

# COPELAND SCROLL™

## OUTDOOR CONDENSING UNITS



The Copeland Scroll™ Outdoor Condensing Unit (X-Line Series) for commercial refrigeration applications offers c-store operators the greatest energy efficiency, performance and flexibility available in a standard condensing unit.



# X-Line Units



**Perfectly suited for:**  
Walk-in coolers and  
freezers  
Display cases  
Other refrigeration needs.

**Range 3/4 – 6 HP**



# The X-Line Advantage

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The X-Line Series' features make it the best option on the market for c-store

**Have you** ever wished for greater installation flexibility?



**Do you** have to operate your store within noise ordinance constraints?

**Are you** concerned about regulatory constraints for your region? Do you feel pressured by your headquarters to maintain energy costs?

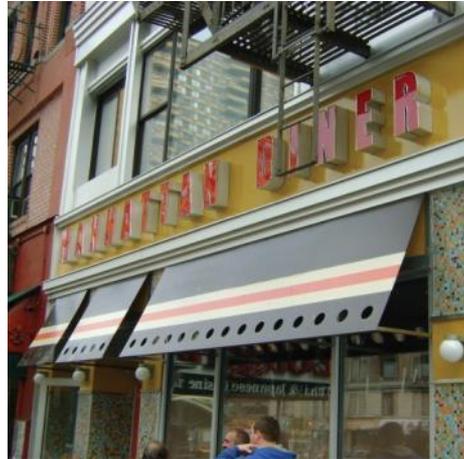
**Have you** ever wanted to track and monitor your equipment performance?

**Is your** refrigeration equipment more of a problem than it should be?



## SLIM PROFILE

The X-Lines' **slim profile, lighter weight** and **wall mount capabilities** means that operators avoid more costly solutions due to location issues. These features also mean lower installation costs and **improved appearance**. For Manhattan Diner, the flexible installation options offered by the X-Line made all the difference.



Manhattan Diner, located in NYC at 94th & Broadway, could not install conventional condensing units on the roof of its six-story building due to space constraints. A seven-foot wide alley was the only other location option. The X-Line condensing unit's **slim profile allowed the units to be installed safely on the building** wall using heavy-duty brackets – high enough not to interfere with the ground areas between New York City's alleyways.

*“After seeing how easy the installation was, I am going to use the X-Line for another job because of the ease of installation.”*

Nick Benetos, Owner, Gibsen HVAC

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QUIET

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The X-Line Condensing Unit's **ultra-quiet design** means that it **operates at a low decibel level**, providing a more peaceful atmosphere for customers and neighbors. For Sun King Brewery, the X-Line's low decibel levels were a game changer.



² Sound values shown represent the XJ unit's lowest and highest operating dBA measurements, or typical industry outdoor unit published data, for both MT and LT products. Sound pressure values are 10 feet from the unit at 25°F evap for MT and -10°F evap for LT at 90°F ambient. A sound reduction of up to 3 dBA will occur in ambient temperatures below 70°F. This data is typical of "free field" conditions for horizontal air cooled condensing units and may vary depending on the condensing unit installation. There are many factors that affect the sound reading of a condensing unit such as unit mounting, reflecting walls, background noise and operating condition.

Sun King Brewery, a craft brewery located in Indianapolis, Indiana, was forced to put its condensing unit in the front of its downtown location, within close proximity to the main parking lot and front entrance of the building. A discreet solution was critical. The X-Line was **selected for its ultra-low sound levels** compared to typical outdoor condensing units.

*"The X-Line Condensing Units exceeded my expectations. The solution makes sense for small business owners who need peace of mind that their equipment will work"*

Omar Robinson, President, Sun King Brewery

# The X-Line Advantage

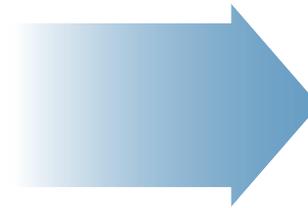
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ENERGY  
EFFICIENT

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**ENERGY  
EFFICIENT**

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.



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 Copeland X-Line technology in a real-world field test.

The energy efficiency of the entire system was improved beyond initial expectations. The X-Line Condensing Unit accounted for approximately 36% energy savings when compared to the old unit. This corresponds to a peak demand reduction of 719 W and an annual energy savings of 11,182 kWh per year.

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CONNECTIVITY



## CONNECTIVITY

Diagnostics **protection and electronic controls** **reduce potential service costs** and result in a reliable, longer-lasting unit. United Dairy Farmers has seen how **connectivity minimizes maintenance costs and maximizes system reliability.**



United Dairy Farmers installed X-Line Condensing Units in conjunction with Site-Controller technologies from Emerson Retail Solutions. The X-Line's One-Way Communication Board **communicates with site controllers** which receive alarms and notice statuses from the X-Line.

