EnergyWatch

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Jack Welch:

> *Before you are a leader, success is all about growing yourself. When you become a leader, success is all about growing others.*
>
> *If the rate of change on the outside is greater than the rate of change on the inside, the end is near.*

Something to Think About… *AMA Urges Minimization of Blue-Emission from LED Streetlights -* The American Medical Association (AMA) says that some LED streetlights are harmful to human health and the environmental. The AMA has officially taken a stand against light pollution and promoted the public awareness of the pervasive nighttime lighting's adverse health and environmental effects, especially from blue-rich LED lighting. According to the AMA, disability glare is caused by light scattered in the eye, especially blue light. The scattered light in the eye creates a luminous veil over the retinal image, which has the effect of reducing retinal contrast. The AMA asserts that the discomfort and disability from intense, blue-rich LED lighting can decrease visual acuity and safety, and potentially create a road hazard and has five times greater impact on circadian sleep rhythms than conventional street lamps. http://www.solidstatelighting.net/ama-urges-minimization-blue-emission-led-streetlights/

Lighting Research Center Issues Response to AMA Report on LED Lighting by Mark Rea and Mariana Figueiro of the LRC - Recently the American Medical Association (AMA) has produced a document cautioning the public about In-Ga-N based LEDs used as sources of illumination. The Lighting Research Center (LRC) at Rensselaer Polytechnic Institute has received a large number of requests for an opinion and has prepared a response…

Key points include:
- Predictions of health consequences from light exposure depend upon an accurate characterization of the physical stimulus as well as the biological response to that stimulus. Without fully defining both the stimulus and the response, nothing meaningful can be stated about the health effects of any light source.
- Notwithstanding certain sub-populations that deserve special attention, blue light hazard from In-Ga-N LEDs is probably not a concern to the majority of the population in most lighting applications due to human's natural photophobic response.

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- Both disability glare and discomfort glare are mostly determined by the amount and distribution of light entering the eye, not its spectral content.
- In-Ga-N LED sources dominated by short wavelengths have greater potential for suppressing the hormone melatonin at night than sodium-based sources commonly used outdoors. However, the amount and the duration of exposure need to be specified before it can be stated that In-Ga-N LED sources affect melatonin suppression at night.
- Until more is known about the effects of long-wavelength light exposure (amount, spectrum, duration) on circadian disruption, it is inappropriate to single out short-wavelength radiation from In-Ga-N LED sources as a causative factor in modern maladies.
- Correlated color temperature (CCT) is not appropriate for characterizing the potential impacts of a light source on human health because the CCT metric is independent of nearly all of the important factors associated with light exposure, namely, its amount, duration, and timing.

The LRC's response attempts to draw attention to the problem of misapplying short-hand metrics to the topic of light and health and also provides the reader with a wealth of references that should inform rational discourse. http://www.lrc.rpi.edu/resources/newsroom/AMA.pdf

DOE Responds to AMA LED Streetlight Warning - As explained in the DOE Fact Sheet *True Colors*, there's nothing inherently different about the blue light emitted by LEDs; that is, at the same power and wavelength, electromagnetic energy is the same, regardless of source type. And as the potential for undesirable effects from exposure to light at night emerges from evolving research, the implications apply to *all* light sources – including, but by no means limited to, LEDs. Further, these research results are often also relevant to light we receive from televisions, phones, computer displays, and other such devices. While there's nothing inherently dangerous about LED lighting, it should be used with the same prudence with which we use any other technology. http://www1.eere.energy.gov/buildings/ssl/pdfs/true-colors.pdf   The Light Post: http://energy.gov/sites/prod/files/2016/07/f33/msslc_enews_jul2016.pdf

IES to Perform a Thorough and Reasoned Review of the AMA Report - On June 14, 2016, the American Medical Association (AMA) announced its adoption of recommendations contained in CSAPH Report 2-A-16 entitled *"Human and Environmental Effects of Light Emitting Diode (LED) Community Lighting."* This report was approved as part of the AMA's Council on Science and Public Health (CSPAH) proceedings. The IES was not consulted in this process. Of primary concern to the IES is the potential for this report and its ensuing press to misinform the public with incomplete or inaccurate claims and improper interpretations. We intend to respond to this through a proper analysis. We are working with a group of researchers familiar with these issues, representing different institutions and areas of practice, to review the AMA report. http://ies.org/emails/2016/june/ama-response.html

NEMA Comments on American Medical Association Community Guidance - The AMA recommendation encouraging the use of 3000K correlated color temperature (CCT) or lower may compromise the ability of the lighting system to meet all critical design criteria for each unique application and is not an appropriate solution for all applications, nor is it is supported by the current body of research. The AMA makes further recommendations regarding the spectral content of outdoor lighting installations that raise serious concerns for electrical manufacturers. NEMA agrees that spectral content should be one factor in effective lighting for outdoor installations. However, a single solution is simply not appropriate for all situations. http://www.nema.org

