

High school qualifies for energy rebates

Result

- The Copeland Scroll™ Outdoor Condensing Unit X-Line accounted for approximately 36% energy savings when compared to traditional or standard condensing units
- Built-in CoreSense™ Diagnostics gives refrigeration technicians information to quickly and accurately troubleshoot any issues, avoid unneeded service calls, and protect the system from premature failure
- The project qualified for a \$967 custom utility rebate to offset total installation costs, significantly improving projected return on investment for subsequent equipment upgrades



Application

Refrigeration system for walk-in freezers.

Customer

Sidney High School cafeteria in Sidney, Ohio.

Challenge

Educational facilities in the U.S. and Canada spend about \$16 billion on energy each year. Schools spend more on energy than any other expense except personnel. However, energy is one of the few expenses a school can reduce without sacrificing educational quality.

Electricity can be charged based on two measures: demand and consumption. The consumption part of the bill is based on the amount of electricity in kWh that the school building consumes each month. The demand part is the peak demand in kilowatts occurring within the month. Demand charges can vary widely, and the challenge is to reduce them whenever possible.



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Sidney High School depends on Eck Refrigeration to recommend energy-saving service practices and new refrigeration technologies. Eck approached Sidney High School with a plan to compare their current refrigeration equipment to newer technology in a real-world field test location.

The local utility, Dayton Power & Light (DP&L), was also interested in learning about the potential energy savings from this technology. They brought in Go Sustainable Energy to conduct pre-installation and post-installation metering of the refrigeration condensing unit manufactured by Emerson Climate Technologies. Metering equipment was installed to measure power, current, and walk-in freezer air temperature.

Solution

Field tests were conducted in Sidney, Ohio in a back-to-back test. The location was instrumented with data acquisition systems that recorded temperatures and power consumption. The old condensing unit was run for over a month before being replaced with the new X-Line unit. The performance of the two units was compared during periods of similar weather and usage.

The energy efficiency of the entire system was improved beyond initial expectations. The Copeland Scroll™ Outdoor Condensing Unit X-Line accounted for approximately 36% energy savings when compared to the old unit. Baseline peak demand was 5,270 W and the energy consumption 30,797 kWh per year. Based on post-installation logged data, estimated new peak demand is 4,551 W and the energy consumption is 19,614 kWh per year. This corresponds to a peak demand reduction of 719 W and an annual energy savings of 11,182 kWh per year. This project qualifies for a \$966.51 rebate.

Resources

Learn more about the Copeland Scroll Outdoor Condensing Unit visit: [EmersonClimate.com /copelandoutdoorunit](http://EmersonClimate.com/copelandoutdoorunit)



Advanced walk-in refrigeration technology

The Copeland Scroll™ Outdoor Condensing Unit XJ Series ranges in size from 1.5-6 HP, and offers energy savings of up to 40% compared to standard industry condensing units, making it perfectly suited for many walk-in cooler and freezer applications. The XJ Series unit incorporates multiple advances in refrigeration as standard features into a single unit solution, including:

- The latest generation Copeland Scroll refrigeration compressors which have been optimized for the highest annual energy efficiency
- Ultra-quiet and efficient variable-speed PSC fan motors
- Large condenser coils for more efficient heat transfer
- High efficiency fan blade design
- Proprietary electronic algorithms to optimize energy performance
- Exclusive Enhanced Vapor Injection (EVI) circuit on low temperature units for added capacity and system efficiency
- Exclusive CoreSense™ Diagnostics to enable faster, more accurate service, along with compressor protection benefits to lower total lifecycle costs

The XJ Series unit's slim profile, light weight, wall mount capability, and sound reduction features may also offer customers added benefits from:

- Crane rental savings
- Flexible location options previously not available
- Ease of installation and service savings
- Compliance with noise ordinances
- A more attractive and quieter atmosphere for neighbors and customers

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