

# Copeland™ Compressors and Condensing Units for Refrigeration Applications



Product Brochure  
2021 Edition

# About Emerson

Emerson's commercial and residential solutions platform is the world's leading provider of heating ventilation, air-conditioning and refrigeration solutions, for both residential and commercial applications. It is synonymous with innovation, reliability, energy efficiency and commitment towards a safe and green environment.

The portfolio includes Copeland™ compressors and condensing units, Vilter™ single screw compressors, Dixell™ controllers, Lumity™ temperature management solutions and refrigeration line components

**COPELAND™ DIXELL™ VILTER™ COOPER-ATKINS™ LUMITY™**

## Core Offerings

### Commercial Refrigeration

Copeland compressors and condensing units help ensure food quality and safety is maintained, helping minimize wastage while maximizing profits.



### Cargo Tracking & Monitoring

Data loggers and trackers help monitor temperature and humidity of perishable goods in transit. The increased visibility helps ensure shipments arrive safe and fresh at their destinations.



### Industrial Refrigeration

With over 150 years of refrigeration experience, Vilter compressors provide superior reliability with the lowest life-cycle costs and are optimized for process cooling applications.



### Food Temperature Management and Monitoring Solutions

Cooper-Atkins™ monitoring solutions for the food service industry help ensure proper food temperatures are maintained and safety standards are kept.



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Copeland Documentation



Asia Product Selection Software



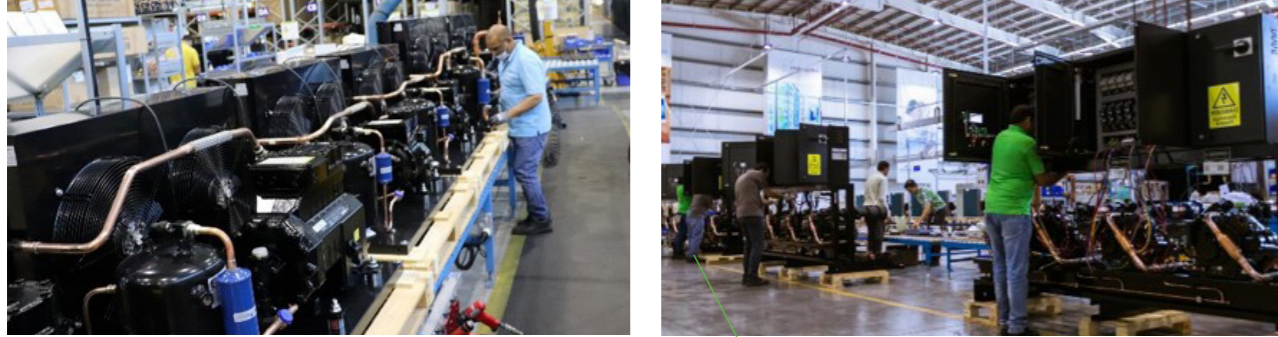
Middle East Africa Product Selection Software



# Centers for World-Class Manufacturing Excellence

## Dubai, United Arab Emirates (UAE)

Technology hub and gateway to Middle East and Africa



## Suzhou, China

Best-in-class high volume compressor and condensing unit manufacturing plant



## Dammam, Saudi Arabia

State-of-the-art manufacturing facility serving the region's ever-growing market



## Pune, India

Asia Cold Chain center of excellence with design and manufacturing capabilities from small fractional horsepower units to large multi-compressors racks



## Rayong, Thailand

Established In 1997, the Rayong facility is the first high-volume scroll plant in Asia





# Broad Condensing Unit Portfolio

Emerson extends its commitment to developing best-in-class refrigeration solutions for customers with a full line-up of condensing units:



## ZX Family Condensing Unit

Premium line with intelligent controller; high efficiency; compact sizing; low sound. Available with digital or variable speed compressors



## Large ZX Condensing Unit

Extending capacity range of premium ZX condensing unit to meet the challenges of large-scale refrigeration applications



## KHZ Condensing Unit

High-quality & reliable scroll condensing unit. Available with ZB (MT) and ZSI (Extended MT) compressors



## Semi-Hermetic Condensing Unit

Premium CDU using Copeland™ Discus technology for enhanced performance. Advanced Copeland diagnostic electronics increases reliability



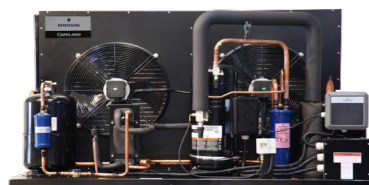
## Multi-Compressor Rack

Best-in-class with robust design, efficiency oil management and integrated electronics for most advanced protection and diagnostics



## F-Series Condensing Unit

Quality indoor scroll condensing unit available with high ambient optimization (Gulf region) and mid ambient optimization (milder climate)



## Indoor Vapor Injection Scroll Condensing Unit

Designed for low temperature applications with scroll vapor injection high efficiency with a full suite of system components for improved reliability



## Water-Cooled Condensing Unit

Reliable and easy to clean and maintain. Designed to deliver exceptional efficiency when used with chilled waterline

# Copeland™ Condensing Unit Line

● Medium temp   
 ● Low temp   
 ● Ultra Low temp   
 Scroll   
 Reciprocating

## Air-cooled Scroll

	<span style="color: green;">●</span>	ZX		2	2.5	3	4	5	6	7.5									
	<span style="color: blue;">●</span>	ZXL		2	2.5	3	3.5	4	5	6	7.5								
	<span style="color: green;">●</span>	ZXD				3	4	5	6	7.5	9	12	16	20					
	<span style="color: blue;">●</span>	ZXLD									9	12	16	20					
	<span style="color: green;">●</span>	ZXV					4	5		9									
	<span style="color: blue;">●</span>	ZXLV				3	4	5											
	<span style="color: green;">●</span>	KHZ		2	3	4	5	6											
	<span style="color: blue;">●</span>	KHZ LT		2	2.5	3	3.5	4	5	6	7.5								
	<span style="color: blue;">●</span>	KHZ LVL							6	7.5	10	13	15						
	<span style="color: green;">●</span>	F-Line		1	1.5	2	2.5	3	3.5	4	5	6	6.5	7.5	9	10	13		
	<span style="color: blue;">●</span>					2	3	3.5	4	5	6	7.5	10	13					

Note: Rated compressor HP

## Air-cooled Reciprocating

	<span style="color: green;">●</span>	S/H Discus CDU							5	7.5	10	15	22	25	30	33	35	40		
	<span style="color: blue;">●</span>	S/H Two Stage											15	20	25	30		40		
	<span style="color: green;">●</span>	Rack																66	250	
	<span style="color: blue;">●</span>																		45	200
	<span style="color: green;">●</span>	F-Line		1	1.5	2	3	3.5	4	5										
	<span style="color: blue;">●</span>			1	1.5	2	2.5													

Note: Rated compressor HP

## Water-Cooled

	<span style="color: green;">●</span>	Co-Axial		1	1.3	1.5	1.7	2	2.5	3.5	4	5	6	6.5	7.5						
	<span style="color: blue;">●</span>			1	1.3	1.5	1.7	2	2.5	3.5	4	5	6	6.5	7.5						
	<span style="color: green;">●</span>	Shell Tube						2	2.5	3.5	4	5	6	6.5	8	9	10	13	15		
	<span style="color: green;">●</span>	Shell Tube		0.7	1	1.5	2			4	5										
	<span style="color: blue;">●</span>			0.7	1	1.5	2														

Note: Rated compressor HP



# Condensing Units for Every Application

Emerson offers a comprehensive selection of refrigeration solutions that answers our customers' most demanding requirements.

## Outdoor



**ZX CDU**

Available with digital and variable speed



**KHZ (ZB)**



**KHZ (ZSI)**



## Indoor



**S/H CDU**

Available with two-stage compressor



**Rack**



**F-Series**



**KHZ\* LVL**



**Water Cooled Units**



● Medium Temp   
 ● Low Temp   
 Scroll   
 Reciprocating

## Bill of Material Comparison

Medium Temperature	ZX	KHZ	F-Line	S/H CDU
Compressor	ZX	ZB	ZB	Standard/Stream/Discus
Injection Technology	Suction Line Liquid Injection			
Controller	✓			
Intelligent Store Capable	✓			
Fan Speed Controller	✓			
Condenser Type	Fin & Tube/ Microchannel	Fin & Tube	Fin & Tube	Fin & Tube
Chassis	✓	✓	Indoor	Indoor
Filter Drier	✓	✓	Optional	Optional
Sight glass	✓	✓	Optional	Optional
Liquid Receiver	✓		✓	✓
Service Valves	✓	✓	✓	✓
Oil Separator	✓			Optional
HP Switch	✓	✓	✓	✓
LP Switch	✓	✓	✓	✓
Crankcase Heater	✓		✓	Optional
Overload Relays	✓			
Circuit Breaker	✓	✓		Optional
Contactors	✓	✓	✓	✓
Terminal Strip	✓	✓	✓	✓

Low Temperature	ZXL	KHZ	F-Line	S/H CDU	KHZ* LVL
Compressor	ZXI	ZSI	ZF	Standard/Stream/Discus	ZFI
Injection Technology	Vapor				
Controller	✓				✓
Intelligent Store Capable	✓				
Fan Speed Controller	✓				
Condenser Type	Fin & Tube/ Microchannel	Fin & Tube	Fin & Tube	Fin & Tube	Fin & Tube
Chassis	✓	✓	Indoor	Indoor	Indoor
Filter Drier	✓	✓	Optional	Optional	✓
Sight glass	✓	✓	Optional	Optional	✓
Liquid Receiver	✓	✓	✓	✓	✓
Service Valves	✓	✓	✓	✓	✓
Accumulator	✓	✓		Optional	✓
Oil Separator	✓			Optional	✓
HP Switch	✓	✓	✓	✓	✓
LP Switch	✓	✓	✓	✓	✓
Crankcase Heater	✓		✓	Optional	✓
Overload Relays	✓				
Circuit Breaker	✓	✓			
Contactors	✓	✓	✓	✓	✓
Terminal Strip	✓	✓	✓	✓	✓

Note: The tables show standard bill of material configuration. For the complete list of BOMs please refer to each product's specific catalogue.



# ZX Family Condensing Units



## Best-in-class condensing unit

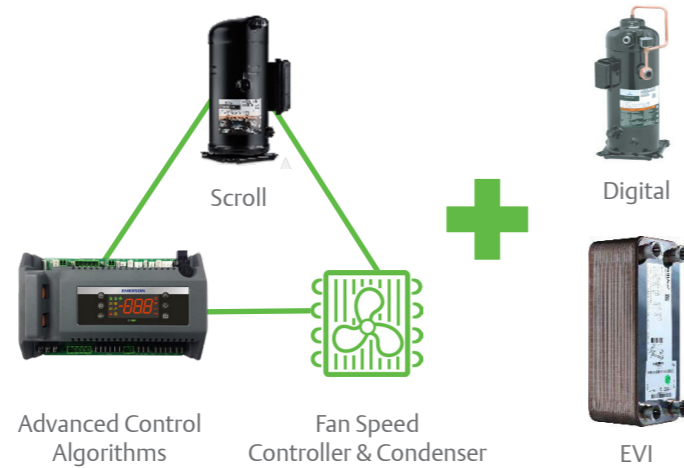
The ZX condensing unit line-up combines Copeland's exceptional compression technology with smart protection & diagnostics to meet the toughest refrigeration requirements. RS485 port allows for ease of connectivity with the Dixell XWeb platform.

## Market leading efficiency and performance

Achieving high efficiency and performance by combining:

- Copeland™ scroll compressor
- Fan speed controller
- Optimized condenser coils
- Advanced control algorithms

Digital modulation and vapour injection options deliver great efficiency enhancements.



## Diagnostic & Protection

Software designed to improve system performance, save energy and reduce maintenance costs



## Slim and lightweight design

Increases flexibility for installations in limited floor area

## Quiet Operations

Sound jacket significantly reduces noise and vibration



## Connectivity

Used in combination with Dixell XWeb for optimizing operations with real-time monitoring

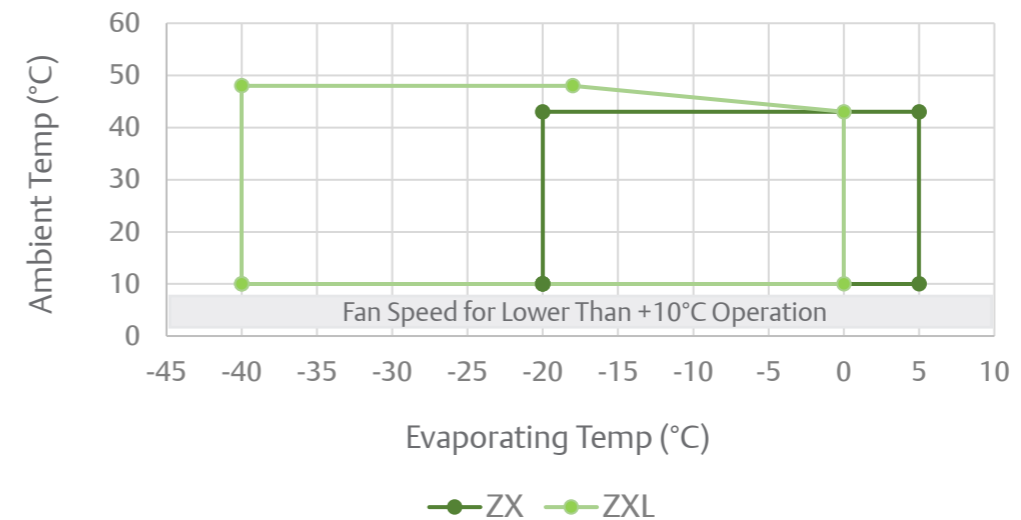
## Fin and Tube Condenser Models

(Available with R22, R404A, R448A, R449A, R507, R407F)	Capacity (kW)	Motor	PFJ	TFD	PFV	TF5	TF7
		50 Hz	1Ø-220/240v	3Ø-380/420v			
		60 Hz			1Ø-208/230v	3Ø-200/230v	3Ø-380v
		HP					
ZX Medium Temp							
ZX020	3.9	2 HP	x	x	x	x	x
ZX025	4.4	2.5 HP	x				
ZX030	5.4	3 HP	x	x	x	x	x
ZX040	7.1	4 HP	x	x	x	x	x
ZX050	9.8	5 HP		x	x	x	x
ZX060	10.8	6 HP		x		x	x
ZX075	11.8	7.5 HP		x		x	x
ZX076	12.1	7.6 HP		x			
ZX Low Temp							
ZXL020	1.8	2 HP	x	x	x	x	x
ZXL025	2.3	2.5 HP	x	x		x	x
ZXL030	2.5	3 HP	x	x	x	x	x
ZXL035	3.2	3.5 HP		x	x	x	x
ZXL040	3.8	4 HP		x	x	x	x
ZXL050	4.3	5 HP		x	x	x	x
ZXL060	5.3	6 HP		x		x	x
ZXL075	5.9	7.5 HP		x		x	x