*“With more pressure than ever on operating profits, our use of Emerson’s solutions have delivered greater energy and maintenance savings than any other initiatives. This helps our store managers focus on delivering the superior customer service United Dairy Farmers is known for, while enabling our operations team to save energy and ensure stores run optimally”*

Brad Lindner, CEO, United Dairy Farmers

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PROTECTION



## PROTECTION

The X-Line unit is **built to withstand harsh environments**. Protective coatings resist corrosion in coastal zones, and **intelligent controls adapt to Arctic blasts and Death Valley heat**. CoreSense protects against common failures and identifies nuisance conditions, avoiding unneeded service.



Maverick Convenience stores selected the X-Line condensing unit **for its ability to handle the heat** – literally. Maverick tested the unit in a Mesquite, Nevada location where temperatures soar to 147 degrees in July. The unit has **performed efficiently without any need for maintenance** for more than two years.

*“ I knew if it would work in 147 degree heat in Mesquite, Nevada, it would work anywhere. Two years later, I have yet to receive a service call.”*

Jim Alexander, Epic Refrigeration

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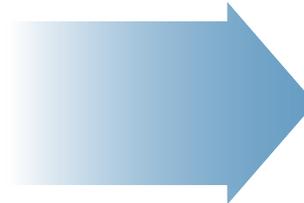
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PROFILE

