Copeland Scroll Outdoor Refrigeration Condensing Unit (XJ Series)

New Product Introduction

2009 DEALER DESIGN AWARDS
theNEWS | SILVER

EMERSON
Climate Technologies

Copeland Scroll Outdoor Refrigeration Condensing Unit

Single Fan Models

- Medium And Low Temp
- R404A & R507
- 1.5 – 3.5 HP
- 208/230V 1 & 3 Phase

Dual Fan Models

- Medium And Low Temp
- R404A & R507
- 4, 5 & 6 HP
- 208/230V 1 & 3 Phase

Diagnostic Protection	→	Increased Reliability And Lower Maintenance Costs
Flexibility	→	More Installation Options
Highest Efficiency	→	Lower Energy Bills

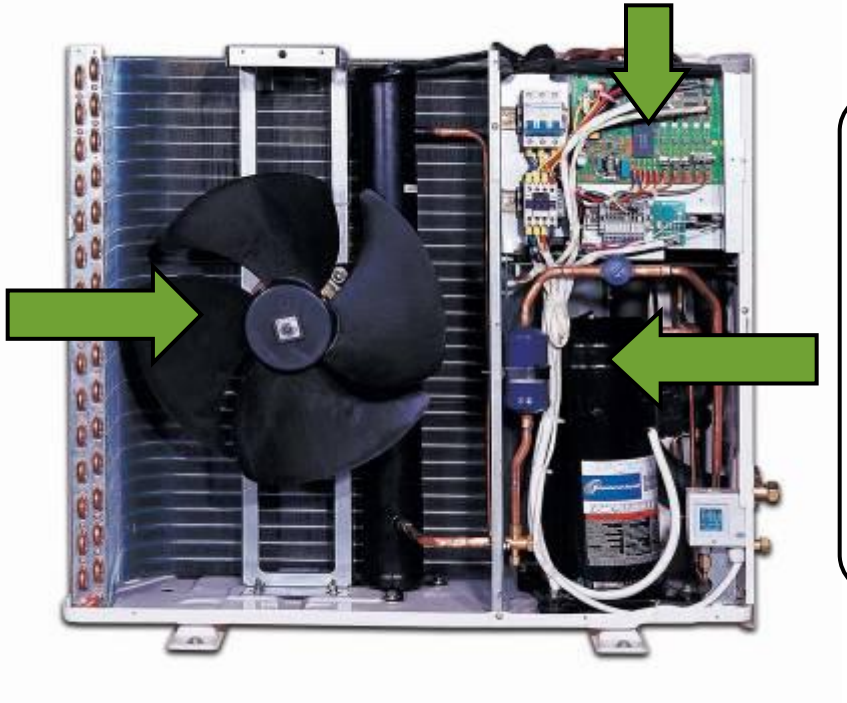
Integrated Technology Delivers Highest Efficiency And Diagnostic Protection

CoreSense™ Diagnostic Protection

- Protection Against Common Failure Conditions
- Predicts Liquid Flood-back For Early System Detection
- Identifies Nuisance Conditions, Avoiding Unneeded Service

Variable Speed PSC Fan Motors

- High Efficiency
- Ultra Quiet
- Optimizes Air-Flow For Maximum Heat Transfer
- Meets CEC and National Standards



