



Leading Supermarket

A Case Study: Lighting Manufacturers Team Up To Help Reduce Costs



With a firm goal of reducing energy costs while maintaining light output, a well-known east coast supermarket chain with nearly 160 stores throughout six mid-Atlantic states recently undertook a lighting upgrade within nearly half of its 1.2 million square-foot Pennsylvania-based distribution center. Assessing the lighting system in the 500,000+ square-foot area where non-perishable items are stored, the retailer realized that significant energy and maintenance costs could be saved by upgrading from the use of high pressure sodium lamps to a more energy-efficient configuration involving pulse start metal halide technology.

An initial assessment of the space by St. Onge, Ruff & Associates, a York, Pennsylvania-based architectural and engineering firm specializing in food warehousing facilities, revealed the need for an energy-efficient system with significant light output. "The retailer had recently converted from floor storage to racked storage, involving the use of aisles instead of open space," confirmed Darin Plitt, Manager of Electrical Engineering for St. Onge, Ruff & Associates. "The new compartmentalization of the space required more light output than their existing 900+ 20-30 year-old high pressure sodium high bay fixtures could provide."

While several options were considered, including the simple addition of more high pressure sodium fixtures as well as possible conversion to a fluorescent T5/HO lighting system, a pulse start metal halide system proved to offer the optimal combination of energy efficiency and light output. The retailer ultimately selected a system comprised of the 55°C-listed Electrolume™ fixture by St. Louis-based Guth Lighting, a leading manufacturer of fixtures for demanding environments, which housed a 40W pulse start metal halide lamp from Philips Lighting Company powered by

Philips Advance DynaVision® electronic HID ballasts, along with the use of occupancy sensors. The retailer began the upgrade process in Spring 2004, conducting the installation in phases to minimize disruptions to facility operations.

Almost immediately, the extensive light output and high lumen maintenance exhibited by the DynaVision-based system began driving significant cost reductions. Says Plitt, "The level of light output that we needed (30 footcandles in the aisles and 50 footcandles in the docks) which would have required over 1,200 HPS fixtures to achieve required only 832 of Guth's 85% efficient VUE-Trol pulse start metal halide fixtures, enabling the retailer to take advantage of a nearly one-third reduction in fixture count. Each DynaVision-based fixture also consumes 5-10% less wattage than the previous high pressure sodium system, driving additional energy reductions, with energy consumption being driven down even further by the use of occupancy sensors that dim lamps when areas are not occupied. As a result of this upgrade, the retailer will be able to slash their energy costs by almost 50%, reducing them from \$160,000/year to just \$85,000/year." Other benefits that the retailer will enjoy from selection of this system include the DynaVision ballast's end-of-lamp-life protection feature, 55°C ambient rating, continuous dimming capability down to 50% lamp power, and exclusive IntelliVolt® technology (enabling the ballast's operation at any input voltage from 200 to 277V, 50/60Hz), all of which were a perfect fit for the retailer's application.

"Overall," concludes Plitt, "pulse start metal halide technology and a DynaVision-based system were optimal for the retailer's space, providing impressive maintenance of 88 lumens per watt and significant

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energy-savings over high pressure sodium without the temperature sensitivity of T5/HO.” Satisfied that the new lighting system has met all of its objectives, the retailer is currently considering additional upgrades throughout its space as it positions itself for continued success.

A leader in the ballast industry for over 60 years, Philips Lighting Electronics N.A., based in Rosemont, Illinois, offers a full line of Philips Advance branded ballasts and drivers for fluorescent, HID, and LED light sources to the market's broad range of lighting fixture manufacturers and electrical distributors. For more information on Philips Lighting Electronics' complete product line and range of Smart Solutions™, visit our website at www.philips.com/advance or call us at (800) 322-2086

Project Overview

End User:

East coast supermarket chain with over 150 locations

Project Scope:

Upgrade of lighting system within the 500,000 square-foot dry-storage section of the retailer's distribution warehouse

Project Timeline:

Lighting upgrade was completed in Summer 2004

Products and Suppliers:

Upgrades involved the conversion of 913 High Pressure Sodium high bay fixtures to 832 400W pulse start metal halide fixtures (involving Electrolume™ fixtures by Guth Lighting and lamps by Philips Lighting Company driven by Philips Advance DynaVision® electronic pulse start metal halide ballasts). Lighting specification and engineering support provided by St. Onge, Ruff & Associates (York, PA) Alberta-based fixture manufacturer Luminescence

Energy Cost Savings:

Estimated at \$75,000 per year, a 47% reduction from their previous annual expenses

Other Benefits of Upgrade:

- Maintenance cost reduction
- High lumen maintenance



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