ENERGY OBSERVER

A MONTHLY NEWSLETTER FROM AMERLUX®

MAR 2023

Amerlux - Commercial Interior Lighting Products

Amerlux New Carisma Pendant Family - Amerlux has released a series of architectural linear luminaires that promises to preserve architects' true design specifications in any project. The Amerlux Carisma is a family of architectural linear luminaires that offer excellent performance, quality, visuals and value. A sleek edge-to-edge lens design results in an elegant aesthetic with clean lines. Carisma's integrated optical system minimizes optical losses, allowing for industry-leading efficacy that meets the stringent requirements for DLC Listing (DLC Listing pending). A tailored end cap design and Amerlux's trusted catch-and-latch mechanism prevents all light leakage. The Carisma family offers luminaires with 2" and 3" wide apertures, delivering seamless lighting as discrete individual fixtures, continuous rows or patterns. Carisma can be specified to the nearest 1/8" and is available in pendant, surface, wall and recessed mounted options, providing designers with the versatility to light up a space with their Carisma. Carisma Pendant Family

Amerlux New Carisma Recessed Linear Family - Carisma is a family of architectural linear luminaires that offer excellent performance, quality, visuals and value. A sleek edge-to-edge lens design results in an elegant aesthetic with clean lines. CARISMA's integrated optical system minimizes optical losses, allowing for industry-leading efficacy that meets the stringent requirements for DLC Listing (DLC Listing pending). Wide range of ceiling trim options accommodate most ceiling types.The Carisma family offers luminaires with 2" and 3" wide apertures, delivering seamless lighting as discrete individual fixtures, continuous rows or patterns. Carisma can be specified to the nearest 1/8" and is available in pendant, surface, wall and recessed mounted options, providing designers with the versatility to light up a space with their Carisma. Carisma Recessed Family

National LED Market Observer

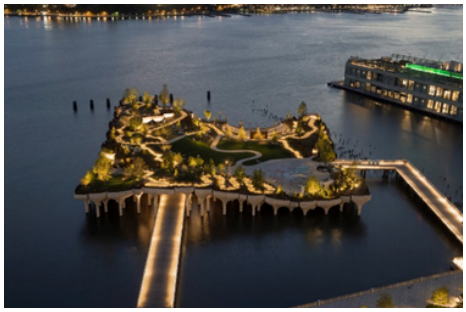
1. **LEDucation** - March 7–8, 2023 New York Hilton Midtown, NYC Virtual Sessions March 6th It's time to make your plans for LEDucation! Expand your knowledge. Choose from 36 accredited sessions and advance your career. View the latest in lighting from over 380 exhibitors throughout three exhibition halls. Be sure to get yourself registered, book a hotel room if you need, and confirm any travel plans you may have. Registration – LEDucation

2. **Registration Is Now Open for LightFair 2023** - Discover the latest lighting products, solutions, technologies and ideas under one roof at the Javits Center, New York, May 21-25, 2023 as LightFair returns with the industry's most immersive trade show and most comprehensive conference. LightFair 2023 (xpressreg.net)

3. **How to Use DLC-Qualified Products Lists** - Energy efficiency rebates can significantly improve the ROI of commercial and industrial lighting projects, but determining which products qualify for your local efficiency program's incentives can be complicated and time-consuming. Project planners and designers can simplify this process by accessing the DesignLights Consortium's (DLC) Qualified Products Lists (QPL). Featuring the ability to be searched, filtered, and saved, these third-party verified resources detail the performance of indoor and outdoor LED lighting products (including those that meet responsible light at night requirements), horticultural LED lighting, and networked lighting controls. Scores of North American utilities and energy efficiency programs use DLC QPLs as a guide in determining the incentives they offer for commercial lighting products, and the lists are publicly available by creating and logging into a MyDLC account. How to Use DLC-Qualified Products Lists | EC&M (ecmweb.com)

4. **Electrical Contractor's Lighting Article Picks:**
   - Title 24 Requirements for Sensors, Controls: Changes in California's updated energy code By Craig DiLouie. The 2022 version of California's energy code took effect on Jan. 1, 2023, superseding the 2019 version.
   - Raising the Bar Again on Light Bulb Efficiency By Rick Laezman. For the better part of two decades, light bulbs have been traveling an escalating trajectory of greater efficiency. The Biden-Harris administration wants to help them take the next step.
   - Lighting and the Electrical Contractor: Experts discuss advances in the field By Craig DiLouie. As lighting becomes a more complex category for electrical contractors, it is beneficial to gain a firm grasp of what lighting can do, how to evaluate its performance and what new opportunities exist.