Copeland Scroll Compressor Technology

- High Efficiency
- Ultra Quiet
- High Reliability

Diagnostics & Protection Are Standard Features For Better System Reliability

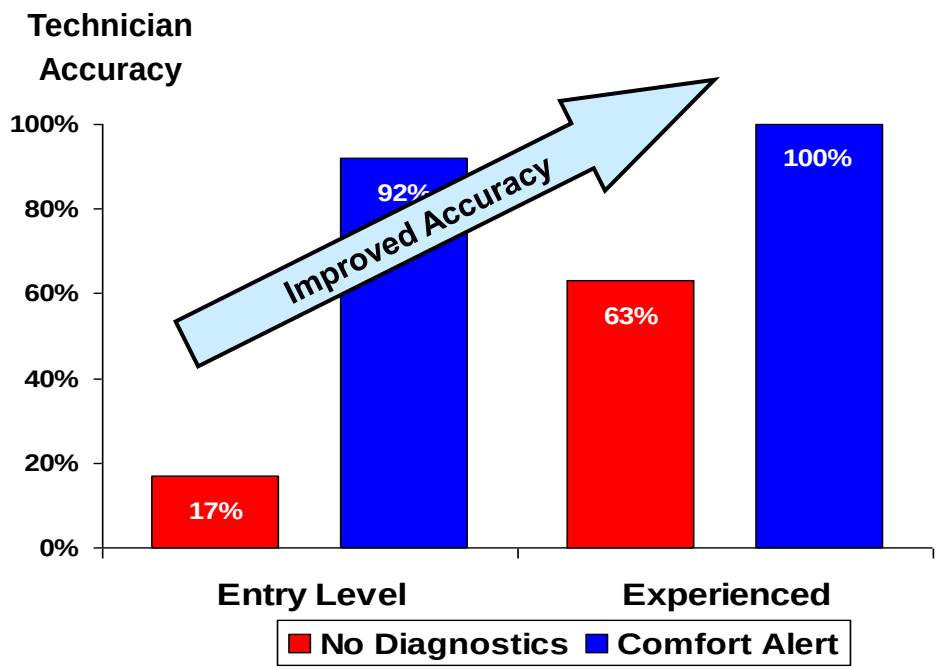
Diagnostics

Over Current	**Standard**	**Optional**
Incorrect Phase Rotation	**Standard**	**Optional**
High Pressure Re-Sets	**Standard**	**Optional**
Low Pressure Cut-Outs	**Standard**	**Optional**
Liquid Flood-Back Prediction	**Standard**	**Not Available**
“Fresh Start” Logic	**Standard**	**Not Available**
“Smart” Crank Case Heater	**Standard**	**Optional**
Compressor Overheating	**Standard**	**Optional**
Compressor Short Cycling	**Standard**	**Optional**
Fault Code History	**Standard**	**Optional**
Remote Alarming	**Standard**	**Optional**

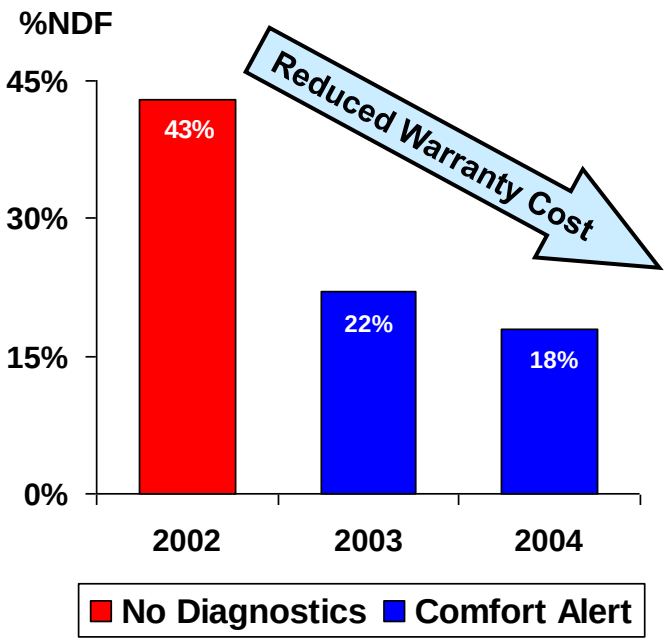
Exclusive Technology Only Available From Emerson

How Diagnostics Improve Troubleshooting Accuracy And Warranty

Service Technician Study



Actual Warranty Results



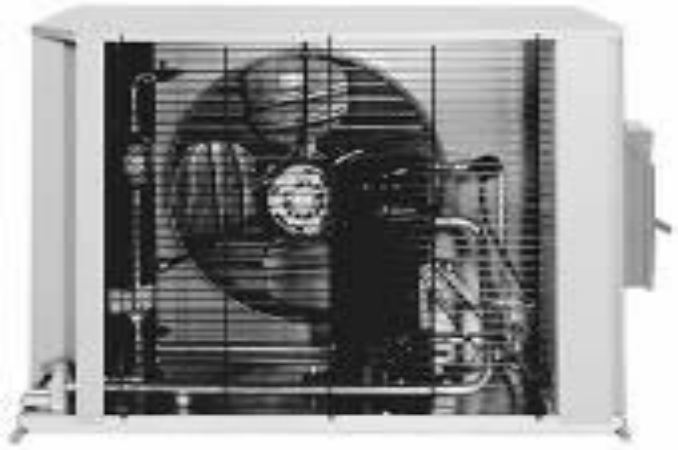
Improved Service Technician Accuracy

Lower "No Defect Found" Warranty Failures

"My main concern is getting the equipment repaired the first time on the first visit. . . " – Refrigeration Contractor