Capacity conditions:

Medium Temp: Ambient Temperature 32°C, Evaporating Temp -10°C; Suction Gas 20°C; 50Hz; R404A

Low Temp: Ambient Temperature 32°C, Evaporating Temp -35°C; Suction Gas 20°C; 50Hz; R404A



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# ZX Digital Condensing Units

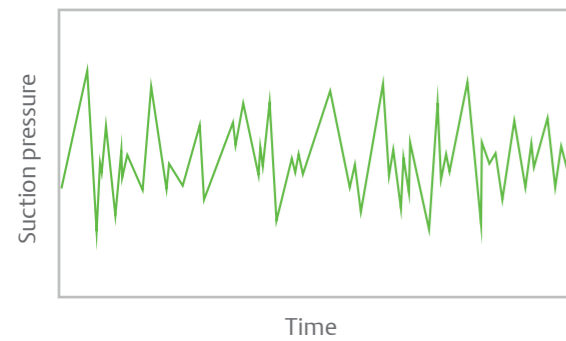


ZXD 12 – 20 HP

## Leveled up performance

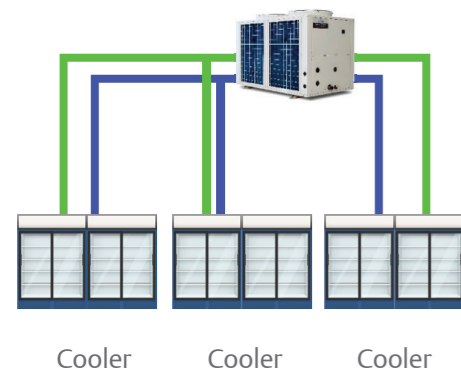
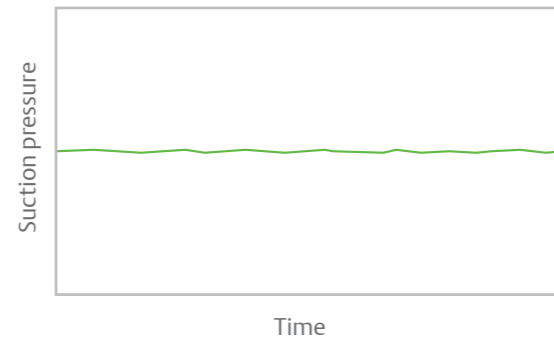
Designed and developed to meet the challenges of large scale refrigeration applications

## Fixed speed



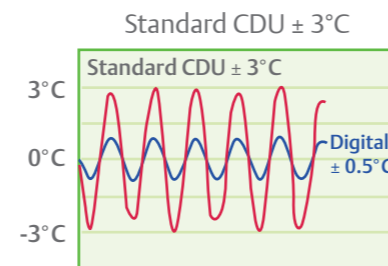
## Digital modulation

Smooth operation across loads



## Multi-evaporator flexibility for retail stores

- Supports multiple showcases
- Digital modulation perfectly matches cooling capacity to fit the refrigeration load requirement, optimizing energy savings



## Temperature control for cold rooms with multiple evaporators

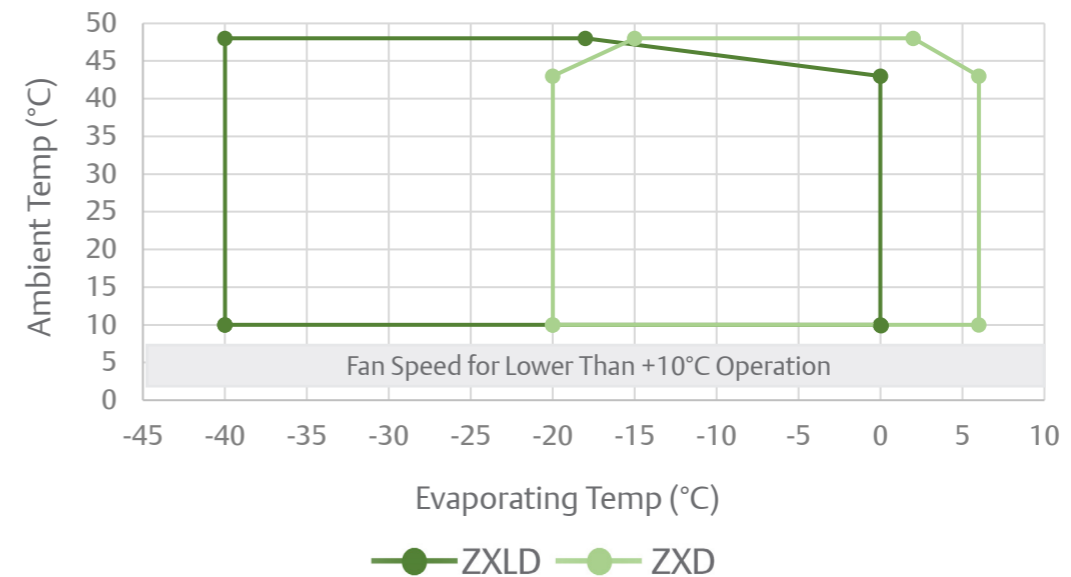
- Precise temperature & relative humidity control
- Reduces dehydration of stored food products
- Less product weight loss & longer shelf life

Model (Available with R22, R404A, R448A, R449A refrigerants)	Capacity (kW)	Motor Code	TFD	TF5	TF7
		50 Hz	3Ø-380/420v		
		60 Hz		3Ø-200/230v	3Ø-380v
		HP			
<b>ZX Digital Medium Temperature</b>					
ZXD030	5.2	3 HP	x		x
ZXD040	7.9	4 HP	x	x	x
ZXD050	9.8	5 HP	x	x	x
ZXD060	10.7	6 HP	x	x	x
ZXD075	11.8	7.5 HP	x	x	x
ZXD076	12.1	8 HP	x		
ZXD090	14.5	9 HP	x		
ZXD120	22.1	12 HP	x		
ZXD160	27.5	16 HP	x		
ZXD200	34.5	20 HP	x		
<b>ZX Digital Low Temperature</b>					
ZXLD090	6.6	9 HP	x		
ZXLD120	10.3	12 HP	x		
ZXLD160	13.8	16 HP	x		
ZXLD200	15.9	20 HP	x		

Capacity conditions:

Medium Temp: Ambient Temperature 32°C, Evaporating Temp -10°C; Suction Gas 20°C; 50Hz; R404A

Low Temp: Ambient Temperature 32°C, Evaporating Temp -35°C; Suction Gas 20°C; 50Hz; R404A



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# ZX Condensing Units with Microchannel Condenser



## ZX with Microchannel Condenser

Best-in-class condensing units now with microchannel condenser option

(Available with R404A, R448A, R449A)	Capacity (kW)*	Motor	TFD
		50 Hz	3Ø-380/420v
		60 Hz	
		HP	
<b>Medium Temperature</b>			
ZX020CE	3.9	2 HP	x
ZX030CE	5.5	3 HP	x
ZX040CE	7.3	4 HP	x
ZX050CE	9.1	5 HP	x
ZX060CE	10.9	6 HP	x
ZX075CE	12.1	7.5 HP	x
ZXD030CE	5.3	3 HP	x
ZXD040CE	7.3	4 HP	x
ZXD050CE	9.1	5 HP	x
ZXD060CE	10.9	6 HP	x
ZXD076CE	12.1	7.5 HP	x
ZXD090CE	15.2	9 HP	x
<b>Low Temperature</b>			
ZXL020CE	1.8	2 HP	x
ZXL025CE	2.3	2.5 HP	x
ZXL030CE	2.6	3 HP	x
ZXL035CE	3.2	3.5 HP	x
ZXL040CE	3.8	4 HP	x
ZXL050CE	4.5	5 HP	x
ZXL060CE	5.5	6 HP	x
ZXL075CE	5.9	7.5 HP	x
ZXLD090CE	6.7	9 HP	x

\*Preliminary Data

Capacity conditions:

MT: Ambient Temperature 32°C, Evaporating Temp -10°C; Suction Gas 18.3°C; 50Hz; R404A

LT: Ambient Temperature 32°C, Evaporating Temp -35°C; Suction Gas 18.3°C; 50Hz; R404A

# ZX Variable Speed Condensing Units



## ZX Variable Speed

Delivering all year-round efficiency improvement through precise modulation to match required cooling load.

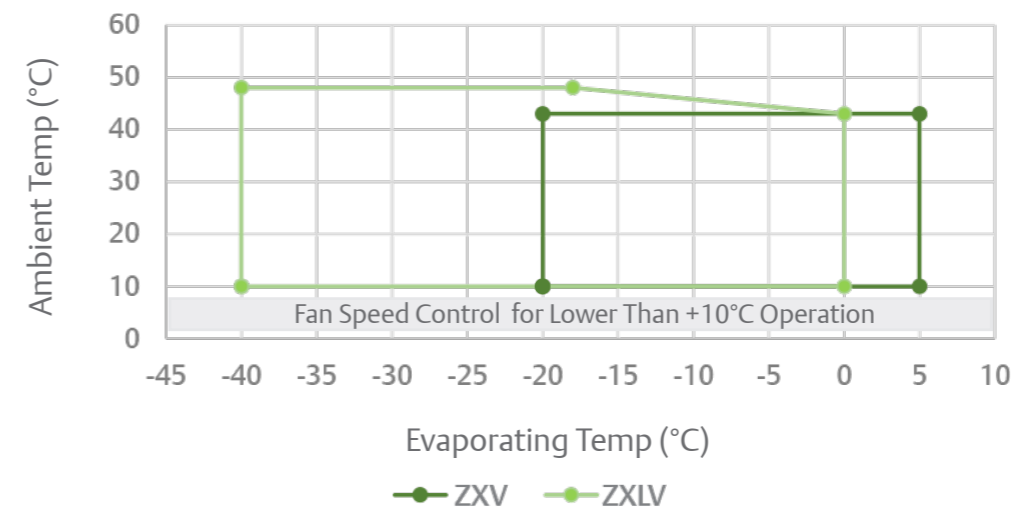
- Delivers extra capacity when required such as during pull downs
- Modulates capacity to fit the requirement during non peak operating hours

(Available with R404A, R448A, R449A)	Minimum Capacity (kW)	Nominal Capacity (kW)	Maximum Capacity (kW)	Motor	4XD	4XK	5XJ
				50 Hz	3Ø-380/420v		
				60 Hz		3Ø-380/420v	3Ø-200/240v
<b>Medium Temperature</b>							
ZXV065	2.58	6.20	7.87		x	x	x
ZXV085	3.27	7.85	9.97		x	x	x
ZXV130	4.05	10.08	14.38		x	x	x
<b>Low Temperature</b>							
ZXLV030	0.92	2.30	3.01		x	x	x
ZXLV040	1.16	2.91	3.81		x	x	x
ZXLV050	1.41	3.81	5.12		x	x	x

Capacity Conditions:

MT: Ambient Temperature 32°C, Evaporating Temp -10°C; Gas Return 5°C; 50Hz; R404A

LT: Ambient Temperature 32°C, Evaporating Temp -35°C; Gas Return 5°C; 50Hz; R404A



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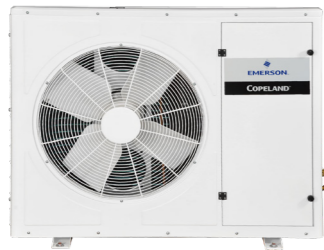
# KHZ Condensing Units



## Quality condensing units

K family condensing units are available in 2 compressor options housed in a slim, durable chassis:

- **KHZ (ZB Scroll):** Medium temperature unit optimized for reliability and efficiency for tropical climates
- **KHZ LT (ZSI Scroll):** Designed for flexibility with evaporating temperature range between -35°C and 0°C



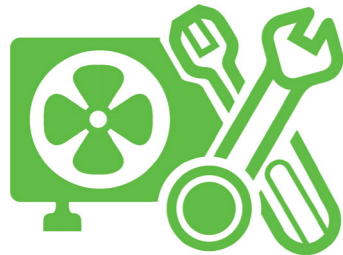
## High-quality chassis

Powder coated chassis for additional weather protection with accessible panel door for ease of maintenance and servicing



## Flexible choice of technology

Flexibility of compressors offer versatility for various applications



## Ready for installation

Factory installed electrical box with contactor, terminal strip and circuit breaker simplifies on-site installation



## Customized protection

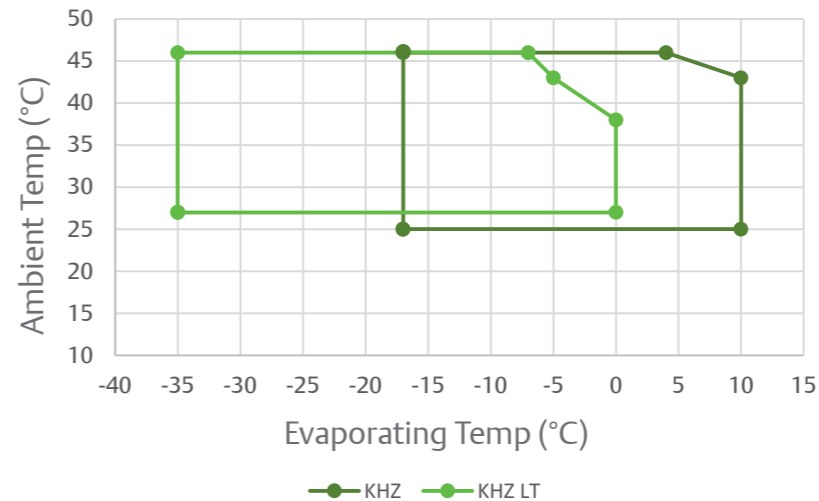
Standard: filter dryer, sight glass  
Customizable: oil separator, crankcase heater, overload relay

