Decline in 2015 - The latest report from LEDinside, a division of TrendForce, finds the total value of the global LED market (include both visible and non-visible LED products) arrived at US\$14.32 billion in 2015, representing YoY growth of -3%. The market witnessed its first annual decline in value last year mainly because of the price war among the LED manufacturers, with the ASPs of some mainstream LED packages suffering a drop of 40% or more compared with 2014. LEDinside Research Director Roger Chu explained that there were three major factors behind the negative growth in market value for 2015:

1. **Decrease in LED usage volume due to technological advancements:**
2. **The rise of OLED as the replacement technology**
3. **Oversupply**

On the whole, Chu expects the demand for LEDs to keep growing in 2016.

<http://www.ledinside.com/node/25153>

21. Apple Drops Osram, Adds Philips LEDs to Top Suppliers List - Apple Inc. swapped out Osram Licht AG from a list of its biggest suppliers and added Royal Philips NV, part of a supply chain reshuffle ahead of the release of the iPhone 7. The revision to the catalog of Apple's top 200 parts providers is a boon to Philips while it searches for a new buyer for its light-emitting-diode unit. It's also a blow to the Munich-based Osram, which is investing one billion euros (\$1.4 billion) in a plant that builds semiconductors used to make LEDs. Osram is meanwhile divesting its traditional lighting business in order to focus on LEDs. <http://www.bloomberg.com/news/articles/2016-03-31/apple-drops-osram-adds-philips-leds-to-top-200-supplier-list>

22. LG Display Injects US \$1B in Construction of OLED Display Module Factory in Vietnam - The company will invest US \$1.5 billion in the factory and expects the new module assembly plant will contribute to increasing production of OLED display panels back in Korea. LG Display, supplier of smartphone screens to clients including Apple and LG Electronics, said that the lower human resource costs are the key factor that encouraged the Korean giant to construct the new facility. This is clearly a reasonable move, echoing other electronics firms operating in Vietnam, including Samsung, Microsoft, Intel, Canon, Panasonic and Toshiba.

http://www.koreatimes.co.kr/www/news/tech/2016/04/133_202043.html



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23. Soraa Brings LED Lighting to Oxford - Soraa LED lamps have been installed at the Pitt Rivers Museum at the University of Oxford in Oxford, England. The museum chose Soraa's LED lamps to save energy and money and to illuminate its rare collections of anthropology and archaeology artifacts. While increased efficiency was a desired outcome, more importantly the artifacts and exhibits needed to be flawlessly illuminated and rendered. The lighting designers for the museum chose Soraa's lamps with Violet-Emission 3-Phosphor (VP₃) technology to showcase the space's industrial design and to illuminate the colors and whiteness of the relics on display. Utilizing every color in the rainbow, especially deep red emission, Soraa's lamps render warm tones beautifully and accurately, and achieve a color-rendering index (CRI) of 95 and deep red (R9) rendering of 95.
<http://www.tedmag.com>

24. Manufacturers Seeking to Launch New Facilities in China May Be Eligible for Up to \$800,000 USD Grant Plus Incentives - A new grant program has been launched by the China Overseas Scholars Pioneer Park Alliance (COSPPA). Manufacturers seeking to open new R&D + manufacturing facilities in China may be eligible for grants between \$150,000 to \$800,000 USD. Advanced energy-efficient lighting manufacturers in the U.S. can qualify for the grant support. Projects targeting the Chinese market and international markets are encouraged. Technical Analysis & Services International, Inc. (TASI)

LED TechnologyWatch...

25. EW's Top 10 LED Product Picks for April 2016 - Electrical Wholesaling's Top 10 LED Picks for April, 2016 are in. Congratulations to the following companies for being featured: EPCO, Everline, Green Creative, JESCO Lighting, Litetronics, Luraline, MaxLite, Shat-R-Shield, Solais/PowerSecure International and WAC Lighting. http://ewweb.com/gallery/ews-top-10-led-product-picks-april-2016#slide-0-field_images-32161



