ENERGY OBSERVER
A MONTHLY NEWSLETTER FROM AMERLUX®

MAR 2019

Amazon Etch 2'x2'
Turn Ceilings Into A Canvas
Architectural Decorative Luminaire Gives Designers Reason to Look Up
The new Etch ceiling panels present a clean aesthetic with evenly lit, premium LEDs. This lighting solution delivers a sense of architectural style to an area. An optional opaque element gives a 3D appearance that brings depth, dimension, perspective, and visual interest to your designs. Add accent lights to the element to put light on task, even when the back panel is dimmed. http://www.amerlux.com/products/ECH2

LED Energy Market Observer:

1. **CSIL Pegs US Luminaire Market at $20 Billion** - CSIL's recent research publication, The Lighting Fixtures Market in the United States (July 2018, 190 pages, EUR 1,600), estimated that consumption of luminaires grew at an average annual rate of 4.6% between 2012 and 2017, resulting in a $20 billion industry. Other conclusions:
   - Over 65% of lighting sales is handled by 50 companies.
   - Nearly half of lighting is imported.
   - LED share is now 65%.

http://www.lightnowblog.com/2019/01/csil-pegs-us-luminaire-market-at-20-billion/

2. **DLC Releases First Draft of Solid-State Lighting Technical Requirements 5.0** - Technical Requirements V5.0 will continue to accelerate broad scale energy savings by improving the quality of light and controllability of DLC listed products. V5.0 expands the benefits of LED lighting by encouraging the development of products that keep the customer in mind. V5.0 Goals:
   - Differentiate lighting with a focus on health and wellness that can provide comfortable, safe environments for people.
   - Increase lighting controls adoption to better realize energy savings and enable improved quality of light.
   - Ensure persistent energy savings through increases in efficacy and enhanced user experience with DLC qualified lighting.
   - Make more product data available for lighting decision-makers.

https://www.designlights.org/workplan/technical-requirements-V5-0/

3. **DOE Publishes 2018 Solid-State Lighting R&D Opportunities (RDO)** - This is a summary of feedback from experts through inputs received at roundtable meetings, at the OLED Stakeholder meeting, and at the DOE Solid-State Lighting (SSL) R&D Workshop held in January 2018 in Nashville, Tennessee. The discussions covered foundational R&D needs for both LED and OLED technologies and reflect SSL stakeholder inputs on topics that will improve efficacy, reduce cost, and add value for LED and OLED lighting solutions. These stakeholders include academic, national laboratory, and industry researchers who provide feedback and inputs to the BTO SSL Program. These topics represent stakeholder suggestions for the most critical areas for advancement of SSL technologies. https://www.energy.gov/eere/ssl/downloads/2018-solid-state-lighting-rd-opportunities

4. **DOE Announces Selections for SSL R&D Funding Opportunity (Round 13)** - The U.S. Department of Energy has announced the competitive selection of 11 projects for solid-state lighting (SSL) R&D, in response to the funding opportunity announcement (FOA) DE-FOA-0001823. These projects will support key scientific advancements in SSL technology and help to accelerate the development of high-quality light-emitting diode (LED) and organic light-emitting diode (OLED) lighting products. Department-funded R&D will drive U.S. technology leadership in SSL by supporting innovative research. In total, the 11 selected projects will receive $11 million and will make a cost-share contribution for a total public-private investment of over $15 million, as they help to further reduce the cost and improve the quality of SSL products. This is the thirteenth round of DOE investments in SSL R&D. The selections are listed at: https://www.energy.gov/eere/ssl/doe-announces-selections-ssl-rd-funding-opportunity-round-13