Model (Available with R22, R404A)	Compressor	Capacity (kW)	Motor	PFJ	TFD
			50 Hz	1Ø-220/240v	3Ø-380/420v
			HP		
<b>KHZ Medium Temp (Scroll)</b>					
KHZ515	ZB15K	3.8	2 HP	X	X
KHZ521	ZB21K	5.1	3 HP	X	X
KHZ529	ZB29K	6.9	4 HP		X
KHZ538	ZB38K	8.7	5 HP		X
KHZ546	ZB46K	10.4	6 HP		X
<b>KHZ Low Temp (Scroll)</b>					
KHZ506LRL	ZSI06K	1.7	2 HP	X	X
KHZ508LRL	ZSI08K	2.0	2.5 HP	X	X
KHZ509LRL	ZSI09K	1.8	3 HP		X
KHZ511LRL	ZSI11K	2.1	3.5 HP		X
KHZ514LRL	ZSI14K	3.1	4 HP		X
KHZ515LRL	ZSI15K	3.5	5 HP		X
KHZ518LRL	ZSI18K	4.7	6HP		X
KHZ521LRL	ZSI21K	5.4	7.5 HP		X

Capacity Conditions:

MT: Ambient Temperature 32°C, Evaporating Temp -10°C; Gas Return 18.3 °C; 50Hz; R404A

LT: Ambient Temperature 32°C, Evaporating Temp -25°C; Gas Return 18.3°C; 50Hz; R404A



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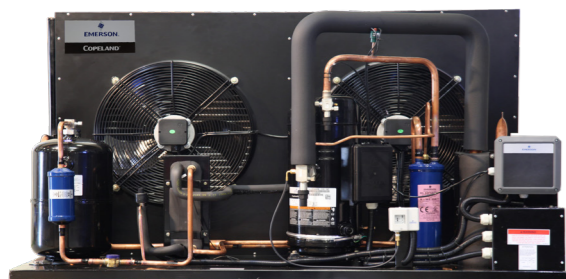


KHZ MT

KHZ LT

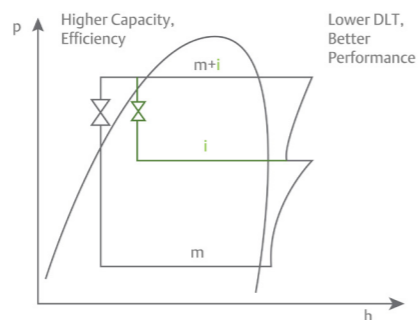


# Indoor Vapor Injection Condensing Unit (KHZ\* LVL)



## Highly efficient indoor condensing unit

Designed for low temperatures, using vapor injection technology to deliver higher capacity and efficiency. A full suite of system components delivers unmatched reliability.



## Vapor Injection

Improved system capacity and efficiency

Model	HP	Capacity (kW)
KHZ526LVL	6HP	5.9
KHZ536LVL	7.5HP	7.6
KHZ550LVL	10HP	10.2
KHZ559LVL	13HP	12.3
KHZ568LVL	15HP	13.7

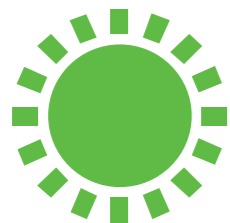
Ambient Temp 32°C, Evaporating Temp -35°C; Suction Gas 18°C; 50Hz; R404A  
Available TFD Configuration (3Ø-380/420v) R404A

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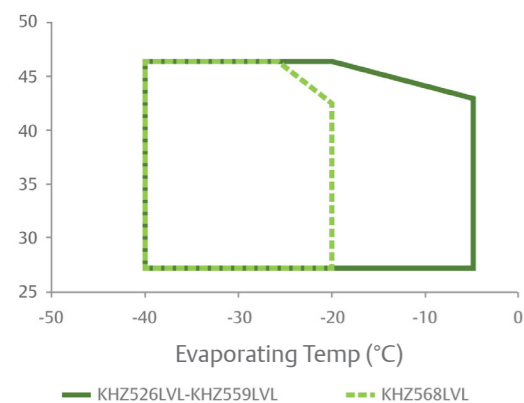
## Dual Compliance Scroll

Strong liquid and debris handling. Reduced performance degradation over time



## Optimized For High Ambient Temperatures

Condenser and fan optimized for reliability and efficiency, dependable ambient temperature performance of up to 46°C





# F-Series Scroll Condensing Units



## Simple & compact condensing units

Compact design with silent fans and an efficient Copeland™ scroll compressor. F-Series units make for an ideal solution for limited installation areas.

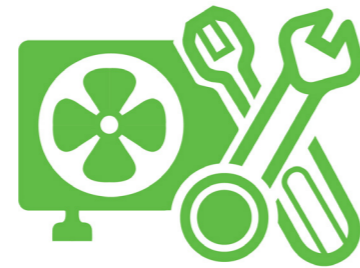
Available in two options:

- **High-ambient** (Gulf cooperation countries): maximum ambient of 46°C
- **Mid-ambient** (Egypt, Jordan, Lebanon): maximum ambient of 43°C



## Copeland scroll

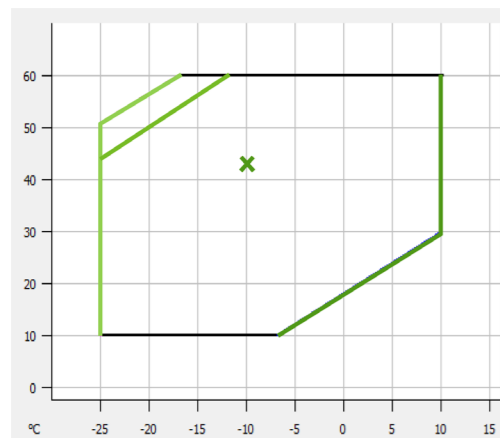
Reliable and highly efficiency compressors for refrigeration applications



## Ready for installation

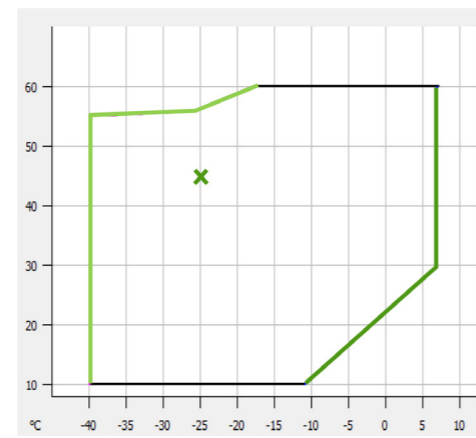
Factory installed electrical box with contactor, terminal strip and circuit breaker simplifies on-site installation

## Medium temperature envelope



-10°C Evap, 43°C Ambient, 0°C Sub-Cooling, 20°C Return Gas

## Low temperature envelope



-25°C Evap, 43°C Ambient, 0°C Sub-Cooling, 20°C Return Gas

Model (Available with R134a and R404A)	Capacity (kw)	Motor	PFZ		TFM		TF5/TF7	CFV
		50 Hz	1Ø-220/240v		3Ø-380/420v		3Ø-230v	
		60 Hz				3Ø-380v	1Ø 220/230v	
HP	High Ambient	Mild Ambient	High Ambient	Mild Ambient	High Ambient	High Ambient		
Medium Temperature								
FMC8A-ZS09	2.2	1 HP	x	x	x	x	x	
FMC8A-ZS11	2.6	1.5 HP	x	x	x	x	x	
FMD8A-ZB15	3.3	2 HP			x	x	x	
FMH7A-ZB19	4.2	2.5 HP			x	x	x	
FMH8A-ZB21	5.1	3 HP			x	x	x	
FMH8A-ZB26	5.7	3.5 HP			x	x	x	
FMM8A-ZB29	6.8	4 HP			x	x	x	
FMR6A-ZB38	8.6	5 HP			x	x	x	
FMR7A-ZB45	10.2	6 HP			x	x	x	
FMR7A-ZB48	10.9	6.5 HP			x	x	x	
FMS9A-ZB58	13.2	8 HP			x	x	x	
FMV9A-ZB66	15.1	9 HP			x	x	x	
FMV6A-ZB76	18.5	10 HP			x	x		
FMV6A-ZB95	21.7	13 HP			x	x		
Low Temperature								
FLD8A- ZF06	1.4	2 HP			x	x		x
FLD8A- ZF09	1.9	3 HP			x	x		x
FLH7A- ZF11	2.4	3.5 HP			x	x		x
FLH8A- ZF13	2.8	4 HP			x	x	x	
FLM8A- ZF15	3.4	5 HP			x	x	x	
FLR6A- ZF18	4.2	6 HP			x	x	x	
FLR7A- ZF25	5.2	7.5 HP			x	x		
FLV9A- ZF34	6.9	10 HP			x	x		
FLV6A- ZF41	8.8	13 HP				x		

Capacity Conditions:  
 MT: Ambient Temperature 32°C, Evaporating Temp -10°C; Gas Return 18.3 °C; 50Hz; R404A  
 LT: Ambient Temperature 32°C, Evaporating Temp -35°C; Gas Return 18.3°C; 50Hz; R404A

Scan to download documentation:



50Hz

60Hz



# Semi-Hermetic Condensing Units

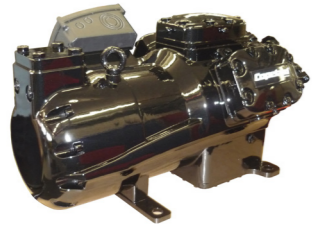


## Premium performance, robust durability

The industry standard for efficiency and reliability, Copeland™ semi-hermetic condensing units are renowned for its versatility and durability for multiple refrigeration applications

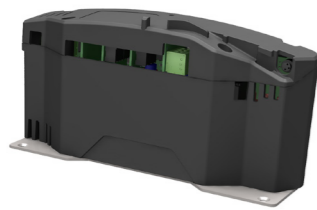
Available in two versions:

1. Copeland Discus condensing units
2. Copeland two-stage condensing units



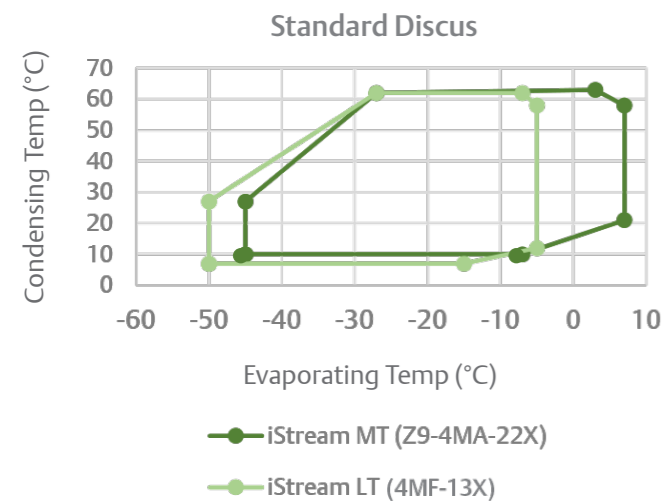
## Highly-efficient Copeland Discus

Discus valve allows more efficient compressor stroke and performance



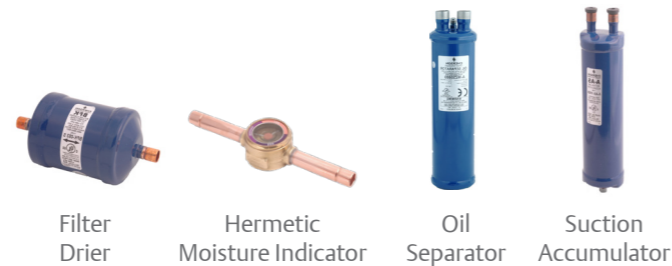
## Copeland Compressor Electronics

Unlocks advanced diagnostics, protection and communication capabilities



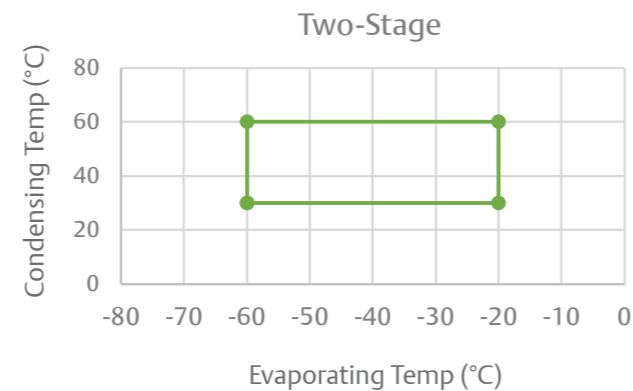
## Available with two-stage option

Enables ultra-low evaporating temperatures of up to -60°C



## Flexible BOM option

- F01: Sight Glass and Filter Dryer
- F02: F01 + Oil Separator
- F03: F02 + Suction Accumulator



Model (Available with R22, R404A, R407C and R134a)	Capacity (kW) Medium Temp	Capacity (kW) Low Temp	Motor	AWM	EWK
			50 Hz	3Ø-380/420v	
			60 Hz		3Ø-230v 3Ø-380v
			Motor HP		
<b>Medium Temp Optimized</b>					
R7-2DD-50X	9.9	3.1	5 HP	x	x
S9-2DL-75X	11.8	3.8	7.5 HP	x	x
S9-2DB-75X	14.2	5.1	7.5 HP	x	x
S9-3DA-75X	16.0	5.4	7.5 HP	x	x
V6-3DC-100X	24.5	9.3	10 HP	x	x
W9-3DS-150X	26.2	9.4	15 HP	x	x
Z9-4MA-22X	34.8	11.7	22 HP	x	x
Z9-4MH-25X	39.6	13.4	25 HP	x	x
Z9-4MI-30X	43.1	15.4	30 HP	x	x
Z9-4MJ-33X	46.9	17.0	33 HP	x	x
Z12-4MK-35X	55.6	19.6	35 HP	x	x
Z12-6MI-40X	64.6	23.1	40 HP	x	x
<b>Low Temp Optimized</b>					
R7-2DB-50X	15.2	4.8	5 HP	x	x
R7-3DC-75X	16.2	6.7	7.5 HP	x	x
S9-3DS-100X	21.5	9.0	10 HP	x	x
W9-4MF-13X	28.8	10.8	13 HP	x	x
W9-4ML-15X	33.1	13.1	15 HP	x	x
W9-4MM-20X	34.6	14.5	20 HP	x	x
W9-4MT-22X	37.6	15.9	22 HP	x	x
Z9-4MT-22X	46.9	17.7	22 HP	x	x
Z9-4MU-25X	50.7	19.5	25 HP	x	x
Z9-6MM-30X	58.1	22.8	30 HP	x	x
Z12-6MU-40X	76.7	29.1	40 HP	x	x
<b>Blast Freezing Two-Stage</b>					
Z9-6TA-150X SUB		14.7	15 HP	x	x
Z9-6TH-200X SUB		18.4	20 HP	x	x
Z12-6TJ-250X SUB		20.8	25 HP	x	x
Z12-6TJW-250E SUB		21.9	25 HP	x	x
Z12-6TKW-300E-SUB		27.1	30 HP	x	x

Capacity Conditions:  
 Medium Temp: Ambient Temperature 32°C, Evaporating Temp -10°C; Suction Gas 20°C; 50Hz; R404A  
 Low Temp: Ambient Temperature 32°C, Evaporating Temp -35°C; Suction Gas 20°C; 50Hz; R404A  
 Blast Freezing: Ambient Temperature 32°C, Evaporating Temp -45°C; Suction Gas 20°C; 50Hz; R404A

Scan to download documentation:

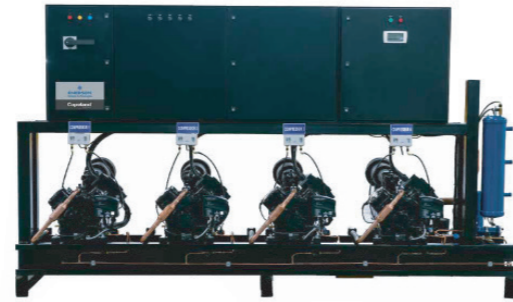


50Hz

60Hz

# Copeland™ Multi-Compressor Rack

For medium and low temperature applications, Multi-Compressor Racks are the ideal choice for supermarkets, hypermarkets and large cold rooms.



