

ZB Copeland Scroll™ Compressor Ranges for Medium Temperature Refrigeration Using R407A/F/C, R448A/R449A, R404A, R134a, R450A and R513A

Emerson offers ZB compressors with a wide displacement range from 5.9 m³/h to 87.5 m³/h. It includes digital compressor models that offers continuous capacity modulation technology.

Copeland Scroll compressors have 3 times less moving parts than reciprocating compressors and feature a scroll compliance mechanism which makes them particularly robust and reliable under severe conditions including liquid slugging.

They have the advantage of light weight and compactness, making them ideal for the usage in refrigeration units, compact refrigeration systems or special process units.

The Summit Series from 7 to 15 hp is designed to provide seasonal efficiencies 15% higher than traditional semi-hermetic compressors. These compressors are extremely quiet and can be fitted with an external sound shell for an additional 10 dBA sound reduction, which makes them best choice for refrigeration applications in urban and domestic areas.

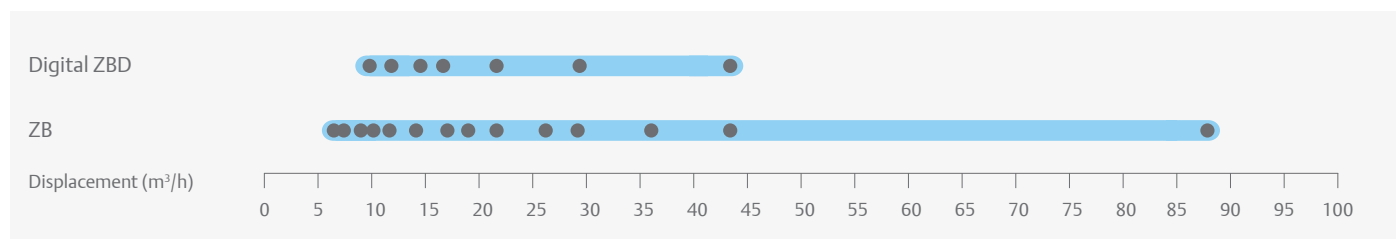
The ZB range also features ZB220 (30hp), the largest refrigeration scroll available on the market. These compressors are qualified for R407A/F/C, R448A, R449A, R404A and R134a. CoreSense™ Diagnostics is now available as an option for the ZB Scroll Summit series (ZB66K5E, ZB76K5E, ZB95K5E and ZB114K5E) as well as for Summit Digital ZBD *K5E Series.



ZB Compressor for Medium Temperature Refrigeration With and Without Sound Shell

For more details on digital models please refer to page 60 in the catalogue.

ZB and ZBD Compressor Line-up



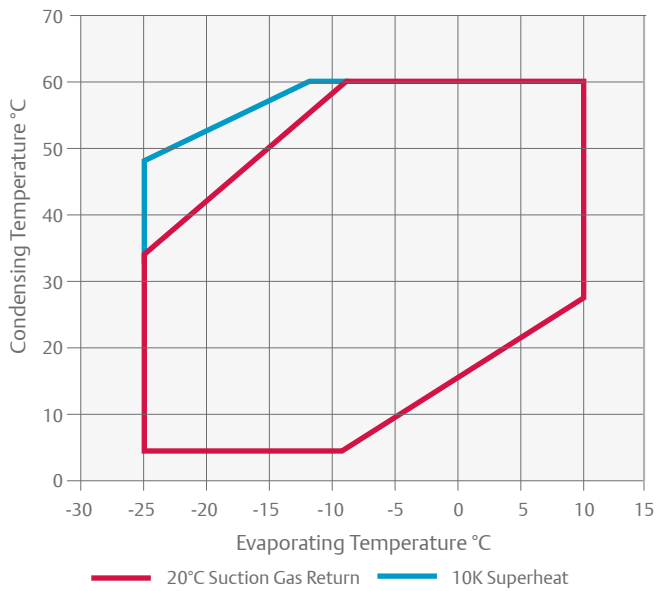
Features and Benefits

- Copeland Scroll axial and radial compliance for superior reliability and efficiency
- Wide operating envelope with 10°C condensing limit and fast pull-down capabilities
- High seasonal efficiencies as scrolls are designed at the condition where equipment runs most of the time
- Light weight and compactness, up to half the weight of equivalent semi-hermetic compressors
- Availability of optional sound shell on all models providing an additional 10 dBA sound attenuation for silent operation
- Includes 12 Digital Scroll compressor models for simple, stepless 10 to 100% capacity modulation
- One model for multiple refrigerants R407A/F/C, R448A/R449A, R404A, R134a, R450A and R513A