5. **DOE Energy Conservation Program: Energy Conservation Standards for General Service Lamps ACTION:** Notice of proposed rulemaking and request for comment. SUMMARY: On January 19, 2017, the U.S. Department of Energy (DOE) published two final rules adopting revised definitions of general service lamp (GSL), general service incandescent lamp (GSIL) and other supplemental definitions, effective January 1, 2020. DOE has since determined that the legal basis underlying those revisions misconstrued existing law. As a result, DOE is issuing this notice of proposed rulemaking (NOPR) proposing to withdraw the definitions established in the January 19, 2017, final rules. DOE proposes to maintain the existing regulatory definitions of GSL and GSIL, which are the same as the statutory definitions of those terms. DATES: Meeting: DOE will hold a public meeting on February 28, 2019, from 9:00 a.m. to 2:00 p.m., in Washington, D.C. The meeting will also be broadcast as a webinar. https://www.energy.gov/sites/prod/files/2019/02/f59/withdrawal-of-gsl-definition-nopr.pdf

6. **DOE 2019 SSL R&D Workshop Presentations Posted** - Thanks to all who participated in the 16th Annual DOE Solid-State Lighting R&D Workshop, held in Dallas, Texas. Lighting experts from across the country and abroad gathered to address the complex science and technology challenges facing SSL today. The mix of perspectives -- spanning universities, labs, and companies large and small -- resulted in a robust and exciting exchange of ideas on SSL research progress and future R&D needs, generating much food for thought. Visit the DOE SSL website to view the workshop presentations and to download the latest edition DOE Solid-State Lighting R&D Opportunities.

7. **NEMA New Standard Available for Wireless Networked Lighting Controllers for Use with Roadway and Area Lighting Systems** - ANSI C136.48-2018 American National Standard for Roadway and Area Lighting Equipment—Wireless Networked Lighting Controllers. Developed by the ANSI Committee for Outdoor Lighting, this new Standard defines the minimum requirements for wireless NLCs intended for use with roadway and area lighting systems. ANSI C136.48-2018 is available in hard copy or as an electronic download for $63 on the NEMA website.

8. **Sensor Standard Paves Way for Internet-Connected Lights** - The sharing of Signify's Sensor Ready standard with the industry will drive adoption of internet-connected lighting and the exciting possibilities and applications it opens up, a senior executive in the company has declared. Jon Potter, business development manager for Signify, believes the protocol – which allows sensors to communicate with the cloud via Dali drivers – could help lighting become the backbone of the so-called Internet of Things in commercial and industrial buildings. The SR standard was ratified by the DiiA in November. https://luxreview.com/article/2019/02/sensor-standard-paves-way-for-internet-connected-lights

9. **ENERGY STAR 2019 Lighting Materials Available** - The Environmental Protection Agency (EPA) is pleased to share upcoming plans to promote ENERGY STAR certified LED lighting in conjunction with Earth Day this April. This year we will continue to build on the momentum of the ENERGY STAR Light the Moment campaign, while supplementing this broad appeal with a targeted effort to reach the low to mid-income (LMI) consumer. To support this outreach and provide ample opportunity for lighting partners to participate and benefit, updated materials are now available, including the wide variety of Light the Moment themed materials from 2018 as well as sample mobile ads and additional social media posts targeting LMI audiences. https://www.energystar.gov/products/tools_resources?f[0]=field_products_t_r_promotion_cam%3A1641

10. **A 2019 Outlook on the Latest Developments & Trends Within Automotive Lighting** - The automotive lighting industry is forecasted to grow substantially over the next few years, partially fueled by the movement towards autonomous, electric, shared, and connected vehicles. More this eBook discusses the following in-depth:

- Status Update on the Proposed Changes to U.S. Lighting Regulations
- The Latest Developments in Adaptive Driving Beam Headlights & Laser Headlights
- LED and Interior Lighting Market Trends & Revenue Forecasts

Join Ford Motor Company, General Motors, Toyota North America and more at Auto IQ's 4th Advanced Lighting for Automotive (May 29-31 in Detroit) which will focus on key lighting essentials to include advancements in intelligent lighting technologies, sensor integration, autonomy's role in the lighting ecosystem, safety performance and design, branding and differentiation, and much more! https://autoadvancedlighting.iqpc.com/downloads