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LED EnergyWatch…

1. ***Smart LEDs Could Join the Dots of Internet of Things -*** LEDs can do double duty and illuminate a room whilst joining together the Internet of Things. Experts at Disney Research and ETH Zurich believe that it is possible to create a network of luminaires that can send messages to each other, while having no effect on the level of lighting they emit. Together they worked to design a Visible Light Communications system that is able to connect to appliances and wearable devices. 'LED light bulbs mounted on the ceiling or in free-standing floor lamps easily cover a room, serving as illumination while at the same time creating a room-area network that allows data exchange between light-emitting devices,' commented Markus Gross, vice president at Disney Research. http://luxreview.com/article/2016/07/smart-light-bulbs-could-join-dots-of-internet-of-things

2. ***The IoT Will Transform Companies from Product Sellers into Service Firms -*** Rowan Trollope, senior vice president and general manager of Cisco's IoT and applications group, said that by embedding chips in products — such as lamps — and connecting them to the Internet, companies can stay in constant touch with customers, garner continuous feedback from them, and send them software upgrades that enhance their product. They can also then collect payment on an ongoing basis rather than upfront, via service contracts. The IoT is the movement in which anything that can be digitized and connected to the Internet will be — cars, phones, refrigerators, light bulbs, security cameras, gas turbines, jet engines, you name it. The connectivity then enables communications between devices and people and collects and analyzes data (using cloud computing) from the devices. http://www.ledsmagazine.com

3. ***Cisco CEO Rules Out Acquiring a Lighting Company -*** Yesterday Cisco Systems CEO Chuck Robbins dampened any speculation that Cisco might purchase an LED lighting company, when he told *LEDs Magazine* that the networking giant prefers to take the partnering route. Cisco has forged more than 20 partnerships with lighting companies as part of its "Digital Ceiling" initiative to build networks of smart lights connected to the Internet. Philips is a charter member of the program. Both Philips and Cisco are pushing Power over Ethernet (PoE) lighting in which Ethernet networks route electricity and data to LED luminaires. http://www.ledsmagazine.com/articles/2016/07/cisco-ceo-rules-out-acquiring-a-lighting-company.html

4. ***2016 ENERGY STAR® Products Partner Meeting Update -*** To be held October 25-27, 2016 in New Orleans, LA. EPA is pleased to provide an updated preliminary agenda and an initial companion document with detailed session descriptions. The order of sessions will be as follows:
   - Day 1, Tuesday, October 25: appliances, water heaters, and consumer electronics
   - Day 2, Wednesday, October 26: plenary and cross-product interest
   - Day 3, Thursday, October 27: lighting

   https://www.energystar.gov/sites/default/files/asset/document/_2016%20ESPPM_Agenda%20Companion_June%202016%20posted_0.pdf

5. ***ANSI Accredited Standards Committee C136 Publishes ANSI C136.49-2016 -*** American National Standard for Roadway and Area Lighting Equipment—Plasma Lighting. This new standard defines the electrical and mechanical requirements of plasma type light sources for use in roadway and area lighting luminaires. http://www.nema.org/Standards/Pages/American-National-Standard-for-Roadway-and-Area-Lighting-Equipment—Plasma-Lighting.aspx

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6. ***Can Apple Save OLEDs? -*** Speculation is mounting that Apple is set to opt for OLED screens for the 2017 iPhone, a move that would transform the fortunes of the technology in the lighting sector. The sheer scale of production involved in the switch from LCD – Apple sold 232 million iPhones last year – would single-handedly drive down prices, increase efficiencies and encourage investment in research and development in OLED, which has been seen as the poor relation to standard LED in the lighting sector. The main stumbling blocks to the adoption by luminaire manufacturers have been high unit cost, relatively low efficacies and a lack of supplier diversity. The world's two leading OLED manufacturers, LG and Samsung, are now investing heavily as Apple and other device manufacturers begin to switch in the coming years. http://luxreview.com/article/2016/07/can-apple-save-oleds-

7. ***Molex Gains Partners in Transcend® Lighting Alliance -*** Molex has announced that six partners have joined the Alliance, a consortium of companies working together to expand and promote the use of network-connected lighting in commercial buildings by developing and implementing new systems and protocols. Inaugural members are: JLC Tech LLC, MHT Lighting, New Star Lighting, . Spectrum Lighting Inc., Swann Lighting Ltd., Waldmann USA. New, integrated lighting network solutions are rapidly becoming an integral part of commercial building design. Companies like Molex that create enabling technology will help drive the industry through the transition from traditional lighting to network-connected lighting.
http://electronics360.globalspec.com/article/6978/molex-gains-partners-in-lighting-alliance