- Nominal Capacities (kW)** : 96 to 395 (Medium Temp)  
55 to 193 (Low Temp)
- Refrigerants** : R134a/R404A (MT) and R404A (LT)
- Electrical** : AWM- 50Hz: 380-420V/3ph - Part Wind Start  
EWK - 60Hz: 380-420/3ph - DOL

## Features



### Stream compressor

- High efficiency Discus™ valve
- Advanced compressor diagnostics

### Robust line control oil reservoir, oil separator & oil filter oil level regulator (with sight glass)

- Effective oil management, removes impurities
- Electronic oil control option
- Active oil management with safety alarm (electronic only)
- Oil pressure switch



### Dual pressure switches

- Adjustable pressures and differentials



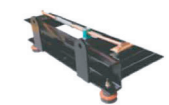
### Suction header with suction filters (with replaceable core)

- Smooth & optimized distribution of refrigerant
- Adequately sized & insulated
- Suction stubs with easily accessible ball valves for isolation



### Common discharge header

- Adequately sized to avoid oil traps
- Heavy gauged discharge piping, Protected within rack frame



### Mounting frame

- Spring-mounted robust MS frame to reduce noise & vibration
- Easy serviceability



### Electrical panel with Dixell™ electronics

- Electronic controller (Dixell iPro rack controller) - with display alarms and i/o relays for safety and communication. Flexible and easy to configure
- Circuit breakers and thermal overload protection (for individual compressors and for condenser fan - max 4 stages)
- Optimized algorithms for efficient rack compressor control

### Liquid station (optional), including:

- Receiver
- Inlet and outlet isolating valve
- Replaceable core filter
- Moisture indicator
- Pressure relief valve
- Low liquid level alarm switch



### Step capacity control kit for mount racks (R404a) optional

Scan to download documentation:



50Hz

60Hz

## Nomenclature

EMPB	-	4	4M	080	L	K	-	XXX
Emerson multi-compressor pack		Number of compressors in parallel	Compressor family 4M STREAM 6M (4/6 Cylinder)	Nominal rack system capacity in HP	Application L: Low temp M: Medium temp	Frequency K:EWK M:AWM		Scope of supply

## Product range

Medium temperature application

Model Name	Compressor	No. of Compressors	HP	Capacity (kW)
EMPB-34M066MM	4MA-22X	3	066	96
EMPB-44M075MM	4MH-25X	3	075	113
EMPB-44M090MM	4MI-30X	3	090	125
EMPB-34M099MM	4MJ-33X	3	099	140
EMPB-34M105MM	4MK-35X	3	105	157
EMPB-36M120MM	6MI-40X	3	120	190
EMPB-36M135MM	6MJ-45X	3	135	212
EMPB-36M150MM	6MK-50X	3	150	237
EMPB-44M088MM	4MA-22X	4	088	128
EMPB-44M100MM	4MH-25X	4	100	150
EMPB-44M120MM	4MI-30X	4	120	167
EMPB-44M132MM	4MJ-33X	4	132	186
EMPB-44M140MM	4MK-35X	4	140	209
EMPB-46M160MM	6MI-40X	4	160	253
EMPB-46M180MM	6MJ-45X	4	180	282
EMPB-46M200MM	6MK-50X	4	200	316
EMPB-56M225MM	6MJ-45X	5	225	353
EMPB-56M250MM	6MK-50X	5	250	395

Low temperature application

Model Name	Compressor	No. of Compressors	HP	Capacity (kW)
EMPB-34M045LM	4ML-15X	3	045	55
EMPB-34M060LM	4MM-20X	3	060	61
EMPB-34M066LM	4MT-22X	3	066	69
EMPB-34M075LM	4MU-25X	3	075	76
EMPB-36M090LM	6MM-30X	3	090	92
EMPB-36M105LM	6MT-35X	3	105	104
EMPB-36M120LM	6MU-40X	3	120	116
EMPB-44M060LM	4ML-15X	4	060	73
EMPB-44M080LM	4MM-20X	4	080	82
EMPB-44M088LM	4MT-22X	4	088	92
EMPB-44M100LM	4MU-25X	4	100	101
EMPB-46M120LM	6MM-30X	4	120	122
EMPB-46M140LM	6MT-35X	4	140	138
EMPB-46M160LM	6MU-40X	4	160	154
EMPB-56M175LM	6MT-35X	5	175	173
EMPB-56M200LM	6MU-40X	5	200	193

Capacity Conditions: Calculated for R404A at

MT: Evaporating Temp: -10°C / Condensing Temp: 45°C / Superheat: 20K

LT: Evaporating Temp: -25°C / Condensing Temp: 45°C / Superheat: 20K

For detailed rack performance at various operating conditions, please contact your local Emerson sales representative



# Semi-Hermetic K/L Condensing Unit



Model (Available with R22, R134a, R404A)	Capacity (kW) Medium Temp	Capacity (kW) Low Temp	Motor	EWL	EWK
			50 Hz	3Ø 380-420v	
			60 Hz		3Ø 380-420v
<b>Medium Temp Optimized</b>					
B8-KM-7X	1.89	0.60		x	x
B8-KJ-10X	2.38	0.80		x	x
D8-KSJ-15X	3.24	1.11		x	x
D8-KSL-20X	4.33	1.58		x	
H8-KSL-20X	4.82	1.66		x	
H8-LE-20X	4.83	1.33		x	x
H8-LF-30X	6.30	2.05		x	x
P8-LF-30X	6.90	2.14		x	
H8-LJ-30X	6.75	2.26		x	
P8-LJ-30X	7.48	2.38		x	
H8-LL-40X	8.07	2.75		x	
P8-LL-40X	9.12	2.93		x	
<b>Low Temp Optimized</b>					
B8-KJ-7X		0.83		x	
B8-KSJ-10X		1.05		x	x
B8-KL-15X		1.21		x	x
D8-LF-20X		1.65		x	x
H8-LJ-20X		2.09		x	
H8-LL-30X		2.73		x	x
H8-LSG-40X		3.41		x	

Capacity Conditions:  
 MT: Ambient Temperature 32°C, Evaporating Temp -10°C; Gas Return 5°C; 50Hz; R404A  
 LT: Ambient Temperature 32°C, Evaporating Temp -35°C; Gas Return 5°C; 50Hz; R404A

Scan to download documentation:



50Hz

60Hz

# F-Series Recip Condensing Units



## Simple & compact recip units

Compact design with silent fans and cost-effective reciprocating compressor  
 Available Components: Compressor, Condenser; Receiver; HP/LP Switch and Crankcase Heater

Model	Capacity (kW)	Motor	EWL	EWK
		50 Hz	3Ø-380/420v	1Ø-220/240v
		60 Hz		
		HP		
<b>Medium Temp (R22 Only)</b>				
FMC8A-CJ513	1.9	1 HP		x
FMD8A-CR 22	2.8	1.5 HP		x
FMD8A-CR 30	3.4	2 HP		x
FMH8A-CR 36	4.5	3 HP	x	x
FMM8A-CR 42	5.4	3.5 HP	x	
FMR6A-CR 53	7.1	4.5 HP	x	
FMR7A-CR 62	8.3	5 HP	x	
<b>Low Temp (R404A)</b>				
FLC8A-CM475	1.1	1 HP		x
FLH7A-CM512	1.4	1.25 HP	x	
FLH7A-CM515	1.6	2 HP	x	
FLH8A-CM517	2.0	2.25 HP	x	
FLH8A-CM520	2.1	2.5 HP	x	

Capacity Conditions:  
 MT: Ambient Temperature 32°C, Evaporating Temp -10°C; Gas Return 5°C; 50Hz; R404A  
 LT: Ambient Temperature 32°C, Evaporating Temp -35°C; Gas Return 5°C; 50Hz; R404A

Scan to download documentation:



# Water-Cooled Condensing Units Co-Axial Condenser



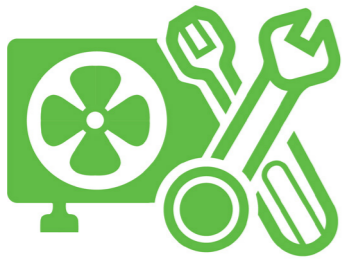
## Compact design, increased reliability

Scroll condensing units from 1.3 HP -7.5 HP with high efficiency scroll for hospitality and process applications. Available with R134a and R404A refrigerants



## Co-axial Condenser

Easy cleaning and operates at higher pressure than shell and tube (20 bar vs. 10 bar)



## System Protection Components

Sight glass, Crank case heater, high pressure, Low pressure switch and water valve



## Copeland™ Scroll Compressor

Gold standard reliability with high efficiency and low sound

Scan to download documentation:



50Hz



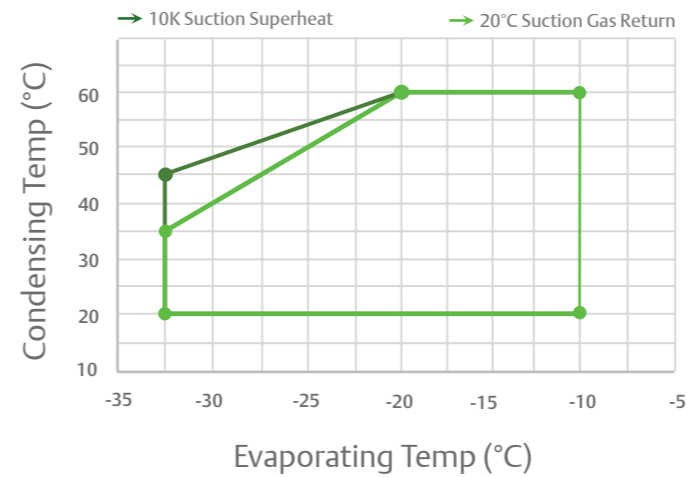
60Hz

Model	HP	Capacity <sup>1</sup> (kW) R134A	Capacity <sup>2</sup> (kW) R404A	Motor	TFD
				50 Hz	3Ø-380/420v
				60 Hz	3Ø-380/460v
FPWD-C13Z-TFD	1.3	1.84	1.83		X
FPWD-C15Z-TFD	1.5	2.20	2.19		X
FPWD-C17Z-TFD	1.7	2.50	2.50		X
FPWD-C20Z-TFD	2.0	2.95	2.75		X
FPWD-C25Z-TFD	2.5	3.41	3.49		X
FPWD-C30Z-TFD	3.0	4.29	4.14		X
FPWD-C35Z-TFD	3.5	4.96	4.82		X
FPWD-C40Z-TFD	4.0	5.81	5.66		X
FPWD-C50Z-TFD	5.0	7.23	7.03		X
FPWD-C60Z-TFD	6.0	8.79	8.28		X
FPWD-C65Z-TFD	6.5	9.85	9.55		X
FPWD-C75Z-TFD	7.5	10.89	10.79		X

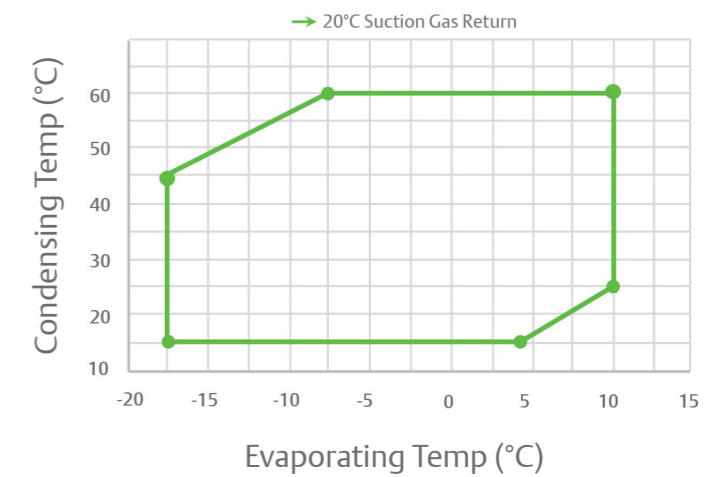
Capacity Conditions:

- (1) -5°C Evaporating Temp; 35°C Condensing Temp; 20°C Suction Return; 3K Subcooling
- (2) -20°C Evaporating Temp; 35°C Condensing Temp; 20°C Suction Return; 3K Subcooling

## R404A: Medium Temp/ Low Temp

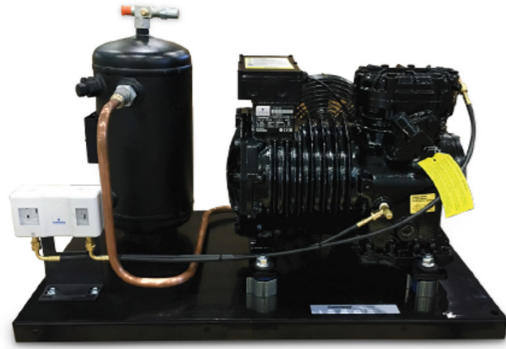


## R134A: High Temp/ Medium Temp





# Water-Cooled Condensing Unit Semi-Hermetic With Shell In Tube Condenser



## Semi-Hermetic Water-Cooled Condensing Unit

Compact, efficient and easy to maintain. Designed to deliver exceptional efficiency when used with chilled water line.