11. **LIGHTFAIR® International Returns to Las Vegas Convention Center in 2020** - LIGHTFAIR® has additionally committed to a 2021 return to Philadelphia and the Pennsylvania Convention Center, where LFI 2019 opens on May 19. Staged alternately on the U.S. east and west coasts, LFI returns to Las Vegas in 2020 following its 2014 Convention Center showing, which set new west-coast occupancy and attendance records. For LIGHTFAIR International 2019, the Pre-Conference program will take place in Philadelphia at the Pennsylvania Convention Center Sunday, May 19 – Monday, May 20 and the LFI Trade Show and Conference will run Tuesday, May 21 – Thursday, May 23. For more information about LIGHTFAIR International, please visit lightfair.com

12. **San Diego Broadly Deploys Cameras and Sensors On LED Street Light Poles** - The city of San Diego, CA is currently deploying what is arguably the largest smart city and Internet of Things (IoT) project yet to be undertaken globally by a municipality. Already the city has deployed 2000 smart nodes based on technology from Current, powered by GE and Intel, and the size of the network should double by mid-2019. Some of the software and applications might still be described as trials or prototypes, but the project is a full-fledged, city-wide deployment with the nodes mounted on selected LED street light poles upon which the city had previously installed solid-state lighting (SSL) with integrated wireless connectivity. The new smart nodes include cameras and other sensors, connected via high-speed cellular technology, that are capturing anonymized data which the city will use to better serve citizens and visitors. That data will also be available to organizations and businesses located in San Diego. https://www.ledsmagazine.com/

13. **From Smart Homes to IoT and Autonomous Cars, This Is How 5G Will Impact Our World** - Super-fast phones. Self-driving cars. Smarter homes. Streaming movies, music, and games with zero lag. These are just a some of the technologies we can expect to see in our lives, beginning in 2019, and tying them all is a next-generation cellular network known as 5G. As with 4G and 3G before it, 5G will deliver faster speeds, but that's just one part of the story. 5G will allow our devices and services — the Internet of Things, or IOT — to interconnect seamlessly. Things that seem complex to operate, like autonomous cars or drones, will become achievable. Here's everything you need to know about your next wireless network: https://www.digitaltrends.com/5g/

14. **Cree Announces Best-in-Class Horticulture Efficiency with New Red XLamp LEDs** - Cree, Inc. announces the next-generation XLamp® XP-E2 Photo Red (660 nm) and Far Red (730 nm) LEDs, delivering breakthrough performance for horticulture applications. The new Red XP-E2 LEDs provide a drop-in upgrade for the previous generation that outperforms competing LEDs by up to 68 percent. These higher-performance horticulture LEDs increase the efficiency of LED luminaires and shorten their payback periods, making it more affordable to grow food under optimized lighting. https://www.cree.com/news-events/news/article/cree-delivers-best-in-class-horticulture-efficiency-with-new-red-xlamp-leds

15. **Affiliated Distributors' Electrical Member Sales Grew +8% 2018** - On a same store basis, by industry, 2018 PHCP (Plumbing, Heating, Cooling, Piping) sales were up 12%; Industrial/Power Transmission sales were up +11%; Electrical sales were up +8%; and Building Materials was up +4%. AD (Affiliated Distributors), Wayne, PA, the contractor and industrial products wholesale buying/marketing group, reported a +11% increase in member sales across its 12 divisions, totaling $41.4 Billion in 2018. Purchases from AD suppliers grew by 13% in 2018. https://www.ewweb.com/news/affiliated-distributors-electrical-member-sales-grew-8-2018

Global LED Energy Market Observer:

16. **We've Learned from Our Mistakes Says Signify Chief by Arthur van Schendel** - For several years now, Rondolat, a Moroccan-born citizen of the world with French and Italian nationality, heads the listed company Signify, the former Philips Lighting. Rondolat is seen as the man who transformed the more than one century old light bulb factory into a modern 'service provider in lighting solutions'. 'We then saw that there was not just one transition going on, no, at the time we saw four transitions, and even later five.