8. ***Augmented Reality Software Could Make Smart Lights Even Smarter -*** Augmented Reality (AR), the technology behind the Pokémon Go craze, could be coming to a ceiling luminaire near you to help you control lighting, heating, and other things through hand gestures. AR uses digital techniques to add visual objects to someone's real-world field of vision or to a live video screen display. In Pokémon Go, Pokémon monsters emerge on a mobile phone screen within a map or video display and gamers then have to go to the exact spot and "find" them, using GPS. In the lighting and home controls world, someone wearing special goggles or other eyewear would see a lighting panel in front of them that would allow them to change light settings around the room or their house by gesturing at the different lights and zones that have been added to their view. The electronics and sensors that support AR could also reside in luminaires.
http://www.ledsmagazine.com/articles/2016/07/augmented-reality-software-could-make-smart-lights-even-smarter.html

9. ***DOE Publishes New CALiPER Snapshot on TLEDs -*** Among the key findings of the new Snapshot, which is based on DOE's LED Lighting Facts® database:
   - TLEDs now comprise more than 50% of all listed lamps, and more than 10% of all listed products.
   - TLEDs offer the highest mean efficacy of any lamp type, and also offer the listed product with the highest efficacy (190 lm/W).
   - In aggregate, TLED efficacy decreases by 3 lm/W for every 1000 K decrease in CCT.
   - While the raw efficacy of TLEDs exceeds that of dedicated LED troffers, the reverse is true if TLED efficacy is adjusted to account for luminaire efficiency. In other words, dedicated LED troffers tend to exceed the efficacy of troffers fitted with TLEDs.
   Download the full report: http://energy.gov/eere/ssl/downloads/snapshot-linear-lamps-tleds

10. ***DOE Interior Lighting Campaign Nets $13.5 Million in Energy Savings -*** The U.S. DOE said its Better Buildings Alliance technology and market campaigns have attracted over 160 participants and supporters in the Interior Lighting Campaign (ILC) and 40 Green Lease Leaders. In the first year, the ILC quickly exceeded an initial goal of replacing 100,000 indoor lighting troffers. The campaign has now upgraded 650,000 troffers and is now working toward a goal of 1 million. Total national energy savings for the 650,000 so far is about 1.3 trillion BTUs or the equivalent of $13.5 million in energy savings in more than 375 million square feet of commercial floor space across the U.S.A. http://energy.gov/eere/articles/energy-department-s-interior-lighting-campaign-nets-135-million-energy-savings-first-0

11. ***The Challenges of LED Upkeep by Craig DiLouie -*** All light sources must be maintained; as lighting controls become more sophisticated, they also must be maintained. Responsible lighting design should include maintenance to preserve design integrity. In terms of sustainability, whether the lighting goal is visual comfort, highlighting merchandise, energy savings or anything else, maintenance is where the rubber meets the road. Lighting maintenance may involve relamping luminaires, cleaning luminaires and room surfaces, troubleshooting and replacing defective parts, and re-aiming directional lamps and luminaires. It may also include periodically inspecting and reprogramming or recalibrating controls. http://www.ecmag.com/section/lighting/challenges-led-upkeep

12. ***Osram Purchases Automotive LED Firm Novità -*** As part of its strategy for its specialty lighting business, Osram has agreed to acquire Novità Technologies, a U.S. producer of automotive LED modules. Osram said that the acquisition is part of the company's plan to increase the focus of the automotive segment of its specialty lighting business on LED-based products. Novità's automotive LED modules are used particularly in tail lights, fog lights and daytime running lights. The successful company with about 100 employees based in Hendersonville, Tennessee boasts annual sales of over $4.4 million. Osram contends that Novità Technologies is well positioned in the automotive lighting sector, particularly in the USA and says that the acquisition will immediately add to the revenues of its Specialty Lighting segment. Novita ships primarily to headlight and tail light producers in the United States. http://www.solidstatelighting.net/osram-purchases-novita/

13. ***Osram Starts Supplying OLED Tail Lights to BMW M4 GTS -*** Apart from their innovative design the new tail lights offer impressive functionality. With a total of 15 OLEDs per tail light and a brightness of 1.200 cd/m² they guarantee optimum visibility on the road and perform all the rear light functions. The thin layers of an OLED contain organic materials. They are enclosed by flat electrodes which serve as the electrical contacts. When power is supplied, photons are produced in the layers, causing the diode to emit light. Since OLEDs produce light in very thin layers they are ideal for flexible lighting solutions, 3D effects can be created by segmentation. http://bizled.co.in/osram-starts-supplying-oled-tail-lights-to-bmw/

