LED technology offers cost savings when compared with conventional lighting

Phoenix Lighting reports major U.S. orders including floodlighting upgrades for crane raising projects

Mark Simmonds takes a look at the terminal lighting industry and the cost benefits of LED technology.

Achieving high illumination levels in port terminals has been challenging using conventional lighting sources, as these can be associated with time consuming and costly maintenance. The advantages of using light emitting diode (LED) illumination systems have led to active replacement of conventional high-intensity discharge (HID) technologies, such as high-pressure sodium lamps. LED technology provides the highest levels of illumination, instant on white light, and uniform light levels. This is important when considering productivity, security and the safety of staff at port terminals. In addition, LED technology is durable, energy efficient, and has significantly reduced carbon emission, thereby allowing receipt of incentives for a low carbon footprint. Overall, potential cost savings of up to 85% are possible. Combined with a rapid return on investment, with operators able to estimate their expected energy and maintenance savings following installation, LED technology is an attractive prospect for customers. A number of companies now offer effective LED lighting solutions within the industry.

New product from Hubbell Lighting

Hubbell Lighting's portfolio of brands have developed solutions specifically for the shipping industry to not only assist with lighting terminal facilities, but to also meet lighting codes, meet and exceed sustainability goals and to ensure employee safety. One example of this is the "new Matrix Series of high-mount area and flood luminaires that have quickly become the perfect replacement for HID 1,000 Watt luminaires in applications in which uniform distributions are non-negotiable," says Jeff Taylor of Transportation Sales. The Matrix design considers large-footprint facilities and is capable of delivering up to 60,000 lumens with efficacies exceeding 125 Lumens per Watt, allowing the strictest of municipal lighting codes to be exceeded. The model's environment-friendly, full cutoff optic is available in 11 different lighting distributions, thereby providing flexibility to the customer. Also available for the Matrix is Hubbell Control Solutions' SiteSync option, which offers flexibility, ease of design, installation simplicity and the reliability of a wireless architecture. With its pre-programmed approach, installation of SiteSync is a quick and easy process, greatly reducing the complexity, time and cost compared to typical field commissioned systems. Hubbell has recently received award recognition for its outdoor commercial brands and is the only lighting manufacturer recognised by Buildings Magazine with a Money-Saving Product for three consecutive years.

Hubbell Lighting's new Matrix Series of high-mount area and flood luminaires

Phoenix Lighting report major U.S. and Puerto Rican orders

Melissa Stephany of U.S.-based Phoenix Lighting reports that Multiple East Coast terminals currently commencing crane raise projects will upgrade floodlighting to Phoenix EcoMod 2 heavy duty LED floodlights as part

of the crane raise. Furthermore, Phoenix Lighting was chosen to design and supply LED illumination at the Port of Los Angeles for ten STS cranes raised 33 feet (10m) to handle the world's largest container vessels. To maintain illumination standards following the raise, the terminal chose to upgrade the floodlighting system to Phoenix EcoMod LED floodlights. In addition to enhanced illumination and operator visibility, the EcoMod floodlights are expected to provide a 60% energy saving compared to the previous conventional lighting system. In addition to the raised cranes, the terminal replaced traditional floodlights with LED technology on a further four cranes. Phoenix worked closely with ZPMC Services North America and the terminal engineers to deliver 52 fixtures per crane with customized optics and brackets, and the design was completed using two different optical arrangements. In March 2017, Phoenix reported supply of complete LED illumination packages for three electric-powered ship-to-shore (STS) container cranes delivered to Isla Grande Terminal in San Juan, Puerto Rico. Crowley Puerto Rico Services' Vice President, John Hourihan, commented that: "With these state-of-the-art cranes now erected, we are taking another step toward the transformation of our terminal into the most modern and efficient port facility on the island," and "our new terminal infrastructure will help us enhance Puerto Rico as a shipping and logistics hub for the Caribbean Basin and beyond, and open up many new opportunities for our customers." These specialised gantry cranes, built by Liebherr Container Cranes in Ireland, are the first to be received for operation in San Juan Harbour in five decades. Crowley is investing USD130 million of its USD550 million total project cost in infrastructure improvements to its Isla Grande terminal, to include a new pier, cranes, container staging areas, reefer plugs, truck gates, container handling equipment and more.

