



Cold Storage Company Saves 13 Million kWh's Annually with Flex Lighting Solutions

“ This project was a no-brainer. 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 Cold Storage

Location: Columbus, OH

Application: Cold Storage Warehouse

End Customer: Cloverleaf Cold Storage

Partner: Keen Technical Solutions, LLC

Facility

For over 60 years, Cloverleaf Cold Storage has offered public and contract storage in refrigerated, frozen, and dry environments. They are the 11th largest cold storage warehouse company in the world and the 8th largest in North America. With 21 facilities throughout North America, the Columbus, OH location is a 300,000 square-foot cold storage warehouse.

Key Results

- 90% Energy Savings
- 824,224 Annual kWh Saved
- 1 Year Payback
- Improved Safety
- Eliminated Heat from Incumbent Lighting in Freezer Rooms



\$125,510

annual energy savings



824,224 kWh

annual energy reduction

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 Flex Lighting Solutions 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 Flex Lighting Solutions LED high bays with an integrated control system. The 300,000-square-foot Lakeville facility operates 24/7



Essentials Series 4.0

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.

“After working with our customer, they were interested in converting to a smart lighting and control system, one with occupancy sensors and a good quality LED light fixture that was going to be robust enough to hold up in harsh conditions,” shared Eli Brown, Energy Solutions Consultant at Keen Technical Solutions. “Ultimately, we all agreed Flex’s Essential Series 4.0 LED high bay was the best choice for their 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 170 600-watt 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 Flex 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 Flex Lighting Solutions across 9 of their other locations. The estimated annual kWh’s saved corporate wide is about 13 Million.

Cloverleaf Cold Storage Locations Upgraded with Flex LED High Bays	
Columbus, OH	Lakeville, MN
Eagan, MN	Sumter, SC
Le Mars, IA	Chesapeake, VA
Chillicothe, MO	Plant 1 - Sioux City, IA
Crest Hill, IL	Plant 6 - Sioux City, IA

For more information, please visit www.flexlightingsolutions.com

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