14. Eaton Partners with NuLEDs on PoE Technology for Connected SSL - Eaton's lighting business (formerly Cooper Lighting) has announced a Power over Ethernet (PoE) collaboration with NuLEDs, a startup company focused on PoE and based in the San Diego, CA area. Both companies are part of Cisco's solid-state lighting (SSL)-centric Digital Ceiling initiative that is based around PoE. The partnership will enable Eaton to supply its PoE-enabled luminaires, and even standard LED-based lighting products, with NuLEDs SpiceBox modules/gateways, sensors, and control panels. Eaton said it will supply the NuLEDs technology alongside products such as the Metalux Encounter troffer luminaire. http://www.ledsmagazine.com

15. 5 Top Reasons to Connect the IIoT Through Lighting Courtesy of Eaton Corporation -

16. ***Enlighted System Enables Cheshire Public Schools to Slash Lighting Energy Costs by 82%, Unlock IoT -*** Cheshire Schools installed an advanced lighting system from Mustone LED Illuminations featuring Enlighted Smart Sensors in all seven of its schools. Specifically, the Enlighted system delivers an additional 62 percent energy reduction over the new LED baseline by providing task tuning, occupancy sensing, daylight harvesting and offering utility grade metering to verify energy use. It configures and manages lighting behavior by adjusting software profiles while retaining lighting data up to 36 months. The system also generates reports on lamp and fixture outages, carbon reduction, energy and financial savings. With the Enlighted system in place, Cheshire has the opportunity to tap into additional IoT technologies, including monitoring and controlling building temperatures, monitoring space utilization, tracking equipment and people, and smart surveillance and emergency response. http://www.facilitiesnet.com/

17. ***Cree Lands Another Power over Ethernet Lighting Installation at a Data Center -*** Cree has landed its latest PoE lighting installation in a deal that sets up the customer as a Cree reseller. The Durham, NC LED company is providing 100 2×2-ft luminaires and its SmartCast PoE software to technology and cloud computing services company Quest, for use in Quest's Roseville, CA data center. The luminaires draw both data and a maximum of 30W of electricity from Ethernet cable that is part of the information network at the 120,000-ft^2 facility. PoE lighting is an example of the Internet of Things (IoT) — by tying LED luminaires into the data center's network, Quest can more intelligently control the lights, turning them on, off, up, down, or changing their color temperature as needed. The PoE system includes occupancy sensors that help the software decide how to adjust lighting, and it also collects data to help with building management. http://www.ledsmagazine.com/

Global LED EnergyWatch…

18. ***MLS Strategies in LED Package and Outlook for U.S. Market -*** Compared to other manufacturers in the industry, MLS is optimistic about LED market developments and market potential with plans of scaling up LED package production this year from 50 billion PCS to 70 billion PCS. Aside from its lighting business, MLS is a main player in the LED backlight business in China, where it has 60% to 70% market share in terms of volume, and about 30% shares when measured with value. MLS decision to scale up production mostly results from its positive outlook of lighting developments in U.S. (Forest Lighting), where market penetration rates is a mere 7% to 8%, indicating there is still large room for growth. MLS for instance has seen its revenue in the U.S. market soar 50% in 2016 http://www.ledinside.com/news/2016/7/mls_strategies_in_led_package_and_outlook_for_us_market

19. ***LEDinside: $16.4 Billion Market Scale in Specialty Commercial Lighting Market in 2020 -*** The expected market scale is going to increase rapidly.
    - **Plant Growth Lighting:** LED has a promising prospect for the plant lighting market. The market scale in 2016 is about $575 million and LEDinside estimates it will increase to $1.424 billion in 2020.
    - **Surgical Lighting:** in 2016, The global medical surgical lamps market scale gradually increased from $612 million in 2016 to $787 million in 2020.
    - **Marine Lighting:** In 2016, global LED marine market scale is estimated at $233 million.
    - **Harbor Lighting:** In 2016, the global LED harbor lighting market scale is $587 million.

- **Smart Lighting:** The global smart lighting market scale in 2015 is estimated to be $1.716 billion. With the maturing of technology and products in future, the active promotion by manufacturers and the popularization of smart lighting related concepts, the market will grow continuously, expected to reach $13.427 billion in 2020.
http://www.ledinside.com/node/25933

20. *Automotive LED Market Has a Bright Future with the Rise of Replacement Products -* Automotive LEDs are one of the few sizable application markets that are developing rapidly along with other smaller markets for niche industrial LED products. The latest analysis by LEDinside, a division of TrendForce, http://www.trendforce.com/ finds the replacement of traditional light bulbs with LED light sources continues steadily in the automotive lighting market despite the slowing growth in the regional automobile markets worldwide during the second quarter. LEDinside projects that the value of the exterior automotive LED market will reach $1.57 billion this year and will grow at a CAGR of 6% in the 2016~2020 period. http://www.ledinside.com/node/view/25804

