ENERGY OBSERVER
A MONTHLY NEWSLETTER FROM AMERLUX®

JUNE 2022

SmartSite Connected Luminaires

SmartSite Connected Luminaires are available in a variety of decorative styles and incorporate one of several methods to include a powerful wireless control system. The wireless control system powered by Synapse, not only provides basic functions such as ON/OFF and Dimming but also provides advanced control, scheduling, grouping functionality and can serve as the foundation of emerging IoT applications. The SimplySNAP control interface by Synapse bundles these capabilities in a reliable, simple-to-use platform that enhances energy efficiency, optimizes ROI, and complies with industry regulatory trends. The SmartSite luminaires combine the Amerlux efficient Avista LED light engine with this powerful management resource, end users at all levels now have the ability to Control, Monitor & Maintain their exterior lighting system with ease. Amerlux - Commercial Exterior Lighting Products

---

National LED Energy Market Observer:

1. **US Economy Shrank at the Beginning of 2022 and Stagflation Could Be Next** - Thursday's report from the Commerce Department on total output of goods and services for the first quarter of this year provides further evidence that the economy is approaching stagflation territory. That's the combination of slow growth and high inflation. Don't forget, if we have another three months of negative growth in output, we're officially in a recession. Let's take a panoramic view of where we are with the economy right now: adjusting for inflation over the past 12 months, real wages and family incomes are down roughly 2%, stocks and family nest eggs are down roughly 4%, and now for the first quarter of this year the rate of growth of the economy is in the red as well. It's not too late to avoid the misery of stagflation. But to do so we need three policy pivots:
    1. We need to start producing more American energy to create jobs and bring down prices.
    2. We need to cut the multi-trillions of dollars of government spending and debt.
    3. The Fed has to take more timely and aggressive action to suck hundreds of billions of dollars of excess dollar liquidity out of the global economy.

US economy shrank at the beginning of 2022 and stagflation could be next (msn.com)

2. **Administration Bans Incandescent Less Than 45 LPW** - The Department of Energy finalized two new rules that require manufacturers to phase out any lightbulbs that produce less than 45 lumens per watt. When combined, the department said, the measures will save consumers an estimated $3 billion annually — though the decision is likely to irk fans of the old-fashioned bulbs, which still make up roughly 30% of the market but eventually will be prohibited under the standard. full enforcement of the rule for manufacturers, retailers, or distributors will not begin until at least June of next year — giving them a significant runway to comply and sell out their existing supply of low-watt bulbs. See all 93 pages of the GSL Final Rule at: https://www.energy.gov/sites/default/files/2022-04/gsl-definitions-fr.pdf

3. **April 2022 M&A Roundup: Distribution Activity Ramps Up to Start 2Q** - M&A activity in the distribution and manufacturing sectors ticked upward in April. The increase in agreements comes on the heels of a relatively slow period for M&A, which followed a rapid rise in activity during the fourth quarter of 2021. Some distributors who reported record sales and profits to start 2022 cited acquisitions from last year as drivers for sustained growth. In time, we'll see which moves from 1Q and 2Q of this year end up driving profits for companies down the road. Here are the M&A announcements — primarily involving distributors but also manufacturers that sell through the channel — MDM covered during April: April 2022 M&A Roundup: Distribution Activity Ramps Up to Start 2Q - Modern Distribution Management (mdm.com)

4. **Here's Where LightFair is Scheduled Through 2029** - LightFair's approach for the foreseeable future will focus on just two cities – adding a predictability and rhythm to the schedule, while also timing things in a way that may help expose LightFair to more design professionals during each East Coast swing. Before the pandemic began, the owners of LightFair struck a deal to host LightFair in New York City in odd-numbered years, and in Las Vegas in even-numbered years. Here's Where LightFair is Scheduled Through 2029 (inside.lighting) The agreements last through 2029:
Las Vegas Convention Center: 2022, 2024, 2026 & 2028
Javits Center in New York City: 2023, 2025, 2027 & 2029