Unique Design Provides Operators Ultimate Installation Flexibility

Today's Technology
Typical Scroll Outdoor Unit



30% Heavier
15+ dBA Noisier
40% More Installation Space

Length:	**30.25 (In.)**
Width:	**42.50 (In.)**
Height:	**29.75 (In.)**
Volume:	**22 ft^3**
Weight:	**287 lbs.**
Sound:	**70 dBA**

Advanced Technology
Copeland Scroll Outdoor Unit

Faster And More Flexible Installations, Ultra-Quiet, And Lowers Costs

Length:	**16.7 (In.)**
Width:	**40.5 (In.)**
Height:	**33 (In.)**
Volume:	**13 ft^3**
Weight:	**194 lbs.**
Sound:	**55 dBA**

Annual Power Consumption XJAM Medium Temp Comparison

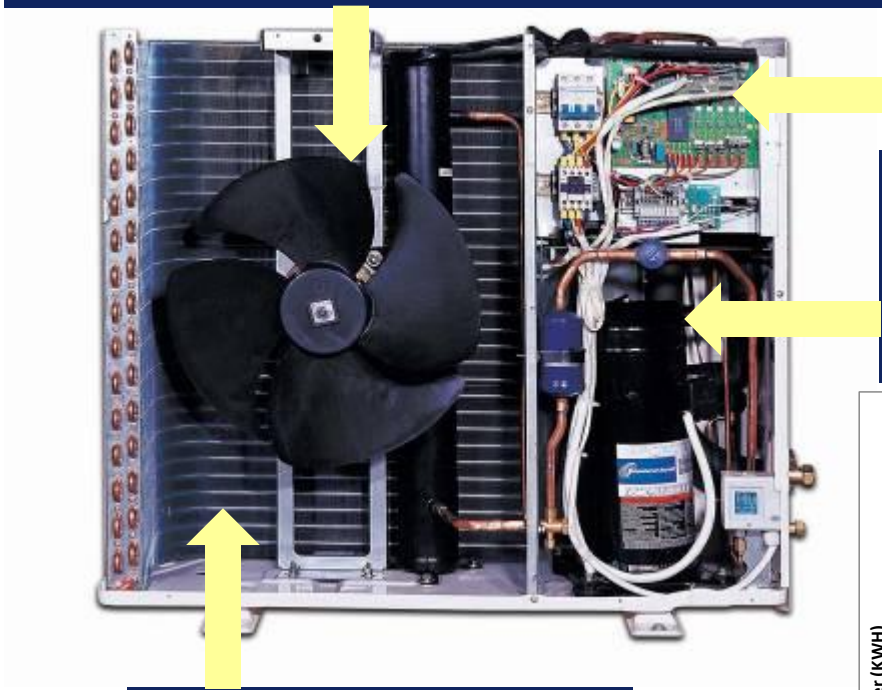
Variable Speed Fan Motor And High Efficiency Fan Blade

See Example

XJAM-030Z-TFC 165 Watts

Comparable ODU 420 Watts

Proprietary Electronic Algorithms To Control Fan Speed, Optimizing Energy Performance For Local Seasonal Ambient Temperatures



Compressor EER Optimized For Low Condensing (70°F)

