ENERGY OBSERVER
A MONTHLY NEWSLETTER FROM AMERLUX®

NOV 2022

Welcome to the future of lighting - Amerlux - AIA Courses/Lighting Education/AIA CES

Guides

For decades, Amerlux has collaborated with architects, lighting designers, contractors and facility managers from around the world, collecting extensive insights into how to cast designs in the best light, for all applications.

Our technical guides and whitepapers share this knowledge and experience with in-depth analysis of the most crucial issues encircling the LED lighting industry now and into the future.

Topics include:

- Human-centric lighting
- Color quality and rendering
- Smart cities
- Operational and energy efficiency

eLumenNation Webinars

Light is the new tech sector, interconnected and fast-growing. Keep up with current trends, stay ahead of the curve and earn AIA CES credits with our free webinar series.

Learn the fundamentals of LED lights or grasp more technical concepts such as the health benefits of white tuning human-central light. In every case, we shine the best light on industry education with a groundbreaking assortment of webinars tailor-made for professionals like you.

Other webinar topics include:

- How tunable white light elevates hospitality spaces
- WELL Building Standards
- Why tunable lighting is a must for better patient outcomes in health care
- When, where and why to use full gamut LEDS vs. standard LEDs

National LED Market Observer

1. **Fed's Preferred Measure of Inflation Shows Prices Surged Again Last Month** - If energy prices rise, all bets are off. This bifurcated dynamic of headline inflation ticking down while core inflation rises is attributable to the drop in energy prices — which worries economists who warn that this reprieve is unlikely to last as the Northern Hemisphere heads into winter and the Organization of the Petroleum Exporting Countries along with its oil-producing allies are said to be considering another output cut. "The drop in energy prices since their peak this summer has been excellent news for American consumers and the resilience of the economic expansion," said Bill Adams, chief economist for Comerica Bank. But he added that this tailwind has diminishing returns. "The big upside risk to inflation over the near term is the possibility of higher energy prices, especially given the explosion on the Nord Stream pipeline in the Baltic Sea and no sign of a quick end to the Russia-Ukraine war," he said. Fed's preferred measure of inflation shows prices surged again last month (msn.com)

2. **Wholesale Prices Up 8.5%, Higher Than Expected as Inflation Persists** - Wholesale prices rose more than expected in September despite Federal Reserve efforts to control inflation, according to a report Wednesday from the Bureau of Labor Statistics. The producer price index, a measure of prices that U.S. businesses get for the goods and services they produce, increased 0.4% for the month, compared with the Dow Jones estimate for a 0.2% gain. On a 12-month basis, PPI rose 8.5%, which was a slight deceleration from the 8.7% in August. Energy rose 0.7% after posting massive gains the previous two months. The Fed has responded by raising rates five times this year for a total of 3 percentage points and is widely expected to implement a fourth consecutive 0.75 percentage point increase when it meets again in three weeks. Producer price index September 2022: Wholesale prices rose 0.4% in September (cnbc.com)

3. **US Inflation Spikes to 8.2%** - Yet excluding the volatile categories of food and energy, so-called core inflation jumped last month — a sign that the Fed's five rate hikes this year have so far done little to cool inflation pressures. Minutes from the Fed's most recent meeting in late September showed that many policymakers have yet to see any progress in their fight against inflation. The officials projected that they would raise their benchmark rate by an additional 1.25 percentage points over their next two meetings in November and December. Doing so would put the Fed's key rate at its highest level in 14 years. Core inflation climbed 0.6% from August to September and 6.6% over the past 12 months. The yearly core figure is the biggest increase in 40 years. Core prices typically provide a clearer picture of underlying price trends. Thursday's report represents the final U.S. inflation figures before the Nov. 8 midterm elections. US Inflation Spikes to 8.2% | Newsmax.com

4. **US Imports Sink in September, Suffer Steepest Drop Since 2020 Lockdowns** - US ports received approximately 2.22 million 20-foot equivalent units in September, an 11% year-over-year decline and a lower level than in September 2020, which was affected by COVID-19 lockdowns, according to a Descartes analysis of customs data. Chris Jones, Descartes' executive vice president of industry and services, says the decline is "more severe" than the typical seasonal drop and could indicate a slowdown that lasts through the end of the year. US imports sink in September, suffer steepest drop since 2020 lockdowns (freightwaves.com)

