ENERGY OBSERVER
A MONTHLY NEWSLETTER FROM AMERLUX®

DEC 2023

Merry Christmas Everybody

VIDEO: Amerlux's Commitment to Best-In-Class, US Made Lighting Design Solutions - YouTube

Amerlux's Commitment to Best-In-Class, US Made Lighting Design Solutions – First, we want to wish everyone a very Merry Christmas and want to thank you, our customers, for another terrific year.
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. We don't keep up with industry trends. We set them. We believe lighting is as much about "feeling" as it is about "seeing." Our solutions deliver the five elements that exceed today's expectations: rich color, next-level comfort, total control, easy configurability and "capture" to provide added security. We believe in building long-term relations with all our stakeholders, including architects, lighting designers, facility managers and contractors. We understand your goals and problems, then rise to the challenge by offering an array of the most magnificent, top-end lighting solutions in the world—backed by iron-clad guarantees, breathtaking savings and unparalleled service—at a cost-effective price. Our clients' business is our business, their reputation, our reputation, and their bright future, our own. Again, Merry Christmas!

National LED Market Observer

1. **EPA's ENERGY STAR Program Celebrates Lighting Efficiency Achievements** - Since the ENERGY STAR label for lighting and lightbulbs was first introduced in 1997 to improve market uptake of energy efficient lighting, well over three billion ENERGY STAR certified light bulbs have been sold in the United States. These sales have helped transform the lighting market and deliver electric energy savings of over one trillion kWh—equivalent to the annual carbon sequestration of over 800 million acres of forest in the United States— emphasizing that energy choices count and our collective decisions as consumers can have a big impact on the environment. In May 2022, the Department of Energy formalized a policy that enforces a 45 lumen-per-watt limit and ushers in a new era for lighting. As a result of this new standard and widespread market penetration of energy efficient lighting, the ENERGY STAR label will be phased out from most lighting options effective at the end of 2024. ENERGY STAR Celebrates Lighting Efficiency Achievements (facilityexecutive.com)

2. **ENERGY STAR Rebate Finder** - Find rebates and special offers near you on ENERGY STAR certified products. Products that earn the ENERGY STAR label meet strict energy-efficiency specifications set by the U.S. EPA helping you save energy and money while protecting the environment. Enter your zip code at:.Special Offers and Rebates from ENERGY STAR Partners | EPA ENERGY STAR

3. **ENERGY STAR Finalizes New Downlight Spec** - The ENERGY STAR Downlights Specification Version 1.0 was finalized on November 16, 2023, is effective immediately, and takes full effect on January 1, 2025 with the sunset of the Luminaires spec. Downlights don't have to be recessed to qualify for the program. For example, flush mount downlights and even wall mounted downlights can qualify. The new program includes downlight retrofit kits that convert legacy light source downlights to LED. No empty socket downlights are permitted in the program, only dedicated LED downlights. On Tuesday, December 5, 2023, at 2:00 PM EST, EPA will host a webinar, providing an overview of the major changes from Luminaires V2.2 to Downlights V1.0. Register here to attend. ENERGY STAR Finalizes New Downlight Spec | LightNOW (lightnowblog.com)

4. **Streetlighting the Way to 5G** - Technologies such as 5G cellular communications need a place to land, as do all the sensors being developed to detect and transmit roadway information. Streetlights are ubiquitous and offer direct access to electrical power, especially in urban and suburban locations, so they are a critical component in cities' digital infrastructure. From monitoring weather and safety conditions to aiding the deployment of autonomous vehicles, devices added to streetlights are set to become more numerous and important over the next decade. What's new is that the move to 5G cellular systems is providing the speed and bandwidth needed to enable new applications, including aiding the development of autonomous vehicles, which will be using 5G to communicate with other vehicles and the environment. Additionally, cities could use smarter streetlights to monitor real-time traffic and roadway conditions more easily. Electrical Contractor - Streetlighting the Way to 5G (ecmagdigital.com)

5. **Lighting Controls Association's "Introduction to Lighting Controls" Now Available on YouTube**
Authored by Craig DiLouie, LC, CLCP, education director for the Lighting Controls Association, EE101: Introduction to Lighting Control provides an overview of the basic functionality of today's lighting controls, benefits and the basic questions to ask when identifying an appropriate lighting control strategy. The written course at Education Express is registered with the American Institute of Architects (AIA) Continuing Education System (CES) and recognized by the National Council on Quality in the Lighting Professions (NCQLP). It is also required reading to prepare for NALMCO's Certified Lighting Controls Professional (CLCP) exam. The Lighting Controls Association is recognized by the State of California as a continuing education provider. https://www.youtube.com/watch?v=xnMySo_Nwi8