5. **International Code Council Releases New Energy Codes and Building Performance Standards Resource** - The International Code Council (ICC) has announced the publication of a new resource on building performance standards (BPS) and energy codes. It is the latest in a series of energy efficiency and greenhouse gas (GHG) resources that the Code Council has published to help communities around the world achieve their sustainability and resilience goals. Downloadable resource provides code officials and building departments with essential background information and recommendations on greater policy coordination. International Code Council Releases New Energy Codes and Building Performance Standards Resource - ICC (iccsafe.org)



6. **The Illuminated Little Island That Could** - A daring partnership between philanthropist Barry Diller and the Hudson River Park Trust, Little Island was born from the unique opportunity to envision repairing and renovating the historic riverfront Pier 54 along the west side of Manhattan within Hudson River Park. Designed by Heatherwick Studios in collaboration with Mathews Nielsen Landscape Architects, with architectural lighting by Fisher Marantz Stone, Little Island is an entirely new type of public space for New York City that creates an immersive experience with nature and art. Once on the Island, visitors can explore the various highlighted paths, ramps, and stairs, take in a show in the "Amph" (the amphitheater overlooking the Hudson) or marvel at the unparalleled views of New York City, the Hudson River, and New Jersey. The Illuminated Little Island That Could - LightFair Blog

7. **AI in the Lighting Space by Thomas Paterson** - If our industry is going to use AI, we have to define clearly what its tasks would be, i.e., what are its objectives? Where would you want AI in lighting? Can you succinctly describe what success would involve? Current applications of AI in lighting and likely in the near future include: AI in the Lighting Space - Illuminating Engineering Society % (ies.org)
   - Machine intelligence in design – input a building model, output a lighting design. For example, we can ask machines to lay out lighting in an office, to organize circuiting, to optimize systems at the design stage.
   - Optimization of tasks. This uses basic, well understood algorithms with decades of application already.
   - Construction can utilize AI for process and quality monitoring, doing comparisons between the built environment and the original design, as well as be part of robotics and other construction hardware.
   - Operational systems can apply something simulating judgment in the operation of building systems, balancing lighting needs perhaps with views through shading, HVAC through temperature sensing and so on.

8. **Interview: ChatGPT's Predictions for The Future of Lighting Technology by David Shiller** - Dave Shiller recently had the opportunity to sit down for an exclusive (not really) interview with the new know-it-all. Arguably, one of the smartest smarty-pants in the world, OpenAI's ChatGPT, an AI chatbot knowledgeable on everything in the world, until 2021. My interview focused on how lighting technology will evolve in the near future. **SHILLER**: What will be some surprising developments in lighting technology in the future? **CHATGPT**: Some potential surprising developments in lighting technology in the future could include: Interview: ChatGPT's Predictions For The Future Of Lighting Technology (lightnowblog.com)

9. **DOE Releases Final Ruling for Fluorescent Lamps** - The effective date of this final determination is March 15, 2023.The Office of Energy Efficiency and Renewable Energy, Department of Energy, has released a final determination on standards for general service fluorescent lamps. In this final determination, DOE has determined that energy conservation standards for GSFLs do not need to be amended. The docket web page can be found at https://www.regulations.gov/docket/EERE-2019-BT-STD-0030.

10. **BriteSwitch: Commercial Lighting Rebate Trends for 2023** - So, what are the latest trends in commercial lighting rebates for 2023? We'll explore some of the key developments in this space and discuss how businesses can position themselves to take advantage of these trends.

- Over 3/4 of the US Has a Commercial Lighting Rebate Program
- A Big Change for Screw-in / General Service Lamps
- Rebate Amounts Stay Relatively Flat Across All Other Categories
- Programs Are Getting Harder to Use

Commercial Lighting Rebate Trends for 2023 (briteswitch.com)

11. **Department of Energy Raises the Bar for Energy-Efficient Homes by Rick Laezman** - Since its inception, over 12,000 new homes have been ZERH certified. According to the DOE, these homes can be 40%-50% more energy-efficient than a typical new home. The DOE wants to improve on that performance and set the stage for future growth of zero-energy homes. With that goal in mind, ZERH V2 is intended to help homebuilders keep pace with the growing demand for these kinds of homes and up-to-speed with a rapidly evolving market, including new technologies and construction processes designed to improve efficiency and fight climate change. ZERH V2 includes several features that will make homes even more energy efficient. The updated certification standards at: Department of Energy Raises the Bar for Energy-Efficient Homes - Electrical Contractor Magazine (ecmag.com)