5. **LightFair to Move to Biennial Trade Show Schedule** - IALD, IES and IMC are thrilled to announce that LightFair is moving to an alternate-year schedule starting with the 2023 event, taking place May 21-25 at the Javits Center in New York. This shift to a biennial schedule allows us to better align the show with manufacturing cycles and the pace of industry innovation, delivering an experience that provides maximum value for the architectural and commercial lighting community — with even more product launches, new technologies and opportunities for connecting with a broader range of professionals in industry segments. Stay tuned for more information. LightFair Blog

6. **Congress Passes Bright Act Requiring Federal Buildings to Procure Efficient Lighting** - The bipartisan Bulb Replacement Improving Government with High-Efficiency Technology (BRIGHT) Act requires the GSA Administrator to ensure that public buildings are using the most life-cycle cost-effective and energy-efficient technology to the extent practicable when performing normal maintenance, altering, or constructing public buildings. The bill also requires GSA to issue guidance to federal agencies and state, local, and Tribal entities to further streamline efficiency and effectiveness across government. GSA previously released a series of reports that calculated that switching to LED lighting would result in millions of dollars in cost savings due to their superior lifespan and energy efficiency. Full legislative language at: BILLS-117s442enr.pdf (govinfo.gov)

7. **Inflation Reduction Act Primed to Pump Billions into Renewables, EVs & Construction Markets** - The Inflation Reduction Act includes over $360 billion in clean energy and climate provisions over the next 10 years. Federal tax credits will be available for electric utilities and other producers of renewable energy, building owners, homeowners and domestic manufacturers of equipment for the solar, wind, electric vehicles and EV battery markets when they make the investments specified in the bill. In the electrical construction market, virtually any company involved in the design, sale or installation of energy-efficient building products should see downstream revenues related to the construction of new manufacturing facilities, retrofits of commercial buildings, the installation of residential solar systems and other green project work. Inflation Reduction Act Primed to Pump Billions into Renewables, EVs & Construction Markets | Electrical Wholesaling (ewweb.com)

8. **The Energy Metaverse: It's (Going to Be) a Thing by Richelle Elberg** - Just like the internet and later mobile phones, it could take years, maybe decades, for this virtual, parallel world to realize its ultimate potential. But like the internet and mobile phones, the Metaverse will ultimately happen, creating operational efficiencies, ESG benefits, increased customer engagement and further untold applications. And while much Metaverse hype today focuses on gaming and social network use cases—Facebook famously renamed itself Meta in October 2021—in fact commerce and industry, including the energy industry, stand to benefit from the advent of the Metaverse. The Energy Metaverse: It's (Going to Be) a Thing | Energy Central

9. **TRAINING: Lighting Controls Association Offers New Course on Utility Rebates** The Lighting Controls Association now offers EE107B: Lighting Controls and Commercial Lighting Rebates as a new course in its popular Education Express program. Authored by Craig DiLouie, LC, CLCP, education director for the Lighting Controls Association, this new course describes rebates, rebate trends, general outlook for rebates, and generally how to acquire them for a project. Education Express | (aboutlightingcontrols.org)

10. **$1.125M Will Fund LRC Research to Improve Lighting at U.S. Airports and Airfields** - The Lighting Research Center (LRC) at Rensselaer Polytechnic Institute (RPI) has been awarded $1.125 million from the Federal Aviation Administration (FAA) for a three-year research effort to improve the visibility, efficiency, and reliability of air traffic and navigation in the United States. For more than 15 years, the LRC has worked closely with the FAA to conduct lighting research that supports the transition of U.S. airports and airfields to energy-efficient LED lighting. This support has ranged from researching the visual needs of pilots for accurately identifying signals and signs used in airport visual guidance applications to assessing technologies that can aid in the development and deployment of new lighting systems and photometric testing methods. F.A.A. Awards Grant Aimed at Improving Airport Lighting (inside.lighting)

11. **CASE STUDY: How Many Does It Take to Change a Lightbulb? by Brian Hullfish** - The correct answer: multitudes, and the number of people literally "changing the lightbulb" grows by the day. For an excellent case in point, let's travel from 19th century Menlo Park to 21st century Portland. The Portland Bureau of Transportation began upgrading the city's 52,000 street lamps to energy-efficient LED technology in 2014. While several lighting manufacturers responded to the city's subsequent request for proposal and underwent extensive field testing in the vintage fixtures, Amerlux won Portland's bid with its unique Avista 42-watt, 3000K LED light engine. This was achieved through the use of Amerlux's Avista, an advanced LED light engine ideal for retrofitting traditional and post-top luminaires or for use in new construction applications. Featuring a completely sealed LED optical chamber, the highly-efficient Avista delivers cutting-edge optics and extraordinary output to meet the most demanding street lighting needs within today's cities and municipalities, while its simple-to-install design incorporating adjustable height levels allows users to position the light exactly where it's needed for optimal application and maximum performance, taking LED street lighting to the next level. How Many Does It Take to Change a Lightbulb? - Issuu