6. **U.S. Offshore Wind Sector 'Fundamentally Broken' - BP Exec** - BP's renewables boss said the U.S. offshore wind industry is "fundamentally broken" as BP and its partner Equinor study options to develop huge projects off the coast of New York after $840 million of their value. The offshore wind industry, one of the fastest growing energy sectors, has recently suffered a string of major setbacks due to equipment reliability issues, supply chain problems and sharp cost increases. Orsted, the world's largest offshore wind developer, flagged writedowns of up to $5.6 billion after halting the development of U.S. offshore wind projects. Anja-Isabel Dotzenrath, BP's head of gas and low carbon, said that problems in the United States included permitting, the time lag between signing power purchase agreements and projects being built and a lack of inflationary adjustment mechanisms. U.S. offshore wind sector 'fundamentally broken' - BP exec | Reuters

7. **Li-Fi Is Finding a Killer App: Gaming & Esports** - Li-Fi utilizes light (typically infrared), instead of WiFi radio waves, to provide blazing fast, secure, wireless connectivity. There has been some Li-Fi adoption by military organizations around the world, but generally, overall adoption has been very slow. That may be about to change. The Consumer Electronics Show (CES) has been writing about a new Li-Fi application that is likely to take off, namely gaming and esports. One startup, PhotonFi, has developed gaming platforms powered by Li-Fi. Li-Fi's use of light to transmit data minimizes interference in ways that far surpass Wi-Fi. Among its advantages, Li-Fi functions well in areas with a high density of users, it significantly reduces latency, and even operates through water. Li-Fi Is Finding A Killer App: Gaming & Esports | LightNOW (lightnowblog.com)

8. **MDM Virtual Data Analytics Summit on December 6th** - A virtual summit specifically designed for wholesale distribution executives. The virtual Data Analytics Summit on December 6th will cover the three building blocks of sales & marketing data analytics:
Customer Stratification: Transform your customer base into actionable categories, to identify high-value opportunities, assess their unique needs and tailor your sales strategy and services to maximize ROI. Learn how to uncover the true cost associated with serving different customer segments.
Channel Analytics: Learn techniques distribution and manufacturing leaders are using to identify, assess and optimize channel partnerships to maximize efficiency, target revenue opportunities and execute win-win plans.
Market Profiling, Market & Wallet Share: This session outlines best-practice growth tools for market segmentation and profiling, prospecting, Recency-Frequency-Monetary (RFM) analysis, market-share tracking and advanced wallet-share optimization techniques.
Registration is open now. I hope you'll join me to tap into the best practices, leading methodologies and peer panel discussions of data analytics leaders. Tom Gale, CEO of Modern Distribution Management

9. **ArchLIGHT Summit 2024 Call for Speakers** - The fourth annual ArchLIGHT Summit held at the Dallas Market Center is looking for our 2024 Speakers! The next event, taking place Tuesday, Sept. 17 and Wednesday, Sept. 18, 2024, will welcome lighting designers, architects, interior designers, specifiers, and students to review new products, network, and attend a wide range of seminars. The most sought-after sessions will be those that break the mold of traditional presentations and panels, in favor of more experiential learning and honest discussions. We are looking for sessions to discuss the latest and greatest in the industry, covering topics such as innovative technology, design practices, business acumen and more. ArchLIGHT Summit 2024

10. **Mark Your Calendar for 2024 & 2025** -
- Registration – LEDucation LEDucation Trade Show and Conference at the New York Hilton Midtown. Virtual Sessions March 14-15, 2024; In-Person Sessions March 19-20, 2024
- ArchLIGHT Summit 2024 ArchLIGHT Summit | Dallas Market Center, 2100 Stemmons Fwy, Dallas, TX 75207 September 17 &18, 2024
- The Future Illuminated | LightFair Commercial Lighting Tradeshow Lightfair Trade Show and Conference at the Las Vegas Convention Center. May 4 – 8, 2025

11. **The Hassle of Approved Product Lists for EV Charger Rebates** - In the rapidly advancing realm of electric vehicles (EVs), the road to adoption is often paved with promising incentives, one of the most notable being EV charger rebates. 74% of the country boasts a rebate for EV chargers, but navigating the landscape to get these incentives can be both rewarding and, at times, challenging. The relatively high incentive amounts can help cover a significant portion of the installation cost. BriteSwitch's RebatePro for EV Chargers makes it easy to determine which rebate and incentive programs have an Approved Product List or Approved Network List. Quickly research where you need to get your equipment on an approved rebate program list or make sure you're using the right rebate-eligible charger in your area. RebatePro for EV Chargers

