ENERGY OBSERVER
A MONTHLY NEWSLETTER FROM AMERLUX®

FEB 2024

Amerlux - Commercial Lighting Manufacturer | SPEC-Grade Lighting

Amerlux, a wholly-owned subsidiary of Delta Electronics, has been a catalyst for change in the lighting industry since 1984—simply by listening to the marketplace.

Amerlux Lines of Brilliance

FINCH collection

A marvel of engineering, this masterfully crafted 1.25" surface mount fixture emits more than 1000 lumens, surpassing competitors with a single gentle beam of discreet quality illumination.
Download Finch Preview

Rook 250
Equipped with integral drivers and individual controllability of direct and indirect lighting, the Rook 250 comes in two distinct cylinder sizes and the same aperture size to round out our signature line of indoor and outdoor cylinders.
See our products

Carisma
With market-leading lumen performance, modern good looks, intoxicating quality and a sleek edge-to-edge lens design, this project-conscious, made-to-measure architectural pendant andrecessed linear is too hard to resist.
See our products

Aerus
Comfortably surpass the WELL Building Standard's UGR requirements with Amerlux's sleek, flagship linear fixture and patented-protected optic design.

See our products

Linea/Gruv
The top-selling Linea pendant and Grüv recessed family of linear lighting offer consistent quality and aperture size from walls to ceilings and open-ceiling applications without compromising performance.
See our products

National LED Market Observer

1. **2024 Nonresidential Construction Forecast: Slower Growth by Craig DiLouie** - In 2023, the U.S. economy defied recessionary expectations with strong growth despite high inflation and resulting rising interest rates. A major contributor to the economy is construction, which overall exhibited unusually strong growth during the year. The boom is starting to abate, however, leading to the AIA Construction Consensus Forecast Panel to forecast that nonresidential construction spending will slow to 4% growth in 2024 and further slow to 1% growth in 2025. 2024 Nonresidential Construction Forecast: Slower Growth (lightingcontrolsassociation.org)

2. **Construction Starts Hit 10-Month Low, Declining 15% in November** - Total construction starts fell 15% in November, dropping to a seasonally adjusted annual rate of $927 billion, according to Dodge Construction Network. Nonresidential building starts fell 29% during the month, residential starts lost 6%, and nonbuilding starts dropped 2%. Year-to-date through November 2023, total construction starts lagged by 4% compared to the previous year. Residential and nonresidential starts were down 14% and 7%, respectively, but nonbuilding starts were up 19%. **Regionally**, total construction starts in November fell in the Midwest, South Atlantic, South Central and West regions, but rose in the Northeast. Construction Starts Hit 10-Month Low, Declining 15% in November | EC&M (ecmweb.com)

3. **UL Solutions' Lighting Performance Services** - UL Solutions' technical experts are committed to providing performance testing services that meet the high expectations of the lighting industry. Our services are designed to support your business needs and range from UL Marketing Claim Verification to measurement of performance and energy efficiency, to assessment of photobiological risk factors and even to the safe packaging and shipping of your products through ISTA package testing. We can help you to better understand your product's performance characteristics, earn key energy efficiency certifications or differentiate your product in the marketplace with independent UL Verification. Lighting Performance | UL Solutions

4. **TRAINING: Lighting Controls Association's Luminaire-Level Lighting Controls Course Now Available on YouTube** - Interested in learning more about luminaire-level lighting controls? The Lighting Controls Association now offers Luminaire-Level Lighting Controls, one of its most popular Education Express courses, as a video course available on YouTube. By the end of this course, you will be able to: 1) explain the capabilities and benefits of LLLC to clients as a subset of networked lighting controls, 2) differentiate LLLC product solutions in terms of capabilities and cost, 3) match LLLC to appropriate applications, and 4) design lighting and control solutions recognizing the basics of what is required to incorporate LLLC.