12. **Chicago Passes Updated Building Energy Code to Support Decarbonization** - The Chicago City Council last week passed the 2022 Chicago Energy Transformation Code, which requires that new buildings are constructed in alignment with stronger energy efficiency and electrification standards to advance decarbonization. Most changes will apply to new building permit applications starting Nov. 1. **Changes include requirements related to energy-efficient lighting**; designing certain commercial building roofs to support future solar panel installations; constructing residential buildings with infrastructure that enables a future switch to electric-powered appliances; and incentives for smart HVAC and water appliances that integrate with the power grid to reduce demand during peak use. Chicago passes updated building energy code to support decarbonization | Smart Cities Dive

13. **Quick Summary of CA Title 24 Lighting Changes for Non-Residential Buildings by David Shiller** - Energy Code Ace has created a summary of California Title 24 code changes for Non-Residential Buildings. The 2022 Title 24, Part 6 Building Energy Efficiency Standards (Energy Code or Title 24, Part 6) updates the 2019 Energy Code. The 2022 Energy Code is effective as of January 1, 2023. Any projects that apply for a permit on or after this date will be subject to the 2022 Energy Code. Information and documents are available at: 2022 Building Energy Efficiency Standards (ca.gov) The key lighting changes to the Energy Code apply to nonresidential buildings such as hotels, motels, factories, office buildings, retail spaces and healthcare facilities. Quick Summary Of CA Title 24 Lighting Changes For Non-Residential Buildings | LightNOW (lightnowblog.com)

14. **5 States with the Most Interest in EV Charger Rebates** - While we know that 70% of the US is currently covered by an EV charger rebate, we wanted to determine where the interest is the highest. To do that, we looked at our RebatePro for EV Chargers and EV Charger Rebate Finder tools. Using anonymized data from the nearly 100,000 requests we have processed so far this year, we were able to determine the areas with the most inquiries. The data shows that the top 5 states where customers were interested in EV charger rebates were CA, FL, NY, IL, and TX. 5 States With the Most Interest in EV Charger Rebates (briteswitch.com)

15. **LM&M: How LED Lighting is Changing the Classroom by Brad S. Picht, Graybar** - LED's cool factor—and what many people don't know—is that LED is digital technology and can do a lot more than just provide basic illumination. Some LEDs can sense their environment, adjust, collect data and "tune" to different colors and intensities suited to the particular purpose of a space and the people in it. This ability to better control LED lighting promises to impact our schools much more than our homes. Because of the flexibility of digital LED technology, manufacturers are designing their products to allow teachers in the classroom to change the color temperature and light intensity at different times of the day. This new technology, tunable light, allows a teacher to change how warm or cool the light appears to optimize class performance based on the time of day and the students' activities. How LED Lighting is Changing the Classrom - Issuu

16. **RESEARCH: Energy Savings from Networked Lighting Control (NLC) Systems With and Without LLLC**- The DLC, in partnership with The Northwest Energy Efficiency Alliance (NEEA), has released a new report, Energy Savings from Networked Lighting Control (NLC) Systems with and without LLLC. This research builds upon the DLC's 2017 study, Energy Savings from Networked Lighting Control (NLC) Systems, and aggregates energy data from nearly 200 NLC system installations, almost doubling the data set from the 2017 study. The results not only improve existing NLC energy savings estimates, but also provide more in-depth savings analyses, such as savings estimates from NLC systems with and without luminaire level lighting control (LLLC), and savings estimates from high-end trim compared to other control strategies. The findings strongly reinforce the savings estimates from the DLC's 2017 report, further enabling utilities, manufacturers, design professionals, specifiers, ESCOs, contractors, building managers, and others to plan for lighting solutions with better estimates of energy savings from NLC technology. Energy-Savings-From-Networked-Lighting-Controls-with-and-without-LLLC_FINAL_09242020.pdf