12. **CASE STUDY: New LHC Group Campus Outfitted With A-Light Lighting** - The lighting at this new campus is meant to improve efficiency and employee morale. Lafayette-based LHC Group is a home health care company in the US. The expanding company had outgrown its 66,000 square-foot main headquarters, with an additional five or six locations scattered around the city. So, it approached the team at Chase Marshall Architects to design a consolidated campus for its growing team. The 200,000 square-foot addition includes office spaces, conference centers, training facilities, a cafeteria, and a pharmacy. This created some unique challenges for lighting. A-Light architectural luminaires feature prominently. New LHC Group Campus Outfitted With A-Light Lighting - Facility Management Lighting Quick Read (facilitiesnet.com)

13. **Close Canopy Lighting Research in Vertical Farming** - Purdue University researchers have designed two simple LED lighting strategies to increase yield and reduce energy costs for the vertical farming sector of indoor agriculture. The close-canopy and focused-lighting strategies developed by PhD candidate Fatemeh Sheibani and Professor Cary Mitchell, both in the Department of Horticulture and Landscape Architecture, take advantage of LED lighting's special properties. This research is part of a project called OptimIA (Optimizing Indoor Agriculture). The project, led by Michigan State University, includes collaborators at Purdue, University of Arizona and Ohio State University. https://purdue.ag/3xlBYjb https://www.youtube.com/watch?v=2KPL3CYh2EA&t=2s

14. **CASE STUDY: Opportunity for Three California CEA Facilities to Slash Energy Costs with Zero Upfront Cost** - Ultra Yield Solutions (UYS), a horticulture lighting distributor specializing in Controlled Environment Agriculture (CEA), offers Zero Upfront Cost financing options for three LED lighting upgrades for California indoor growers where high electricity prices continue to rise while wholesale prices continue to fall. The **UYS Zero Upfront Cost Program**, customized for each CEA's circumstances, allows growers to significantly reduce energy expenditures and improve yield without the challenges of upfront costs. Switching to LED lighting and controls results in savings that keep wholesale prices competitive and improve margins. UYS's unique approach offers CEA facilities the opportunity to compare grow lighting solutions from several manufacturers to ensure technology combinations that optimize high yield and reduced energy consumption. Contact - Ultra Yield Solutions

15. **The DLC Technical Requirements for LED-based Horticultural Lighting V3.0** - The DesignLights Consortium® (DLC) Technical Requirements for LED-based horticultural lighting V3.0 have been released with a proposed effective date of March 31, 2023. Is your company ready for the changes? Intertek's lighting experts can help. To assist manufacturers, Intertek developed this fact sheet that summarizes all the relevant technical requirements. The fact sheet highlights:

- Key Changes from V2.1 to V3.0
- Reported Metrics
- Required Minimums

Fact Sheet: The DesignLights Consortium® (DLC) Technical Requirements for LED-based Horticultural Lighting V3.0 (intertek.com)

16. **UL Smart Systems Rating Program is Launched** - UL Solutions on Feb. 6 announced the UL Smart Systems Rating Program, intended to help solidify the definition of a smart product. The program, which is designed to help the smart building industry and smart product original equipment manufacturers (OEMs), puts forth a criteria-based approach using key factors and attributes of a smart building system. Per the program, such key factors include connectivity and interoperability, functional value, resilience, cybersecurity, digital experience, and control and automation to create a holistic rating program. UL Smart Systems Rating Program is launched | Smart Buildings Technology

Global LED Energy Market Observer:

17. **Portuguese Cannabis Underscores Fluence's European Presence** - Austin, Texas–based horticultural lighting firm Fluence has racked up several cannabis wins in Portugal, further demonstrating that it is willing and able to do business in Europe, where it competes against its sister group at Signify. The Dutch company explained in the early days of the acquisition (for $272m) that Fluence would focus on North America, while Signify would focus on Europe. But some amount of competition seemed inevitable, as Signify acknowledged that both entities would also continue to sell globally, including outside of their focus areas. Indeed, Fluence has demonstrated a strong engagement and outreach to the market in Signify's typical territory, evidenced by the Portuguese wins and others, with more announcements expected soon. Portuguese cannabis underscores Fluence's European presence | LEDs Magazine