5. **US Producer Prices Surge 11% in April** - U.S. producer prices soared 11% in April from a year earlier, a hefty gain that indicates high inflation will remain a burden for consumers and businesses in the months ahead. The Labor Department said Thursday that its producer price index — which measures inflation before it reaches consumers — climbed 0.5% in April from March. That is a slowdown from the previous month, however, when it jumped 1.6%. The producer price data captures inflation at an earlier stage of production and can sometimes signal where consumer prices are headed. It also feeds into the Federal Reserve's preferred measure of inflation, the personal consumption expenditures price index. There were plenty of signs in the consumer price report that inflation will remain stubbornly high, likely for the rest of this year and into 2023. US Producer Prices Surge 11% in April – tEDmag

6. **NEMA Lighting 2.0 | Rewriting the Playbook by Kelly Gordon, PNNL, and Morgan Pattison, SSLS, Inc.** - Significant gains in source efficiency of LED lighting products deserve recognition due to the massive energy savings they provide. At the same time, we need a new understanding of LED lighting technology's potential to improve human and environmental health and well-being — from individual building occupants to the resiliency of buildings and infrastructure to climate impacts. Understanding and quantifying the full range of efficiency benefits from LED technology provides a more holistic vision for lighting performance and value. The U.S. Department of Energy (DOE) Solid-State Lighting (SSL) Program proposes a new application-level approach that supports the delivery of the right amount of light at the right time, in the right direction, with optimized spectral properties for the functions of the light Lighting 2.0 | Rewriting the Playbook (nema.org)

7. **LEDs Magazine's UV Tech Insights for May 12, 2022** - This newsletter from LEDs Magazine focuses on UV research, technology, and applications. In this issue:

- Wirepas and Illumipure demonstrate where connectivity and ultraviolet germicidal irradiation (UVGI) collide.
- We keep the information flowing with on-demand webinars. If you haven't attended them, there are excellent presentations on UV LED test & measurement as well as the role of LED drivers in UV-C systems available for free.
- Top UV stories itemized below from 2022 look toward business growth and the role UV standards will play in LED uptake.

Please stay in touch about content we publish or to propose contributed articles.
Carrie Meadows, (603) 891-9382, cmeadows@endeavorb2b.com

8. **Lightovation Announces Details for Summer 2022 Show** - Lightovation has announced details for the June 22-25, 2022 edition of its twice annual show. The summer show will feature new collections, insightful events, and epic celebrations across a 1 million square foot lighting marketplace. Pre-registration is now available for the show, which officially opens on Wednesday, June 22, by visiting www.dallasmarketcenter.com/lightovation. By pre-registering, buyers will receive a FastPass email for contactless, quick entry into the show.

9. **TRAINING: Lighting Controls Association Announces New Course on Utility Rebates** - The Lighting Controls Association (LCA), a council of the National Electrical Manufacturers Association, now offers EE107B: Lighting Controls and Commercial Lighting Rebates as a new course in its popular Education Express program. Utilities offer a variety of rebate programs to encourage public adoption of advanced, energy-saving lighting and controls in existing buildings. These programs often offer a strong incentive to incorporate lighting controls with rebates that are substantial, historically consistent, recognize the most popular control types, and are geographically widely available. New rebates promoting networked lighting control continue to grow in availability, specifically promoting the most advanced control options in the market. Because rebates are generally unstandardized across the United States, it is important to familiarize oneself with recognized technologies, how products are qualified, and the process and requirements specific to the given rebate program. Authored by Craig DiLouie, LC, CLCP, Education Director for the Lighting Controls Association. www.LightingControlsAssociation.org

10. **CASE STUDY: SNHA Design for Modern Manufacturing** - Determining what goes into designing a highly technical, 54,000-square-foot factory is no easy feat. Such was the challenge for the Sheehan Nagle Hartray Architects (SNHA) team with the new build of Lightbox—a major producer of lab-grown diamonds now located in Gresham, OR. Throughout the process, our team at SNHA not only worked to design a great facility—we gathered insights that can serve as a blueprint for manufacturing workspaces to come. Lighting plays a key role for Lightbox; this means employing systems with automatic controls throughout the building and site to maximize efficiency (e.g., timeclocks, automatic daylight dimming, occupancy sensors, dawn-to-dusk controls). With lighting control in place to save resources, user comfort is the next major consideration. At Lightbox, indirect lighting with hidden light sources prevents glare and eye discomfort. Direct light sources use diffused lenses that maintain eye comfort while providing brightly lit spaces to perform focused tasks. Additional task lighting is provided in cleanrooms and inspection areas, precisely where it is needed. Design For Modern Manufacturing (facilityexecutive.com)