CLC reports successful year in 2017

The CLC Group, which was founded in Taiwan in 1978, was the first LED manufacturer to specifically focus on harbour application, with products available for STS cranes, rubber tyred and rail mounted gantry cranes, machinery rooms, high masts, walkways, mobile vehicles, spreaders, ship unloaders, bucket wheel stackers and barge ship loaders. In 2012, the G5 series of products were launched, followed by the G6 and CBL series in 2016. CLC LED technology has now been installed in 65 container terminals across different continents, with the number of installations continuing to rise. Based on an understanding of customers' feedback and requirements, CLC now holds 27 patents covering designs, structures, and more importantly specific harbour lighting applications. These patents have enabled CLC products to be highly competitive on price performance, with short payback periods, and substantial energy savings. To ensure long product life and endure tough terminal working environment, CLC has introduced IP67++ and IP68++ to all their product lines to guarantee no possible moisture intrusion into the LED housing. CLC Products for mobile vehicles are DC type and IP69K approved and are able to install directly with the vehicle battery and withstand high pressure steam injecting. Furthermore, CLC products are designed to withstand vibration, 12G up to 3.5 million times. Indeed, CLC crane spreader light is 1000G shock approved and has won the 2016 China International lighting design award. CLC reports that 2017 has been a successful year and with increasing spend on research and development, CLC continues to improve on quality, performance and new technology to exceed customer expectations.

BLS provides lighting for GPA and VICT

Bright Light Systems (BLS), a Georgia-based manufacturer of energy-efficient LED luminaires and adaptive lighting controls, reported in July 2017 that they had been selected by Georgia Ports Authority (GPA) to provide high-mast LED lighting along with the Bright Light Management System (BLMS) software for the Ocean Terminal facility. Griff Lynch, Executive Director of the Georgia Ports Authority commented that: "This new computer-controlled LED system is a great solution, providing superior lighting while reducing our costs and shrinking GPA's environmental footprint," and that "this investment is part of the Authority's commitment to responsible, sustainable growth." The Nova HM (High Mast) LED luminaire is specifically designed for the typically harsh operating environments found in ports, airports, and rail yards. It offers coverage over large areas and comes with a variety of optical distributions. Consuming only 580 watts, use of the Nova HM allows an energy cost reduction of almost 50% when compared to traditional HID lighting. The high-brightness LED Modules are IP68 rated and incorporate a UV resistant,

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high-impact polycarbonate lens. A 100,000 hour (L85) lifetime minimises maintenance expense and enables a simple payback of typically less than three years. BLS will supply approximately 400 NOVA series LED lights with intelligent sensors and controls to replace the existing high-pressure sodium lamp fixtures. Once completed, the new energy-efficient LED lights are expected to reduce energy and maintenance costs by more than 70% while illuminating an area of almost 9,000,000 square feet. Ocean Terminal will also utilise the Bright Light Management System software, a data analytics and lighting management platform that provides energy consumption data and reporting with detailed asset management information. The combination of LED lighting and controls will allow the port to optimise lighting around its facilities. In further projects, BLS has supplied light emitting luminaires for Victoria International Container Terminal's night-time operations at the terminal's 660m berth. This 35-hectare international container handling facility at the Port of Melbourne, Australia, has been built at a cost of nearly USD 450 million to host the world's largest Neo-Panamax container ships and support an annual capacity of one million twenty-foot equivalent units (TEUs). An additional 400,000 TEUs are expected once the second phase of development is completed by the end of this year. BLS has also been busy completing lighting projects at the Port of Freeport and Port of Charleston, with products now installed in 18 port terminals across 7 different countries.

Summary

In summary, port terminal lighting manufacturers are offering customers flexible and energy efficient LED technology to suit a range of needs at their port facilities. Demand for LED lighting and control systems is set to continue as customers choose to upgrade conventional lighting systems and realise the benefits of this improved technology. WPD