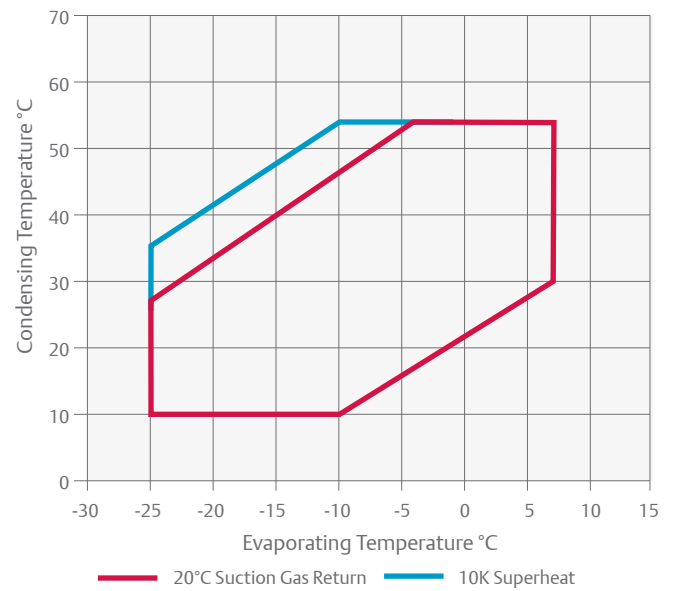
Maximum Allowable Pressure (PS)

- ZB15 to ZB45:
Low Side PS 21 bar(g) / High Side PS 32 bar(g)
- ZB50 to ZB220:
Low Side PS 22.6 bar(g) / High Side PS 32 bar(g)
- Digital ZBD:
Low Side PS 21 bar(g) / High Side PS 28.8 bar(g)
- Summit ZBD:
Low Side PS 22.6 bar(g) / High Side PS 32 bar (g)

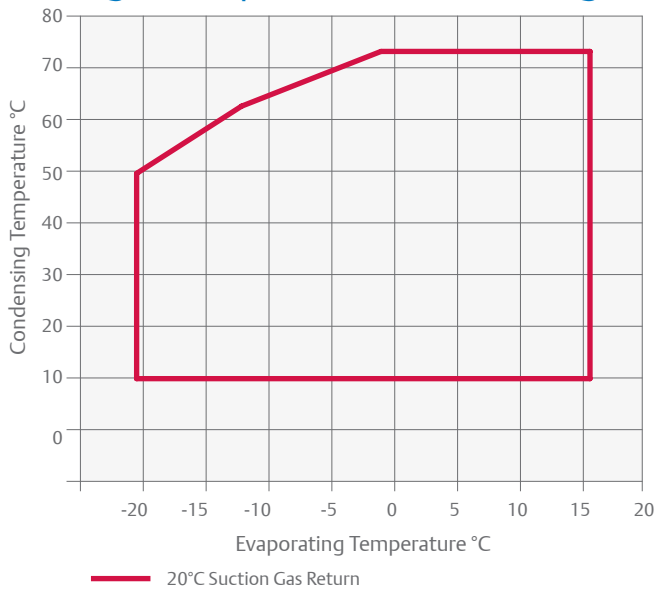
Operating Envelope R448A/R449A



Operating Envelope R407A



Operating Envelope R134a - for ZBD Digital Models



For individual model details please refer to select software.