Average EV Charger Rebate in North America	
Level 2 Charger Residential	$544 per charger
Level 2 Charger Commercial	$3,128 per charger
Level 3 / DCFC Charger Commercial	$24,379 per charger
Source: BriteSwitch RebatePro for EV Chargers Nov 2023	

12. **Electrification Opens New Avenues for Lighting Industry Growth** - As electric vehicle (EV) adoption accelerates across the U.S., the EV charging market is powering up — with a projected annual compounded growth rate of 29.1% between 2023 and 2030. Leveraging their business experience and industry partnerships, some lighting and controls companies are expanding their product lines to capitalize on the opportunity. While the EV charging sector offers a lot of opportunity, success is not guaranteed. The market is continuously evolving and major competitors, such as Tesla, are known to announce new advancements that can cause significant disruption overnight. Electrification opens new avenues for lighting industry growth | LEDs Magazine

13. **Waiver of Buy America Requirements for EV Chargers** - The Federal Highway Administration (FHWA) established a temporary public interest waiver to waive Buy America requirements for steel, iron, manufactured products, and construction materials in electric vehicle (EV) chargers. This short-term, temporary waiver enables EV charger acquisition and installation to proceed while also ensuring the application of Buy America to EV chargers by the phasing out of the waiver over time. Beginning with EV chargers manufactured on July 1, 2024, FHWA will phase out coverage under this waiver for those previously covered EV chargers where the cost of components manufactured in the United States does not exceed 55 percent of the cost of all components. Complete information for the FHWA temporary waiver for EV chargers at: Federal Register :: Waiver of Buy America Requirements for Electric Vehicle Chargers

14. **Steps to Conducting a Commercial Building Energy Audit** - Fundamental energy audit steps:
- **Gather Utility Bills**: Start by collecting your commercial building's utility bills for the past year. These bills will provide valuable insights into your energy consumption patterns and help establish a baseline for comparison.
- **Inspect Your Commercial Building**: Conduct a thorough visual inspection of your commercial building, both inside and outside. Look for signs of energy inefficiency such as drafts, leaks, and inadequate insulation.
- **Identify Energy Sources**: Make a list of all the energy sources and systems in your commercial building, including lighting, HVAC, appliances, and machinery. This will help you focus your audit efforts.
- **Assess Lighting and HVAC Systems**: Evaluate the energy efficiency of your lighting and HVAC systems. Consider upgrading to energy-efficient solutions and optimizing HVAC controls.
- **Conduct an Energy Assessment**: Use energy auditing tools or software to input your data and generate a comprehensive energy assessment report. This report will highlight areas for improvement and offer recommendations.
  Energy Auditing 101: Rebounding From Extreme Weather (facilityexecutive.com)

15. **Networked Lighting Controls Offer Deep Well of Energy Savings by CRAIG DILOUIE** - As first-generation LED lighting systems begin to be replaced, a significant opportunity to maximize energy savings by incorporating networked lighting controls is emerging, particularly when HVAC integration is included. Networked lighting controls have been demonstrated in research to reduce LED energy consumption by 50+ percent. By integrating HVAC control via lighting system-based occupancy sensors, total commercial building energy consumption can be reduced by up to 5-10 percent. Networked Lighting Controls Offer Deep Well of Energy Savings (lightingcontrolsassociation.org)

16. **Fluence Announces Major Presence at MJBizCon 2023** – Fluence announced it will have a major presence at MJBizCon, the leading cannabis industry conference. Fluence Cannabis Solutions Architect Casey Rivero will join a panel alongside Fluence customers to discuss how growers can maximize crop quality. In addition, the company is investing in connecting the cannabis community at this year's conference, providing product demonstrations from Fluence's line of leading LED lighting solutions as well as hosting a series of Grower Talks with Fluence experts at the company's booth. Fluence Announces Major Presence at MJBizCon 2023, Including Panel of Industry-Leading Growers, Educational Series and Product Demos - LEDinside

17. **Green Rebates to Give Away More Than $100,000 in Cash and Horticulture Prizes at MJBizCon** - Green Rebates, the only rebate and incentive management company primarily serving the horticulture industry, announced today it will give away more than $100,000 in cash and prizes to attendees at MJBizCon, the world's largest cannabis conference and expo, taking place Nov. 28 to Dec. 1 in Las Vegas. Conference attendees must acquire an "Emerald Ticket," available on Green Rebates' social media channels and distributed among partners, to enter Green Rebates' cash machine (located at booth No. 29006). Inside the cash machine, participants can win vouchers for thousands of dollars worth of cultivation equipment as well as cash. Now in its 12th year, MJBizCon is the leading global cannabis business conference and trade show held annually at the Las Vegas Convention Center. Green Rebates to Give Away More Than $100,000 in Cash and Horticulture Prizes at MJBizCon - LEDinside