5. **Electrical Wholesaling's Top 10 Product Picks for January 2024** - Congratulations to the product development and marketing teams from Appleton Electric/Emerson, Earthtronics, Keystone Technologies, Legrand, Leviton, Milwaukee Tool, Russelectric, Siemens, Signify and Werner for having their new products selected in this month's EW Top 10 Product Picks. Interested in having one of your company's new products selected as an EW Top Product Pick? Send a brief description (100 words or less) and high-resolution photo (300 dpi or better) to Jim Lucy, editor-in-chief, of Electrical Wholesaling magazine at jlucy@endeavorb2b.com
Electrical Wholesaling's Top 10 Product Picks for January 2024 | Electrical Wholesaling (ewweb.com)

6. **Cultivating with Light by Susan DeGrane** - Controlled environment agriculture (CEA) drives product innovation, energy savings and installation opportunities. Farming is undergoing dramatic changes today. Several factors have accelerated demand for controlled environment agriculture (CEA)— population growth, climate, a need to increase crop reliability and reduce transportation costs, a desire to extend growing seasons and the legalization of cannabis. Because CEA consumes lots of electricity, demand for energy-efficient horticultural LED lighting is on the rise. The global market for horticulture lighting (estimated at $3.2 billion in 2019) is predicted to grow to $20.3 billion by 2030, according to market research firm Prescient & Strategic Intelligence Market Research. The United States currently leads all other nations with 16.9% of the market. Electrical Contractor - Cultivating With Light (ecmagdigital.com)

7. **How Can AI Rewrite the Lighting Controls Value Proposition? by Landon Miles** - AI systems can analyze vast amounts of data in real time, adjusting lighting settings based on factors such as occupancy, ambient light, and energy consumption. It is important to note that AI-enabled lighting control systems may not be ideal for every lighting installation. They are particularly well suited for large-scale applications with a sizable number of nodes and substantial data generation. In such cases, AI-driven solutions can effectively harness the wealth of data to optimize performance, adapt to changing conditions, and manage complex installations with ease. For smaller-scale lighting systems with less complexity and fewer nodes, the benefits of AI may not be as pronounced as the data set is smaller. In these applications, standard control systems may suffice, although with the rising popularity of household digital assistants, there is potential to bring some version of these advanced technologies to smaller networks.AI is a transformative force that can redefine what is possible in the realm of lighting control. CONTROLS | How can AI rewrite the lighting controls value proposition? | LEDs Magazine

8. **IALD International Lighting Design Awards Opens Call for Entries** - Preparing for an exceptional 41st year, the International Association of Lighting Designers (IALD) has opened the Call for Entries in the 2024 cycle of its annual IALD International Lighting Design Awards. Projects can be submitted for award consideration by any individual lighting designer or lighting design firm, provided they performed the design of the architectural lighting for that project. Eligible projects must be a permanent architectural lighting design solution for which construction was completed after 1 January 2022. Further details on these 2024 Awards presentation on the IALD website

9. **The GSA and PNNL Release LED and Controls Guide** - In support of the BRIGHT Act, the U.S. General Services Administration (GSA) in collaboration with Pacific Northwest National Library (PNNL) has released LED Lighting and Controls Guidance for Federal Buildings. The 50-page document aims to help lighting designers and project managers choose cost-effective and energy-efficient systems and provides its findings on LEDs and controls by GSA's Green Proving Ground (GPG). The document discusses LED system features to consider such as color rendering, color temperature, communication protocols, efficiency and flicker. Furthermore, the guide covers information on various types of LED installations such as retrofit kits, TLEDs and interior linear lighting. Also included are steps for design lighting controls systems, as well as information on how to evaluate financial returns on a lighting project. Download the guide at: LED Lighting and Controls Guidance | GSA

10. **A.L.P. Releases Monterrey Capabilities Video** - A.L.P. recently released a video tour of its strategically located, 106,000-square-foot Monterrey, Mexico plant. The new video showcases A.L.P.'s world-class plastic and metals manufacturing capabilities, showing how it collaborates with OEM customers to move quickly from concept to prototype to finished product, supporting innovation and cost-effective production. A.L.P. is a leading global supplier of lighting components, offering a diverse line of products and services for lighting OEMs and the aftermarket. From LED to legacy applications, A.L.P. offers the industry's most comprehensive line of optical components, unwired fixture bodies, LED fixture kits, custom services and more. A.L.P. Brands include Steel Craft, LexaLite®, and Reflek®. Industrial Lighting Design and Manufacturing | A.L.P. Advantage (alpadvantage.com) VIDEO: https://www.youtube.com/watch?v=XWbXX8bbqBI

11. **DarkSky Approved Lodging Program is Now Live** - The DarkSky Approved Lodging Program sets a new standard in the travel industry, encouraging hospitality companies to actively participate in safeguarding the night from the damaging effects of light pollution while providing their guests with an awe-inspiring and educational experience under pristine dark skies. The DarkSky approval process centers on four primary criteria: sky quality, habitat identification, lighting design, and education. Applicants to the DarkSky Approved Lodging Program must also provide a detailed lighting management plan to ensure compliance into the future. Learn more at: darksky.org.