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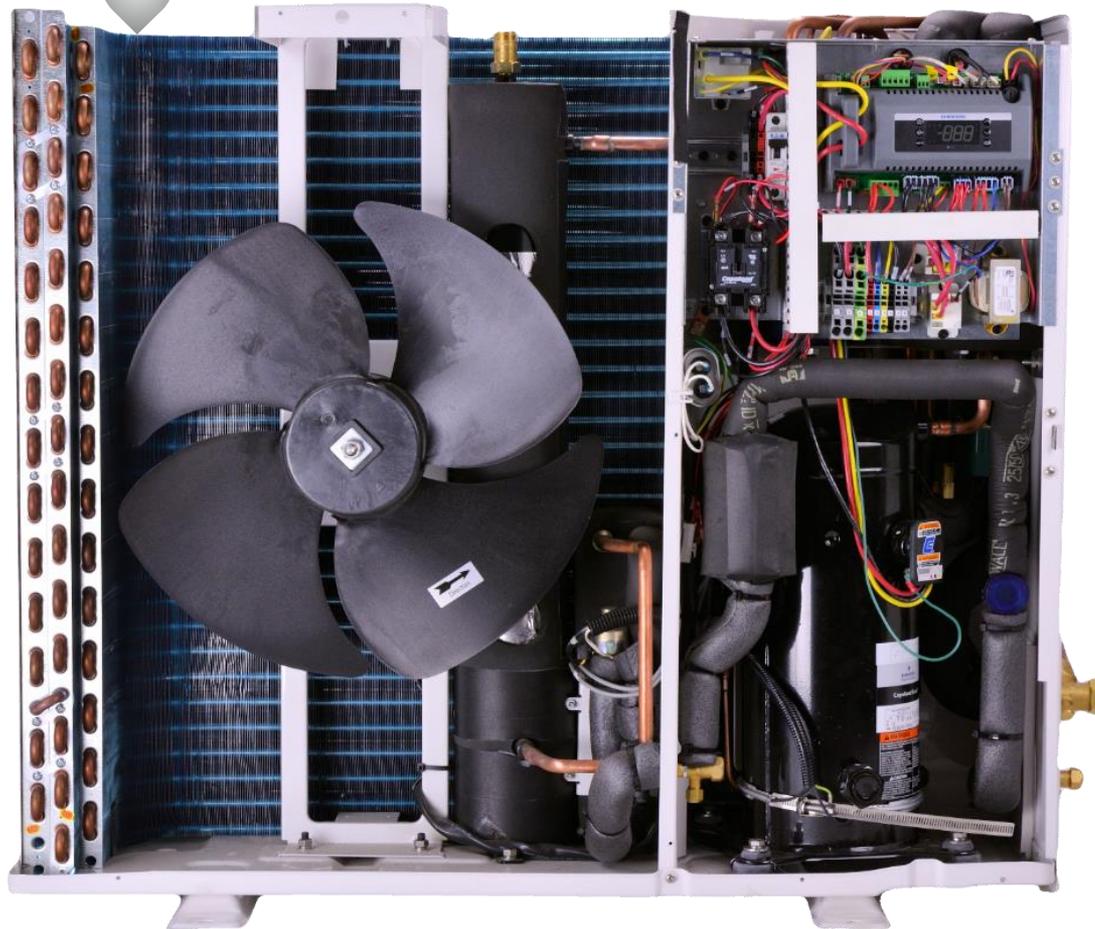
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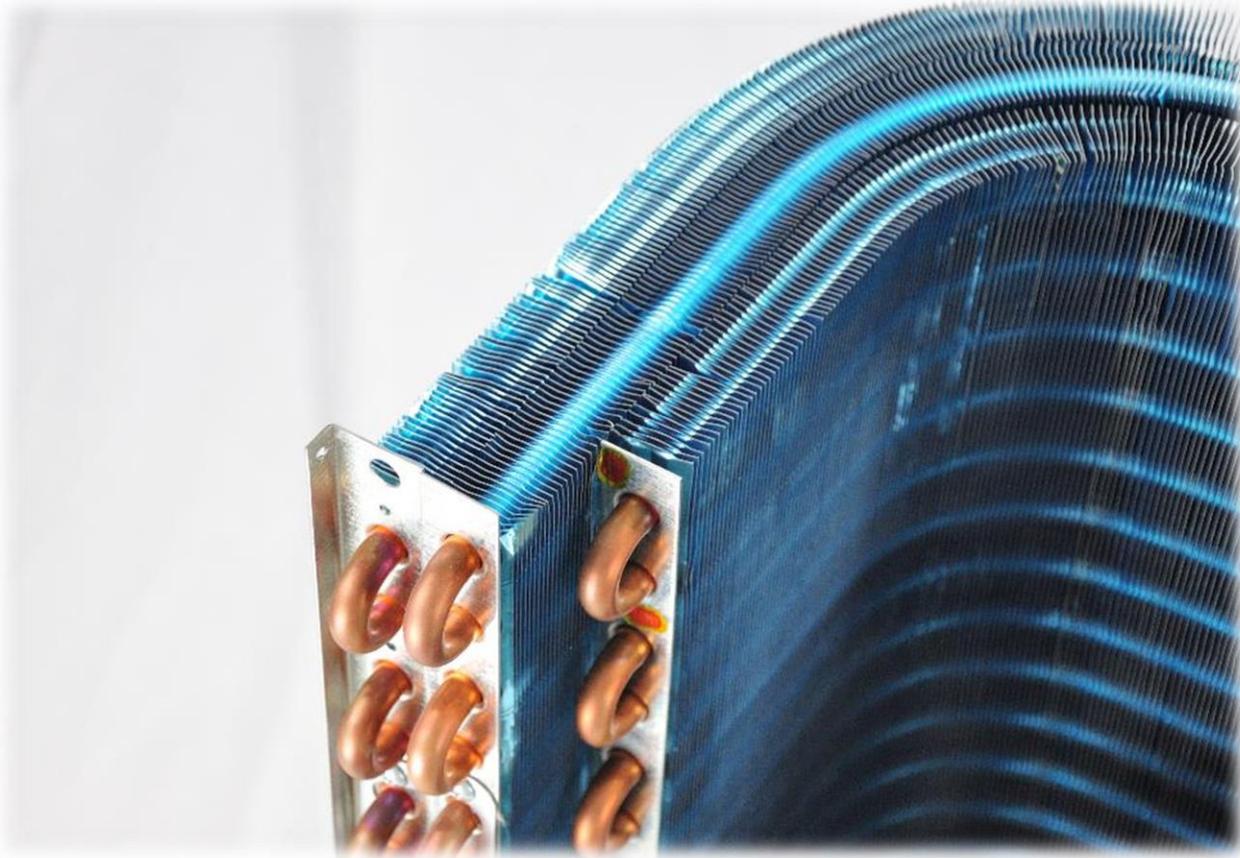


PROTECTION

# X-Line Tour

**Large condenser coils**  
Increases efficiency





## **Large condenser coils**

Increases efficiency, aids in heat transfer, lowers condensing temperatures and allows units to operate in a wider range of ambient temperatures.

