

Copeland™ Digital Outdoor Refrigeration Unit X-Line Series

The compact solution for continuous capacity modulation

The Copeland Digital Outdoor Refrigeration Unit sets a new standard for energy efficiency, reliability, and installation flexibility. With 20-100% modulation now available and expanded refrigerant approvals, its industry leading on-board diagnostics and system protection can help optimize operational efficiency and deliver peace of mind to any end user. Digital X-Line units are available for applications commonly found in today's food service and food retail establishments.

Designed with three factors in mind

Energy Efficiency

Modulating scroll compressor technology, variable speed fan motors, large capacity condenser coils, and advanced control algorithms, work together to significantly reduce energy consumption.

Reliability

Equipment reliability is greatly enhanced by combining the proven reliability of Copeland scroll compressors with advanced on-board diagnostics and system protection technology. Each unit has built-in diagnostics and protection that can alert and record alarms independently or communicate with building management systems.

Flexibility

The ultra-quiet variable-speed fan motor significantly reduces exterior sound levels and is combined with a lightweight weather-resistant cabinet, slim footprint, and optional wall mounting capability to deliver unmatched installation flexibility.

Refrigeration Applications

The perfect solution for applications with wide load variation

- Coolers
- Display Cases
- Industrial Process Chillers
- Refrigerated Air-Dryers



“ We replaced multiple outdoor condensing units with a Copeland Digital Outdoor Refrigeration Unit. The unit cycles less and we see much tighter case temperature control. ”

– Small format grocery operator

Features

- Copeland digital scroll compressor (20-100% capacity modulation)
- Pre-painted enclosures for corrosion protection
- Brass service valves located externally for easy access
- Electronic low-pressure control for quick set-up and higher accuracy
- Receivers with pressure relief valve, liquid shut-off valve and charging port
- Easy to read moisture indicator
- Variable-speed PSC fan motors
- Advanced on-board diagnostics and system protection
- Over-sized condenser coils with additional fin corrosion protection for coastal zones
- Light-weight, slim-line profile for maneuverability and ease of installation
- Factory tested for braze joint leaks, wiring connections, electrical continuity and start-up performance

Copeland digital scroll compressors

High efficiency for modulated refrigeration applications

The digital difference

For years, the patented axial and radial compliance of the Copeland scroll compressor have provided a decisive reliability advantage by allowing the scroll elements to mechanically separate under the most extreme circumstances.

Now, digital technology actively manages axial compliance, achieving continuous capacity modulation from 20% to 100%. The result is precision temperature control, reduced compressor cycling, and lower energy consumption. For our customers, this means:

- Enhanced product integrity
- Longer lasting refrigeration equipment
- Lower energy bills

Capacity Range (95° Ambient)

		Medium Temp R-404A +25°F evap																											
		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	
XFAM-030D																													
XFAM-040D																													
XFAM-050D																													
XFAM-060D																													

Advantages

- Variable modulation for precise temperature control
- Highly flexible load matching, from 20-100%
- Less costly and more reliable than variable speed
- Simple control methods
- Significantly improved efficiency vs. hot gas bypass and other methods of modulation
- Linear power reduction relative to modulated capacity
- Based upon field-proven Copeland scroll design

Benefits

- Improved load matching capability
- Reduced compressor cycling
- Reduced power and energy consumption
- Decreased electrical load at startup
- Can be applied to multiple evaporator systems
- Efficient modulation of Copeland scroll compressors for high and medium temperature applications

A superior solution for food safety

Digital modulation enables tighter control of case temperatures. This provides supermarkets and foodservice establishments with the security of knowing that their food is safe from harmful bacteria growth and other harmful micro-organisms.

A superior solution for energy savings

Traditional modulation technologies consume close to full load energy no matter what the required capacity. Copeland digital scroll compressor technology reduces power consumption linearly as it modulates capacity resulting in optimum system performance and control, as shown in Chart A.