- Medium Temp: WDH R134a, WMH R404a
- Low Temp: WDH R404a

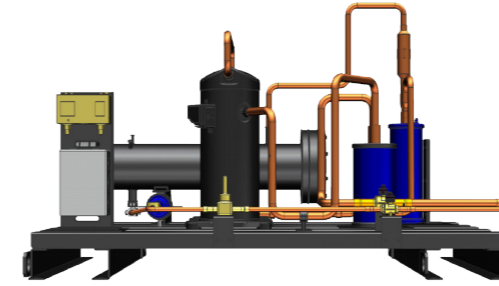
Model (Available with R404A and R448A)	Motor HP	Capacity <sup>1</sup> (kW) Medium Temp	Capacity <sup>2</sup> (kW) Low Temp	Motor	EWL	EWK
				50 Hz	3Ø-380/420v	
				60 Hz		3Ø-380/420v
<b>Medium Temp Version With R134A or Low Temp Version with R404A</b>						
WDH1A-KJ007	0.7	2.39	2.21		x	x
WDH1A-SJ010	1	2.89	2.79		x	x
WDH1A-KL015	1.5	3.35	3.22		x	x
WDH1A-SL020	2	4.26	4.07		x	x
WDH2A-LF020	2	5.82	5.22		x	x
WDH2A-LJ020	2	6.51	6.34		x	x
WDH3A-LL030	3	8.37	8.20		x	x
WDH4A-SG040	4	10.60	10.25		x	x
WDH4A-HA050	5	12.45	12.10		x	x
<b>Medium Temp Version with R404A</b>						
WMH1A-KM007-EWL	0.7	3.07			x	
WMH1A-KJ010-EWL	1	4.18			x	
WMH1A-SJ015-EWL	1.5	5.16			x	
WMH3A-LE020-EWL	2	7.94			x	
WMH4A-LF030-EWL	3	10.85			x	
WMH4A-LJ030-EWL	3	12.10			x	

Capacity Conditions:  
 (1) -5°C Evaporating Temp; 30°C Condensing Temp; 20°C Suction Return; 3K Subcooling, 50Hz  
 (2) -20°C Evaporating Temp; 30°C Condensing Temp; 20°C Suction Return; 3K Subcooling, 50 Hz

Scan to download documentation:



# Water-Cooled Condensing Unit Scroll With Shell In Tube Condenser



## Scroll Water-Cooled Condensing Unit

- Designed and built with high quality shell & tube condenser with good tolerance against foul water
- Condenser easy to clean and maintain
- Scroll compressors delivers robust and efficient performance
- High pressure/low pressure switch mounted
- Optional accessories: condenser with liquid level sight glass, filter drier, suction accumulator, oil separator, vibration eliminator



## Shell in Tube Condenser

Simple cleaning and maintenance. Easily remove build up scaling around the condenser



## Highly Efficient ZB Compressor

Gold standard reliability with high efficiency and low sound

Model (Available with R32 and R404A)	Compressor	Capacity (kW)	Motor	TFD
			50 Hz	3Ø-380/420v
			HP	
EWG-ZZB15KQE-AL-106	ZB15KQE-TFD-524	5.2	2 HP	x
EWG-ZZB19KQE-AL-106	ZB19KQE-TFD-524	6.4	2.5 HP	x
EWG-ZZB21KQE-AL-106	ZB21KQE-TFD-524	6.6	3 HP	x
EWG-ZZB26KQE-AL-106	ZB26KQE-TFD-524	7.7	3.5 HP	x
EWG-ZZB29KQE-AL-106	ZB29KQE-TFD-524	10.4	4 HP	x
EWG-ZZB38KQE-AL-106	ZB38KQE-TFD-524	13.1	5 HP	x
EWG-ZZB45KQE-AL-106	ZB45KQE-TFD-524	15.3	6 HP	x
EWG-ZZB48KQE-AL-106	ZB48KQE-TFD-524	16.9	6.5 HP	x
EWG-ZZB58KQE-AL-106	ZB58KQE-TFD-551	20.3	8 HP	x
EWG-ZZB66KQE-AL-106	ZB66KQE-TFD-551	22.7	9 HP	x
EWG-ZZB76KQE-AL-106	ZB76KQE-TFD-551	27.0	10 HP	x
EWG-ZZB95KQE-AL-106	ZB95KQE-TFD-551	33.1	13 HP	x
EWG-ZZB114KQE-AL-106	ZB114KQE-TFD-551	39.7	15 HP	x

Capacity Conditions: Condensing Temperature 30°C, Evaporating Temp 0°C; 50Hz; R404A

# History of Refrigeration Compressors



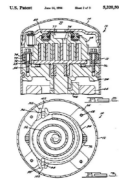
Mr. Edmund Copeland

Trusted by HVACR professionals worldwide for efficient, reliable performance and breakthrough innovations, the Copeland™ name is synonymous with compressors. The world's first successful mechanical refrigeration system was developed by Copeland Corporation and is proudly displayed in the Smithsonian museum in Washington D.C., United States.

Steady growth followed Copeland in the following years and went on to expand semi-hermetic technology from ¼HP to 60HP. Licensing designs to DWM (Germany), Prestcold (UK), COMEF (France) and Gelpha (Spain).

The first refrigeration scroll models were produced in 1993 and enabled users to reimagine the potential application for commercial refrigeration architecture. EVI (Enhanced Vapor Injection) brought a step change in efficiency and digital unloading introduced the world to the first compressor with a modulation range of 10% to 100%.

Today, refrigeration compressors range from 0.5HP to 60HP and cools everything from storing ripe bananas at +14°C to freeze drying durian at -50°C.



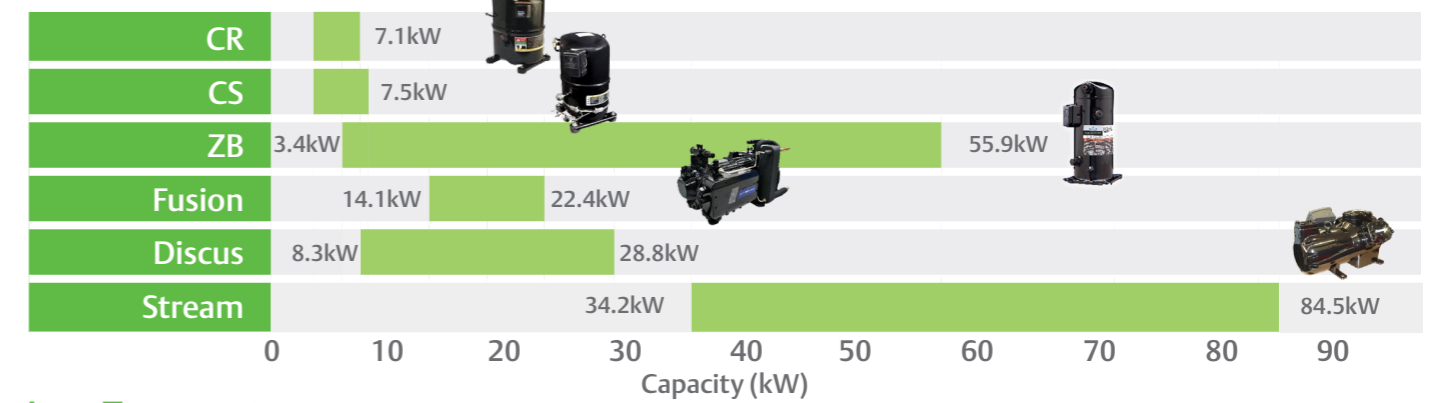
First refrigeration scroll	ZB scroll Asia production	Digital scroll	Fusion semi-hermetic scroll	Low temp ZSI scroll
1993	1996	2005	2009	2012
2016	2017	2018	2019	2020



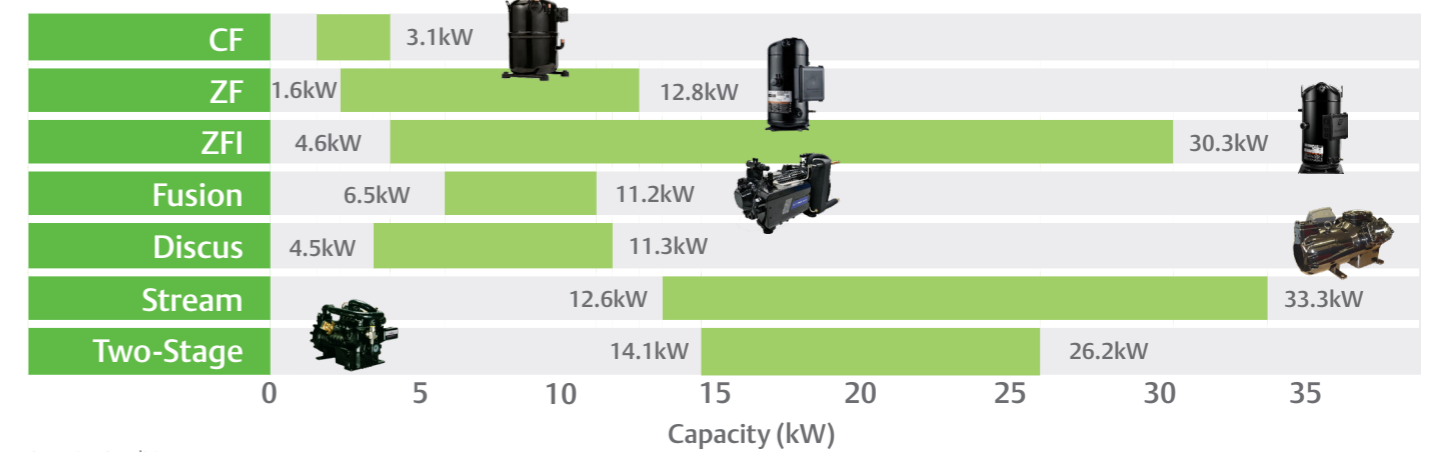
Variable speed	Low temp EVI scroll	Large ZB Refrigeration scroll	Fractional HP with R290	Large low temp EVI scroll
2016	2017	2018	2019	2020

# Copeland™ Compressor Portfolio

## Medium Temperature



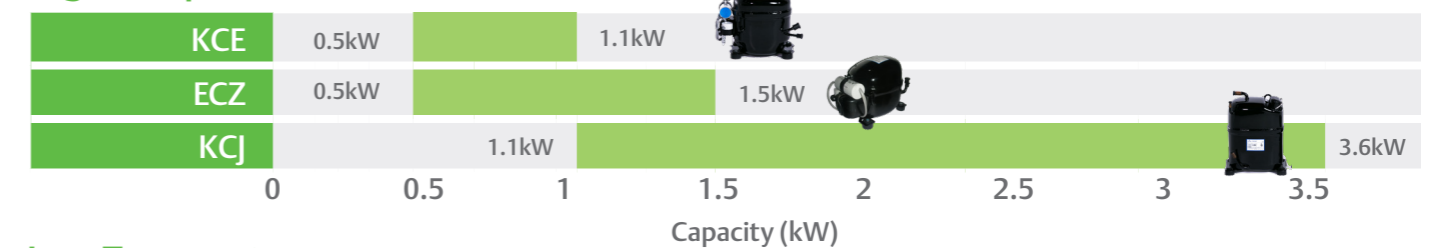
## Low Temperature



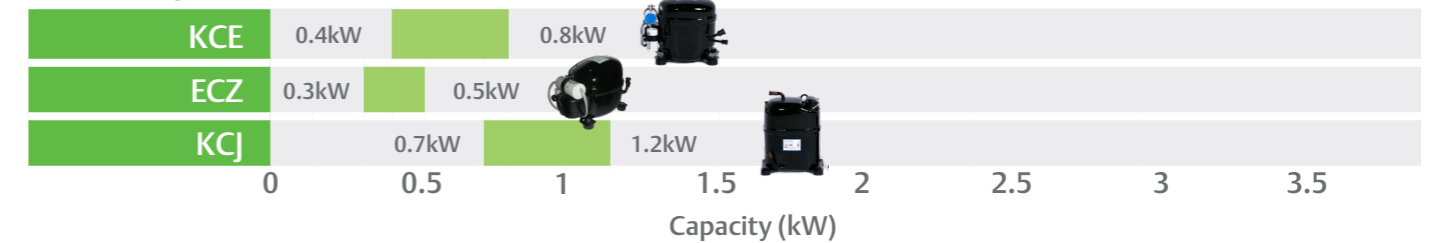
Capacity Conditions:  
 Medium Temp: Evaporating Temp -6.7°C; Condensing Temp 48.9°C Suction Gas 18.3°C; 50Hz; R404A  
 Low Temp: Evaporating Temp -31.7°C; Condensing Temp 40.6°C Suction Gas 18.3°C; 50Hz; R404A

## Fractional Horsepower

### High Temperature




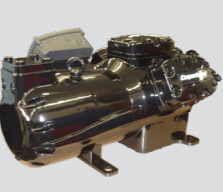
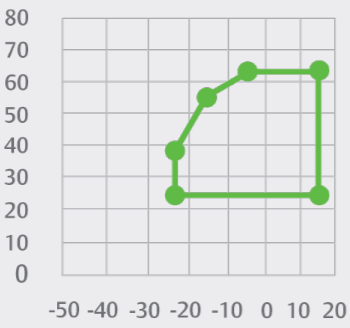
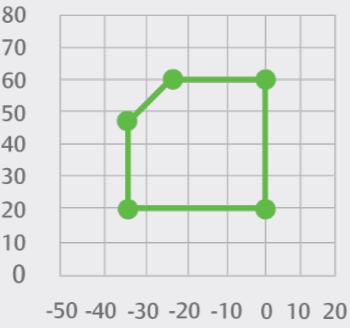
### Low Temperature



