

## **CASE STUDY**

Location: Columbus, OH Application: Cold Storage Warehouse

# Essentials Series 4.0 (ES4)

The ES4 delivers superior performance, quality and versatility in low bay and high bay applications. The fixture operates at temperatures as low as -40°C, perfect for cold storage and has rotatable outer modules to optimize light distribution.

### RESULTS

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Cloverleaf Cold Storage replaced 170 600W HIDs with Essentials Series 4.0 High Bays. The energy savings from the upgraded fixtures plus the added controls coupled with the safety benefits and quick payback caused the company to install the ES4 in 9 of their other locations. **90%** ENERGY REDUCTION

824,224 kWh DISPLACED ENERGY

\$125,510 ANNUAL ENERGY SAVINGS

### **OVERVIEW**

Cloverleaf Cold Storage was seeking to upgrade the lighting in their 300,000 square-foot cold storage facility to reduce energy consumption, improve the lighting and integrate an advanced control system for monitoring. The Cloverleaf Cold Storage corporate team was also looking to upgrade the lighting to create a safer environment in their plant. With the assistance of Keen Technical Solutions, an ESCO company, they selected the Essential Series LED high bays with an integrated control system to do just that.

### CHALLENGE

In a frigid environment like a cold storage freezer, heat generated from incumbent lighting coupled with poor performance presented a myriad of challenges, especially with high-energy consumption at Cloverleaf's 24/7 facility. The incumbent HID lamps at the Cloverleaf plant created heat which the facility team had to compensate for when cooling the freezer rooms, as to not adversely affect the required optimal temperatures. The Cloverleaf Cold Storage corporate team was also looking to upgrade the lighting to create a safer environment in their plant.

#### SOLUTION

The Cloverleaf Cold Storage corporate team was excited to adopt the Essentials Series LED high bays with an integrated control system. The 300,000-squarefoot Lakeville facility operates 24/7 in below zero temperatures. The Essentials Series 4.0 LED high bay is rated for ambient operating temperatures ranging from minimum -40°C (-40°F) to maximum 65°C (149°F), which made it the perfect fixture for this cold storage application.

The Essential Series 4.0 LED high bays feature rotatable outer modules to optimize the light distribution and provide the highest flexibility for any application, which makes for easy field adjustments once installed. This allowed Cloverleaf to properly illuminate both the aisles and racking areas within their facility. Keen Technical Solutions' installation team worked quickly on a one for one replacement. A total of 170 600watt HID's were replaced with the Essential Series 4.0 LED high bays integrated with controls. As part of this control system, occupancy sensors turn off lights when employees are not in the freezers, which contributed to the immediate energy savings.

This advanced control system was installed throughout the facility to allow managers to monitor and control the system. This coupled with the Essentials LED high bays generated up to 90% energy savings through reduced run hours, task lighting, motion/ambient sensors, and scheduling. Cloverleaf's management team discovered that the new lighting system created a safer, more energy-efficient working environment, saving an estimated 824,224 kWh's annually. This substantial energy savings created a quick payback of 1.8 years.

Because of the positive results and savings the Cloverleaf Cold Storage team experienced after installing the Essential Series 4.0 LED high bays, they implemented the high bays across 9 of their other locations. The estimated annual kWh's saved corporate wide is about 13 million.

> This project was a nobrainer. Integrating controls with efficient lighting has allowed my business to enjoy immediate energy savings, as well as improve safety in the plant."

> > - William Feiges Former Business Owner, Cloverleaf



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