See Example

ZX21KCE-TF5 18.9 EER

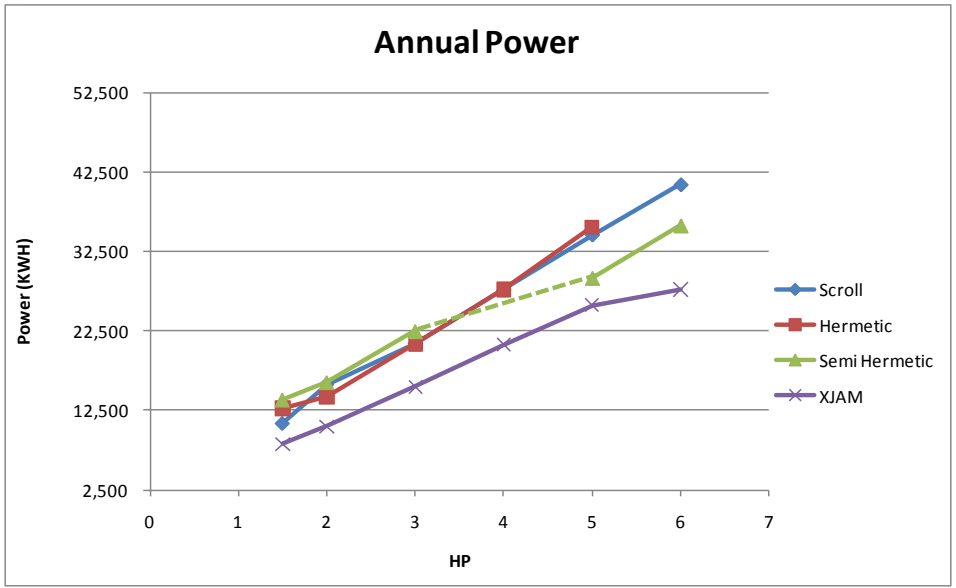
ZS21K4E-TF5 14.9 EER

Oversized Condenser Coil

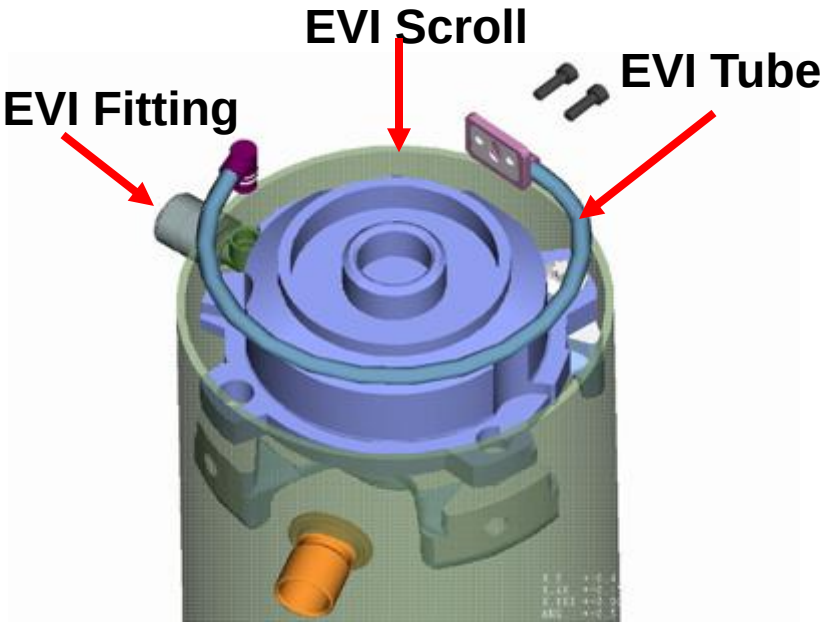
See Example

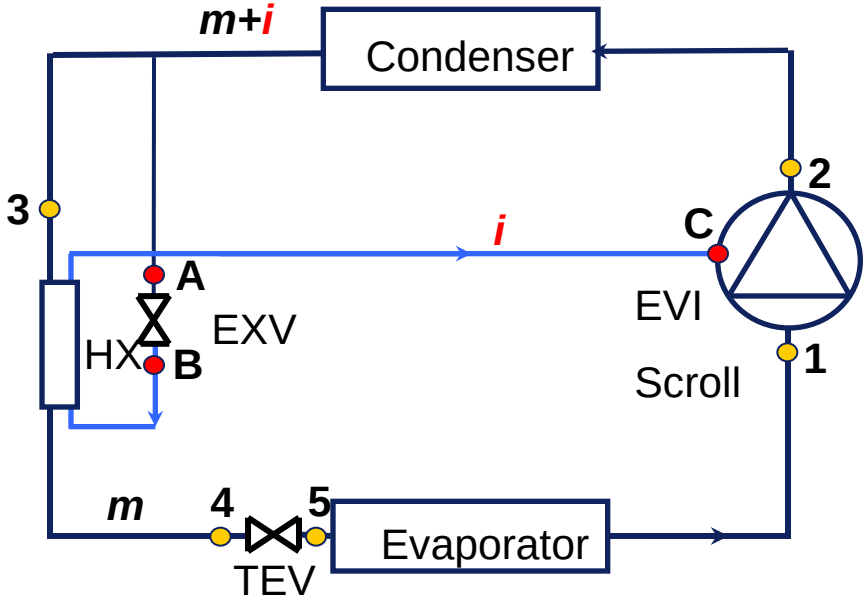
XJAM-030Z-TFC 9°F Coil TD

Comparable ODU 13°F Coil TD



Vapor Injection On XJAL Units



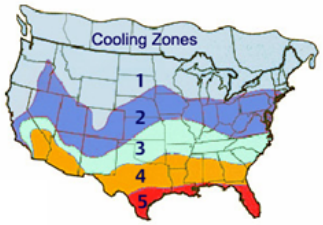


Capacity And Efficiency Increase With Vapor Injection

EMERSON
Climate Technologies

Annual Energy Savings Calculator For Comparison To Traditional Units

Energy Saving For XJ Outdoor Units



Click anywhere on a Zone in the map to view Annual Saving from XJ unit shown in the Table.

Box Temperature (°F) (Walk-In Cooler): 35

Medium Temp. Units

Cooling Zone: Zone 2

Design Load Basis: Constant

Select / Specify Energy Rate ($/kWh)

Standard 0.08 Custom

View Energy Rates

Print Report

E-Mail Report

Annual Operating Cost: Zone 2	
XJ Unit Horse Power	($)
1.5	661
2	839
3	1,237
4	1,659
5	2,057
6	2,216

Annual Saving ($) using XJ Units: Zone 2 (Annual XJ Unit Saving relative to Other Units)			
Unit Horse Power	Hermetic Reciprocating ☑	Standard Scroll ☐	Semi-Hermetic ☐
1.5	362	205	447
2	297	420	444
3	433	439	560
4	557	552	N/A
5	788	711	275
6	N/A	1,059	644
View Medium Temperature Units list			

Notes:

1. N/A - Condensing unit is not available.
2. All Units use refrigerant R-404A and their selections are based on a capacity match of ±10% relative to the XJ Outdoor Unit.
3. Hermetic Reciprocating, Standard Scroll and Semi-Hermetic refer to condensing units using these compressor technologies.