12. **Federal Facilities Get $104 Million for Energy Efficiency** - The U.S. Department of Energy (DOE) recently announced $104 million for energy-conservation and clean-energy projects at 31 federal facilities. The projects announced for funding align with a December 2021 Executive Order that calls for a 65 percent reduction in greenhouse-gas emissions from federal operations by 2030, 100 percent zero-emission vehicle acquisitions by 2035, and a net-zero building portfolio by 2045.
Selected projects include:

- Installation of rooftop solar panels
- Installation of LED lights and occupancy sensors in low-occupancy areas
- Replacement of evaporator diesel-powered boilers with electric boilers
- Replacement of a 35-year-old HVAC system with high-efficiency equipment

https://www.facilitiesnet.com/energyefficiency/tip/Federal-Facilities-Get-104-Million-for-Energy-Efficiency--52918

13. **LED Lighting Rated Up To 212°F** - Most people in the lighting industry know that high heat can destroy both LED's and drivers, especially drivers containing electrolytic capacitors. However, there are classes of both LED emitters and luminaires that are designed to withstand high operating temperatures, up to 212oF. Example applications include lighting for steel mills, blast furnaces, pulp & paper plants, painting facilities, offshore platforms, oil & gas complexes, and more. How can LED luminaires survive such temperatures, visit: LED Lighting Rated Up To 212°F | LightNOW (lightnowblog.com)

14. **AI Needs So Much Power That Old Coal Plants Are Sticking Around** - Power companies are scrambling to satisfy the needs of data centers and new factories in a country where the grid is already strained. Artificial intelligence is quickly shaping up to be the "it" technology of 2024, but there's one thing many people don't realize -- and that's just how energy intensive the industry is. AI is fueling data center growth and the sector is expected to consume 390 terawatt-hours of power by 2030, reports Boston Consulting. The related rise in demand could also be a barrier to rapid coal-burning power plant closures. AI Needs So Much Power That Old Coal Plants Are Sticking Around - Bloomberg

Global LED Energy Market Observer:

15. **Adelaide Oval Unveils Multi-Million-Dollar LED Tower Lighting Upgrade** - Adelaide Oval has unveiled a new $5 million LED upgrade to its tower lighting system, making it the only major stadium in Australia with tower lights equipped with both immaculate white sports lighting and full colour 'light show' capabilities. The LED system replaces high intensity discharge (HID) lighting that was last updated in 2014 as part of the Adelaide Oval redevelopment. LED allows for two things - instant switch on and off of a focused, consistent lighting level across the field of play, as well as new capabilities including colour, flash and animation. The new lights will also use approximately 40% less power than their predecessors, contributing to Adelaide Oval's sustainability goals. Installation was completed in just 11 weeks by a project team of 30 full-time experts, led by South Australian electrical solutions company CME and longtime Adelaide Oval project management partner Mott MacDonald, with lighting supplied by Signify Australia. https://www.ledinside.com/news/2023/12/2023_12_29_03 Watch the video: https://www.youtube.com/watch?v=DOQ-TgURewM

16. **RESEARCH: Global Smart Street Lighting Market Report 2023** - The "Global Smart Street Lighting Market, 2nd Edition" report has been added to ResearchAndMarkets.com's offering. The global installed base of individually controlled smart street lights amounted to 23 million units at the end of 2022. Growing at a CAGR of 22.7 percent, the number will reach 63.8 million in 2027. Europe is the leading adopter and today accounts for around 35 percent of the global installed base. North America is the second largest and also constitutes the fastest growing market, closely followed by the Rest of World region. A variety of proprietary RF networking platforms together account for 60 percent of the individually controlled street lights while cellular and PLC communications are the second and third most common connectivity technologies respectively. As of Q3-2023, the leading smart street lighting vendor was Signify with an installed base of nearly 4.9 million lighting controls, followed by US-based Itron and the Chinese vendor Fonda Technology. Itron also constitutes the global leader in the network segment. Global Smart Street Lighting Market Report 2023 – lightED (lightedmag.com)