11. **RESEARCH: New Study Proves Correct Dosage for UV Disinfection Against COVID-19** - Research lays the foundation for health standards about what offers true ultraviolet sterilization. In a newly published study, researchers from Binghamton University's Thomas J. Watson College of Engineering and Applied Science answer many of those questions and lay the foundation for health standards about what offers true disinfection. UVC kills viruses and other microorganisms by damaging their DNA and RNA, which are the bioorganic building blocks for life. The best results during the study came from a range of 260 to 280 nanometers, which is commonly used in LED UVC lights. Wavelengths below 260 nanometers can be deployed only in unoccupied spaces because they can damage human skin and eyes. The most important part of this research is that it offers a scientific basis for standardizing and regulating claims from manufacturers of UV disinfectant devices. The paper, titled "Systematic evaluating and modeling of SARS-CoV-2 UVC disinfection" and published in Scientific Reports.

12. **Horticultural Luminaires Possess Unique Characteristics That Require Additional Safety and Performance Assessments** - Intertek's horticultural lighting testing, certification, and Total Quality Assurance services help manufacturers develop products in compliance with the safety and performance requirements unique to this growing marketplace. Our **Horticulture Lighting** fact sheet clarifies the compliance requirements for these products, recommends best practices for testing, assessment, and certification and provides an overview of standards used for testing horticultural luminaires. Download our fact sheet today!

13. **ANSI/IES TM-37 Evaluates and Addresses Sky Glow** - ANSI/IES TM-37-21 was a core resource used by the DesignLights Consortium (DLC) during the development of its LUNA Technical Requirements, which define performance parameters for controllable outdoor SSL luminaires to minimize sky glow and light trespass, while increasing energy efficiency. IES convened a panel of international experts who collectively have devoted years to studying issues around light at night and sky glow. This committee, chaired by PNNL with support of the DOE Solid-State Lighting (SSL) program, produced a Technical Memorandum (TM) entitled Description, Measurement, and Estimation of Sky Glow. ANSI/IES TM-37-21 summarizes the causes, characteristics, and potential impacts of human-based sky glow. The document then provides a framework for calculating the contributions of individual light sources to sky glow, along with general recommendations for mitigation through more appropriate selection, placement, and usage of light at night. Description, Measurement, and Estimation of Sky Glow – The IES Webstore

14. **The Future of PoE by Guest Writer: Joe Herbst** - While LEDs have transformed the century-old lighting industry, using 1/100th of the power of high voltage lights while generating the same output, the surrounding infrastructure has remained frozen in time. And, like many other technologies, the pandemic has hastened the adoption of Power over Ethernet (PoE) due to its ease of installation as well as its energy and cost savings. As background, PoE passes electric power and data over twisted-pair Ethernet cable to powered devices such as wireless access points, IP cameras, and lights. It enables one RJ45 cable to provide data connection and electric power instead of needing a separate cable for each. Essentially anything on the desktop or above, like ceiling lights, can be powered by PoE because those devices are all inherently low voltage. PoE offers several advantages over our traditional, high voltage infrastructure. The Future of PoE by Guest Writer: Joe Herbst - EdisonReport

15. **Signify and Intelligent Waves Enter Into Strategic Collaboration** - Signify has entered into a strategic technology collaboration with Intelligent Waves, developer of the award-winning, cyber-defense solution, GRAYPATH. Together, Signify's game-changing LiFi solution, Trulifi, and the GRAYPATH software use invisible light waves to enable reliable, secure, two-way wireless data communication, providing defense personnel with mission-critical connectivity. Signify's unique Trulifi solution offers physical security via dedicated USB access keys and a consistent, high-speed wireless connection through light, while GRAYPATH uses the cloud to randomize and distribute data across multiple paths and encrypted channels. The technology integration enables the secure transmission of data from high-risk operational locations without the danger of information being jammed, intercepted or disrupted. Signify and Intelligent Waves Enter Into Strategic Collaboration to Deliver Mission-critical, Light Waves-based Wireless Connectivity - LEDinside

16. **ArchLIGHT Summit** - September 15-16, 2022 Dallas Market Center, Dallas, Tx - ArchLIGHT Summit announces that you can now officially register to attend. Be sure to check out our website for our full schedule and then go ahead and secure your spot for your favorite sessions. We have lots of exciting speakers along with two dynamic hands-on learning sessions. Be sure to also check out the growing list of leading exhibitors we have that will be showcasing their latest innovations!