Technical Overview

Models	Nominal hp	Displacement (m ³ /h)	Rotolock suction (inch)	Rotolock Discharge (inch)	Oil Quantity (l)	Length/Width/Height (mm)	Net Weight (kg)	Motor Version/Code		Maximum Operating Current (A)		Locked Rotor Current (A)		Sound Pressure @ 1 m - dB(A)***
								1 Ph*	3 Ph**	1 Ph*	3 Ph**	1 Ph*	3 Ph**	
ZB15KCE	2.0	5.9	1 1/4	1	1.3	241/241/369	25	PFJ	TFD	12	4	58	26	55
ZB19KCE	2.5	6.8	1 1/4	1	1.5	242/242/369	27	PFJ	TFD	12	6	61	32	55
ZB21KCE	3.0	8.6	1 1/4	1	1.2	243/244/391	29	PFJ	TFD	16	7	82	40	58
ZB26KCE	3.5	10.0	1 1/4	1	1.5	243/244/405	28	PFJ	TFD	18	8	97	46	60
ZB29KCE	4.0	11.4	1 1/4	1	1.5	246/246/423	29		TFD		10		50	58
ZB38KCE	5.0	14.4	1 1/4	1	1.9	242/242/438	37	PFJ	TFD	32	12	142	65	61
ZB42KCE	5.5	16.2	1 1/4	1	1.9	251/246/438	43	PFJ		35		150		62
ZB45KCE	6.0	17.1	1 1/4	1	1.9	242/242/438	39		TFD		13		74	61
ZB48KCE	6.5	18.8	1 1/4	1 1/4	1.8	246/250/442	39		TFD		14		101	62
ZB57KCE		21.4	1 1/4	1 1/4	1.9	246/256/442	39		TFD		15		102	68
ZB Summit Models														
ZB66K5E	10.0	25.7	1 3/4	1 1/4	3.4	280/280/534	60		TFD		17		111	66
ZB76K5E	12.0	28.8	1 3/4	1 1/4	3.4	280/280/534	61		TFD		20		118	67
ZB95K5E	13.0	36.4	1 3/4	1 1/4	3.4	280/280/552	65		TFD		28		140	69
ZB114K5E	15.0	43.4	1 3/4	1 1/4	3.4	280/280/552	66		TFD		33		174	72
ZB220KCE	30.0	87.5	2 3/4	1 3/4	6.3	448/392/715	176		TWM		69		310	78

* 1Ph: 230V/ 50Hz

** 3 Ph: 380-420V/ 50Hz

*** @ 1m: sound pressure level at 1m distance from the compressor, free field condition

Capacity Data

Condensing Temperature 40°C															
R407A	Cooling Capacity (kW)							R407A	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-35	-30	-25	-20	-15	-10	-5	Model	-35	-30	-25	-20	-15	-10	-5
ZB15KCE				2.1*	2.8	3.5	4.2	ZB15KCE				1.5*	1.5	1.5	1.5
ZB19KCE				2.4*	3.2	4.0	5.0	ZB19KCE				1.5*	1.6	1.6	1.6
ZB21KCE				3.0*	4.0	5.1	6.3	ZB21KCE				2.0*	2.0	2.0	2.1
ZB26KCE				3.6*	4.7	5.8	7.1	ZB26KCE				2.3*	2.3	2.3	2.4
ZB29KCE					5.3	6.5	8.0	ZB29KCE					2.6	2.6	2.6
ZB38KCE				5.4*	7.2	8.9	11.0	ZB38KCE				3.2*	3.3	3.3	3.4
ZB42KCE**				6.1*	7.9	9.8	12.0	ZB42KCE**				3.9*	3.9	3.9	3.9
ZB45KCE				6.3*	8.2	10.2	12.4	ZB45KCE				3.9*	4.0	4.0	4.0
ZB48KCE					9.5	11.7	14.3	ZB48KCE					4.5	4.6	4.5
ZB57KCE				8.2*	10.6	13.1	15.8	ZB57KCE				4.4*	4.6	4.8	4.9
ZB Summit Models															
ZB66K5E				9.2*	12.4	15.6	19.3	ZB66K5E				5.5*	5.5	5.7	5.8
ZB76K5E				10.6*	14.2	18.1	22.4	ZB76K5E				6.5*	6.5	6.7	6.9
ZB95K5E				12.9*	17.7	22.5	27.8	ZB95K5E				8.3*	8.3	8.5	8.7
ZB114K5E				14.8*	20.5	26.3	32.8	ZB114K5E				10.2*	10.2	10.3	10.5