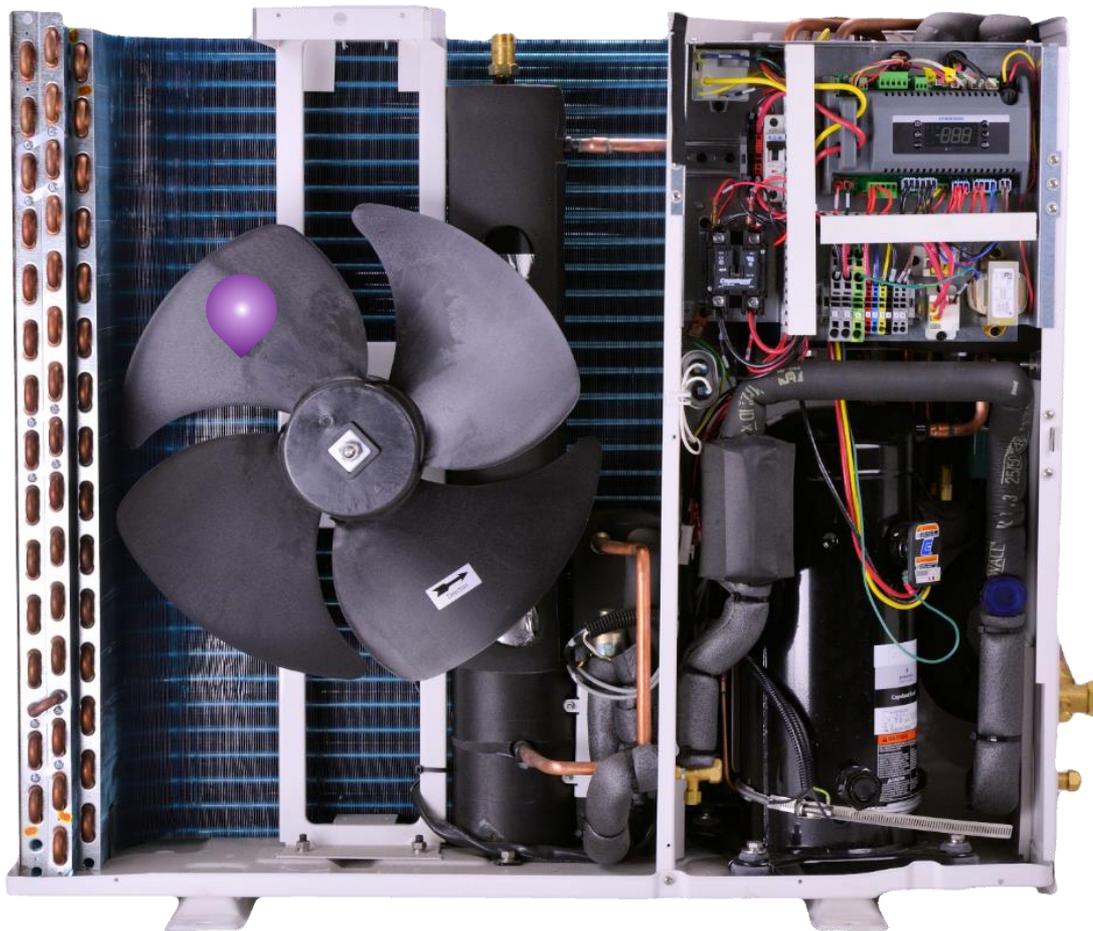
## **Copper tube and coated aluminum fin construction**

Superior reliability and protection against corrosive environments. The hydrophilic coating resists dirt and water, so it stays cleaner longer and is suitable for coastal applications.