17. **Blackouts Likely This Summer Due to Extreme Weather, Grid Issues** - Significant parts of the country are facing an increased risk of power outages this summer due to extreme weather, according to an assessment from the North American Electric Reliability Corp. (NERC). Texas, Southern California and the central and upper Midwest regions are subject to failing power grids due to extreme heat, wildfires and droughts, as reported in E&E News. Analysis from NERC says that a combination of climate change and transition to carbon-free renewable power from traditional fossil fuel could make for a tough summer in these areas.

Global LED Energy Market Observer:

18. **Canadian Grower Tunes Five Light Recipes Over Five Different Crops in One Location** - When you run a commercial greenhouse and decide to expand the variety of flowers and vegetables beyond the roses you've primarily cultivated, it might be a good idea to bring in flexible lighting that could deliver different photon recipes to different crops. That's what Canadian grower Rose Drummond is doing, turning to Montreal-based Sollum Technologies for an LED system that will enable it to adjust spectra, intensity, and duration as it ramps up operations in gerberas, alstroemerias, tomatoes, and cucumbers while also fortifying its rose growing. Canadian grower tunes five light recipes over five different crops in one location | LEDs Magazine

19. **DALI-2 Certification Supports Interoperability and Sustainable Lighting** - The DALI Alliance, the global industry organization for DALI lighting control, is strengthening its focus on the DALI-2 product certification program. DALI-2 certification builds confidence in the interoperability of DALI-based devices from different manufacturers. As a standardized platform, DALI-2 mitigates concerns around proprietary technologies and vendor lock-in, and enables future-proof luminaire and system designs for sustainable lighting. DALI-2 certification is now available for all control gear types in common use, including those for colour control and self-contained emergency lighting. DALI-2 also includes a broad range of additional features such as storage and reporting of luminaire, energy and diagnostics data. https://www.led-professional.com/all/dali-2-certification-supports-interoperability-and-sustainable-lighting

20. **WHITEPAPER: DLC Non-white Light Sources for Nighttime Environments** - The lighting industry needs an integrated approach to solving the unintended negative consequences of light pollution on the natural environment. This whitepaper describes the landscape for a small but promising part of the solution: non-white light LED sources. Since the DLC uses standards to ensure that LED luminaires qualified under DLC technical requirements can be reliably and consistently measured and evaluated worldwide, existing lighting standards must be updated to include NWL sources so that the DLC and other stakeholders can evaluate these products using a consistent framework. The whitepaper outlines the necessary developments required for the DLC to address these types of products in the future. Whitepaper: Non-white Light Sources for Nighttime Environments - DesignLights

21. **RESEARCH: Global Grow Lights Market** - Forecasts from 2022 to 2027 – Research and Markets: The global grow lights market is expected to grow at a compound annual growth rate of 13.41% over the forecast period to reach a market size of US$7.975 billion in 2027 up from US$3.306 billion in 2020. One of the primary factors driving the market's growth is a significant increase in the agricultural sector. In addition, the increased adoption of vertical and indoor farming practises are boosting the market's growth. Multiple grow lights are used in hydroponic farming systems to ensure that the plants receive enough sunshine while also shielding them from insects and vermin. Furthermore, increased food consumption as a result of the rising population, along with the restricted quantity of cultivable land, is positively boosting product demand. The growth of lighting helps to ensure the optimum output and quality of the plants and, therefore, to meet the ever-increasing global food demand. Global Grow Lights Market - Forecasts from 2022 to 2027 (researchandmarkets.com)