Capacity Conditions:  
 High Temp: +7.2°C Evaporating Temp/ 54.4°C Condensing Temp/ 35°C Return Gas/ 8.3K Subcooling R134A, 50Hz  
 Low Temp: -23.3°C Evaporating Temp/ 54.4°C Condensing Temp/ 35°C Return Gas/ 8.3K Subcooling R404A, 50Hz









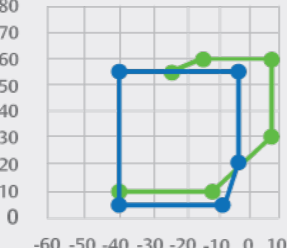
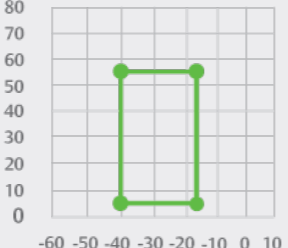
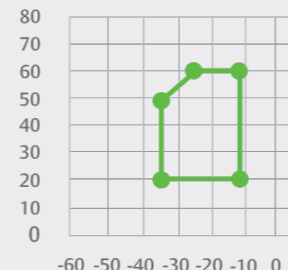
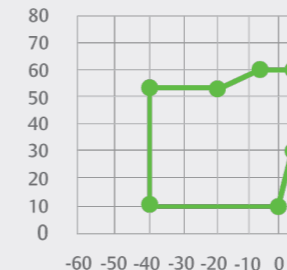
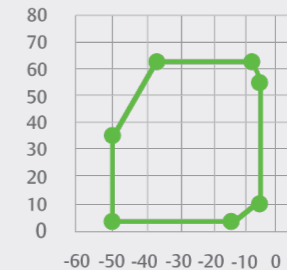
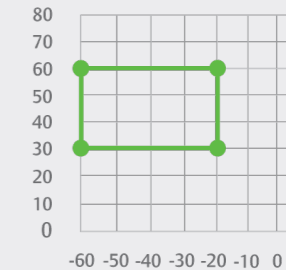
# Medium Temperature Compressor Line-up

	CR K6	CS K6	CS K7		ZB	Fusion	Copeland™ Stream
							
<b>Envelope*</b>							
<b>Type</b>	Hermetic reciprocating	Hermetic reciprocating	Hermetic reciprocating		Scroll	Semi-hermetic scroll	Semi-hermetic reciprocating
<b>Range (HP)</b>	1.5 – 5 HP	1 – 3.5 HP	1 – 3.5 HP		2 – 30 HP	11 – 20 HP	22 – 50 HP
<b>Range (kW)</b>	2.5-7.1 kW	2.4-7.5 kW	2.4-7.5 kW		3.4 – 55.9 kW	14.1 – 22.4 kW	34.2 – 84.5 kW
<b>Refrigerant</b>	R22,R407C	R22, R404A, R448A, R449A	R22, R404A, R448A, R449A		R22, R404A, R134a	R22, R404A	R22, R134a, R404A, R407C
<b>Designed for</b>	High temp medium temp	Medium to extended medium temp	Medium to extended medium temp		Medium temp	Medium temp low temp	Medium temp low temp
<b>Description</b>	Efficient HT and MT compressors designed for tropical climates	Highly-efficient and reliable US design for MT and Ext MT (-32°C to +0°C)	Extended envelope version of CSK6 to allow for better pull-down performance		Gold standard reliability and efficiency	Designed for both MT and LT. Fusion compressors delivers efficient and quiet performance	Rugged and reliable with industry-leading efficiency through Discus valve CoreSense for advance diagnostics

Capacity Conditions:  
 Medium Temp: Evaporating Temp -6.7°C; Condensing Temp 48.9°C Suction Gas 18.3°C; 50Hz; R404A  
 Low Temp: Evaporating Temp -31.7°C; Condensing Temp 40.6°C Suction Gas 18.3°C; 50Hz; R404A

Note: \* X-axis: Evaporating temp (°C)  
 Y-axis: Condensing temp (°C)

# Low Temperature Compressor Line-up

	ZF	ZFI	CF K6	Fusion	Copeland™ Stream	Copeland Two-Stage
						
<b>Envelope*</b>	 <p>ZF06-18KQE; ZFI20-26KQE ZF25-41KQE; ZFI36-59KQE</p>	 <p>ZF49-54KQE; ZFI68-81KQE</p>				
<b>Type</b>	Scroll	Scroll	Hermetic reciprocating	Semi-hermetic scroll	Semi-hermetic reciprocating	Semi-hermetic reciprocating
<b>Range (HP)</b>	2 – 17 HP	4 – 40 HP	1.5 – 3 HP	11 – 20 HP	5 – 45 HP	15 – 30 HP
<b>Range (kW)</b>	1.6-12.8 kW	4.6-30.3 kW	1.2-3.1 kW	6.5 – 11.2 kW	12.6 – 33.3 kW	14.1 – 26.2 kW
<b>Refrigerant</b>	R22, R404A, R448A, R449A, R407(A,C,F)	R22, R404A, R448A, R449A, R407(A,C,F)	R22, R404A, R448A, R449A	R22, R404A	R22, R134a, R404A, R407C	R22, R404A
<b>Designed for</b>	Low temp	Low temp	Low temp	Medium temp low temp	Medium temp low temp	Blast Freezing
<b>Description</b>	Highly-reliable liquid injection scroll Scroll compliance mechanism makes it highly tolerant of liquid slugging	Best-in-class efficiency with vapor injection scroll Wide envelope (-40°C to +7°C)	Highly-efficient and reliable US design for LT (37°C to -12°C)	Design for both MT and LT. fusion compressors deliver efficient and quiet performance	Rugged and reliable with industry-leading efficiency through Discuss valve. CoreSense for advance diagnostics	Designed for blast chilling applications with evaporating temp between -20°C to -60°C

Capacity Conditions:  
 Medium Temp: Evaporating Temp -6.7°C; Condensing Temp 48.9°C Suction Gas 18.3°C; 50Hz; R404A  
 Low Temp: Evaporating Temp -31.7°C; Condensing Temp 40.6°C Suction Gas 18.3°C; 50Hz; R404A

Note: \* X-axis: Evaporating temp (°C)  
 Y-axis: Condensing temp (°C)



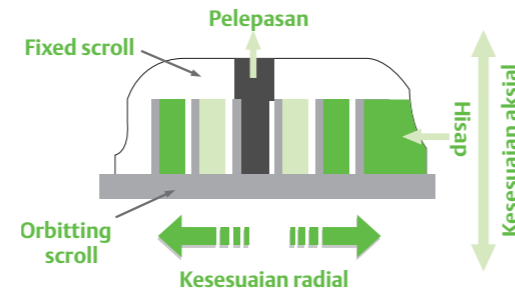
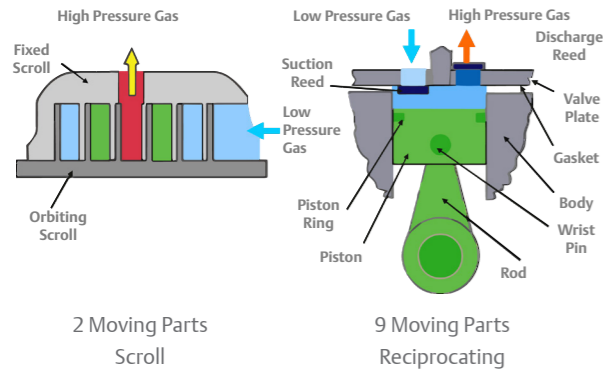
# Copeland™ Scroll Compressor



Copeland Scroll ZB Refrigeration Compressor

## The industry's go-to compressor

Every Copeland compressor is engineered and tested for ultra-reliability, quiet operation with improving the technology to meet today's energy and environmental standards. Over 10 million units sold across Asia Pacific demonstrates its reputation.



### Robust design

Scroll compressor's distinct design minimizes moving parts increases durability

### Improved liquid and debris handling

Axial and radial compliance improves compressor performance reducing system damage



### Longer product life and operation

Scrolls are designed to "wear-in" compared to other compressor technologies that "wear-out"



### Low sound & vibration

Compression process in a scroll set is symmetrical and continuous, inherently reduces the sound, vibration and pulsation.



### Compact sizing

Lightweight and compact



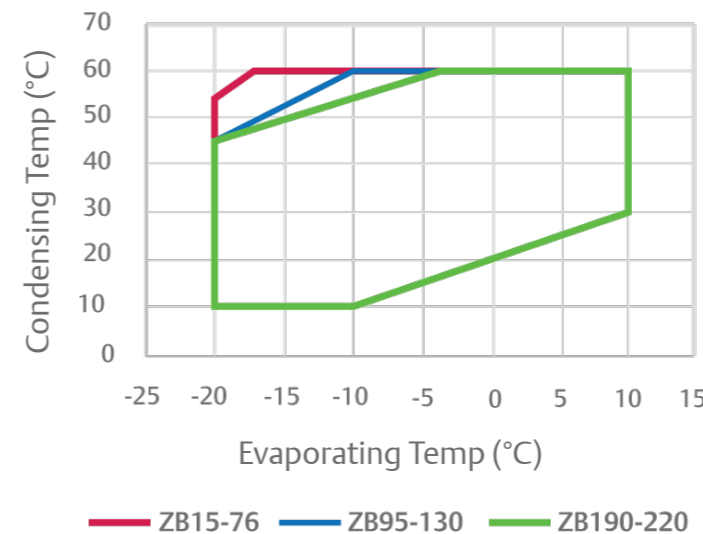
### Higher efficiency

Optimized for seasonal efficiency; +20% more efficient than traditional reciprocating compressor

(Available with R22, R404A, R134a)	Capacity (kW)	Motor Code	PFV	PFJ	TFD/TWD	TFM/TWM	TF5/TW5	TF7
		50 Hz	1Ø-200v	1Ø-220/240v	3Ø-380/420v	3Ø-380/420v	3Ø-200/220v	
		60 Hz	1Ø-208/230v	1Ø - 265v	3Ø-380/460v		3Ø-200/230v	3Ø-380v
		HP						

ZB Refrigeration Scroll								
ZB15K	3.4	2 HP	x	x	x		x	x
ZB19K	4.4	2.5 HP	x	x	x		x	x
ZB21K	5.3	3 HP	x	x	x		x	x
ZB26K	6.2	3.5 HP	x	x	x		x	x
ZB29K	7.2	4 HP	x	x	x		x	x
ZB38K	9.0	5 HP			x		x	x
ZB45K	10.6	6 HP			x		x	x
ZB48K	11.6	6.5 HP			x		x	x
ZB58K	14.0	8 HP			x		x	x
ZB66K	15.8	9 HP			x		x	x
ZB76K	18.8	10 HP			x		x	x
ZB95K	22.8	13 HP			x		x	x
ZB114K	27.0	15 HP			x		x	x
ZB130K	30.1	20 HP			x		x	x
ZB150K	36.2	22 HP			x	x		x
ZB190K	45.2	25 HP			x	x		x
ZB220K	55.9	30 HP			x	x		x

Capacity Conditions: Evaporating Temp -6.7°C; Condensing Temp 48.9°C Suction Gas 18.3°C; 50Hz; R404A



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# Copeland™ Scroll with Injection Technology

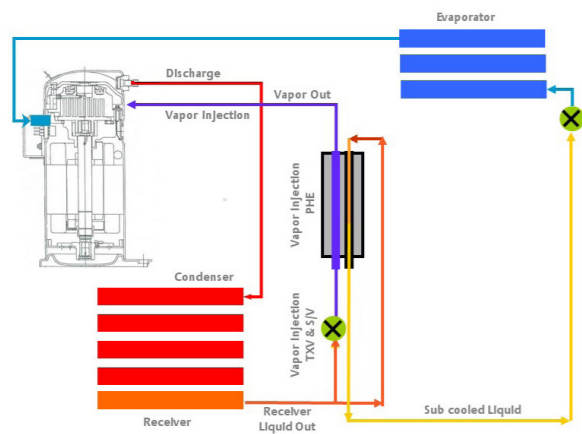


Copeland Scroll ZFI Compressor with Vapor Injection

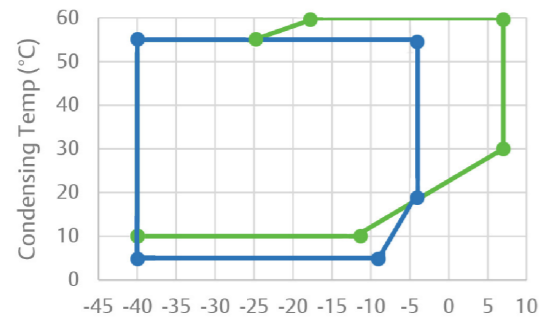
## High performance refrigeration compressor

For low temperature applications with +20% efficiency gains

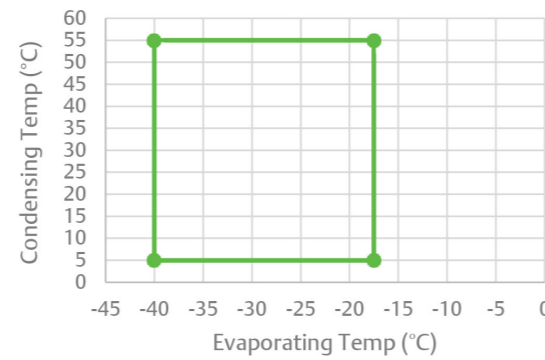
- ZF compressors are designed to operate with liquid injection to control discharge temperatures
- ZFI compressors are intended for operation with a sub cooler and vapor injection.