# X-Line Tour



**Variable speed  
fan motor control**  
Quiet and efficient  
head pressure control

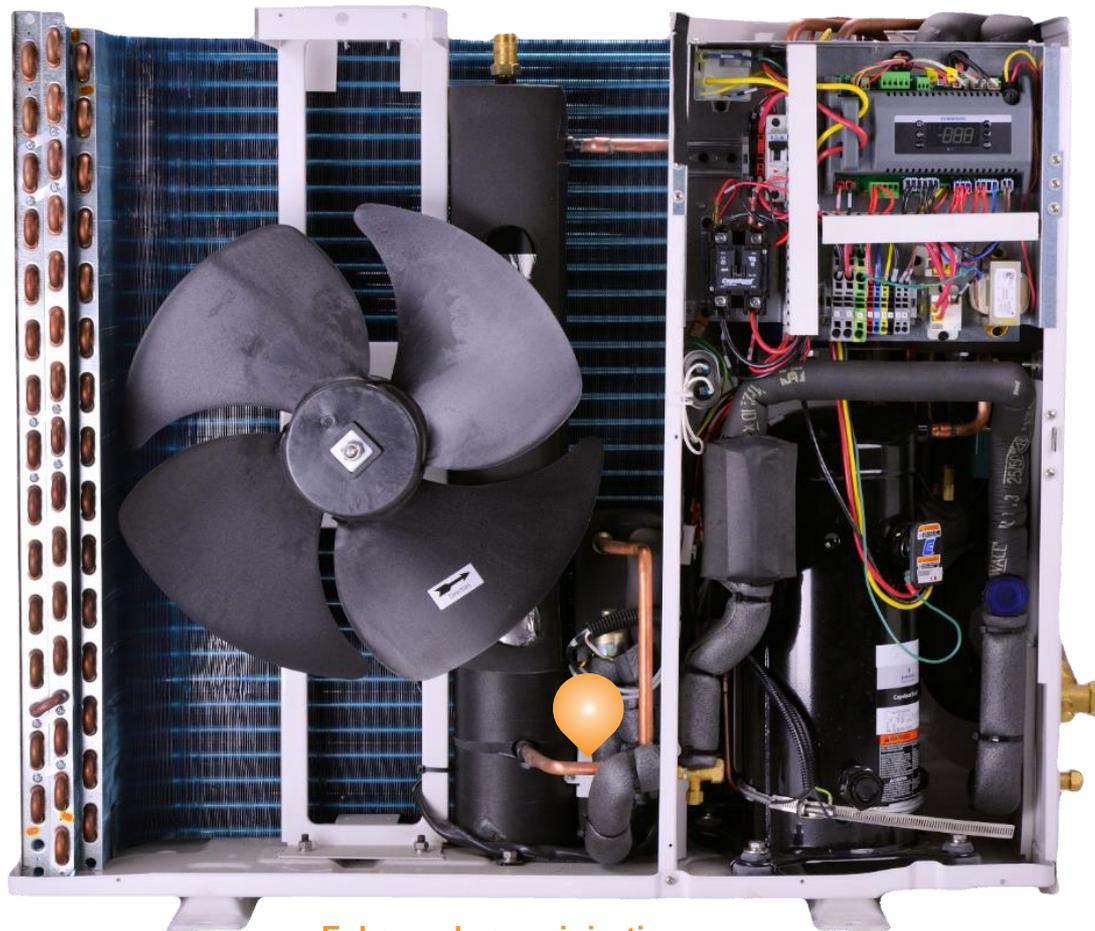


## High efficiency variable speed PSC motor

- Proven PSC motor reliability and efficiency
- Eliminates the need for a mechanical head pressure control valve so less refrigerant is needed
- Allows for floating head pressure and low condensing operation for higher efficiency
- Fan blade design offers virtually noiseless operation (as low as 53 decibels at 10 feet).



