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Embracing LED

US Foods adopts Orion's newest technology for freezers

For decades, heat-pump-ing, energy-sapping high-intensity discharge (HID) light fixtures were the norm in freezers at cold-storage facilities across the country.

A few years ago, high-efficiency fluorescent lighting improved its cold-temperature performance, sparking a wave of money-saving freezer retrofits.

And now, another development:

light-emitting diode (LED) technology has stepped strong into the cold-storage arena and flexed its muscle in freezers, showing it thrives in the coldest conditions.

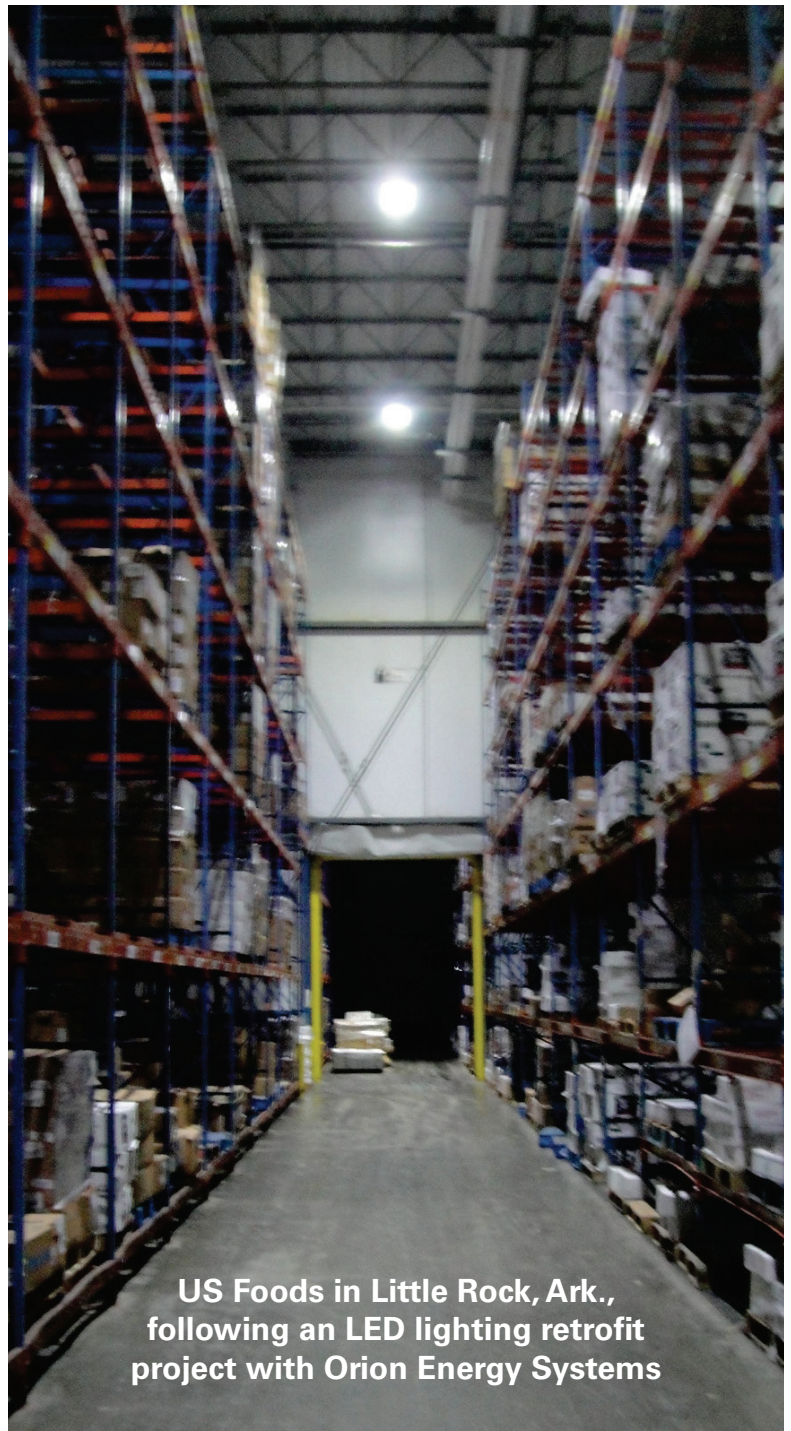
During this evolution of cold-storage lighting, industry leaders US Foods and Orion Energy Systems have proactively spearheaded change, and along the way have teamed up to con- See **LED**, page 2

"For cold-storage lighting, fluorescent is quite good and energy-efficient. But in frigid freezer conditions, LED is better."

John Jepsen
Director of Energy Management
US Foods



Orion Energy Systems has retrofitted 388,302 square feet of freezer space at 11 US Foods facilities with LED technology.