17. **Judge Rejects Bid to Resume Construction on $1B Power Line** - A judge declined a request by developers of a $1 billion power line to resume construction, keeping the project on hold until a judge's decision next year on the constitutionality of a referendum that halted the project. The project, which would supply enough Canadian hydropower for 1 million homes in New England, received regulatory approvals but voters rejected the project in a referendum after construction had begun. The proposal calls for a 145-mile power line from Canada into Maine, where it could connect to the regional power grid. Most if it would follow existing utility corridors but new section had to be cut through 53 miles of woods to reach the Canadian border. Supporters say the project is a bold step in reducing carbon in the atmosphere and would moderate electric rates in the region. Critics say those benefits are overstated and must be weighed against destruction of woodland habitat. Judge rejects bid to resume construction on $1B power line | AP News

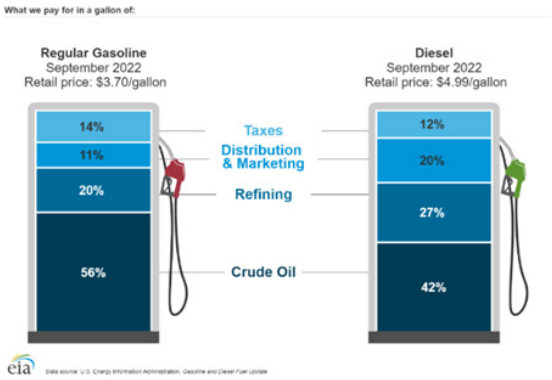
18. **Commercial Buildings Tax Deduction Expands by Craig DiLouie** - The new incarnation of the Commercial Buildings Tax Deduction offers a strong incentive to stretching energy efficiency in new buildings and modernizing existing buildings. The recently enacted Inflation Reduction Act includes amendments to Section 179D that expand the CBTD's availability, reduce the required energy savings target, increase the size of the incentive, and make the incentive repeatable instead of a one-off. Commercial Buildings Tax Deduction Expands (lightingcontrolsassociation.org)

19. **Maryland's Cannabis Vote Could Dial Up the LED Lighting** - As a top provider of LED lights to cannabis growers, Fluence (Signify) keeps a close eye on the always evolving legislative measures determining the legality of marijuana around the world. At the moment, it has a sharp focus on Maryland. That's because on Nov. 8 voters in the state will decide whether to legalize the drug for recreational purposes. A "yes" could potentially quadruple Fluence's presence in the jurisdiction, where the Austin, Texas company already provides grower Culta with LED lights that nurture cannabis for medical use. Bethesda-based Culta grows cannabis both indoors and outdoors in the eastern city of Cambridge. Some 450 Fluence LED luminaires are everywhere in the indoor facilities. Any new lighting will be all LED including in the flowering rooms. And should Maryland give the thumbs up to adult recreational cannabis use, Culta foresees a huge expansion. Maryland's cannabis vote could dial up the LED lighting | LEDs Magazine

20. **Controlled Environment Horticulture Report Exposes Lack of Standardized Energy Data** - The California Public Utilities Commission and utility Pacific Gas and Electric Company (PG&E) completed a report this past summer studying the published literature on energy and water resource usage in controlled environment horticulture (CEH — also called controlled environment agriculture). The objectives were to quantify resource consumption by CEH operations in the state of California and identify areas for energy savings that can be addressed in future iterations of the California Energy Code. The initiative should result in multiple reports: the first on the state of data in this burgeoning industry, and others with recommendations for establishing metrics — standardized terminology and methods for how facilities quantify energy use —and benchmarking practices for resources, which will be used to direct regulatory policy that helps meet California energy and GHG goals. Controlled environment horticulture report exposes lack of standardized energy data | LEDs Magazine

21. **US Gasoline Prices on the Rise Again -** Gasoline and Diesel Fuel Update - U.S. Energy Information Administration (EIA)

22. **What We Pay for a Gallon of Gasoline** -



Global LED Energy Market Observer:

23. **There's No Cheap Way to Sidestep China's Energy Supply Chains** - China dominates clean energy supply chains and has enough manufacturing capacity to meet global demand for most of the solar market to 2030. But as the US and Europe decarbonize their economies, Western governments are seeking to meet their own needs with new, local facilities capable of producing photovoltaic panels and storage. It won't be easy or cheap. Building plants to manufacture solar panels, batteries and electrolyzers to meet domestic demand in 2030 would cost Europe $149 billion and the US $113 billion. the bleeding-edge knowledge" of PV, battery and electrolyzer manufacturing resides in China. China has invested for decades through low-interest loans, free land, cheap energy and other subsidies, to build the world's most integrated and efficient clean energy supply chains. The country hosts 90% of production capacity for six vital parts of the photovoltaic panel and battery storage value chain and more than 75% of several other segments, according to the BNEF.
There's No Cheap Way to Sidestep China's Energy Supply Chains - BNN Bloomberg