# X-Line Tour



**Enhanced vapor injection**  
Improves capacity and energy efficiency



## Enhanced vapor injection

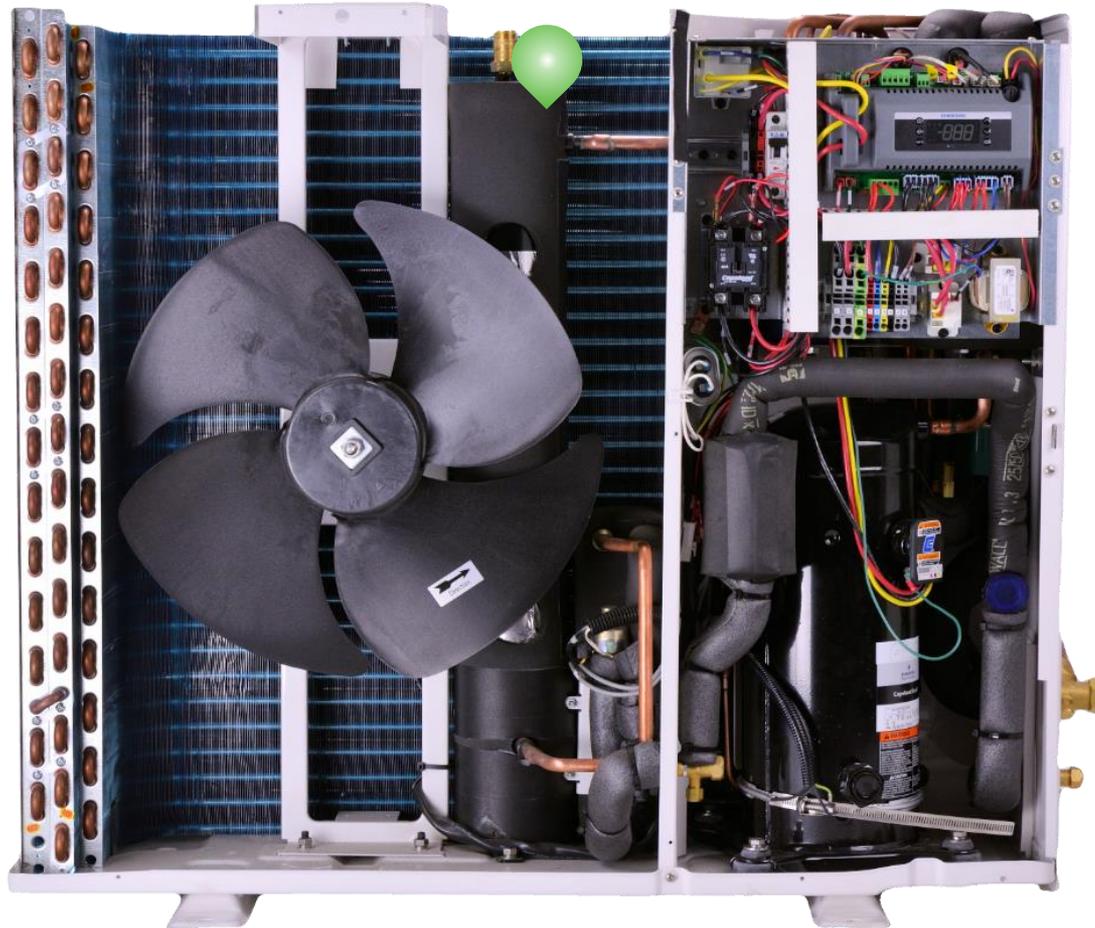
**(low temp models only)**

Improves capacity and energy efficiency by utilizing a sub-cooling circuit. Additionally, vaporized refrigerant from the sub-cooling circuit is injected into the Scroll set, offering increased over-heat protection.

# X-Line Tour

## Heated and insulated receiver

Allows operation in low-ambient situations.



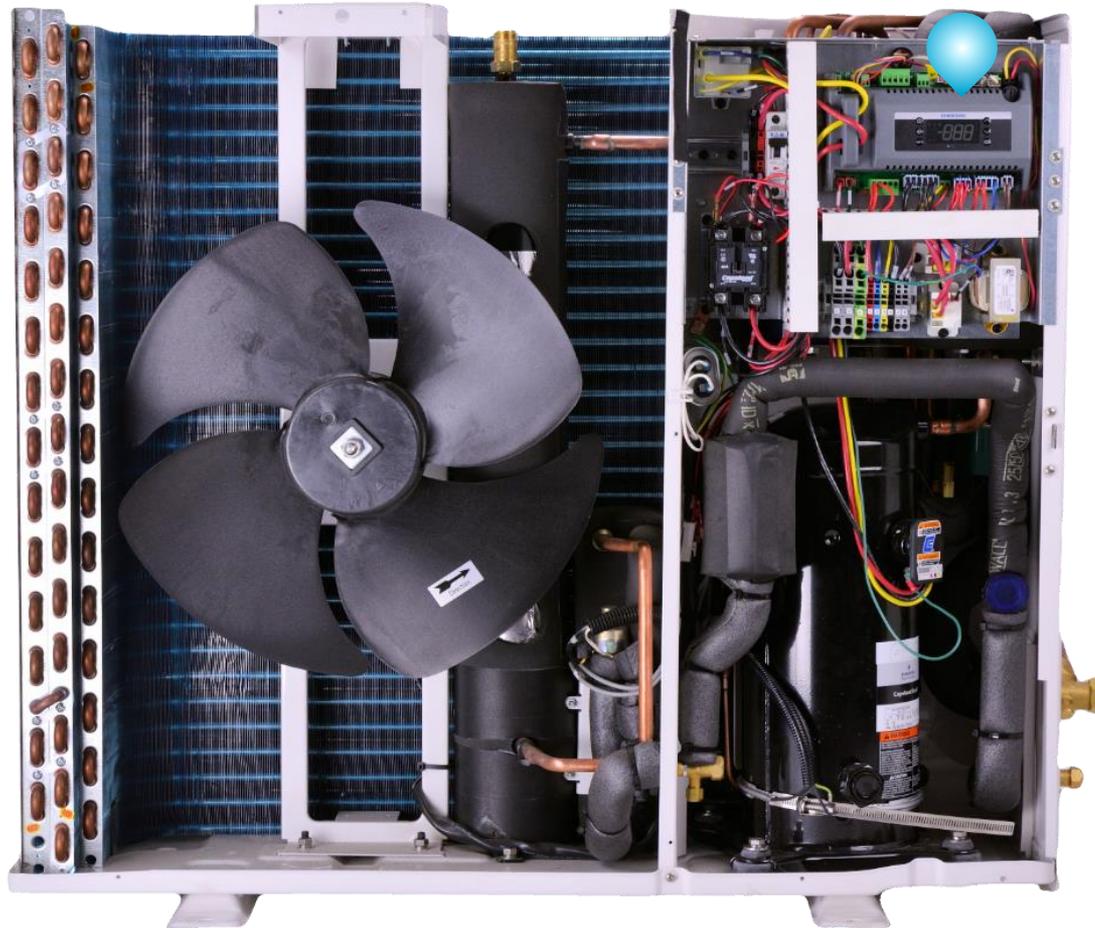
## Heated and insulated receiver

A heated and insulated receiver, along with a liquid line check valve and smart controls, allows the unit to operate in low-ambient temperatures.