US Foods in Little Rock, Ark., following an LED lighting retrofit project with Orion Energy Systems

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serve energy and save US Foods millions of dollars in electricity costs.

In 2009, US Foods, one of the country's most innovative food companies and leading distributors, began retrofit projects to phase out its 400-watt HID lighting in favor of Orion's 150-watt fluorescent solution at more than two-dozen facilities.

But less than three years later, with cold-friendly LED lighting's technology and pricing finally starting to meet its long-simmering potential, Orion began installing LED freezer lighting in US Foods facilities from coast to coast.

"For cold-storage lighting, fluorescent is quite good and energy-efficient. But in frigid freezer conditions, LED is better," said John Jepsen, director of energy management for US Foods.

Rosemont, Ill.-based food and distribution company US Foods, has more than 60 locations across the country and has worked with Manitowoc, Wis.-based Orion Energy Systems to make a difference in terms of energy consumed and money saved. Orion has installed both fluorescent and LED solutions for freezer lighting, but all of the upcoming projects will be LED.

Fluorescent-to-LED retrofits are slated for La Mirada and Livermore in California and in Perth Amboy, N.J. Meanwhile, HID-to-LED retrofits are scheduled for Bensenville, Ill.; Knoxville, Tenn.;

APRIL/MAY 2012
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Orion-US Foods LED lighting featured in national trade publication

The article on these pages is a reprinted version of the feature story that appeared in the April/May 2012 edition of Frozen Food Digest.

Frozen Food Digest is a bi-monthly, industry-leading national trade publication that offers complete cov-

erage of the retail and food service operations, including equipment, supplies, and transportation, free-

Omaha, Neb.; and Memphis, Tenn.

LED technology in general is a hot topic in the lighting industry, and it has its critics. With hundreds of LED products and suppliers across the lighting landscape, quality varies. Some lighting experts say LED doesn't hold up as well as fluorescent for interior or exterior lighting in warm or even variable conditions.

But in extreme cold, like in a freezer, LED shines. It has a 100,000-plus-hour life expect-

tancy for freezer applications, and 100-percent instant startup in even the coldest freezers.

That long LED lifespan is highly attractive to people who perform maintenance in freezers that can get colder than minus-20 degrees Fahrenheit.

"Nobody wants to work on the lights in the freezer," Jepsen said. "You can take the fixture down and take it back to the shop and work on it there, but getting the lift up there to take the fixture down can be difficult. With the

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Foods facility in Little Rock, Ark., shows annual energy cost savings from the LED retrofit at nearly \$80,000. Jepsen said another recent LED project is yielding annual savings of at least \$130,000.

Leaving the HID technology behind makes sense, Jepsen said. HIDs produce heat and put strain on the freezer's compressors. The light from HID is not as true as from fluorescent or LED, and energy consumption from an HID fixture is significantly greater than from fluorescent or LED.

"The savings going away from HID are significant, and the quality of light is much better," Jepsen said "But when looking at changing from fluorescent to LED, it's a bit of a mindset change. The upfront cost for LED is a bit more, but when you factor in the longer life of the product, that's where the additional savings come in."

Jepsen said all of Orion's new lighting projects at US Foods over the past three years have included motion control. For the LED fixtures and their quick restrike capability, it's all on or all off, depending on motion.

The fluorescent freezer fixtures can never be all off, Jepsen explained, because of the warm-up time in extreme cold and the fact that US Foods freezers are in use day and night.

"If you completely turn the fluorescent fixture off, it could take up to a minute to get that light to full brightness," Jepsen said. "It's important in our warehouse that we have proper lighting for our warehouse staff at all times."

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John Jepsen

**Director of Energy Management
US Foods**

Depending on what part of the country they're located in, and the regional utility rates, some of US Foods' facilities will stay with the efficient fluorescent lighting. That technology is still strong, and continues to save US Foods money while reducing energy consumption and improving light quality.

But in California, for example, where electricity rates are high, Orion's LED technology makes too much sense to ignore.

When it comes to the evolution of lighting, keeping up with money-saving, energy-sparing technology is a challenge US Foods and Orion continue to take on together.

LED lights and the motion sensors, it's likely we won't have to touch those fixtures for 10 or 15 years."

Another nice thing about LEDs is their instant re-strike ability in extreme cold.

"With LEDs, you're instantly at full brightness," Jepsen said. "And with the motion sensors, they can be either all on or all off. You're getting the ultimate energy savings with the lights off a high percentage of the time."

One case study, for the US



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Anheuser Busch, Coca-Cola, Kraft, PepsiCo, Sysco Foods, MillerCoors and US Foods are just a few of our many customers that are dramatically reducing their lighting costs – without compromise – in coolers and freezers. 3 million square feet of freezer storage have already converted to LED.

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