Conditions: Suction Gas Return 20°C / Subcooling 0K

*Conditions: Suction Superheat 10K, Subcooling 0K

** Single Phase Only

Preliminary Data

Condensing Temperature 40°C															
R407F	Cooling Capacity (kW)							R407F	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-35	-30	-25	-20	-15	-10	-5	Model	-35	-30	-25	-20	-15	-10	-5
ZB15KCE					2.6*	3.4	4.2	ZB15KCE					1.6*	1.6	1.6
ZB19KCE					3.2*	4.2	5.1	ZB19KCE					1.9*	1.9	1.9
ZB21KCE					3.9*	5.0	6.2	ZB21KCE					2.2*	2.2	2.3
ZB26KCE					4.5*	5.8	7.2	ZB26KCE					2.6*	2.6	2.6
ZB29KCE					5.4*	7.0	8.7	ZB29KCE					2.8*	2.9	2.8
ZB38KCE				5.2*	6.9*	8.9	11.0	ZB38KCE				3.7*	3.7*	3.7	3.7
ZB42KCE**				5.9*	7.8*	10.1	12.5	ZB42KCE**				4.0*	4.0*	4.0	4.1
ZB45KCE				6.0*	8.1*	10.5	13.0	ZB45KCE				4.1*	4.2*	4.3	4.2
ZB48KCE				7.0*	9.3*	12.1	15.0	ZB48KCE				4.7*	4.8*	4.9	4.9
ZB57KCE				8.5*	10.9*	13.8	16.9	ZB57KCE				5.0*	5.1*	5.1	5.2
ZB Summit Models															
ZB66K5E				9.5*	13.0*	16.9	20.9	ZB66K5E				5.8*	5.8*	5.9	6.1
ZB76K5E				10.9*	14.9*	19.6	24.2	ZB76K5E				6.9*	6.8*	7.0	7.2
ZB95K5E				13.2*	18.6*	24.4	30.1	ZB95K5E				8.7*	8.8*	8.9	9.1
ZB114K5E				15.2*	21.5*	28.5	35.4	ZB114K5E				10.6*	10.7*	10.8	11.0

Conditions: Suction Gas Return 20°C / Subcooling 0K

*Conditions: Suction Superheat 10K, Subcooling 0K

** Single Phase Only

Preliminary Data

Capacity Data

Condensing Temperature 40°C															
R448A/ R449A	Cooling Capacity (kW)							R448A/ R449A	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-35	-30	-25	-20	-15	-10	-5	Model	-35	-30	-25	-20	-15	-10	-5
ZB15KCE			1.6*	2.2	2.9	3.6	4.4	ZB15KCE			1.6*	1.5	1.5	1.5	1.4
ZB19KCE			2.0*	2.6	3.3	4.1	5.1	ZB19KCE			1.6*	1.6	1.6	1.6	1.6
ZB21KCE			2.4*	3.3	4.2	5.2	6.4	ZB21KCE			2.1*	2.1	2.1	2.1	2.1
ZB26KCE			2.6*	3.8	4.8	5.9	7.2	ZB26KCE			2.4*	2.4	2.4	2.4	2.4
ZB29KCE			3.3*	4.5	5.5	6.8	8.3	ZB29KCE			2.6*	2.6	2.6	2.7	2.7
ZB38KCE			3.9*	5.7	7.2	8.9	10.9	ZB38KCE			3.4*	3.4	3.4	3.4	3.4
ZB42KCE**			4.4*	6.4	8.1	10.1	12.3	ZB42KCE**			3.9*	3.9	3.9	3.9	3.9
ZB45KCE			4.5*	6.6	8.5	10.5	12.8	ZB45KCE			3.9*	3.9	3.9	3.9	3.9
ZB48KCE			5.3*	7.6	9.7	12.1	14.7	ZB48KCE			4.5*	4.5	4.5	4.5	4.5
ZB57KCE			6.4*	8.6	10.8	13.4	16.4	ZB57KCE			4.4*	4.5	4.7	4.9	5.1
ZB Summit Models															
ZB66K5E			6.8*	9.4*	12.6	15.8	19.3	ZB66K5E			5.8*	5.8*	5.8	5.8	5.8
ZB76K5E			8.0*	11.1*	14.9	18.6	22.7	ZB76K5E			6.5*	6.6*	6.6	6.6	6.7
ZB95K5E			8.8*	13.2*	18.2	22.8	27.8	ZB95K5E			8.6*	8.6*	8.6	8.6	8.7
ZB114K5E			10.5*	15.5*	21.5	27.3	33.7	ZB114K5E			10.4*	10.3*	10.3	10.3	10.4
ZB220KCE				32.4*	43.1	53.7	65.7	ZB220KCE				20.3*	20.3	20.4	20.6

