

Customer Success Story: Telsmith, Inc. Corporate Headquarters



Location:

Mequon, Wisconsin

Segment:

Industrial Construction/Lighting

Challenge:

Improve operating efficiency at its corporate headquarters leveraging the latest emerging technologies.

Solution:

Eaton's LumaWatt Pro wireless connected lighting system featuring data-gathering sensors integrated in Metalux Encounter and Cruze LED ambient lighting luminaires, Metalux HBLED high bays and Lumark Prevail LED parking lot fixtures

Results:

The connected lighting system provides improved light quality and has reduced the company's lighting utility costs by more than 50 percent the first month (expected to be over 60 percent moving forward), which is a 18 percent overall monthly energy reduction/savings.

Eaton's LumaWatt Pro Wireless Integrated Sensor System Exceeds Telsmith's Energy Savings, Rebate and Lighting Performance Expectations

The LumaWatt Pro Wireless Connected Lighting System provided significant energy savings and exceeded performance expectations.

Background

Building on the advancements in LED lighting, luminaires can have integrated smart sensors to capture real-time data: from energy usage and occupancy status, to advanced applications like building usage and tracking of equipment.

Telsmith, Inc., a Wisconsin-based manufacturer of crushing and vibrating equipment, modular and portable plants, wanted to explore ways to improve operating efficiency at its corporate headquarters. Servicing the global mining and aggregate industries for over 100 years, Telsmith has a history of innovation, always looking at emerging technologies.

Challenge

To identify and analyze options to optimize its energy costs, keep its capital costs low and take advantage of local utility rebates, Telsmith brought in an Energy Services Company (ESCO) to conduct an energy audit, which included the current lighting of fluorescent troffers in the offices and high-pressure sodium high bay fixtures in the manufacturing plant. While a typical recommendation might be to use LED retrofit lamp kits, Telsmith wanted a more advanced LED system that would track energy usage and overall performance. In addition, Telsmith also wanted to improve the quality of light in its facilities.



Powering Business Worldwide

Solution

Telsmith chose Eaton's LumaWatt Pro connected lighting system, a distributed network of smart LED lighting fixtures with integrated sensing and beacon technology that captures real time data.

The wireless system, which features Eaton's LED lighting fixtures integrated with sensors to collect data to display on dashboards, allows Telsmith to see real-time energy usage, project energy savings and view system health reports to get a more comprehensive understanding of the total lighting system performance.

To evaluate the performance, color and light quality of LEDs, the team at Telsmith, including engineer Nick Lollino, visited a nearby business with a similar LED installation. The company also installed a mock-up of six Metalux HBLED LED high-bay luminaires (5000K) in its manufacturing plant and four Metalux Encounter and Cruze LED recessed ambient fixtures (3500K and 4000K) in its offices.

The new lighting system, which not only meets code for occupancy and time schedules, also is intuitive to configure and use. The new lighting has been installed throughout the headquarters including the manufacturing plant, private and open offices, conference rooms and in the parking lot.

"The ability to monitor the energy usage, evaluate and tune the lighting to save on energy costs has been simple and successful," said Nick Lollino, manufacturing engineer, Telsmith. "Using on-going adjustments, such as dimming the new parking lot fixtures from 100 percent brightness to 50 percent, Telsmith is saving additional energy costs while improving safety for their employees and buildings."

Results

Completed in January 2018, the one-to-one LED system retrofit resulted in:

- Actual utility bill savings on the lighting of more than 50 percent the first month (expected to be over 60 percent moving forward), which is a 18 percent overall monthly energy reduction/savings
- Estimated yearly lighting maintenance savings of \$18,000
- Brighter, more uniform illumination in the office areas from Metalux Encounter and Cruze LED ambient fixtures and Halo Commercial LED downlights
- Customized light levels in private and open offices, based on employee preferences
- Uniform and efficient illumination in the parking lot and on the building's exterior from Lumark Prevail LED area luminaires and photo-cell controlled Crosstour wall packs
- Higher vertical lighting along the walls in manufacturing and warehouse areas from Metalux HBLED high bay luminaires
- Conference room adjustability and zoning of the lighting fixtures with in-room wall stations
- Energy monitoring of the lighting fixtures with simple-to-use facility-wide dashboards

The new lighting provides a reduction in CO₂ emissions of 874 metric tons, equivalent to 187 cars driven for one year or 94 homes' annual energy use.

In addition, local utility rebates for the LED lighting and advanced network controls, produced a return on investment of less than two years. Using the monitoring and verification capabilities of the advanced lighting network, Telsmith also qualified for another pilot program when both "before"



and "after" energy data is submitted.

"Beyond the energy efficiency, one of the most dramatic improvements has been the light quality in the manufacturing paint booth," said Lollino. The LED lighting allows the workers to see the true colors of the paint being applied, as the previous older lighting didn't portray the true colors during application."

Lollino also notes that the ability to adjust the lighting to employee preferences has been an important part of the process. "It's been a dramatic change for our employees to adjust from the existing lighting to the increased light output, but the ability to adjust the lighting to their personal needs has been important and successful for our employees."

Next, the company is evaluating upgrading its HVAC system with IoT capabilities and integrating the systems together as the LumaWatt Pro's AirE advanced system enables demand-driven heating or cooling by using data collected. The system can direct cooling or heating in real-time to offices and plants where occupants are working.

Telsmith and their parent company are examining the results of the new lighting and controls system to use as a template for other facilities.

About Eaton Lighting

Eaton's Lighting Division delivers a range of innovative and reliable indoor and outdoor lighting solutions, as well as controls products specifically designed to maximize performance, energy efficiency and cost savings. The Lighting business serves customers in the commercial, industrial, retail, institutional, residential, utility and other markets.

Eaton's Electrical Sector is a global leader with expertise in power distribution and circuit protection; backup power protection; control and automation; lighting and security; structural solutions and wiring devices; solutions for harsh and hazardous environments; and engineering services. Eaton is positioned through its global solutions to answer today's most critical electrical power management challenges.

Eaton is a power management company with sales of \$19.7 billion. Eaton provides energy-efficient solutions that help our customers effectively manage electrical, hydraulic and mechanical power more efficiently, safely and sustainably. Eaton has approximately 95,000 employees and sells products to customers in more than 175 countries. For more information, visit www.eaton.com.

Eaton

1121 Highway 74 South
Peachtree City, GA 30269
P: 770-486-4800
www.eaton.com/lightingsystems
For service or technical assistance:
1-800-553-3879

Canada Sales

5925 McLaughlin Road
Mississauga, Ontario L5R 1B8
P: 905-501-3000
F: 905-501-3172

© 2018 Eaton
All Rights Reserved
Printed in USA
Publication No. CS503006EN
April 2018

Eaton is a registered trademark.

All other trademarks are property of their respective owners.



Powering Business Worldwide