4. Refrigeration Load is assumed to be constant in the analysis. It assumes that Walk-In Cooler/Freezer is located indoors and the surrounding ambient is at constant 90°F temperature.
5. Design Refrigeration Load for analysis is based on Outdoor Unit's (XJ) Capacity at 90°F ambient air and 25°F evaporator temperature condition.
6. Unit Performance is based at 40°F to 65°F Return Gas temperature, 5F Subcooling for all units except for XJ Low Temperature units which have higher Subcooling. We use Actual Subcooling for these units. Minimum Condensing Temperature is set at 70°F for estimation of Annual Operating Cost.
7. Operating cost for Evaporator Fan or Power required for the Defrost Cycle are not included in the annual operating cost or saving analysis.
8. Weather data is based on typical metrological year obtained from National Solar Radiation Database, Years: 1961 - 1990. Analysis use weather data of: Minneapolis, MN (Zone 1), Dayton, OH (Zone 2), St. Louis, MO (Zone 3), Atlanta, GA (Zone 4), Miami, FL (Zone 5).
9. Sample annual energy analysis describing the procedure may be viewed by choosing AEER.
10. Additional information on AEER methodology and calculation is available in Emerson's AEER White Paper or by viewing the AEER Webinar.
11. Click Here to download desktop application.

Energy savings estimates based on rated equipment performance and assumptions are noted. Actual savings dependent on box load sizing calculations and system component matching, and may vary by type of application and other operational variables not considered.

Up To 40% Energy Savings Vs. Standard Unit Technologies