24. **DNV Sees World Powered by 70% Renewables by 2050** - The latest DNV Energy Transition Outlook estimates variable renewable energy sources will provide 70% of the world's power by 2050, with gas providing 8% and coal providing 4%. Solar capacity will grow by 22 times, wind capacity will expand by 9 times and Europe will lead renewables growth, the report states. In a world seeing doubling of electricity generation by 2050, hydropower generation will still provide 13% of total electricity supply, down from 16% in 2020. While growing in absolute terms, this loss of share is transferred to solar and wind. Waste management and high construction costs and long lead times remain stubborn realities for nuclear power. However, current energy security concerns are leading to renewed interest in this source, and our forecast this year reflects a modest uptick in nuclear, growing by 13% from today's levels to 2050. The rise of renewables - DNV

25. **Nichia and GE Lighting Enter into Cross License Agreement** - Nichia Corporation and Savant Technologies LLC, known as GE Lighting, a Savant company, announced that they have entered into a cross-license agreement. Under the agreement, Savant will be licensed under Nichia's patents on filament LED lightbulbs, including Nichia's U.S. Patent No. 9,752,734. Nichia will be licensed to supply LEDs containing potassium fluoride silicon, or PFS phosphor, in the residential and retail market channels. This cross license confirms the value of each companies' patents covering lighting products. Nichia and GE Lighting enter into Cross License Agreement - LEDinside

26. **Dutch Propagator Dials Down the New Lights Because They're Too Effective** - Proving that it is possible to have too much of a good thing, a Dutch tomato propagator had to dial down the hybrid LED/HPS lighting in a new greenhouse because growth was outpacing the tomatoes in an existing greenhouse and thus upsetting the overall crop cycle. The good news is that the illumination that Westlandse Plantenkwekerij (WPK) installed in the new greenhouse facility resulted in what WPK has described as a higher-quality tomato than those grown exclusively under HPS lights in the existing greenhouse at the site, yielding an advantageously compact morphology and darker and richer colors.The problem was that the quality plants were coming on too fast. After discovering that tomato growth was racing ahead in the new facility, WPK decided to turn down the illumination. With energy prices on the rise, the grower chose to pare back on the more energy-hungry HPS lights. Dutch propagator dials down the new lights because they're too effective | LEDs Magazine

27. **French Li-Fi Company Steps Away from Illumination to Strengthen Data Communications** - In a commensurate market shift, Oledcomm is now pinning its growth strategy on selling Li-Fi into sectors such as defense, aerospace, and commercial airlines that it thinks will benefit from transmitting data via infrared methods. In an acknowledgment that consumer Li-Fi uptake has indeed been slow, Oledcomm Execs Azoulay and Beylier said that they have deprioritized the goal of outfitting consumer laptops, tablets, and phones with chips that would enable users to use light for internet communications in the same manner that radio-based Wi-Fi does today. Those opportunities include the military sector. Aerospace and airlines are also ripe for Li-Fi, especially infrared Li-Fi. Like Oledcomm, Signify has also now shifted to infrared-only as a Li-Fi transmitter. "You get much better performance with infrared than with white LED," Azoulay said. "The speed can be three times that of white." French Li-Fi company steps away from illumination to strengthen data communications | LEDs Magazine

28. **RESEARCH: Worldwide LED Driver Industry to 2028** - The "LED Driver Market – Size, Share, Outlook, and Opportunity Analysis, 2022 – 2028" report has been added to ResearchAndMarkets offering. Besides the gradual rise in specific regions, the current outbreak of the pandemic is anticipated to further fuel the price of LED solutions by up to 10 percent as per the survey. Additionally, the new lighting methods, by contrast, are on the huge side of the price that scales to conventional lighting. Smart lighting is projected to spectator quick development over the predicted duration assisting the regulatory authorities and a rise in the per capita income are the main driving forces for its increase. Apart from these, developments in IoT, strong internet connection, and Bluetooth smart assist the smart lighting market.