26. Universal Lighting Technologies Expands EVERLINE® LED Retrofit Kit Product Warranty to Seven Years - The EVERLINE LED Retrofit Kit simplifies the transition from fluorescent to LED, reducing electrical demand and energy consumption compared to conventional fluorescent lighting systems. Available in two- or four-foot kits, the product consists of either two or three LED-lensed modules, one LED driver, and a harness packaged together with replacement instructions. All EVERLINE LED Retrofit Kits are DesignLights Consortium (DLC) Listed and have a 140,000 hour rating at L70, drastically reducing maintenance costs. For more information on the EVERLINE LED Retrofit Kit, including an Installation Video, please visit <http://www.unvlt.com>



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27. LEDtronics Introduces the NEW DLC-Listed LED High Bay Lights - comes in a MEDIUM or WIDE beam! They only consume 100 to 300 watts, but replace HID lights of 250 all the way up to 1000 watts! The units are IP-65 Rated, and come with a 5-Year LEDtronics U.S. Factory Warranty!

- DLC & UL/cUL Listed (E356779), RoHS Compliant
- IP65 Rated: Suitable for Wet Locations
- Instant-On Light: No Delay in Re-Strike
- 5000K Pure White.....Other CCTs Available
- Lumen Maintenance over 70% @ 35,000+ Hours



<http://www.ledtronics.com/Products/ProductSearch.aspx?searchStr=hb1003dl&x=9&y=14>

28. Green Creative New Clean Room T8 17.5W 4FT. GOLD BYP - This TITANIUM LED SERIES T8 Gold Tube has been designed and engineered for demanding clean room applications. The lamp's coated diffusing tube provides protection against harmful UV rays. The micro-designed driver allows for a smaller end cap and end-to-end lighting with no dark spots. This UL listed tube requires bypassing the ballast during installation and runs directly off line voltage to eliminate compatibility problems, incidental power loss, lifetime issues, and maintenance costs associated with ballasts.

- 32W fluorescent replacement
- Wide beam 310° light emitting area
- Built-in universal voltage driver
- 4000K & 5000K CCT
- Extra-long 50,000 hr lifetime

<http://gc-lighting.com/products/bypass-t8-17-5w-gold>



National EnergyWatch...

29. Lighting Control Rebates Going Strong - About two-thirds (64%) of the United States is covered by prescriptive lighting rebates, according to BriteSwitch, <http://briteswitch.com/index.html> a rebate fulfillment company. These rebates can significantly reduce the installed cost of new lighting in existing buildings and improve payback by 20-25%, which would reduce a two-year payback to about 1.5 years. In 2016, many rebate programs have begun to focus more heavily on LED products. The most popular rebates cover downlights, track lighting, high-bays, garage luminaires, linear luminaires, outdoor pole luminaires and linear replacement lamps. Linear replacement lamps previously covered by custom rebates are now being increasingly covered by prescriptive rebates. For a list of rebates and other energy incentives available across the USA, visit www.dsireusa.org

30. The EPA Announces 2016 ENERGY STAR Award Winners - Among the EPA's 2016 ENERGY STAR Award Winners were MaxLite, Eaton, Schneider Electric, Metro Lighting, Panasonic Eco Solutions, and the Home Depot. <http://www.tedmag.com>



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- 31. Linear Fluorescent Lamp Indexes Continue Year-Over-Year Decline** - NEMA's linear fluorescent lamp shipments indexes continued their year-over-year decline in 2015Q4. After declining for seven consecutive quarters, the index for T12 lamps posted a 4.2 quarter-over-quarter increase, but declined 17.4 percent from fourth quarter 2014. T8 and T5 shipments also continued to decline, decreasing by 13.4 and 9.3 percent, respectively, on a year-over-year basis. T8 lamps accounted for a 72.4 percent share of fluorescent lamp shipments in 2015Q4, with T12 lamps claiming a 16.8 percent share and T5 lamps a 10.7 percent share. <http://www.nema.org/news/Pages/Linear-Fluorescent-Lamp-Indexes-Continue-Year-Over-Year-Decline.aspx>
- 32. HID Lamp Indexes Close out 2015 Down From 2014** - NEMA's shipments indexes for high intensity discharge (HID) lamps declined in the fourth quarter of 2015 compared to the fourth quarter of 2014. Sodium vapor lamp shipments fell 15.6 percent compared to the same period last year while shipments of mercury vapor lamps decreased by 24.9 percent year-over-year. Shipments of metal halide lamps decreased by 11.6 percent year-over-year. Sodium vapor lamps accounted for 31.7 percent of high intensity discharge lamp sales in 2015Q4, while mercury vapor and metal halide lamps accounted for 3.4 percent and 64.9 percent of sales, respectively. <http://www.nema.org/news/Pages/HID-Lamp-Indexes-Close-out-2015-Down-From-2014.aspx>
- 33. Lighting Systems Index Decreased in Fourth Quarter With Mixed Results for Components** - NEMA's Lighting Systems Shipments Index, a measure of demand for lighting equipment, decreased 2.6% quarter-to-quarter while posting a 0.1 percent increase year-over-year during 2015Q4. Fixtures, emergency lighting, and miniature lamp, components of the index, gained ground on a year-over-year basis, while ballast and large lamp, components recorded year-over-year declines. <http://www.nema.org>