Conditions: Suction Gas Return 20°C / Subcooling 0K

*Conditions: Suction Superheat 10K, Subcooling 0K

** Single Phase Only

Preliminary Data

Condensing Temperature 40°C															
R404A	Cooling Capacity (kW)							R404A	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-35	-30	-25	-20	-15	-10	-5	Model	-35	-30	-25	-20	-15	-10	-5
ZB15KCE			1.9	2.4	3.0	3.7	4.5	ZB15KCE			1.7	1.7	1.6	1.6	1.5
ZB19KCE			2.3	2.9	3.5	4.2	5.1	ZB19KCE			1.9	1.9	1.9	1.9	1.9
ZB21KCE			3.0	3.7	4.5	5.5	6.6	ZB21KCE			2.2	2.2	2.2	2.2	2.2
ZB26KCE			3.5	4.3	5.3	6.4	7.6	ZB26KCE			2.6	2.6	2.6	2.6	2.6
ZB29KCE			4.0	4.9	6.0	7.2	8.6	ZB29KCE			2.9	2.9	2.9	2.9	2.9
ZB38KCE			5.1	6.3	7.7	9.3	11.2	ZB38KCE			3.8	3.8	3.8	3.8	3.8
ZB42KCE**			5.7	7.1	8.7	10.6	12.7	ZB42KCE**			4.2	4.2	4.2	4.2	4.2
ZB45KCE			6.0	7.4	9.1	11.0	13.2	ZB45KCE			4.3	4.3	4.3	4.3	4.3
ZB48KCE			6.9	8.6	10.5	12.7	15.2	ZB48KCE			4.9	4.9	4.9	4.9	4.9
ZB57KCE			7.9	9.7	11.9	14.3	17.1	ZB57KCE			4.7	4.9	5.2	5.4	5.5
ZB Summit Models															
ZB66K5E			9.1	11.4	13.9	16.8	20.1	ZB66K5E			6.2	6.2	6.2	6.3	6.4
ZB76K5E			10.5	13.1	16.2	19.7	23.6	ZB76K5E			7.2	7.2	7.3	7.4	7.5
ZB95K5E			10.7*	16.0	20.1	24.5	29.3	ZB95K5E			9.3*	9.2	9.3	9.3	9.4
ZB114K5E			12.5*	18.7	23.4	28.7	34.7	ZB114K5E			11.3*	11.3	11.3	11.4	11.4
ZB220KCE				28.5*	39.2	47.7	57.5	ZB220KCE			21.4*	21.8	22.0	22.2	22.4

Conditions: Suction Gas Return 20°C / Subcooling 0K

*Conditions: Suction Superheat 10K, Subcooling 0K

** Single Phase Only

Capacity Data

Condensing Temperature 40°C															
R134a	Cooling Capacity (kW)							R134a	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-35	-30	-25	-20	-15	-10	-5	Model	-35	-30	-25	-20	-15	-10	-5
ZB15KCE				1.4	1.7	2.2	2.7	ZB15KCE				0.9	0.9	0.9	0.9
ZB19KCE				1.6	2.0	2.5	3.1	ZB19KCE				1.1	1.1	1.1	1.1
ZB21KCE				2.0	2.5	3.2	4.0	ZB21KCE				1.3	1.3	1.3	1.3
ZB26KCE				2.3	2.9	3.7	4.6	ZB26KCE				1.5	1.5	1.5	1.5
ZB29KCE				2.5	3.2	4.0	5.0	ZB29KCE				1.7	1.7	1.7	1.7
ZB38KCE				3.2	4.2	5.4	6.7	ZB38KCE				2.1	2.1	2.1	2.2
ZB42KCE**				3.8	4.8	6.0	7.5	ZB42KCE**				2.5	2.5	2.5	2.4
ZB45KCE				4.0	5.1	6.4	8.0	ZB45KCE				2.4	2.4	2.5	2.5
ZB48KCE				4.8	6.0	7.5	9.1	ZB48KCE				2.8	2.8	2.9	2.9
ZB57KCE				5.0	6.4	8.1	10.1	ZB57KCE				3.4	3.4	3.4	3.5
ZB Summit Models															
ZB66K5E				6.0	7.5	9.5	11.8	ZB66K5E				3.8	3.7	3.8	3.8
ZB76K5E				6.9	8.6	10.8	13.5	ZB76K5E				4.4	4.4	4.4	4.5
ZB95K5E				8.2	10.8	13.8	17.1	ZB95K5E				5.4	5.5	5.5	5.6
ZB114K5E				9.6	12.7	16.3	20.4	ZB114K5E				6.6	6.6	6.7	6.7
ZB220KCE					27.3	34.1	42.1	ZB220KCE					13.0	13.2	13.5

*Conditions: Suction Superheat 10K, Subcooling 0K

** Single Phase Only