18. **Is AI an Energy Efficiency Game Changer for Older Buildings?** - From a smart building perspective, AI is being integrated into many occupant-facing technologies to help improve the safety, health, and functionality of buildings and campuses. While "smart" electrical, lighting, and HVAC systems have existed for a while, their intelligence remains largely static and relies on input by system operators. However, with the advent of AI/ML, these technologies can evolve to the next level by identifying consumption patterns at a far more granular level and can more quickly adapt to these changes, lowering electricity and heating/cooling draw to dramatically low levels. So much so that operators of older buildings who opted to pass on early-generation smart building infrastructure technologies may not be able to ignore them. While the technologies are not yet ready for commercial use and will likely be expensive for the first few years on the market, now's the time to start researching and planning. AI will eventually be a game changer when it comes to smart building operational efficiency practices that leapfrog what is available today. For building operators that have yet to move to smart technologies, this is the time to get on board. Is AI an energy efficiency game changer for older buildings? | Smart Buildings Technology

19. **U.S. Losing Ground in Net-Zero Efforts** - While other G20 countries are improving or stagnating, study shows building emissions actually rising in United States. The Global Retrofit Index (GRI) report reveals that building emissions in the U.S. have increased by 3 percent since 2010, going against the trend of other G20 nations, some of whom (UK, France and Germany) are stalling on their carbon emission efforts. GRI attributes some of the country's struggles to retrofit national buildings to lack of private investment, workforce skills shortages and public awareness. It also cites five elements that the country must adopt to reach net zero goals.

1. Set net zero building performance standards
2. Develop a national retrofit plan
3. Provide financial incentives and support
4. Upskill the workforce and scale the supply chain
5. Promote best practice and data transparency

U.S. Losing Ground in Net-Zero Efforts - Facility Management Energy Efficiency Quick Read (facilitiesnet.com)

Global LED Energy Market Observer:

20. **Fluence and Cannabis Business Times' Annual "State of the Cannabis Lighting Market" Report** - Today Fluence, in partner ship with Cannabis Business Times, released the eighth-annual State of the Cannabis Lighting Market Report. A survey of more than 125 industry insiders, this report provides unique insights into the actions of cannabis growers in the midst of an uncertain and fast-changing landscape. Some of the key takeaways from this year's report include:

- For the second year in a row, at least 70% of study participants used LEDs in vegetation and/or flowering.
- 62% of respondents ranked "crop quality" as the most important factor for using LEDs in cannabis production.
- Growers' top three challenges in 2023: Energy costs, consistency of lighting and lighting's impact on plant growth.
- LED adoption has increased more than 50% across veg, flower and propagation since the start of the report in 2016.

Full report on the Fluence website or in Cannabis Business Times' November/December 2023 issue

21. **Signify Gets No Pain Relief in the Second Quarter** - CEO Rondolat describes a "missed season" for horticulture, while indoor commercial and home markets continue to slump. Interest rates are now a factor, while outdoor lighting and supply chain offers bright spots in the financials. Being a lighting all-rounder can be hazardous to the bottom line. Ask Signify, where net income crashed 82% in the second quarter as the company's solid performance in the outdoor sector couldn't stave off difficulties in the indoor professional and home markets, as well as in the horticultural lighting segment. Signify gets no relief from economic slump in its second quarter financials | LEDs Magazine

22. **Signify Accelerates the Transition to Energy Efficient Lighting with New Ultraefficient Lamps** - Signify continues to lead the transition to energy efficient lighting, helping municipalities, communities and businesses reduce their energy consumption by replacing legacy conventional lamps with the new Philips MASTER LED SON-T UltraEfficient (UE). The new products meet the highest energy label, 'A', under the EU's Ecodesign Regulation, and the Energy Labelling Regulation. As A-class products, these new bulbs, spots, and lamps consume at least 43% less power to achieve the same output as standard alternative products. In the E.U.'s September 2021 reconfigured labeling scheme, the top rating of A requires 210 lumens per watt (lm/W), B means 185 lm/W, and C 160 lm/W. https://www.ledinside.com/news/2023/11/2023_11_06_03