17. **Everything You Missed at CES 2024** - The first truly busy day of CES 2024 Las Vegas has come and gone. From home robots to electric vehicles to AI, laptops and processors, there was news from pretty much all areas of tech. There were pleasant surprises like Samsung's cute new Ballie robot ball and Sony's spatial content creation headset, and intriguing concepts like Razer's vibrating cushion for gamers. We also got exactly what we expected in the form of new processors from the likes of AMD, Intel and NVIDIA, as well as the subsequent flood of laptops carrying the just-announced chips for 2024. And for everyone else, this CES also saw the launch of things like headphones, electric vehicles, gaming handhelds, grills, gaming phones, e-ink tablets, strange hybrid devices, noise-suppressing masks, standing desks and more. It's a free for all and we're nowhere near done. Here's just a small selection of the biggest news at: Everything you missed at CES 2024 Day 1: Samsung and Sony dominated, as did chips and laptops - LEDinside

18. **WHITE PAPER: The Smart Building of the Future by Johnston Controls** - Today's buildings account for nearly 40% of global greenhouse gas emissions. That's one of the many reasons why organizations are under pressure to meet net zero goals while accommodating continued growth with improved profits. When a building comes alive with smart technology, it conserves energy as well as the resources needed to fuel the organization while creating a healthier, safer, and more productive environment. Although smart buildings have been a reality for years, advancements in connectivity, AI, IoT, cloud, and cybersecurity technology, as well as innovation in the buildings domain, are driving dramatic transformation. Envision a future where these structures harmoniously intertwine with human and environmental ecosystems, fostering sustainability and enhancing experiences. The smart buildings of the future are able to self-heal, selfmanage, and self-operate with little to no human intervention for day-to-day operations. ctrls.johnsoncontrols.com/smart-buildings-whitepaper

19. **Award Winning XLamp® XP-G4 Incorporates Latest High-Power LED Advancements** - According to analysts at Fortune Business Insights, the global LED lighting market is currently experiencing double digit year-on-year growth – with a 19.2% compound annual growth rate (CAGR) projected to continue between now and the end of the decade. This equates to it having an annual worth close to $300 billion by the end of that period. To get a share of the lucrative opportunity that this represents, LED manufacturers need to develop products that are capable of pushing the performance envelope and offering clear differentiation to end users. In any industry sector, when a well-established product line has dramatic improvements applied to it, current users as well as newcomers are going to take notice. High-power LEDs are no exception in this respect – with the upgrading of existing designs and brand new system implementations both benefitting as a result. Now, with the announcement of the XLamp XP-G4 emitter products, the bar has been raised even further. Award Winning XLamp® XP-G4 Incorporates Latest High-Power LED Advancements - LEDinside

20. **The 2023 CEA Rollercoaster Recap** - 2023 was another turbulent year in the Controlled Environment Agriculture (CEA) market. There was a surprising wave of bankruptcies in Q1, Q2, and Q3. Major players like Infarm, AppHarvest, Aerofarms, and Kalera all closed operations and filed for bankruptcy. The high-profile closures then contributed to funding drying up for CEA ventures, hindering new projects. Lots of technology is still being pursued, experimented with, and adopted by the industry, including AI, digital twins, CRISPR-Cas9 gene editing, advanced LED lighting, and Nanobubble technologies. The 2023 CEA Rollercoaster Recap | LightNOW (lightnowblog.com)

21. **This Company Wins Contract to Install LED-Based Solar Street Lighting System in Ayodhya** -
The Uttar Pradesh government in India is working round-the-clock to develop Ayodhya as the country's first solar city. In this context, the government has targeted to break the world record for the longest solar street light line. Recently, Lord's Mark Industries Private Ltd, a diversified business group, won the contract to set up good number of LED-based smart solar street lighting systems in the temple town of Ayodhya. As per the contract valued in crores, Lord's Mark Industries will manage the designing, supply, installation, testing, and commissioning of LED-based smart solar streetlights with LiFePO4 battery including a 5-year comprehensive warranty along with operations and maintenance. https://www.ledinside.com/news/2024/1/2024_01_25_04

Monthly Feature:

Endless Buying Spree: A Recap of Acquisitions and Mergers Throughout the Lighting Industry in 2023 - The survival and growth of businesses bear striking similarities to the growth patterns of cells, both evolving continuously in the process of adapting to environmental changes. Mergers and acquisitions between companies share commonalities with cell fusion, aiming to achieve broader integration for better survival and development. In the growth trajectory of most large enterprises, mergers and acquisitions are indispensable components. What new trends have emerged in mergers and acquisitions within the lighting industry since 2023? This article will take a closer look at the acquisitions and mergers in the lighting industry since 2023, delving into the underlying industrial development characteristics of these cases. **Amid intensifying competition within the LED lighting industry, corporate M&A is both an expansion and survival strategy**.

