

SnoTemp Gains Better, Higher Quality Lighting with 50% Fewer Fixtures and Massive Energy Savings

Multi-Facility Deployment Addresses Complex Lighting Needs in Bulk Warehousing Environment

Headquartered in Eugene, Oregon, SnoTemp Cold Storage is a family-owned warehousing and distribution company with more than 15 million cubic feet of climate-controlled space under management. To meet the needs of a rapidly growing customer base, the company owns and operates two centrally located facilities along the I-5 corridor in Eugene and Albany, Oregon, offering easy access to vital transportation routes. For more than 50 years, SnoTemp Cold Storage (SnoTemp) has thrived by continuously evolving to meet client needs and through exceptional customer service focused on innovation, operational efficiency, quality, and value.

Deeply committed to the sustainability of its business operations, the SnoTemp management team recently completed a range of energy efficiency facility upgrades, resulting in more than 5-million kilowatt hours (kWh) of electricity saved annually. A major contributor to these extraordinary savings was lighting. Specifically, Digital Lumens' Intelligent LED Lighting System. Between the Eugene and Albany facilities — comprised of one new-build and two retrofit installations — the Digital Lumens system enabled SnoTemp to:

- Save in excess of one million kWh annually in lighting-related energy usage.
- Reduce heat-related energy loads on refrigeration systems by more than 500,000 kWh annually.
- Eliminate disruptive re-lamping and re-ballasting events, saving more than \$12,000 in annual maintenance costs.
- Deliver consistent levels of high-quality light throughout its facilities, enhancing productivity, safety and energy savings.

“The Digital Lumens deployment was a significant win for our organization,” said Jason Lafferty, Vice President and General Manager for SnoTemp. “Our work teams love it for the natural quality of light it delivers, even to areas of the facility that traditionally have been very hard to illuminate; our maintenance teams for the ease of modifying lighting behaviors without touching a lighting fixture, while eliminating highly disruptive maintenance tasks; and management, for its ability to collect, analyze and document facility-wide energy use, occupancy patterns and savings down to the individual fixture level. Add extraordinary energy savings to the list, which exceeded our initial funding estimates, and the result is one truly happy customer.”

UNIQUE DESIGN SOLVES TRADITIONAL LIGHTING CHALLENGES

Facing decades-old challenges lighting their bulk warehousing facilities, the SnoTemp management team tested a wide range of fluorescent and LED alternatives for their first upgrade project, retrofitting high pressure sodium (HPS) fixtures at the Eugene facility in May of 2013. With wide-open center aisles and stacked bulk storage spaces along the perimeter — sometimes 60 feet away from the center line — maintaining appropriate light levels was difficult. With traditional HID, HIF or HPS lighting, illuminating the vertical stacks forced management to either significantly over-light surrounding spaces to get minimal illumination to the stacks, dramatically increasing the fixture count and producing unwanted glare, or, under-light space, with predictable ramifications on productivity and safety. Designed from the ground-up with three independently aimed and dimmable light bars in each fixture, the Digital Lumens system neatly solved this challenge.

SnoTemp^o

LOCATION

EUGENE and ALBANY, OREGON

ANNUAL kWh SAVINGS

1,000,000+

ANNUAL MAINTENANCE SAVINGS

\$12,000

TYPICAL OPERATIONAL SCHEDULE

6AM - 6PM M-F

ENVIRONMENT

COLD STORAGE WAREHOUSE

PREVIOUS LIGHTING SOLUTION

HIGH-PRESSURE SODIUM (HPS)

PARTNER

GROOM ENERGY SOLUTIONS

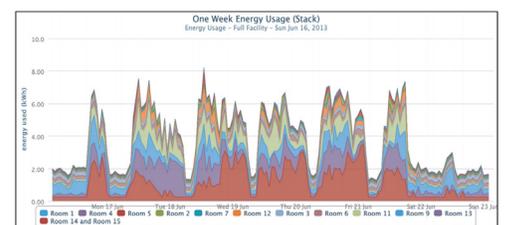


Figure 1: One-week occupancy and energy usage (kWh) reports from the Eugene, OR facility.

“The benefits of being able to rotate light bars within each fixture to direct lighting to critical work surfaces cannot be overstated,” said Erik Moser, sales engineer for Groom Energy Solutions, a national leader in energy efficient solutions for industrial businesses engaged by SnoTemp to design and manage the retrofit. “When combined with the ability to turn lighting off when no one is present, it solves many of the lighting challenges we see in industrial facilities today. Without question, it played a major role in the SnoTemp decision to upgrade to the Digital Lumens system, in addition to the energy, maintenance and refrigeration savings.”