21. *China's MLS Said to Be Lead Bidder for Osram Lighting Business -* Osram may choose a winner for the asset as soon as this month. The Chinese firm (Forest Lighting in USA) may pay less than 500 million euros ($558 million) for the investment. Osram is selling the general lamps business, which generates about 36 percent or 2 billion euros ($2.2 billion) of the Munich-based company's annual sales, to focus on research and development, products for the automotive industry and lighting solutions for buildings and cities. http://www.bloomberg.com/news/articles/2016-07-14/china-s-mls-said-to-be-lead-bidder-for-osram-lighting-unit

22. *Osram Sells Lighting Business -* In its meeting on Tuesday, July 26, the Supervisory Board of Osram approved the sale of the general lighting lamps business. The buyer of the business known as Ledvance is a Chinese consortium consisting of the strategic investor IDG Capital Partners (IDG), the Chinese lighting company MLS Co., Ltd. (MLS) and the financial investor Yiwu State-Owned Assets Operation Center (Yiwu). The purchase price amounts to nearly $440 million. Osram will additionally receive payments for license agreements of trademark rights. MLS will be able to significantly expand its position in the global lighting market through the transaction. Ledvance in return will gain improved access to the Chinese growth market as a result of this transaction. Based on an agreement with Osram, Ledvance will continue to use the Osram and Sylvania brand names at the product level. Intellectual property rights are clearly allocated so that the consortium and Ledvance can continue to drive global innovations and product development. The transaction is subject to certain closing conditions, regulatory approval by the relevant authorities. The transaction is expected to close in the course of fiscal 2017. http://www.tedmag.com

23. *Smart Energy for Smart Cities -* According to Navigant Research, global smart energy for smart cities technology revenue is expected to grow from $7.3 billion in 2015 to $20.9 billion in 2024. This Navigant Research report analyzes the global smart energy for smart cities market, with a focus on two segments: smart grid and advanced energy technologies. The study investigates the key market drivers, barriers, dynamics, and regional trends related to smart energy for smart cities technology. Global market forecasts for revenue, broken out by segment, application, and region, extend through 2024. The report also examines the key technologies that constitute the smart energy for smart cities market, as well as the competitive landscape.
http://www.navigantresearch.com/research/smart-energy-for-smart-cities

24. Is CE Mark in LED Products Enough to Establish Safety? - One of the major lines of defense against dangerous lighting products in the European market is the CE mark, which stands for Communauté Européenne. The CE mark is a way of announcing that the products have met all the necessary EU legislation such as the Low-Voltage Directive, the Restriction of Hazardous Substances (RoHS) Directive and the Electromagnetic Compatibility (EMC) Directive. With the CE mark, the manufacturer declares their products meet the necessary standard for safety, but some industry analysts believe that there is no thorough understanding in the industry of what is necessary with regards to testing and completing technical files. http://bizled.co.in/is-ce-mark-in-led-products-enough-to-establish-safety/

LED TechnologyWatch…

25. EW's Top 10 LED Picks for July 2016 - *Electrical Wholesaling's* Top 10 LED Product Picks for July 2016 showcase products from Acclaim Lighting, Alloy LED, Bayco, Bulbrite, Cree, Legrand, Milwaukee Tool, Organic Lighting Products, SEPCO, and U.S. Architectural Lighting. http://ewweb.com Have a product you would like considered for our Top 10 LED Picks? E-mail a product description and high-resolution photo (300 dpi or better to Jim Lucy, chief editor, *Electrical Wholesaling* at jim.lucy@penton.com

26. Connected Lighting Systems from Philips - In this video (Part 1; Part 2 is on VLC; Part 3 is on SDK), https://www.youtube.com/watch?v=gHnZe9FIVAw&feature=youtu.be you will learn how a shopper experience can be improved by lighting systems in the retail segment. It adds a whole new level of responsiveness to interior retail and hospitality spaces. Connected lighting combines sophisticated, intuitive lighting management software, digital controls, and best-in-class Philips luminaires to give you centralized control of every light point in your environment. With deeper insight into your customers' activities and preferences, you can tailor lighting to create welcoming and memorable experiences while achieving the energy efficiency and sustainability goals that are the cornerstone of your brand. Innovative LED connected lighting systems help customers find special offers throughout the store and provide targeted deals. From the entrance to checkout, our lights create engaging and efficient shopping experiences. http://www.lighting.philips.com/main/systems/packaged-offerings/retail-and-hospitality.html

27. ABBLighting Introduces Human Centric LED Light Troffer Retrofit Kit - The light panel is specially designed to create comfortable and natural light for patients and anyone in pursuit of high quality healthy living. Utilizing a 38-watt lamp, the panel mimics the natural Kelvin changes of the sun throughout the day in a typical 2' x 2' troffer. The fixture can be set to run automatically or allows you to change the lighting with one of several presets such as sunrise/sunset, best lighting for reading (4100K) or best for working (5000K). With the wireless adjustable color temperature driver, the ABBLighting retrofit kit can easily be controlled by a remote control, smartphone or tablet using an available app. "Our goal was to design an indoor light fixture that is healthy for seniors and hospital patients," said ABBLighting President Greg Murphy. "What we quickly realized is that what is healthy for seniors and patients is healthy for everyone. " http://www.abblighting.com/