18. **World's Largest Vertical Farm Serving Greens from the Desert** - Indoor growing, out of the sun, is regarded by some experts as vital to help ensure food supplies around the world. The Signify-lit Dubai facility puts spinach, kale, and lettuce on the plates of many thousands of air travelers per day. The all-indoor, artificially lit Bustanica vertical farm next to Dubai's Al Maktoum International Airport at Dubai World Central has a growth surface of 30,000 square meters (about 330,000 square feet), or 3 hectares, more than any other indoor facility on the planet, Signify claims (please shout if you know of a bigger one). Bustanica began operations last July and can produce a million kilograms of leafy greens annually, a Signify spokesperson said. World's largest vertical farm serving greens from the desert | LEDs Magazine

19. **Fluence Selected as LED Technology Partner by Major Cannabis Cultivators in Growing Portuguese Market** - Portuguese growers have leveraged Fluence's industry-leading technology to achieve better yields and a more efficient cultivation process. Portugal's cannabis laws are among the most progressive in the world, and its established licensing system is ahead of most other European countries. Portugal decriminalized personal cannabis use in 2001 and legalized medical use in 2018. Since then, 20 official licenses for medical cannabis production, processing, import, export or a combination of categories have been issued, and Fluence has been chosen to provide lighting for over half of them. For more information on Fluence, visit www.fluence.science.

20. **Fluence Supporting Premium Dutch Floriculture Brands to Future-Proof and Increase Sustainability** - Fluence, a leading global provider of energy-efficient LED lighting solutions for floriculture, medicinal cannabis and food production, is supporting sustainability and operational cost efficiency amid volatile energy market conditions in Europe. Leading floriculture companies dedicated to delivering high-quality products to customers—including Bernhard Kwekerijen, Moerman Lilium, Deliflor Chrysanten, Beyond Chrysant and Ten Have Plant—have made the switch from high-pressure sodium (HPS) fixtures to Fluence's LED technology, which increase photon output and energy efficiency. Moerman Lilium, a lily cultivator, has 13 hectares of crops under full LED lighting and uses Fluence's RAPTR fixtures regulated via a Wireless Flex Dimming controller. Moerman Lilium expects to save at least 45% on electricity costs with the investment in Fluence's LED lighting solutions. Fluence Supporting Premium Dutch Floriculture Brands to Future-Proof and Increase Sustainability - LEDinside

21. **IALD EE23 Dates + Venue Announced** - IALD Enlighten Europe returns to the EU stage from 30 June to 1 July 2023. This eagerly-awaited lighting design conference will be held at Cafe Moskau in Berlin. Make your plans to join the IALD and hundreds of industry peers for the event of the year. We're thrilled to bring the event back in full, and to see the hundreds of lighting design professionals who make the IALD a global network of creative brilliance! IALD - Home - International Association of Lighting Designers

Monthly Feature: Commercial Lighting Rebate Trends for 2023

Rebates have been a staple in the commercial lighting marketplace for decades, helping millions of customers transition to more efficient lighting at a reduced cost. Each year, these programs adjust their offerings, evolving to match the current market needs. So, what are the latest trends in commercial lighting rebates for 2023? We'll explore some of the key developments in this space and discuss how businesses can position themselves to take advantage of these trends.

- Over 3/4 of the US Has a Commercial Lighting Rebate Program
- A Big Change for Screw-in / General Service Lamps
- Rebate Amounts Stay Relatively Flat Across All Other Categories
- Programs Are Getting Harder to Use

Over 3/4 of the US Has a Commercial Lighting Rebate Program

At the start of 2023, 78% of the US has a commercial lighting rebate program available. That's consistent with the past few years and just shy of the record of 79% we saw back in 2017.

Looking across the country, we haven't seen any dramatic change in areas discontinuing or starting new programs. As we've seen in the past, the most robust programs are still in the Northeast and Northwest, while states like Ohio, Kansas and North Dakota offer no rebates.

It's interesting to see that the top 3 most populated states, California, Florida and Texas, also have some of the lowest rebate potential. While all three states appear green in the map above, the programs there are so restrictive that they offer little value for most projects. For example, Florida Power & Light, the largest utility in FL, limits the program to only a handful of fixture types. Also, their amounts are very low; their highbay rebate is 10% of the national average.

A Big Change for Screw-in / General Service Lamps

The most significant change for rebate programs in 2023 is in response to the Energy Independence and Security Act (EISA). Phase 2 of that legislation will go into full effect in July and will increase the minimum efficacy requirement of many general service lamps, like A19s and PARs, to 45 lumens per watt. That significantly changes the marketplace and has created two big changes with rebate programs.