FEWER FIXTURES, BETTER LIGHTING

By enabling managers to meet all of their footcandle targets without over-lighting, SnoTemp was able to reduce its fixture count for the retrofit from 232 HPS 150-watt and 250-watt fixtures pre-retrofit, to 114 intelligent LEDs post-retrofit, a reduction of more than 50%. And for the first time, they also gained the ability to:

- Automatically turn on, off or dim lighting to save energy without worrying about ramp-up times or cycling impacts on the longevity of the lamp source or fixture.
- Adapt lighting to widely varying needs (e.g. high traffic, fast turnover product storage areas versus seasonally intense traffic areas for harvested products, followed by low space usage for the rest of the year as fruits and vegetables are shipped on demand).
- Respond to unscheduled or unique events, such as operational emergencies, inventory assessments or a facility open house, by instantly changing lighting settings and saving those settings for future use.
- Document precisely how lighting energy is being used throughout the facility, with visibility down to the individual fixture level.
- Inform the meter technician sent by the utility company that the precipitous drop in energy use was, in fact, correct — and prove it.

“The Digital Lumens system is a highly versatile solution that is performing beyond our expectations on so many levels — quality and robustness of design, new and retrofit installation, ease of transitioning to a managed lighting environment and kWh savings, to name a few,” continued Mr. Lafferty. “As importantly, energy conservation is all about control and Digital Lumens provides that in spades, backed by the intelligence we need to make smarter, better decisions about how we deliver lighting within our facilities. It’s a wholly new way to think about lighting that, for us, just came naturally.”

FROM ONE TO MANY

Once the retrofit project was complete at the Eugene facility, the SnoTemp management team decided to upgrade its 280,000-square foot warehouse in Albany, Oregon, to the Intelligent Lighting System. In the process, they reduced the facility’s fixture count from 479 HPS to 216 intelligent LED fixtures, mirroring the more than

50% reduction seen at the Eugene facility. With better, higher quality lighting, they are also saving more than 550,000 kWh of electricity annually at this facility, while gaining the control they need to adjust to highly variable seasonal workloads based on harvesting and shipping schedules for regional fruits and vegetables.

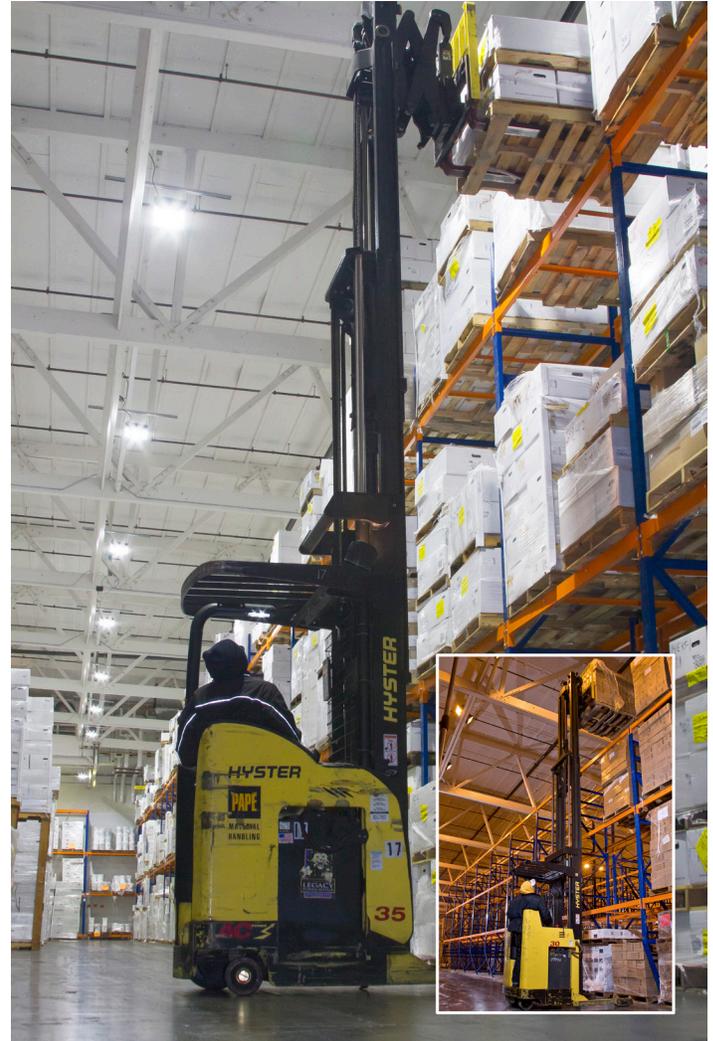


Figure 2: Lighting quality before (inset) and after at the Eugene, OR facility.

Most recently, SnoTemp completed a 70,000-square foot addition to its Eugene facility, an expansion driven by increased customer demand for its services. During the planning and design phase, the management team at SnoTemp specifically called for the use of Digital Lumens intelligent LEDs within the new-build space. They ended up deploying a combination of narrow and wide optic intelligent LED fixtures, which are used for lighting stacked or open spaces, respectively.

In addition to lighting, SnoTemp has implemented a range of other energy efficiency projects, including new refrigeration equipment and control systems within all three facilities. In this way, management continues to invest in the sustainability of its business operations, with truly impressive results.