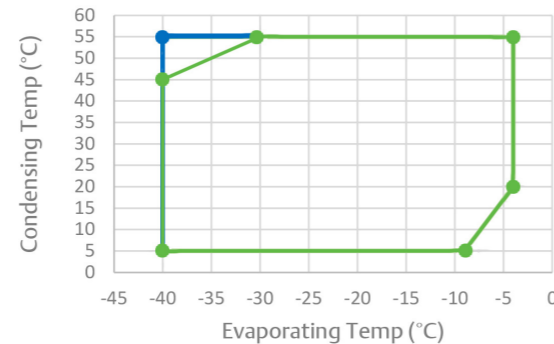
ZFI Accessory List



- ZF06-18KQE; ZFI20-26KQE
- ZF25-41KQE; ZFI36-59KQE



- ZF49-54KQE; ZFI68-81KQE



- ZFI96-122KQE (20°C Return Gas)
- ZFI96-122KQE (20K Superheat)

Model (Available with R22, R404A, R448A, R449A, R507, R407A/C)	Capacity (kW)	Motor Code	TFD/ TWD/ TED	TFC/TEC	TF5/TW5	TF7/TE7
		50 Hz	3Ø-380/420v	3Ø-200v	3Ø-200/220v	
		60 Hz	3Ø-380/460v	3Ø-208/230v	3Ø-200/230v	3Ø- 380v
		HP				

### ZF - Liquid Injection Scroll

ZF06K	1.6	2 HP	x		x	
ZF08K	2.0	2.5 HP	x		x	
ZF09K	2.2	3 HP	x		x	
ZF11K	2.8	3.5 HP	x		x	
ZF13K	3.2	4 HP	x	x	x	x
ZF15K	3.9	4 HP	x	x	x	x
ZF18K	4.8	6 HP	x	x		x
ZF25K	5.9	7.5 HP	x	x		x
ZF28K	6.7	9 HP	x	x		x
ZF34K	7.8	10 HP	x	x		x
ZF41K	9.8	13 HP	x	x		x
ZF49K	11.8	15 HP	x	x		x
ZF54K	12.8	17 HP	x	x		x

### ZFI - Vapor Injection Scroll

ZFI20K	4.6	4 HP	x	x		x
ZFI23K	5.8	5 HP	x	x		x
ZFI26K	6.9	6 HP	x	x		x
ZFI36K	8.7	7.5 HP	x	x		x
ZFI39K	9.9	9 HP	x	x		x
ZFI50K	11.6	10 HP	x	x		x
ZFI59K	14.1	13 HP	x	x		x
ZFI68K	16.0	15 HP	x	x		x
ZFI81K	18.8	20 HP	x	x		x
ZFI96K	24.1	25 HP	x	x		x
ZFI122K	30.3	30 HP	x	x		x
ZFI140K	TBC	40 HP	Q4 '21	Q4 '21		Q4 '21

Capacity Conditions:  
Evaporating Temp -31.7°C; Condensing Temp 40.6°C Suction Gas 18.3°C; 50Hz; R404A

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# Copeland™ Scroll with Digital Modulation

## Simple and cost-effective mechanical modulation

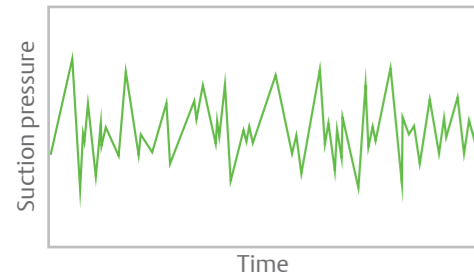
Simple and cost-effective mechanical modulation

- Wide capacity range from 10% to 100%
- No inverter loss & motor switching loss
- No EMC/EMI issues
- Easy installation



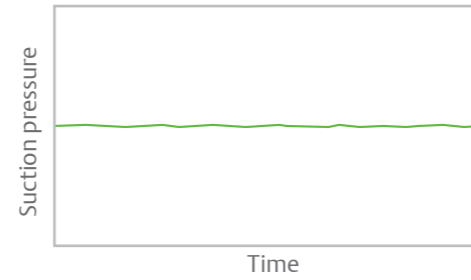
Copeland Scroll Digital ZB Compressor

### Fixed-speed



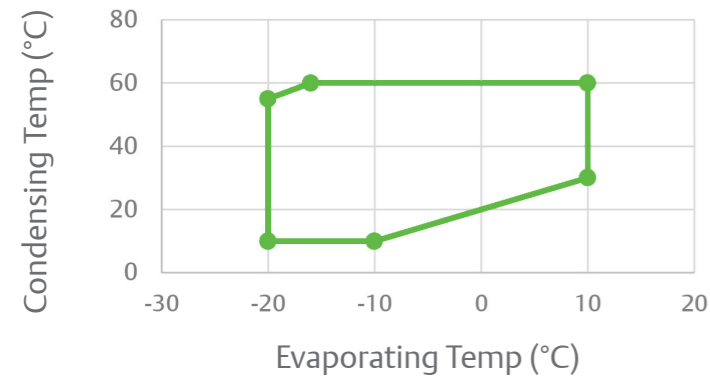
### Digital modulation

Smooth operation across loads



Model (Available with R22, R404A)	Capacity (kW)	Motor Code	TFD/TWD	TF5/TW5	TF7
		50 Hz	3Ø-380/420v	3Ø-200/220v	
		60 Hz	3Ø-380/460v	3Ø-200/230v	3Ø-380v
		HP			
ZBD21	5.1	3 HP	x	x	x
ZBD29	6.8	4 HP	x	x	
ZBD38	8.6	5 HP	x	x	x
ZBD45	10.2	6 HP	x	x	x

Capacity Conditions:  
(1) Evaporating Temp -6.7°C; Condensing Temp 48.9°C Suction Gas 18.3°C; 50Hz; R404A



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# Copeland™ ZSI Compressor

Flexible liquid injection scroll compressor

Designed for medium temp and extended medium temp applications

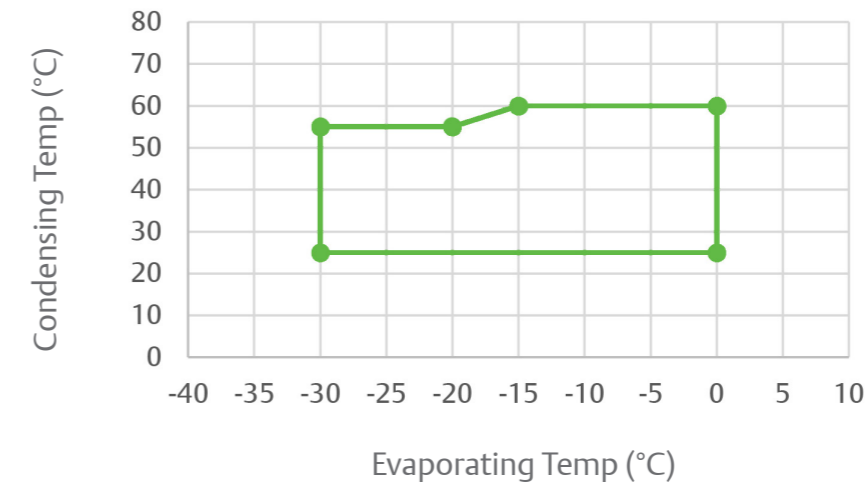
Flexible choice for customers looking to simplify their line-up



Copeland Scroll ZSI Compressor

Model (Available with R22, R404A)	Capacity <sup>1</sup> (kW)	Capacity <sup>2</sup> (kW)	Motor Code	TFM	PFZ
			50 Hz	3Ø-380/420v	1Ø-220/240v
			60 Hz		
			HP		
ZSI06KQE	3.7	2.0	2 HP	x	x
ZSI08KQE	4.5	2.6	2.5 HP	x	x
ZSI09KQE	4.9	2.9	3 HP	x	
ZSI11KQE	6.4	3.5	3.5 HP	x	
ZSI14KQE	8.1	4.5	4 HP	x	
ZSI15KQE	9.1	5.1	5 HP	x	
ZSI18KQE	11.1	6.3	6 HP	x	
ZSI21KQE	12.4	7.0	7.5 HP	x	

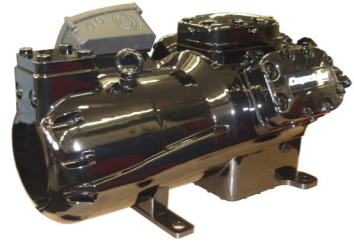
Capacity Conditions:  
(1) Evaporating Temp -6.7°C; Condensing Temp 48.9°C Suction Gas 18.3°C; 50Hz; R404A  
(2) Evaporating Temp -25°C; Condensing Temp 40.6°C Suction Gas 18.3°C; 50Hz; R404A



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# Copeland™ Semi-Hermetic Compressor



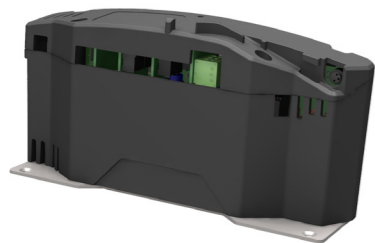
Copeland Stream Compressor with Electronic Protection Module

## Copeland Discus™ high efficiency and capacity refrigeration solution

These Compressors are world renowned for its ruggedness, reliability and superior energy efficiency. Manufactured in one of the most advanced facilities in Europe, Discus compressors feature advanced protection and diagnostics for system reliability, reduced service costs and increased system uptime. Discus series compressors are built to last for today's commercial refrigeration industry.

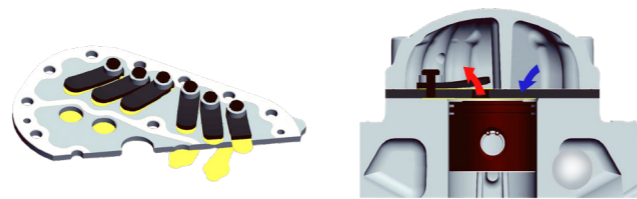
### Industry-leading efficiency

- **Discharge “puck” retained flush with valve plate**  
Reduces clearance volume to minimum when piston in high position
- **Valve plate allows gas to flow into cylinders with minimum heat gain:**  
Suction cavities designed to smoothly route the gas to minimize losses
- **Superior capacity and efficiency:**  
Compared to conventional compressors



Copeland Compressor Electronics Module

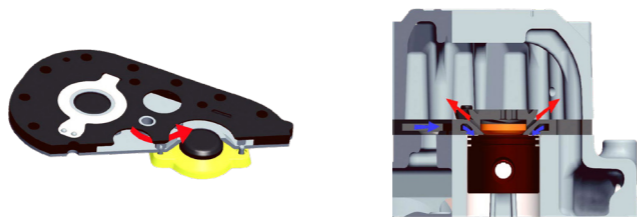
### Standard Compressor Discharge “Reed”



Discharge “Reed”

Re-expansion volume

### Copeland Discus Integrated Discharge “Puck” Valve



Discharge “Puck”

No dead volume (Re-expansion)

### Increase your uptime

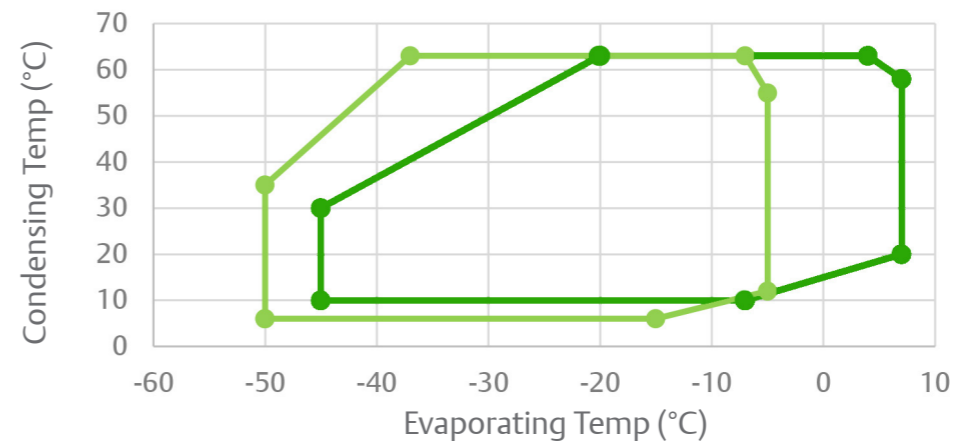
Key features such as fault history and LED indicators allow technicians to diagnose past and present system statistics for rapid and accurate troubleshooting. When the compressor electronics detect a fault, it will respond by shutting down the compressor to avoid imminent damage.

Model (Available with R22, R404A and R407C, R134a)	Medium Temp Capacity (kW)	Low Temp Capacity (kW)	Motor	AWM	EWL	AWD	EWK
			50 Hz	3Ø-380/420v	3Ø-230v 3Ø-400v		
			60 Hz			3Ø-460v	3Ø-230v 3Ø-380v
			Motor HP				
<b>Medium Temp Optimized</b>							
2DC-50X	8.3	2.6	5 HP	x	x	x	x
2DD-50X	10.2	3.4	5 HP	x	x	x	x
2DL-75X	12.9	4.4	7.5 HP	x	x	x	x
2DB-75X	15.4	5.8	7.5 HP	x	x	x	x
3DA-75X	18.1	6.4	7.5 HP	x	x	x	x
3DC-100X	21.5	8.0	10 HP	x	x	x	x
3DS-150X	28.8	10.9	15 HP	x	x	x	x
4MA-22X	34.2	12.7	22 HP	x	x	x	x
4MH-25X	40.4	14.9	25 HP	x	x	x	x
4MI-30X	44.6	17.3	30 HP	x	x	x	x
4MJ-33X	49.7	19.2	33 HP	x	x	x	x
4MK-35X	55.8	21.6	35 HP	x	x	x	x
6MJ-45X	75.0	28.8	45 HP	x	x	x	x
6MK-50X	84.5	32.5	50 HP	x	x	x	x
<b>Low Temp Optimized</b>							
2DL-40X	12.6	4.5	4 HP	x	x	x	x
2DB-50X	15.3	5.5	5 HP	x	x	x	x
3DA-50X	17.0	6.7	5 HP	x	x	x	x
3DC-75X	20.6	8.2	7.5 HP	x	x	x	x
3DS-100X	28.4	11.3	10 HP	x	x	x	x
4MF-13X	33.0	12.6	13 HP	x	x	x	x
4ML-15X	40.2	15.7	15 HP	x	x	x	x
4MM-20X	43.6	17.7	20 HP	x	x	x	x
4MT-22X	49.9	19.8	22 HP	x	x	x	x
4MU-25X	-	21.8	25 HP	x	x	x	x
6MM-30X	67.3	26.5	30 HP	x	x	x	x
6MT-35X	75.9	29.9	35 HP	x	x	x	x
6MU-40X	85.4	33.3	40 HP	x	x	x	x