a. 'The first was simple and inescapable: the conventional lamp would slowly but surely disappear.
b. 'The second was a logical consequence: the unprecedented advance of LED lighting.
c. 'The third was about the consequences: we would have to switch from one technology to another and we would immediately have to move on by linking the lighting systems and connecting them to the Internet. 'That required a control system and software.
d. 'The fourth transition ensued again: now that we all lighting could be connected, we could start to offer services: you do not buy a lamp, you buy lighting.
e. 'In all fairness, we did not see the fifth and final transition at the time. We have gained the insight that light is a wave and that you can transport data with light waves. 'Of course! Light as language, light as a means of communication. Light waves could, for example, be an excellent, faster and safer alternative to Wi-Fi. We call that system Li-Fi.

https://luxreview.com/article/2019/02/-we-ve-learned-from-our-mistakes-says-signify-chief

17. **Signify Ratchets Up the Li-Fi Trials, pureLiFi Cranks the Speed** - A couple of leading Li-Fi developers have announced advances that they hope hasten the technology's arrival. Signify revealed it now has about 30 pilot installations, while also acquiring a Li-Fi company. Meanwhile, Scotland's pureLiFi said it has cranked up transmission speeds to 1 Gbit/sec, about a 20× increase. Li-Fi uses lightwaves from LED luminaires — rather than the radio waves of Wi-Fi. It is another part of the move beyond illumination toward a data-focused business model in which the lighting infrastructure would morph into an IT infrastructure. One of the obstacles is that gadget makers have yet to embed Li-Fi receiver chips in phones, tablets, and laptops. Standards could help instigate that, but international standards body IEEE is not expected to release one until 2021. The Li-Fi light spectrum has about 1000 times the frequency range of Wi-Fi. Li-Fi enthusiasts also point out that it is more secure than Wi-Fi, because it requires line of sight. https://www.ledsmagazine.com/

18. **Signify Begins LiFi Trial in Europe, North America and Asia** - Signify is speeding up its LiFi development and implement. The leading lighting company announced the trail of LiFi in Europe, North America and Asia through cooperation with more than 30 customers. Signify and its customers set up pilot LiFi installations in worldwide cities. In India, Signify works with Incubex, an incubator for product and business solution, to set up a LiFi implemented meeting room where new startups and firms can apply the technology with Signify's Philips LiFi-enabled luminaires. In Europe, Signify collaborate with telecoms company Orange, providing LiFi service for its Paris Office. The Dutch lighting company also installed LiFi luminaires for Atea, an iT infrastructure company in the Nordic and Baltic region, in its office in Stravenger, Norway. The LiFi luminaires equipped lobby of its building can demonstrate the technology and offers visitors the connectivity. https://www.ledinside.com/news/2019/2/signify_begins_lifi_trial_in_europe_northamerica_asia

19. **Signify Acquires Firefly, its Second LiFi Company** - EdisonReport can confirm that Signify has acquired Firefly LiFi. According to their website, Firefly has an office in San Diego as well as Germany. We believe the transaction has already occurred. https://edisonreport.com/signify-acquires-firefly-its-second-lifi-company/

20. **Osram Acquires UK's Ring Automotive for Extend Its Aftermarket Products** - After revealing its sluggish business performance, Osram announced that it will strengthen its automotive business by acquiring aftermarket specialist Ring Automotive. With the acquisition, Osram plans to expand its aftermarket portfolio and reach end customers via the distribution channels of Ring Automotive in the UK. In addition, Ring's specialization in electronic car accessories complements Osram's product range. Moreover, Osram will give the ring portfolio access to the US market via the established Osram Sylvania channels and opens up new sales potential in Europe and the rest of the world with a differentiated brand strategy. https://www.ledinside.com/