23. **Zumtobel Comes Back to the IoT Table** - A resurgence is afoot in the LED industry's efforts to market IoT lighting, and no company exemplifies the renewal more than Zumtobel. Zumtobel's rekindled interest emerged a few months ago, when the Dornbirn-based company announced a set of technologies that turns its Tecton batten-style LED luminaires into a tracking system to help users keep tabs on physical assets and to monitor the movement of people within a facility. The "High Accuracy Positioning" (HAP) system attaches sensors and Bluetooth transceivers to the Tecton fittings and to goods. It collects data which it can analyze with software called Zumtobel Industry Analytics. The intent is to provide insights on how to improve operations like logistics, inventory, and workflow. Zumtobel comes back to the IoT table | LEDs Magazine

Monthly Feature:
Here Comes the Lighting–HVAC Integration Tsunami by David Shiller - Before a tsunami, the ocean withdraws out to sea. Similarly, the signs are growing that a new tsunami is about to hit the lighting industry. That is the integration of lighting controls with HVAC controls.

Why?
It's well known that LED "socket saturation" as well as diminishing returns when LEDs are combined with advanced lighting controls are quickly eliminating significant ROI for lighting retrofits and control installations. Utilities are abandoning residential lighting rebates completely by the end of this year, and many utilities are struggling to figure out how to replace energy savings from commercial lighting retrofits. In short, much of the energy saving potential from LED lighting is already being saved and the "energy efficiency – industrial complex" (in which the lighting industry has played a major role) is in desperate need of a new **large** source of cost-effective energy savings.

HVAC integration
Advances in networked lighting controls (NLC), LLLC, wireless technology, sensors, and building management systems, have all laid the groundwork for the integration of lighting controls with HVAC control. This will not try to squeeze more blood (energy savings) out of the lighting stone. Rather, it will utilize lighting sensors and control systems to inform HVAC control systems of opportunities to better schedule and control HVAC systems to significantly reduce HVAC energy usage. According to the US Energy Information Administration (EIA), HVAC consumes 52% of commercial building energy use in the US (space heating + cooling + ventilation in the chart below). Meanwhile, lighting has declined to only 10% of commercial building energy use, and only 10 years ago it was 17%. Well done LED lighting industry! A quick look at the EIA chart below will show that HVAC is by far the only building system in which to find double digit percentage savings of commercial building energy use. All other systems (except lighting) are less than 10%). For example, if lighting integration with HVAC could save 20% of HVAC energy use, those savings would equal all the energy used in commercial lighting today! Therefore, HVAC potential savings dwarfs the energy savings potential from lighting energy use.

Climate Action
As if these weren't enough reasons to pursue lighting-HVAC control integration, there are enormous new pressures coming to commercial buildings. Climate action is resulting in:

- Electrification of vehicles with enormous new EV charger electricity demands on commercial buildings.
- Electrification of HVAC with heat pumps has high initial costs and greater electricity demand (to replace fuel oil and natural gas use).
- Municipal and state commercial building performance standards to reduce building energy use & carbon emissions. Many of these standards now have fines on building owners for non-compliance.
- At the same time, some municipalities are instituting financial incentives to building owners to electrify and reduce energy use. Carrots and sticks!
- Rapidly rising electricity rates due to the Russia-Ukraine war, chaotic growth in electricity demand from electrification, price inflation and some shortages in critical electricity grid supplies, such as transformers, poles, substation components, etc.
- Projected shortages and price spikes in critical metals needed for electrification, such as copper, aluminum, cadmium, rare earths, and others.

All of the electrification stresses above can be reduced through significant energy savings in commercial buildings. But where to save significant building energy? Lighting – HVAC integration.

Once you start looking for them, you'll find plenty of signs that the lighting – HVAC integration tsunami is coming. Here are some that I see:

1. LiteTrace merged with Autani, last month. One driver was to combine their respective lighting controls with building automation systems, to provide lighting-HVAC integration.
2. Last week's DLC Controls Summit had a large focus on lighting-HVAC integration. See Randy Reid's recap of the event here. There was a conference session devoted to lighting-HVAC integration.
3. I'm aware of large Chinese factories that are already building their product development strategy around lighting-HVAC integration, such as making EVERY fixture sensor-ready (containing a sensor receptacle). These factories in China have heard that utility rebates will be shifting to lighting-HVAC integration, and they want to be positioned to get sales lift from those anticipated future rebates.
4. Trane has expanded from HVAC to lighting and is actively discussing the arrival of lighting-HVAC integration, and their unique position to facilitate it. See here.

[Here Comes The Lighting–HVAC Integration Tsunami | LightNOW (lightnowblog.com)]