City & State EnergyWatch...

- 34. 2016 Northeast Energy Efficiency Summit – June 13-14, 2016 | Bretton Woods, NH** - Registrants through May 13 can still take advantage of a discounted registration and hotel rate to the Northeast Energy Efficiency Summit at the Omni Mt. Washington Hotel and Resort in Bretton Woods, New Hampshire. Join a broad range of stakeholders in building a positive and motivating narrative for the future of energy efficiency in the midst of major change in energy use, technology, grid modernization, climate change and utility business models. <http://www.neep.org/events/northeast-energy-efficiency-summit/2016-neep-summit/registration>
- 35. NYSERDA and OLEDWorks to Study OLED Lighting for Healthcare Industry** - OLEDWorks will collaborate with Highland Hospital at the University of Rochester Medical Center, which has formed a team of doctors and nurses to provide feedback on the innovative white and amber OLED lighting system. Amber OLEDs are free of blue wavelengths found in regular LEDs that are known to disrupt sleep patterns. The new lighting technology is beneficial to hospitals because the amber lighting will not wake patients, allowing for better sleep. OLEDWorks is using research and development funding of \$100,645 from NYSERDA to develop the white and amber OLED prototype and then quantify the benefits of the lighting with Highland Hospital. <http://www.ledinside.com>



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36. Chicago Announces Plans to Switch to LED Streetlights - The Chicago Smart Lighting Project outlined the initiative's goal to update 270,000 city lights in the next four years. Currently, there are approximately 348,500 outdoor lights across Chicago, including street, alley, viaduct, pathway and lakefront lights. The city plans to switch roughly 85 percent of these outdated HPS lights with LED lights, calling the project "one of the largest municipal lighting modernization programs in the country." <http://www.ecmag.com/section/your-business/chicago-announces-plans-switch-led-streetlights>

37. Major League Baseball Opens with LEDs in San Diego and Arlington - Musco Lighting and Eaton's Ephesus Lighting each have announced new high-profile, sports-venue, LED-based lighting projects that came to light with the dawn of the 2016 Major League Baseball season. Petco Park, home of the San Diego Padres in San Diego, CA, has the new Musco Lighting installation. Globe Life Park, home of the Texas Rangers in Arlington, TX, has the new Ephesus Lighting installation. In both cases, the solid-state lighting (SSL) has raised light levels and slashed energy usage while DMX-based controls enable the teams' production crews to generate special effects for the fans. <http://www.ledsmagazine.com>

Monthly Special Feature... *Tracking Luminaire Sales*

	2011	2012	2013	2014	2015
OUTDOOR					
Total Outdoor Market (m)	\$1,820	\$1,940	\$2,100	\$2,400	\$2,600
LED OUTDOOR Dollars (m)	26% \$475	34% \$650	42% \$875	54% \$1,300	78% \$2,028
INDOOR					
Total Indoor Market (m)	\$5,150	\$5,125	\$5,300	\$5,700	\$6,500
LED INDOOR Dollars (m)	9% \$475	13% \$675	19% \$1,000	35% \$2,000	50% \$3,250
TOTAL (000)	\$7,920,000	\$8,390,000	\$9,275,000	\$11,400,000	\$14,378,000
Ballast Market Dollars (m)	\$1,010	\$975	\$870	\$740	600
LED Systems Market Dollars (m)	\$200	\$300	\$400	\$500	800
Total Ballasts and LED Systems	\$1,210	\$1,275	\$1,270	\$1,240	\$1,400



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