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28. ***Lumileds Introduces Luxeon Stylist Series -*** Lumileds says that it engineered the Luxeon Stylist Series to provide the ideal lighting environment for selling products in fresh food markets, restaurants, and fashion retail stores. Lumileds based the Stylist Series on its four proprietary technologies CrispWhite Technology, CrispColor Technology™, FreshFocus Technology™ and AtmoSphere Technology™. CrispWhite Technology can activate fluorescent whitening agents in retail items to make white paints and fabrics appear vivid and bright white. In the fresh food market segment, FreshFocus Technology is the ideal lighting spectra that can present different foods in their most appealing, freshest light. For Restaurants, bars, and other gathering places, Lumileds developed the new AtmoSphere Technology to enhance the dining experience and help reinforce the restaurant's brand and image. The Stylist Series with AtmoSphere Technology can be used to create a warm, comfortable, and inviting ambiance. http://www.solidstatelighting.net/lumileds-introduces-luxeon-stylist-series/

National EnergyWatch…

29. ***Acuity Brands, Inc. Acquired 100 Percent of DGLogik -*** A San Francisco Bay Area-based provider of innovative software solutions that enable and visualize the Internet of Things (IoT). DGLogik's solutions provide users with the intelligence to better manage energy usage and improve facility performance. Its customizable applications and dashboards allow users to easily visualize, analyze and optimize facility operations based upon various sets of data from multiple types of devices. The acquisition of DGLogik supports Acuity Brands' strategy to expand and enhance its portfolio of holistic IoT solutions for the growing market for intelligent networked systems that collect and exchange data to increase efficiency, as well as provide a host of other economic benefits resulting from data analytics to better enable smart buildings and smart cities. http://www.naed.org/News/manufacturer-news/Acuity-Brands-Acquires-DGLogik.aspx

30. ***Linear Fluorescent Lamp Indexes Continue to Slide in the First Quarter of 2016 -*** After increasing modestly in 2015Q4, the index for T12 lamps posted a 12.0 percent quarter-over-quarter decrease, and a steeper 14.5 percent decline from the first quarter 2015. T5 and T8 shipments also continued to decline, decreasing by 1.3 and 8.9 percent, respectively, on a year-over-year basis. T8 lamps accounted for a 67.4 percent share of fluorescent lamp shipments in 2016Q1, with T12 lamps claiming a 14.5 percent share and T5 lamps an 11.2 percent share. T-LED lamps accounted for a 6.9 percent share of shipments in 2016Q1, marking their first appearance in the market penetration chart. NEMA will continue to track the growth of T-LED lamps and will integrate the category into the index as more historical data becomes available. www.NEMA.org

31. ***NEMA's HID Lamp Indexes Start 2016 with Mixed Results -*** Sodium vapor lamp and mercury vapor lamp shipments indexes both rose in the first quarter of 2016 compared to first quarter 2015 increasing 0.6 percent and 5.3 percent, respectively. Shipments of metal halide lamps in the first quarter of 2016 decreased by 16.1 percent compared to the same period last year. Sodium vapor lamps accounted for 34.1 percent of high intensity discharge lamp sales in 2016Q1, while mercury vapor and metal halide lamps accounted for 4.1 percent and 61.8 percent of sales, respectively. www.NEMA.org

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32. *Lighting Systems Index Decreased in First Quarter with Mixed Results for Components -* NEMA's Lighting Systems Shipments Index, a measure of demand for lighting equipment, decreased 0.8% quarter-to-quarter while posting a 0.6 percent increase year-over-year during 2016Q1. Fixtures, and emergency lighting, components of the index, gained ground on a year-over-year basis, while ballast, miniature lamp, and large lamp, components recorded year-over-year declines. www.NEMA.org

City & State EnergyWatch…

33. *Smart Energy for Smart Cities -* According to Navigant Research, global smart energy for smart cities technology revenue is expected to grow from $7.3 billion in 2015 to $20.9 billion in 2024. This Navigant Research report analyzes the global smart energy for smart cities market, with a focus on two segments: smart grid and advanced energy technologies. The study investigates the key market drivers, barriers, dynamics, and regional trends related to smart energy for smart cities technology. Global market forecasts for revenue, broken out by segment, application, and region, extend through 2024. The report also examines the key technologies that constitute the smart energy for smart cities market, as well as the competitive landscape. http://www.navigantresearch.com/research/smart-energy-for-smart-cities

