

LED Case Study



Burrows Packaging/Novolex

Mount Vernon, OH



Background

Burrows™ is the go-to supplier for restaurants, supermarkets, convenience stores, concessionaires, and caterers. Their vast array of paper-based products includes clamshells, cartons, wraps, basket liners, and napkins. They have been creating unique products for more than 100 years, and now have four manufacturing plants in the U.S. and Europe to allow them to serve large multinational customers and region-specific brands around the globe.

Burrows facility management sought to replace the multi-lamp T5HO system at its Mount Vernon, OH production facility to improve overall lighting levels, address lighting issues, eliminate maintenance issues, and provide a rapid return on investment with annual energy savings.

Industrial Energy Savings audited the existing lighting system and with facility management inputs, developed an LED lighting solution to meet the needs of the staff while providing an attractively priced project. The chosen solution improved overall lighting levels by more than 35%, provided direct sensor savings, and addressed multiple areas which had suffered from low light levels while still reducing lighting energy expenses by an estimated 31% annually.

By The Numbers

Facility Size- 80,000 FT²
Year Installed- March 2023

Existing Fixture Data

PRODUCTION

165 - 4 Lamp T5HO Fluorescent High Bay

WAREHOUSE

81 - 4 Lamp T5HO Fluorescent High Bay

OFFICES

44 - 4 Lamp F32T8 Fluorescent
Recessed Troffers

LED Solutions

PRODUCTION

208 - Illumadyne 4CB 44 LED High Bay
with Programmable Motion Sensor

WAREHOUSE

81 - Illumadyne 4CB 44 LED High Bay
with Programmable Motion Sensor

OFFICES

44 - Illumadyne 24TRU Universal
Retrofit Kit

*Total Luminaires Retrofit/Replaced: 402

Energy Summary

419,802 kwh Reduction (67.3%)

Economic Analysis

Annual Estimated Energy Savings: \$27,028.90
Annual Estimated Maintenance Savings: \$5,495.37
Payback (years): 3.84
IRR: 26%



The New Lighting Design

The IES solution consisted of replacing all existing T5HO high bays with new Illumadyne LED high bays with onboard programmable motion sensors and adding additional luminaires to fill gaps in the existing lighting layout in several areas. The programmable sensors will allow facility managers to adjust trim levels and sensor behaviors to better fit the needs of the workforce. The 24TRU retrofit kit provided an updated look to the offices areas as well as much improved lighting quality.

The IES crew commissioned the system to provide improved lighting levels while reaping additional savings by setting high end trim and sensor behaviors for all warehouse areas before finalizing the project with Burrows facility management.

Economic Results

The new LED lighting system is expected to generate over \$31,520.00 in total annual savings and provide a simple payback in just 3.60 years.

LED Highbay Specification:

Illumadyne 4CB 44 (DLC Listed, Premium)

- 25,000 Lumens
- 82 CRI
- 156 System Watts
- L70= 140,000 HRS (50C)
- 5,000K
- 7-Year Limited Warranty

2x4 Troffer Kit Specification:

Illumadyne 24TRU 42 (DLC Listed, Premium)

- 5,250 Lumens
- 82 CRI
- 42 System Watts
- L70= +100,000 HRS (50C)
- 4,000K
- 7-Year Limited Warranty

Controls Strategy

The lighting controls strategy leverages on-board programmable sensors combined with an Illuma-source 0-10 volt dimming driver. High-end trim was set to 60% provide the required lightings levels.

Environmental Summary

CO2 Reduction: 852,722 lbs
 NOX Reduction: 2,369 lbs

Equal to 74 Combustible Engine Cars Removed
 Equal to 1,279 Trees Planted

Customer Feedback

"The installation crew was very professional, polite and considerate to our production needs. They were more than willing to work around and accommodate our machine work schedule. They altered their working schedule by working days a few days, night the majority time and working the weekend. Knowing how hard it is to flit shifts from days to night, this was greatly appreciated.

The crew did not leave any signs that they were even here, no wires, no dirt....nothing. When I asked for this to be a turn-key installation, that is exactly what we got. The install was a great success. The whole plant is amazed at the transformation of our facility.

It not only brightened the place up but has also seemed to wake our employees up. lol

The pro....we can now see everything (no dimly lit areas). The con....we can now see everything (it has exposed some well needed cleaning).

Thank you so very much for making this one of the best outside contractor project experiences I have ever been apart of."

- M. Lewis, Maintenance Manager, Mt. Vernon, OH