21. **Osram Confirms the Buyout Rumors and in Discussion with Bain Capital and Carlyle Group** - Osram announced a confirmation about the possible buyout by Bain Capital and Carlyle Group and revealed that it is engaged in detailed discussions with the interested parties. After Osram reported its declined business performance in the first quarter of fiscal 2019 and said it has "taken a number of measures to improve revenue and returns," the Germany company confirmed the market rumors that Bain Capital and Carlyle Group are eyeing the buyout of Osram. https://www.ledinside.com/

22. **Zumtobel CEO: "Li-Fi Will Play A Decisive Role"** - Li-Fi got another boost from the old guard today, as the CEO of venerable lighting maker Zumtobel endorsed the technology's potential following a trial with pioneer pureLiFi ahead of a joint display by the two companies at the Mobile World Congress, the mobile telecommunication industry's annual giant confab in Barcelona. The comments by Zumtobel boss Alfred Felder mark the second Li-Fi advance in recent weeks at a major lighting company, following Signify's announcement earlier this month that it now has about 30 Li-Fi trials underway. Li-Fi turns LED luminaires into Internet transmitters by using LED lightwaves, rather than the radio frequencies of Wi-Fi, to communicate with laptops, tablets, and smartphones. Li-Fi advocates say that it can be faster than Wi-Fi. It is also potentially an important part of lighting's emerging Internet of Things (IoT) push, in which vendors are looking for altogether new business models and new sources of revenue by tying lights to the Internet and thus using the lighting infrastructure for a myriad of data services. https://www.ledsmagazine.com/articles/2019/02/zumtobel-ceo-li-fi-will-play-a-decisive-role.html

23. **China LED Chip Makers See High Inventory** - China-based LED chip makers saw inventory pile up to CNY6 billion (US$882 million) at the end of 2018 due to oversupply, according to industry sources. With local government subsidies, many China-based LED chip makers expanded production capacities in 2018, but demand fell far short of expectation, resulting in continual price drops and increasing oversupply, the sources noted. During the first three quarters of 2018, prices for entry-level and mid-range white-light LED chips dropped 30-40% and those for high-end models fell 10-20%, the sources indicated. Some China makers had to lower capacity utilization to below 50% at the end of 2018, the sources said. https://www.digitimes.com/news/a20190222PD202.html

24. **Quality Initiative Aims to End Spec-Breaking in UK** - A solution to spec-breaking on building projects is being trialed in the UK, which it is hoped can help prevent quality lighting products from being rejected in favor of cheap alternatives. The BIQ (Building in Quality) Quality Tracker has been created jointly by the bodies representing architects, builders and surveyors, in an effort to make sure that those involved in a construction project get together and agree quality requirements at the start. The move comes in response to calls for better quality management in the building industry, in the light of low productivity figures and high-profile scandals resulting from poor building quality and maintenance - including the deadly Grenfell Tower fire of 2017, the collapse of a wall at an Edinburgh primary school in 2016, and widespread problems with new-build homes. In the lighting industry, manufacturers and designers are becoming increasingly concerned about contractors ignoring specifications and substituting cheaper products in the name of value engineering. The new Quality Tracker - developed and backed by RIBA, representing architects, the RICS, representing surveyors, and the CIOB, representing building professionals - aims to get this problem under control. https://luxreview.com/article/2019/02/quality-initiative-aims-to-end-spec-breaking

25. **Australian IoT Vendor Buddy Acquires Lighting Company LIFX for $51m** - Australian Internet of Things (IoT) vendor Buddy Platform on Wednesday announced that it has entered into a binding agreement to fully acquire San Francisco-headquartered smart lighting vendor LIFX for about $51 million in a cash and stock transaction. As part of the deal, Buddy will absorb LIFX's 48 employees across offices in Melbourne, Australia, Silicon Valley and Shenzhen. Following the completion of the acquisition, LIFX's chief technology and product officer, Marc Alexander, will join the Buddy board of directors, per a company statement. https://www.dealstreetasia.com/stories/buddy-lifx-120265/

26. **WHITE PAPER - Samsung's Horticulture LEDs Using Full Spectrum** - Samsung has made several attempts to develop new spectrum for horticulture lighting. One solution is to utilize white LED alone or in conjunction with monochromatic LEDs to create a very broad spectrum. These approaches using Samsung white LEDS can deliver the full spectrum of light to promote plant growth, as well as comfortably perform cultivation management, with even better color rendering.