34. *NY Government Agencies Collaborate on LED Streetlight Installations -* The NY State Energy Research and Development Authority (NYSERDA) and the NY State Department of Transportation (NYSDOT) announced that a section of Central Avenue in Colonie, Albany County, will get new LED street lights to enhance visibility and safety, as well as reduce energy costs. LED installations are scheduled to start this fall on the $300,000 project. The new lighting is part of a demonstration project bringing together industry, government agencies, not-for-profits and academic organizations to develop a systematic strategy to transition street lights to energy-saving LED lighting throughout New York State. Utilities and communities across the State own approximately 1.4 million municipal streetlights. 7/12 AP

35. *VTTI Tests On-Demand Roadway Lighting -* Vehicles are expected to play a big part in the Internet of Things. By 2020, 250 million connected vehicles will be on the road, creating new services and driving capabilities, according to Gartner, Inc. The Virginia Tech Transportation Institute (VTTI) recently put this idea to the test on the Virginia Smart Road, creating a responsive roadway lighting system now ready for a wide range of human-factors and other testing. http://lightingcontrolsassociation.org/

36. *Top US Basketball Team in Li-Fi Stadium First -* The California Golden State Warriors' new stadium is all set to feature Li-fi. The Li-fi Centre, the Edinburgh based technology company, is to install Li-fi. The high-tech sports and entertainment complex, which is due to be completed by 2018, will feature Li-fi street lamps that will be able to transmit data to people passing beneath them. The floor tiles in the brand new stadium will also generate electricity when people walk on them. The technology can be rapidly integrated in to everyday applications and it is believed that Li-fi will be much more secure than Wi-fi. http://luxreview.com/article/2016/07/top-us-basketball-team-in-li-fi-stadium-first-
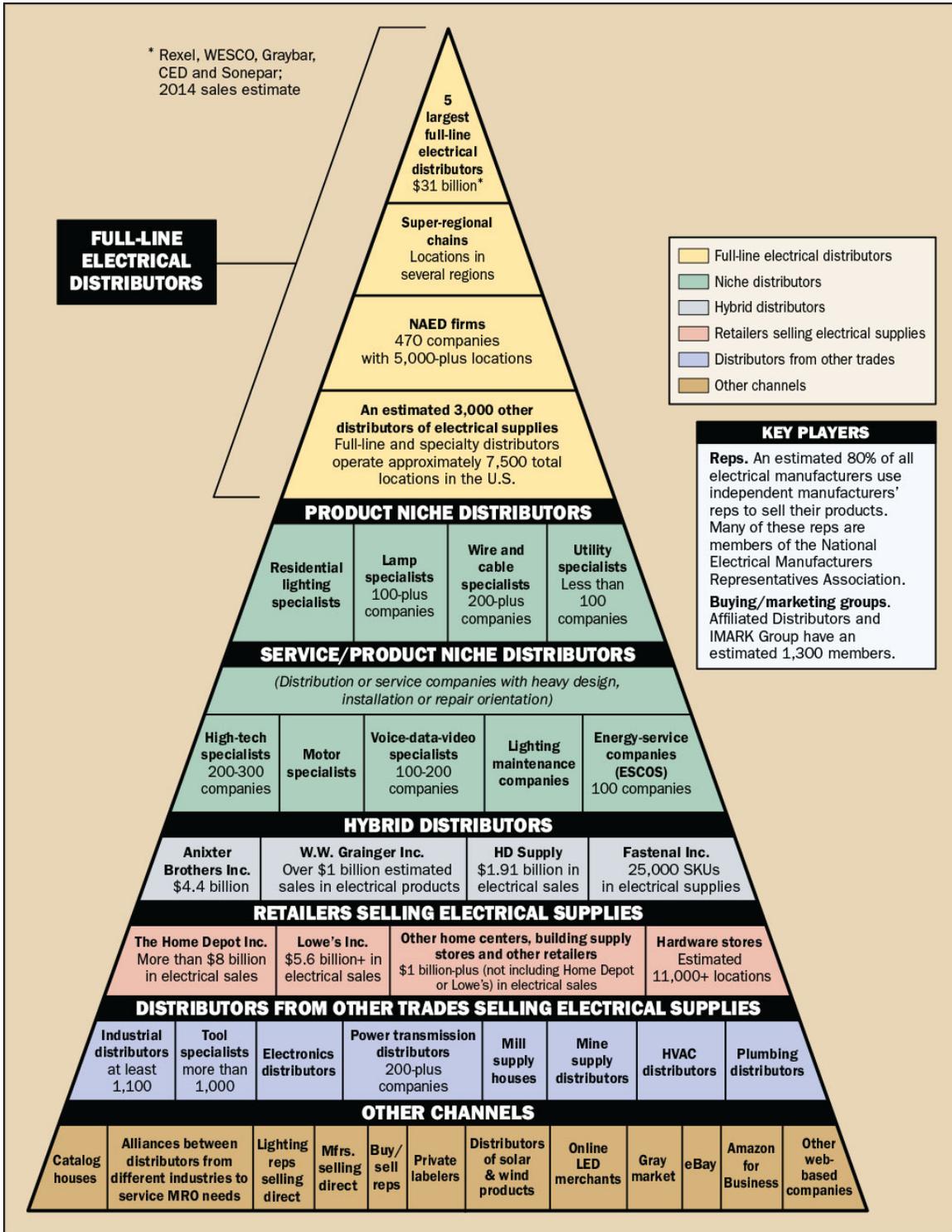
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Monthly Special Feature… *2016 EW Electrical Pyramid Update -*