With this upcoming change, programs are pushing hard to complete projects with these lamps in the first half of the year. Many of these programs are offering bonuses or increased dollar amounts in an effort to capture the savings while they still can. In fact,

with this increased push, the average rebate for a screw-in/incandescent replacement lamp shot up an impressive 71% from last year to $7.66 per lamp. Projects at hotels, multi-family buildings, restaurants and other businesses that often use these lights should plan their projects in the first half of this year while the higher funds are still available.

For the second half of the year, many programs have announced that they'll be discontinuing the rebates for general service lamps. It should be noted that EISA does not explicitly prohibit rebates for these products. However, it does mean that inefficient lighting will no longer be available for sale starting in July. Therefore, many programs question if customers still need to be motivated to make the switch.

Also, since the new baseline wattage will be much lower, the utility can claim less savings. For example, when measuring program effectiveness before EISA, a program could say a 60W A19 was replaced by an 11W LED, resulting in 49W savings. However, under the new guidelines, a 60W equivalent A19 (800 lumens) would have to be at most 17.8W. So if a customer installs an 11W LED, the program can now only claim 6.8W savings.

Rebate Amounts Stay Relatively Flat Across All Other Categories

For most other lighting types, the 2023 incentive amounts have stayed relatively consistent year-over-year. It's the third year the rebates have remained stable, bucking the historical trend of a 10-20% decline each year. In 2021 and 2022, we attributed this stability to the pandemic and the need to get more projects. This year, the motivating factor is likely due to increased LED costs and inflation.

The product categories with the highest dollar amounts are typically the lighting fixtures that offer the most energy savings, such as high bay fixtures and pole lights. These fixtures have historically had the highest rebates, and the 2023 amounts are on par with their record-high levels.

Rebates for lighting controls also remain consistent over the previous year. For basic controls, like wall and remote-mount occupancy sensors, the rebates still cover a good portion of the cost, making it a great add-on to most energy efficiency projects. More advanced controls, like Networked Lighting Controls (NLC), have also stayed flat for 2023 in terms of geographic availability and dollar amount. This trend is surprising since the rebates for this category saw a good amount of growth in 2022. Programs still seem to be struggling with how to explain the benefit of NLC to customers in a quantifiable way.

Programs Are Getting Harder to Use

A concerning trend in rebate programs is that they are getting harder to use. Over the years, many of the incentive programs have shifted to online portals in an effort to cut costs and streamline work on their end. Those portals are usually poorly developed, full of glitches and slow down the application process. The time spent per application increases significantly for the person entering the information. A simple pre-approval application with just one line item can easily take up to 20 minutes now, a significant change from the days of paper or PDF applications. As programs "streamlined" their applications, they've also cut staff, and it's increasingly hard to connect to someone. When there is a problem with a project or an application, reaching someone typically involves calling a general call center where an assistant with no knowledge of lighting or the rebate program takes your contact information and passes it to the utility's staff, who can take up to a week to get back to you. These issues make the rebate process, which was already cumbersome, even worse. As a result, people looking to file rebates in 2023 need to focus on allowing enough time to complete all the steps in the process and have a project management system in place for tracking each rebate application from start to finish.

2023 Average Rebate Amounts in North America

Type of LED Solution	2023	% Change vs 2022	Type of LED Solution	2023	% Change vs 2022
Replacement Bulbs (A19, PAR, MR)	$8	71%	Accent / Track Lighting	$50	-2%
Linear Tube	$4	1%	Screw-in HID (corncob)	$58	4%
Pin-Based (cfl-ni replacement)	$6	-11%	Outdoor Wall Mount	$98	4%
Downlights	$28	-2%	Parking Garage Fixtures	$101	4%
Troffers / Panels	$34	1%	Outdoor Pole/Arm Mount	$106	3%
Retrofit Kits (1x4, 2x2, 2x4)	$38	10%	High Bay Fixtures	$127	4%

**Based on prescriptive and midstream rebates as reported in BriteSwitch RebatePro for Lighting 2/23*

2023 Is Another Strong Year for Commercial Lighting Rebates

Overall, 2023 proves that commercial lighting rebate programs still have life left in them. While rebates may seem like "old news," they still are a valuable tool for making projects more affordable and improving the payback period of a project. With most of the country having a program, you should research the rebates available for each and every project you do.

Source: BriteSwitch RebatePro for Lighting 2/2023