In recent years, the lighting industry has undergone significant transformations, with a continual acceleration in industry reshuffling, a gradual reduction in effective demand, and a further escalation of market competition. Despite the intensifying competition, the rise of new LED lighting applications injects vitality and growth opportunities into the entire industry. Manufacturers are boldly exploring segmented markets, steering clear of the monotony of fierce competition. They seek to stand out by offering unique products, discovering new avenues for profit and achieving long-term growth in the highly competitive lighting industry. Smart lighting is gaining significant attention.

In the realm of **smart lighting**, driven by continuous technological upgrades and people's persistent pursuit of convenience and intelligent experiences, the demand for smart lighting continues to expand. The market research consulting firm TrendForce estimates rapid growth of the market size of global LED smart lighting to $2.4 billion in 2023. With an increase in health awareness and increasing demand for quality living, businesses are increasingly recognizing the growing embrace of **human-centric lighting**, considering it a new avenue for industry evolution. Compared to other segmented markets in the lighting sector, **marine lighting** is still in early development, with relatively lower maturity. However, this market is highly promising. For example, Foshan Lighting has already begun positioning itself in this market. Despite a slight decline in the demand for **horticulture lighting** in recent years, the industry remains confident in its long-term prospects and continues to seek new growth opportunities by optimizing product performance. TrendForce estimates the LED horticulture lighting market to reach $1.44 billion in 2023 and rise to $2.44 billion by 2027.

In the highly competitive lighting industry, specialized niches have emerged as fresh opportunities for growth, becoming key battlegrounds for manufacturers. Through mergers and acquisitions, enterprises can rapidly acquire technological resources and expertise in the target market, seize opportunities in different lighting segments and achieve early positioning in niche markets. Therefore, M&A activities are not only an expansion strategy for companies but an effective means to address competitive pressure for survival. Moreover, compared to internal development, mergers and acquisitions hold an absolute advantage in terms of time and efficiency. By integrating the resources and technologies of the target companies, enterprises can more swiftly complete their expansion journey, better cope with homogeneous competition, enhance brand influence, achieve economies of scale and secure a larger market share.

Numerous lighting manufacturers begin acquiring other businesses, attracting attention to segmented markets...

According to a brief survey from LEDinside, the optoelectronics research arm under TrendForce, the lighting industry saw 14 mergers and acquisitions in 2023. These cases covered various fields such as smart lighting, marine lighting, horticulture lighting, specialty UV/IR light sources and more.

Date	Acquirer	Target company	Target sector for expansion
Jan 9th	Yankon Group	Zhiyi IoT Technology	NA
Mar 1st	Cooper Lighting (acquired by Signify in 2020)	Intelligent Lighting Controls (a US-based wired control system manufacturer)	Smart internet lighting
Apr 7th	Tons Lightology	Strong LED	Comprehensive resource integration
Aug 11th	Unilumin	Cecoceco, Co.	Consumer lighting
Sep 1st	Inventronics	Digital Systems business of ams OSRAM	Mid- and low-power LED driver ICs
Sep 15	Excelitas Technologies (a leading photonics company from the US)	Specialty light source business from Heraeus (Heraeus Noblelight)	UV/IR and other specialty light sources
Oct 5th	Facility Solutions Group (FSG; a leading lighting distributor from the US)	Lighting Management Inc. (LMI, a US lighting management company and distributor)	Smart internet lighting
Oct 10	Signify	Douglas Lighting Controls (DLC), originally owned by Panasonic	Smart internet lighting
Oct 31st	Foshan Lighting	Shanghai Liangzhou Lamp Manufacturing Co., Ltd.	Marine lighting
Nov 27th	Acuity Brands	Current Lighting	Horticulture lighting
Nov 28th	Luoman Lighting Technologies	PREDAPTIVE	Cultural tourism involving digital technology and AR/VR
Nov 30th	Xiaosong Co., Ltd.	SIMPLE	Heat pumps
Dec 5th	Ragni Group	Hess GmbH + Form	Public LED lighting
Dec 21st	Kingswood Capital Management, LP	Hubbell	Household lighting

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