29. **New Programmable Spectrum LEDs Revolutionize Cannabis Cultivation** - The Avici 1500 breaks industry records with high energy efficiency, the longest rated life, the most flexible spectrum, and the highest output of any high power horticultural LED. With all four categories of excellence covered in one light, the Avici 1500 is a force to be reckoned with. Programmable Spectrum LEDs open up a whole new world of possibilities to cannabis cultivators. They can be used to mimic seasons and shorten harvests to increase the number of cycles per year. They can control plant architecture, using plants' natural response to blue to shorten internodal spacing for stocky plants or using red to encourage reaching. They can influence terpene profiles to grow a more flavorful, aromatic crop or to boost cannabinoid content for a high THC content. They can even influence the color of the bud by using shorter wavelength (bluer) light to trigger anthocyanin production which give the buds more purple, red, and pink tones. Suffice it to say, there's a lot that a grower can do with programmable spectrum to increase the quality of the product. New Programmable Spectrum LEDs Revolutionize Cannabis Cultivation - LEDinside

30. **Zhaga Launches Smart City Sensor Awards** - The Zhaga Consortium is launching the global Zhaga Smart City Sensor Awards to address the needs of cities that have installed Zhaga-D4i certified streetlights. The awards encourage and recognize excellence in smart city sensors that can be installed on streetlights using the Zhaga Book 18 standard and are suitable for Zhaga-D4i certification. Sensor manufacturers, innovators as well as universities and students are encouraged to submit their applications by December 16, 2022. Smart city sensors under the following categories: mobility, climate, pollutants, sound, lighting controls, multi-sensors, innovation and research, can be submitted to the international jury. The winners will be announced in February 2023. Zhaga Smart City Sensors Awards (zhagastandard.org)

Monthly Feature:

The 25 Distributors with the Highest Sales Per Employee - The 150 distributors in this year's Electrical Wholesaling's ranking have tremendous clout in the market. They have an estimated $84 billion in 2021 revenues and operate more than 7,000 locations. Our best estimate is that these companies account for roughly 70% of the electrical wholesaling industry's total sales. Electrical Wholesaling's 2022 Top 150 Ranking: Updated! | Electrical Wholesaling (ewweb.com)

THE 25 DISTRIBUTORS WITH THE HIGHEST SALES PER EMPLOYEE

As in the past, specialty distributors, which tend to have fewer customers and employees than full-line electrical distributors, dominate the list of distributors ranked by sales-per-employee. The companies here were among the 83 respondents that provided both a 2021 sales number and an employee count for publication in this year's listing. They had an average sales-per-employee figure of $1,546,589, which is up +3% from the 2021 ranking's Top 25 distributors in sales-per-employee. Quite a few other distributors (both full-line and specialists) would have been in this Top 25 list but they requested that their sales data be used confidentially. The average sales-per-employee for the 69 respondents who identified themselves as full-line electrical distributors was $799,132, up roughly +6% from the 2021 ranking.

Rank	Company Name:	Town/City:	State:	Sales-per-employee
1	Western United Electric Supply	Brighton	CO	3,887,500
2	TEC Manufacturing & Distribution Services (TEC Utility Supply & Service)	Georgetown	TX	3,287,129
3	Tri-State Utility Products Inc.	Marietta	GA	3,264,647
4	Rural Electric Supply Cooperative (RESCO)	Middleton	WI	3,260,274
5	Gresco Utility Supply Inc.	Forsyth	GA	2,130,435
6	General Pacific Inc.	Fairview	OR	1,991,228
7	Jackson Electric Supply	Jacksonville	FL	1,800,000
8	International Electrical Sales Corp. (IESCO)	Miami	FL	1,640,000
9	First SOURCE Electrical	Houston	TX	1,322,955
10	PEPCO	Eastlake	OH	1,314,286
11	American Electric Supply	Corona	CA	1,314,245
12	LoneStar Electric Supply	Houston	TX	1,310,680
13	Wesco International Inc.	Pittsburgh	PA	1,136,075
14	Advance Electrical & Industrial Supply	Norcross	GA	1,125,000
15	Shepherd Electric Supply	Baltimore	MD	1,122,638
16	Border States	Fargo	ND	1,109,813
17	Bell Electrical Supply	Santa Clara	CA	1,107,843
18	Electrical Supply Center	Burlington	MA	1,060,000
19	Graybar Electric Co.	St. Louis	MO	1,000,000
20	Facility Solutions Group	Austin	TX	999,805
21	Jo-Kell Inc.	Chesapeake	VA	994,794
22	Benfield Electric Supply Co.	Mount Vernon	NY	983,193
23	Advance Electrical Supply Co.	Chicago	IL	980,583
24	F.D. Lawrence Electric Co., The	Cincinnati	OH	960,644
25	Turtle & Hughes Inc.	Linden	NJ	953,333