Here are EW's picks for what will be the biggest changes to the channels of distribution in our industry over the next few years. http://ewweb.com

* Rexel, WESCO, Graybar, CED and Sonepar; 2014 sales estimate

FULL-LINE ELECTRICAL DISTRIBUTORS

5 largest full-line electrical distributors $31 billion*

Super-regional chains — Locations in several regions

NAED firms — 470 companies with 5,000-plus locations

An estimated 3,000 other distributors of electrical supplies — Full-line and specialty distributors operate approximately 7,500 total locations in the U.S.

Legend:
- Full-line electrical distributors
- Niche distributors
- Hybrid distributors
- Retailers selling electrical supplies
- Distributors from other trades
- Other channels

KEY PLAYERS

Reps. An estimated 80% of all electrical manufacturers use independent manufacturers' reps to sell their products. Many of these reps are members of the National Electrical Manufacturers Representatives Association.

Buying/marketing groups. Affiliated Distributors and IMARK Group have an estimated 1,300 members.

PRODUCT NICHE DISTRIBUTORS

Residential lighting specialists	Lamp specialists 100-plus companies	Wire and cable specialists 200-plus companies	Utility specialists Less than 100 companies

SERVICE/PRODUCT NICHE DISTRIBUTORS

(Distribution or service companies with heavy design, installation or repair orientation)

High-tech specialists 200-300 companies	Motor specialists	Voice-data-video specialists 100-200 companies	Lighting maintenance companies	Energy-service companies (ESCOS) 100 companies

HYBRID DISTRIBUTORS

Anixter Brothers Inc. $4.4 billion	W.W. Grainger Inc. Over $1 billion estimated sales in electrical products	HD Supply $1.91 billion in electrical sales	Fastenal Inc. 25,000 SKUs in electrical supplies

RETAILERS SELLING ELECTRICAL SUPPLIES

The Home Depot Inc. More than $8 billion in electrical sales	Lowe's Inc. $5.6 billion+ in electrical sales	Other home centers, building supply stores and other retailers $1 billion-plus (not including Home Depot or Lowe's) in electrical sales	Hardware stores Estimated 11,000+ locations

DISTRIBUTORS FROM OTHER TRADES SELLING ELECTRICAL SUPPLIES

Industrial distributors at least 1,100	Tool specialists more than 1,000	Electronics distributors	Power transmission distributors 200-plus companies	Mill supply houses	Mine supply distributors	HVAC distributors	Plumbing distributors

OTHER CHANNELS

Catalog houses	Alliances between distributors from different industries to service MRO needs	Lighting reps selling direct	Mfrs. selling direct	Buy/ sell reps	Private labelers	Distributors of solar & wind products	Online LED merchants	Gray market	eBay	Amazon for Business	Other web-based companies

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The channels of distribution in the lighting market are being recast because of the LED revolution. If you look at the EW Electrical Pyramid from the perspective of LED vendors formulating channel strategies for the future, there are no guarantees that traditional electrical distributors will be their channel of choice. The lighting market is converting over to LEDs niche-by-niche, and the traditional equation of having electrical distributors stock and sell lamps, ballasts, lighting fixtures and lighting controls in local markets doesn't always add up in the new world of lighting because of several key factors:

- The LED, fixture, power source and even the control components are now often shipped in one unit, blowing apart many of the lamp-fixture-ballast-control relationships of the past.
- Unless electrical distributors truly dedicate themselves to keeping pace with the rapidly maturing LED technology, they won't be able to perform their role as a reliable source of technical information on lighting products.
- LEDs have a nasty habit of becoming obsolete rather quickly, and this changes inventory management and investment dynamics for distributors.
- New LED vendors quite often attempt to crack lighting market by going direct, experimenting with online vendors or new combinations of distribution channels.

If you spot any major changes in the channels to market that you think *Electrical Wholesaling* should address in next year's EW Electrical Pyramid, please contact Jim Lucy, chief editor, at jim.lucy@penton.com or 913-967-1743. We are delighted to get the feedback — positive and negative — and are happy to be able to provide the Electrical Pyramid as a service to the industry.