



QBP Chooses Intelligent LED Lighting for New East Coast Distribution Center, Saving 85% Over Lighting Alternatives



DIGITAL LUMENS

Photo: QBP's new facility features Digital Lumens Intelligent LED Lighting System and skylights from Solatube for maximum efficiency.

Quality Bicycle Products (QBP) is the largest wholesale distributor of bicycle parts and accessories to the cycling industry, serving over 5,000 independent bike dealers in the United States, Canada, and Europe.

QBP is committed to environmental and community causes, values that have driven its business and operational decisions. With more than 35,000 SKUs from more than 450 vendors, QBP strives to do good in the world by promoting health, building communities, and contributing to a more sustainable environment.

In 2014, QBP relocated its East warehouse and distribution center from Middletown, PA to Lancaster, PA. The motivation behind this new construction project was to expand significantly the ability to serve independent specialty retailers on the Eastern seaboard. The new 122,000-square foot facility houses even more products, which are delivered at a faster rate than ever before.

The Right Gear for Efficiency

The Lancaster facility features numerous energy efficient systems as well as sustainable building techniques including high-volume/low-speed fans, a fully integrated HVAC system with BMS software that handles climate control, and advanced skylight technology that both captures and distributes light. Among the technologies chosen to help meet their goals is the Digital Lumens Intelligent LED Lighting System, which has enabled QBP to:

- Secure 85% (573,994 kWh) lighting-related energy savings over fluorescent alternatives
- Save 66% (401,650 kWh) over plain LED alternatives
- Reduce lighting load power to less than 0.4 watts per square foot
- Cut half of the labor costs for circuit installation
- Reduce fixture count by 30% from the original lighting design
- Secure E-Power rebates with PPL Electric Utilities
- Eliminate lighting maintenance costs from budget

CASE STUDY

QBP

LOCATION

Lancaster, Pennsylvania

FACILITY SIZE

122,000 ft²

ENVIRONMENT

Warehouse Distribution Center

INSTALLATION TYPE

New Construction

PARTNER

Illuminations, Inc.

ELECTRICAL CONTRACTOR

Lancaster Electric, Inc.

Shifting to Advanced Controls & Intelligence

Before choosing intelligent LED lighting, QBP worked with electrical design/build contractor Lancaster Electric, Inc. during the new construction project. They looked at four different high bay lighting solutions: T5 HO fluorescent, simple LED fixture, LED fixture with standard motion sensors, and Digital Lumens' Intelligent LED Lighting System with fully integrated controls and LightRules® lighting and energy management software.

"We reviewed a variety of lighting solutions for this facility, but the goal was to find a solution that would cut costs long term," said Scott Wiest, Project Manager at Lancaster Electric, Inc. "With the size of the building, QBP was looking for scheduling and dimming capabilities, along with the ability to turn lights on or off in concentrated areas throughout the day."

Lancaster Electric worked with Digital Lumens' representative agency, Illuminations, Inc., to determine the best lighting solution mirroring QBP's philosophy and the building requirements. A successful lighting design needed to account for the necessary light levels in varying areas of the facility and reduce fixture count.

"It was clear that legacy lighting or LED lighting with simple controls would not meet QBP standards, or address the complexity of the facility layout," said Terry Farrell of Illuminations, Inc. "Creating a lighting design to meet foot-candle requirements was the first step. However, the real challenge was finding a system that could reduce costs in more than just lumen output. Only a solution with fully integrated occupancy and daylight sensing, dimming capability, and advanced controls could maximize their energy savings."

Maximizing Performance

With smart LED fixtures, combined with LightRules lighting and energy management software, the Digital Lumens Intelligent Lighting System enables QBP to:

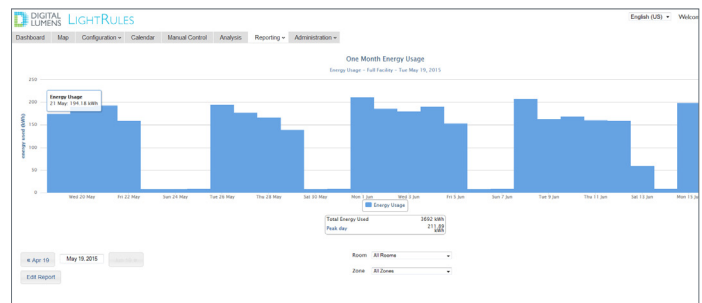
- Meet requirements of 25 foot-candles in the aisles, 35 foot-candles on the conveyer belts, and 30 foot-candles in the pick-and-pack areas
- Leverage natural light from skylights, and save energy by dimming fixtures to match illumination requirements
- Use LightRules to control individual fixtures and lighting zones, and create nighttime lighting profiles in LightRules, which eliminated the need for night light circuits

Dave Smith added, "From a management perspective, LightRules is very intuitive and lets you easily change lighting outputs, schedules, and reports. The programmability coupled with daylight harvesting, and the communication technology that allows the fixtures to work with each other is what makes this system so unique and influential to our facility. For example, we have 45 skylights across the distribution center, so having the fixtures adjust automatically to the amount of natural light coming through is a huge advantage."

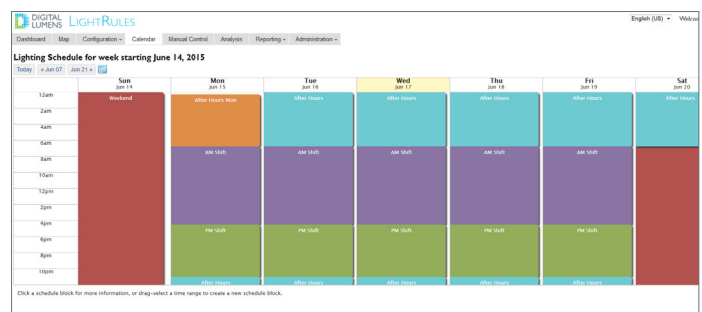
"A key element of project success was the deployment, and Lancaster Electric, QBP's electrical contractor, demonstrated exceptional commitment to quality, attention to detail, and customer satisfaction," said Dan Petrillo, Application Engineer at Digital Lumens. "Their flawless execution was essential in achieving maximum performance and efficiency at QBP East."

"From the start of the new building construction, our goal was to create an all-around better building, keeping our employees and sustainability goals in mind. We knew we wanted to invest in quality systems, rather than spend time and money to improve them later on. A high priority for us was to consume less energy from day one, using solutions that are natively efficient in both design and function. The Digital Lumens system fit that profile perfectly."

- Dave Smith, Site Manager at QBP East



LightRules Report from East Coast Distribution Center, displaying one month energy usage



Example of QBP's lighting schedule created within LightRules