Smart controls turn the heater on only when needed so energy is not wasted in warmer weather. A factory installed pressure relief valve allows compliance with municipal zoning codes.



# X-Line Tour



**Electronic controls**  
Offer greater reliability than  
traditional mechanical controls.



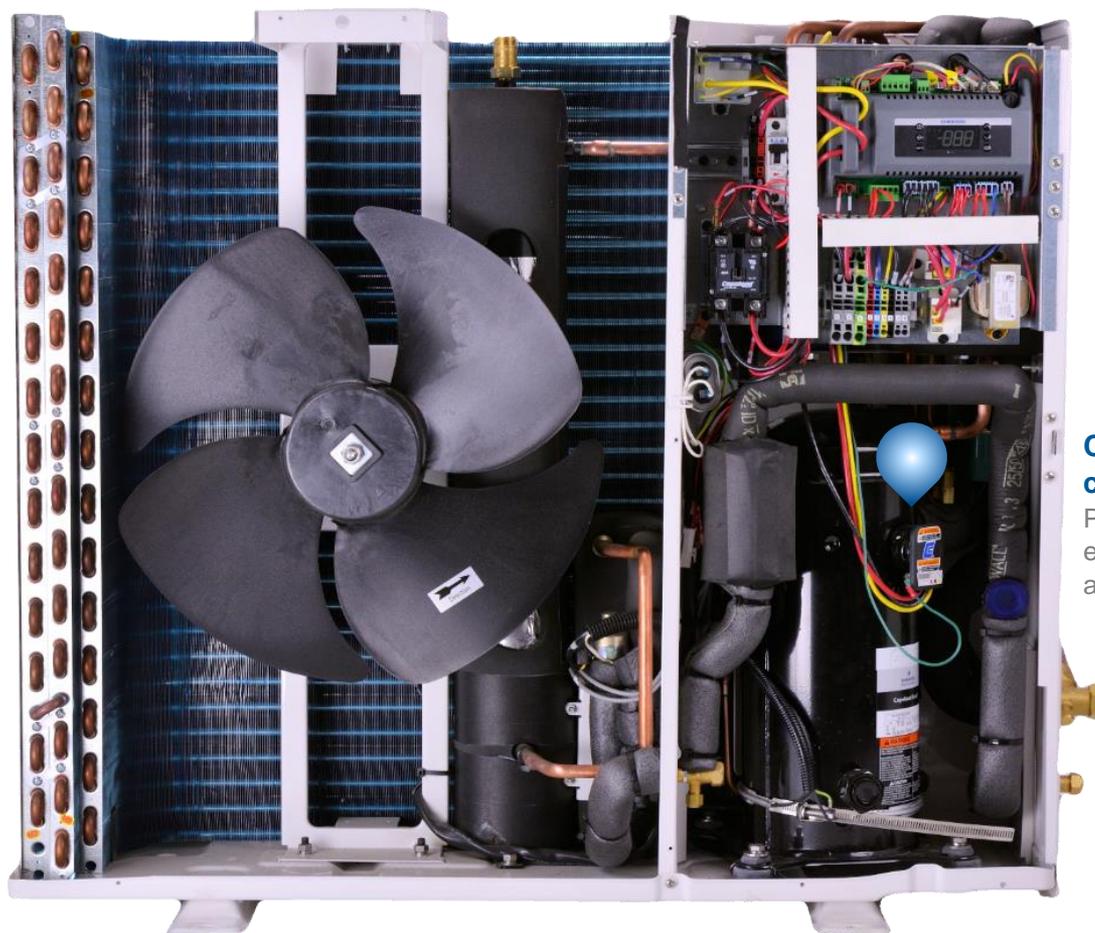
## Electronic controls

Integrated electronics control unit operation, diagnostics, compressor protection, and provide communication. The single control consolidates pressure controls, fan controls, defrost controls, temperature sensors, and electrical sensors. This consolidation allows the control to monitor system operation and make adjustments to maximize efficiency and reliability.

### CoreSense™ Diagnostics And Protection

- Over Current protection
- Incorrect Phase Detection
- High Pressure Lockout
- Flood-Back Prediction
- Demand Cooling™
- Flooded Start Protection (“Bump-Start” Logic)
- Discharge Temp. Protection
- Anti-Short Cycle Time Delay
- Digital Fault Code Display / Remote Alarming
- Over/Under Voltage Protection

# X-Line Tour



## Copeland Scroll™ compressor technology

Provides the most reliable, highest efficiency compression technology available.