Capacity Conditions:

MT Conditions: Evaporating Temp -6.7°C; Condensing Temp 48.9°C Suction Gas 18.3°C; 50Hz; R404A

LT Conditions: Evaporating Temp -31.7°C; Condensing Temp 40.6°C Suction Gas 18.3°C; 50Hz; R404A



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Product Selector Software



# Copeland™ Semi-Hermetic K/L Compressors

Models (Available with R22, R134a, R404A and R407C)	Motor	EWL	EWK
	50 Hz	3Ø 380-420v	
	60 Hz		3Ø 380-420v
	Capacity (kW)		
<b>Medium Temp</b>			
KM-7X	2.3	x	x
KJ-10X	3.1	x	x
KSJ-15X	3.9	x	x
KL-20X	4.6	x	x
LE-20X	5.6	x	x
LF-30X	8.0	x	x
LJ-30X	8.8	x	x
LL-40X	11.5	x	x
<b>Low Temp</b>			
KM-7X	0.8	x	x
KM-5X	0.8	x	x
KJ-10X	1.1	x	x
KJ-7X	1.1	x	x
KSJ-15X	1.4	x	x
KSJ-10X	1.5	x	x
KL-20X	1.6	x	x
LE-20X	1.7	x	x
KL-15X	1.7	x	x
KSL-20X	2.1	x	x
LF-20X	2.3	x	x
LF-30X	2.7	x	x
LJ-20X	2.8	x	x
LJ-30X	3.1	x	x
LL-30X	3.9	x	x
LL-40X	3.9	x	x

Capacity Conditions:  
 MT: Evaporating Temp -6.7°C; Condensing Temp 48.9°C Suction Gas 18.3°C; 50Hz; R404A  
 LT: Evaporating Temp -31.7°C; Condensing Temp 40.6°C Suction Gas 18.3°C; 50Hz; R404A





# Copeland™ Hermetic Integral Horsepower Reciprocating Compressors

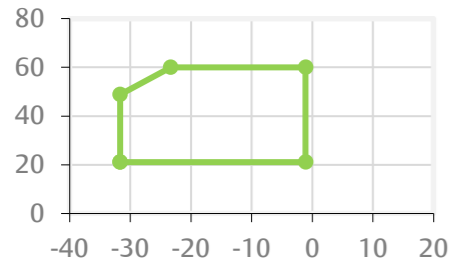


CS Hermetic reciprocating compressor

## High-tier reciprocating compressor

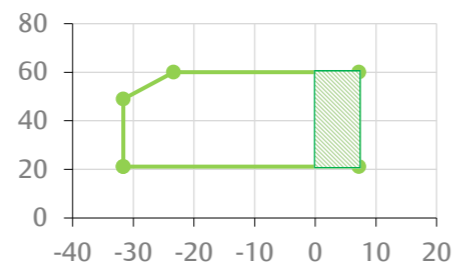
Best in class reciprocating hermetic solutions from 1.5 HP To 3.5 HP. Supports a wide range of applications from cabinets, island freezers, cold rooms, and bulk milk chilling.

- Highly reliable based on over 10 years of project installations
- Value option versus scroll compressors
- Extended medium temperature envelope



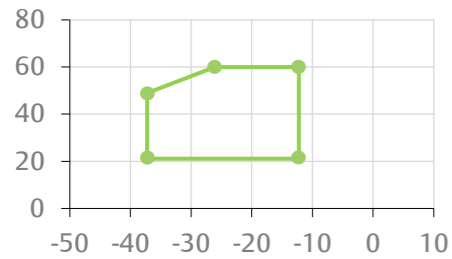
### CS K6 Platform

Based on proven US design



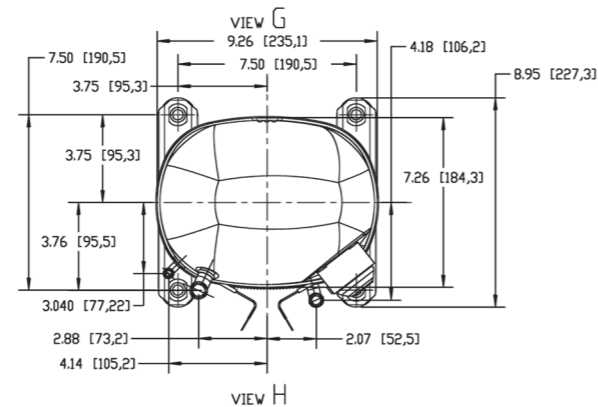
### CS K7 Platform

Enhance envelope version of CSK6 to support pull down application



### CF K6 Platform

Based on proven US design support for low temperature



### Industry-standard 7.5 x 7.5 leg

Same as previous generation platform such as CR\* K6 and KCM



### Protection

CSK6 and CFK6 standard sight glass and crankcase heater

Model (Available with R22, R406A)	Motor Code	PFV	PFZ	TFD	TFM	TF5
	50 Hz	1Ø-200v	1Ø-220/240v	3Ø-380/420v	3Ø-380/420v	3Ø-200/240v
	60 Hz	1Ø-208/230v		3Ø-380/460v		3Ø-200/230v
Capacity (kW)						

CSK6 Platform						
CS10K6	2.5	x	x		x	x
CS11K6	2.7		x	x		
CS12K6	2.8	x		x		x
CS13K6	3.3		x		x	
CS14K6	3.5	x		x		x
CS16K6	3.9		x			
CS17K6	4.1		x		x	
CS18K6	4.2	x		x		x
CS20K6	4.8	x	x	x	x	x
CS24K6	5.4			x		
CS25K6	5.8		x			
CS27K6	6.4	x		x		x
CS30K6	7.1			x	x	
CS33K6	7.5	x		x		x

CFK6 Platform						
CF04K6	0.9	Sept '21				Sept '21
CF05K6	0.9		Sept '21		Sept '21	
CF06K6	1.6	Sept '21		Sept '21		Sept '21
CF09K6	2.4	Sept '21		Sept '21		Sept '21
CF10K6	2.4				Sept '21	
CF12K6	3.1	Sept '21		Sept '21		Sept '21

CSK7 Platform*						
CS10K7	2.5	x	x		x	
CS11K7	2.7					
CS12K7	2.9	x		x		x
CS13K7	3.3		x		x	
CS17K7	4.1		x		x	
CS18K7	4.2	x		x		x
CS20K7	4.8		x		x	
CS24K7	5.4	x		x		x
CS23K7	7.5	x		x		x

Capacity Conditions:

MT Conditions: Evaporating Temp -6.7°C; Condensing Temp 48.9°C Suction Gas 18.3°C; 50Hz; R404A

LT Conditions: Evaporating Temp -31.7°C; Condensing Temp 40.6°C Suction Gas 18.3°C; 50Hz; R404A

Scan to download documentation:





# Copeland™ CR Integral Horsepower Compressors

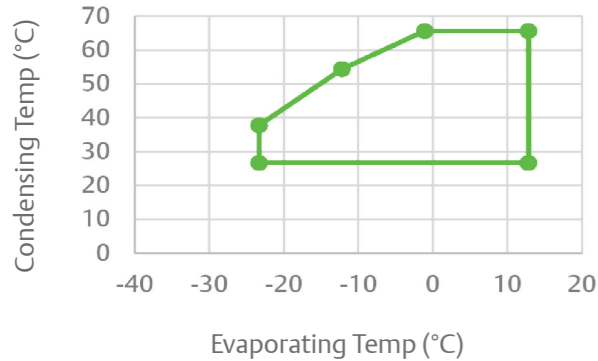


### Cost Efficient Compressor

An economical hermetic solution from 1.5 To 6.5 HP

Model (Available with R22, R407C)	Capacity (kW)	Motor Code	PFV	PFV/PF1	TFD	TFM	TF5
		50 Hz	1Ø-200v	1Ø-220/240v	3Ø-380/420v	3Ø-380/420v	3Ø-200/240v
		60 Hz	1Ø-208/230v		3Ø-380/460v		3Ø-200/230v
		HP					
CR20K6	2.8	1.5 HP	x				
CR22K6	2.8	1.5 HP		x		x	
CR24K6	3.3	2 HP	x	x	x		x
CR28K6	3.3	2 HP	x				
CR30K6	4.0	2.5 HP		x		x	
CR32K6	4.2	2.5 HP	x	x			
CR34K6	4.7	3 HP	x	x	x		x
CR36K6	4.8	3 HP		x		x	
CR37K6	5.0	3.25 HP	x	x	x		x
CR42K6	5.7	3.5 HP	x	x		x	x
CR47KQM	7.2	4 HP	x	x	x		x
CR53KQM	7.9	4.5 HP	x		x		x
CR57KQM	8.0	4.5 HP	x		x		x
CR62KQM	9.2	5 HP	x		x		x
CR72KQM	12.8	6.5 HP	x			x	

Conditions:  
Evaporating Temp -6.7°C; Condensing Temp 48.9°C Suction Gas 18.3°C; 50Hz; R22



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# Copeland™ Hermetic Fractional Horsepower Reciprocating Compressors



Bottle Coolers



Glass Top Freezer

## Compact and efficient refrigeration compressor

Designed and manufactured for efficiency and reliability, Copeland compressors are the proven choice for various food service applications



### KCE & KCJ Platform

Proven reliability & cost-effective platform with over 40 years of field installations across Asia



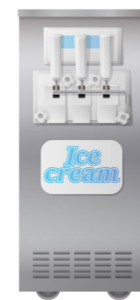
### KCN Platform

Mid-generation platform balances efficiency and cost effectiveness



### ECZ Platform

High efficiency platform delivering up to 20% higher EER compared with standard model; Available with R290



Ice Cream Machine



Water Dispenser



Display Counter



Drinking Water Cooler



Food Cart

Platform	Ref.	Model (50Hz)	Displacement (cc)	Capacity (btu/Hr)	EER	Capacity (watt)		
High Temperature Models								
KCE	R134a	KCE419HAG-VXXXH	5.8	1,585	6.5	465		
		KCE425HAG-VXXXH	7.6	2,145	6.0	629		
		KCE432HAG-SXXXH	9.4	2,690	7.2	788		
		KCE444HAG-VXXXH	12.1	3,675	8.2	1,077		
	R22	KCE443HAE-VXXXH	8.0	3,450	7.7	1,011		
KCE461HAE-VXXXH	11.5	5,100	8.2	1,495				
ECZ	R134a	ECZ421HG-13F-37XX	5.3	1,700	7.1	498		
		ECZ426HG-11M-37XX	6.0	2,150	9.0	630		
		ECZ426HG-13M-37XX	6.0	2,150	9.0	630		
		ECZ431HG-11M-37XX	7.2	2,555	9.0	749		
		ECZ431HG-13M-37XX	7.2	2,555	8.6	749		
		ECZ434HG-11M-37XX	8.7	3,150	9.4	923		
		ECZ434HG-13M-37XX	8.7	3,150	9.4	923		
		ECZ444HG-11M-37XX	10.5	3,700	9.0	1,084		
		ECZ444HG-13M-37XX	10.5	3,700	9.0	1,084		
		ECZ463HG-11M-37XX	15.3	5,250	8.8	1,539		
KCN	R134a	KCN463HAG-UXXXH	15.3	5,250	8.5	1,539		
KCJ	R134a	KCJ443HAG-BXXXH	12.6	3,700	8.2	1,084		
		KCJ467HAG-BXXXH	18.3	5,600	8.3	1,641		
		KCJ482HAG-SXXXH	22.0	7,075	8.5	2,073		
		KCJ498HAG-SXXXH	25.9	8,200	8.4	2,403		
		KCJ511HAG-UXXXH	29.3	9,290	8.8	2,723		
		KCJ513HAG-SXXXH	38.0	12,135	8.6	3,556		
		KCJ511HAE-UXXXH	18.3	9,150	9.0	2,682		
	R22	KCJ513HAE-SXXXH	25.9	12,800	8.9	3,751		
	Low Temperature Models							
	KCN	R134a	KCN372LAG-BXXXH	7.3	600	3.8	176	
KCN396LAG-BXXXH			9.0	800	3.9	234		
KCN411LAG-BXXXH			11.1	960	3.9	281		
KCN415LAG-BXXXH			15.3	1,260	3.9	369		
R404A		KCN414LAL-BXXXH	7.3	1,150	3.5	337		
		KCN418LAL-BXXXH	9.0	1,500	4.0	440		
		KCN422LAL-BXXXH	11.1	1,825	4.0	535		
		KCN430LAL-BXXXH	15.3	2,575	4.4	755		
		ECZ	R134a	ECZ380LG-11M-37XX	7.2	660	4.6	193
				ECZ380LG-13M-37XX	7.2	660	4.3	193
ECZ396LG-11M-37XX	8.2			760	4.3	223		
ECZ396LG-13M-37XX	8.2			760	4.0	223		
ECZ411LG-11M-37XX	10.5			890	3.9	261		
ECZ416LG-11M-37XX	13.8			1,260	4.5	369		
R404A	ECZ416LG-13M-37XX		13.8	1,260	4.5	369		
	ECZ412LL-31M-37XF		6.4	984	4.5	288		
	ECZ417LL-31M-37XF		8.7	1,318	4.5	386		
	ECZ419LL-31M-37XF		9.9	1,642	4.9	481		
R290	ECZ410LH-31M-X7XF	6.2	890	5.0	261			
	ECZ412LH-11M-X7XF	7.2	1,090	5.0	319			
	ECZ415LH-31M-37DF	8.7	1,220	4.9	358			
	KCE	R134a	KCE334LAG-AXXXH	4.5	285	2.6	84	
KCE345LAG-BXXXH	5.5	380	2.8	111				
KCJ	R134a	KCJ412KLAG-BXXXH	16.4	1,025	3.7	300		
		KCJ423KLAG-CXXXH	32.6	1,925	4.0	564		
	R404A	KCJ430LAL-BXXXH	16.4	2,425	4.2	711		
		KCJ450LAL-BXXXH	32.6	4,100	4.1	1,202		

Capacity Conditions:

High Temp: 7.2°C Evaporating Temp / 54.4°C Condensing Temp / 35°C Return Gas / 8.34K Subcooling/ 50Hz

Low Temp: -23.3 °C Evaporating Temp / 54.4°C Condensing Temp / 35°C Return Gas / 8.34K Subcooling/50Hz





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