- Comparison of horticulture light sources
- Functions of visible wavelength on plant growth
- Superior spectrum for leafy greens and herb
- Advantages of white-based full spectrum

https://www.samsung.com/led/

27. **ams Introduce New IR Laser for 3D Sensing in Mobile Devices** - ams announced the launch of MERANO-Photodiode (PD), an in-frared (IR) laser flood illuminator module which provides the uniform light output needed in mobile 3D sensing applications such as user face recognition. By introducing a VCSEL-based flood illuminator in a slim package, ams aims to ehance the adoption of 3D sensing applications in mainstream mobile phones. Its 2W Merano-PD is suitable for use in the latest technologies for 3D sensing, including ToF and structured light methods. Applications such as face recognition, augmented reality, 3D object scanning and 3D image rendering, as well as other industrial and automotive applications, will benefit from use of the Merano-PD. Benefiting from optimized thermal design, the 2W-Merano-PD module has a footprint of 2.4mm x 3.3mm and just 1.2mm high. It is small enough to be integrated easily into a mobile phone's design for either front- or world-facing applications. https://www.ledinside.com/

Monthly Feature:

CSIL Pegs US Luminaire Market at $20 Billion

https://www.lighting.csilmilano.com/report/the-lighting-fixtures-market-the-united-states-0058484.html

The 12th edition of The Lighting Fixtures market in the United States offers a comprehensive picture of the lighting fixtures industry in the US, providing data and trends 2012-2017 and forecast up to 2021. From one hand, the report analyzes the main trends affecting the market over the last five years, considering the production, the consumption, the imports and the exports of lighting fixtures in the country. On the other hand, it offers an analysis of the market structure and the competitive system, an overview of the distribution system and the main players operating in the market.

1) International Trade
   Lighting fixtures exports and imports are considered, broken down by country and by geographical area of destination/origin. The time frame considered is 2012-2017.
2) Market Structure
   The lighting fixtures market is divided into four main segments:
   - residential-consumer
   - architectural-commercial
   - industrial
   - outdoor.

   Within them, the market is further broken down by types of product, by light sources, and by the place of production.
   A financial analysis, on a sample of a selected number of companies operating in the market, includes profitability ratios and financial indicators.
3) Distribution Channels
   The analysis of the distribution system is organized by the following channels:
   - Contract/Builders
   - Lighting Specialistsaaa
   - Lifestyle stores
   - DIY stores
   - E-commerce

   A selection of architectural offices and lighting designers, electrical and lighting wholesalers, and furniture stores is also included.
4) Competitive System
   Finally, the report offers an analysis of the leading local and foreign players present in the market and in each segment considered; through sales data, market shares and short profiles.

An address list of more than 130 US lighting fixtures manufacturer is included.
Among the considered products: indoor/outdoor lighting, decorative/residential lighting, commercial lighting, industrial lighting, technical lighting, traditional/transitional/contemporary lighting, floor/table/wall/ceiling lamps, suspensions, downlights/recessed, tracks/systems, projectors/spotlights, hospitality, retail, office lighting, entertainment lighting, lighting for museums, lighting for industrial plants, explosion-proof lighting, marine lighting, healthcare lighting, emergency lighting, residential outdoor lighting, lighting for urban landscape, Christmas lighting, street lighting, sporting facilities and galleries, incandescence, fluorescence, gas discharge, LED, lighting controls and IoT applications.