## Copeland Scroll™ compressor technology

Provides the most reliable, highest efficiency compression technology available on the market today and serves as the workhorse and intelligence of the condensing unit. There are more than 100 million Copeland Scrolls in operation today.

# X-Line Tour



**Large condenser coils**  
Increases efficiency

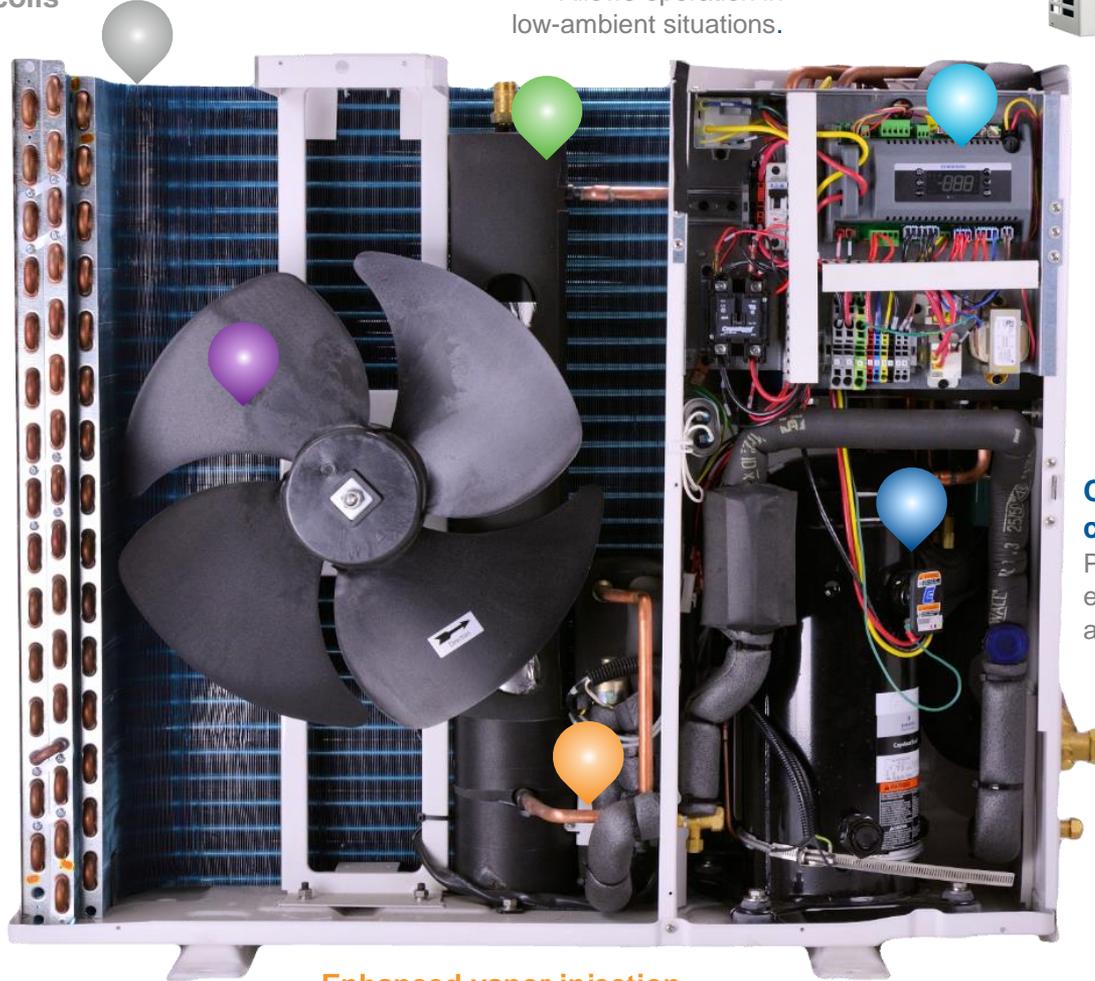
**Heated and insulated receiver**  
Allows operation in low-ambient situations.

**Variable speed fan motor control**  
Quiet and efficient head pressure control

**Electronic controls**  
Offer greater reliability than traditional mechanical controls.

**Copeland Scroll™ compressor technology**  
Provides the most reliable, highest efficiency compression technology available.

**Enhanced vapor injection**  
Improves capacity and energy efficiency





**EMERSON**™



Visit [Emerson.com/CopelandOutdoorUnit](https://www.emerson.com/CopelandOutdoorUnit)  
for more information about the Copeland X-Line.