22. **RESEARCH: Hospital Lights Market Forecast to 2028** - According to Research and Markets latest market research study on "Hospital Lights Market Forecast to 2028 - COVID-19 Impact and Global Analysis - by Product Type, Technology, and Application," the market is expected to grow from US$ 5,432.01 million The notable factors driving the growth of the hospital lights market include the increasing use of LED-based lighting fixtures, government initiatives to improve energy efficiency in hospitals, and advantages of LED over conventional lighting. Furthermore, elevated government support for the adoption of energy-efficient lighting solutions in hospitals has led to the rise in the use of LED-based lighting products over traditional lighting. On-going developments in lighting technology are likely to create lucrative market prospects during the forecast period. UV LED lights are a more secure lighting option than traditional lights. As UV light also serves as a disinfectant, it is also used for water and air treatment to control the spreading and survival of germs, eventually killing them. This factor is further propelling the adoption of UV LED lights across hospitals. in 2021 to US$ 9,765.09 million by 2028; it is estimated to grow at a CAGR of 8.7% from 2021 to 2028. Hospital Lights Market Forecast to 2028 - COVID-19 Impact and Global Analysis By Product Type, Technology and Application (researchandmarkets.com)

23. **RESEARCH: Global Lighting Controls Growth Opportunities** - Research and Markets estimates the global lighting controls market to grow by 4.7% in 2021 after experiencing a 6.3% growth decline in 2020 due to the COVID-19 pandemic. The market is expected to reach pre-COVID-19 growth rates in 2023 and achieve $11.82 billion in revenue by 2028, expanding at a compound annual growth rate of 7.5% from 2021 to 2028. This study provides an overview of the global lighting controls market, with analyses of global and regional revenues, growth drivers and restraints, notable acquisitions and restructuring activities, and growth opportunities. North America holds the largest revenue share of the global lighting controls market, a trend that is forecast to continue until 2028. Wired lighting controls are anticipated to remain the dominant technology in the market, but will lose a portion of their market share to wireless technologies. Global Lighting Controls Growth Opportunities (researchandmarkets.com)

Monthly Feature:

Study Shows 14% Increase in Tomato Yields with Interlighting - Holland's Wageningen University & Research uses a mix of GE Current LED fixtures above and within the crop. The result: More tomatoes, same flavor. A study by a Dutch university has shown that placing about a third of a greenhouse's LED grow lights among high wire tomato crops rather than suspending all of them above the vines can increase the yield, according to lighting company GE Current, which supplied the fixtures.

Wageningen University & Research (WUR) compared the growth of about 20 trusses of two tomato varieties with another 20 trusses of the same two cultivars — Marinice and Santiana. Researchers grew each over the same five month period, applying the same light intensity, duration, and red-heavy spectral content to both. It also kept other growing conditions such as water, nutrition, ambient temperature, and CO2 levels the same. But in one group it used only toplights. In the other, it used 66% toplights while mounting the remaining 34% of the LED fixtures among mature leaves. The tomatoes in the mixed-height lighting scheme "produced an average of 14% more fruit," GE Current reported, while also noting that the two different groups exhibited no difference in quality or taste, as they both registered similar acidity and Brix (sugar) levels.

"Increasing the proportion of light delivered from intracanopy lighting and applying photons to the lower areas of the plant sparked a few changes of plant architecture and physiology," WUR said in a report. "For example, the bottom leaves were 6% larger and able to process more CO2 in photosynthesis. These two changes contributed to more overall growth."

WUR noticed "a 73% higher maximum photosynthetic capacity of the bottom leaves" in the intra-lighting setup than in the toplighting-only section. The practice of placing lights among the leaves goes by various names. While GE Current refers to it as "intracanopy" lighting, rival Fluence — recently acquired by another competitor, Signify — has dubbed it "intercanopy" lighting. Signify refers to it as "interlighting." Semantics aside, horticultural LED lighting vendors and experts are increasingly advocating the method. Fluence introduced new intercanopy fixtures earlier this year. GE Current — its full name is GE Current, a Daintree company — is hoping to explore the subject more with WUR, a life sciences university in the town of Wageningen in central Holland.

"We are currently discussing further potential collaboration with Wageningen University & Research to determine the most productive division of light energy between LED toplights and intracanopy lighting," said GE Current horticultural scientist Hans Spalholz. "However, for now, the results at 34%...are extremely encouraging."

Current said that the intracanopy lighting would benefit other high wire crops, such as cucumbers and bell peppers. In the WUR study, the university used Current's Arize Element L1000 toplight and its Arize Integral intracanopy lighting.

MARK HALPER is a contributing editor for LEDs Magazine, and an energy, technology, and business journalist (markhalper@aol.com). Study shows 14% increase in tomato yields with interlighting | LEDs Magazine