ZR Copeland Scroll™ Compressor Range for R513A, R407C and R134a

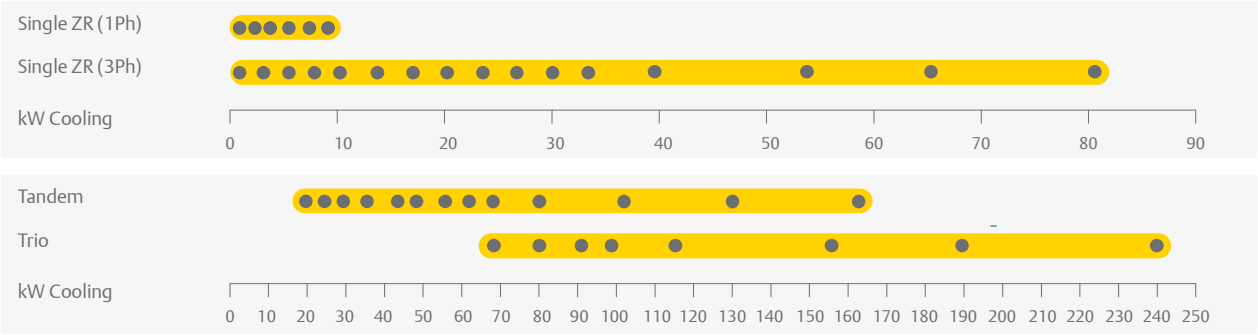
ZR Copeland Scroll compressor were developed or comfort and process/precision cooling applications using R513A, R407C and R134a.

Applied in the air conditioning and comfort industry for water chillers, rooftops and close control unit applications, scroll compressors are now the most used compression technology replacing reciprocating and screw compressors due to its undeniable superiority. Several, fully Copeland™ qualified, multiple compressor assemblies (tandem and trio) are available to allow the use of Copeland Scroll compressors into large capacity systems (ex. up to 500kW air cooled chillers) able to deliver optimal comfort, low operating cost with higher seasonal efficiency (SEER). To support the new market needs of customers, Emerson offers scroll compressors for R513A, a low-pressure refrigerant with a low GWP of 631. These ranges are able to reach 5K Superheat which allows better system performance optimization and cost.

The range of products goes from the ZR18 (1.5hp) to the ZR380 (30hp) for R407C and R134a and from ZR24KRE (2hp) to ZR190KRE (15hp) for R513A, R407C and R134a.

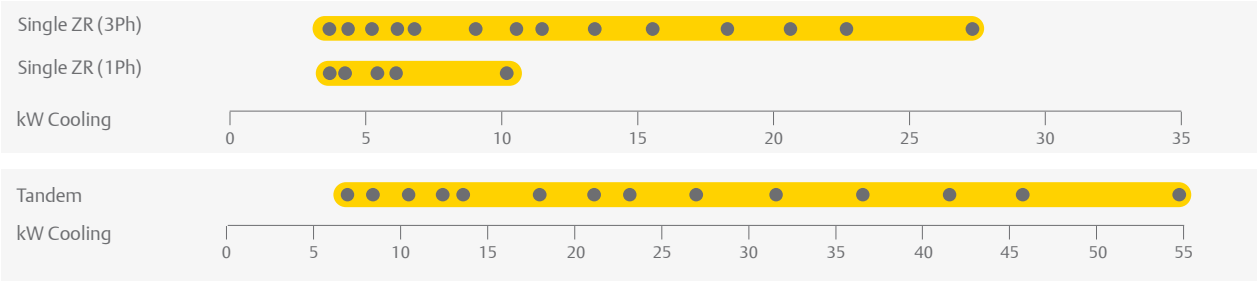
ZR Scroll Compressor

ZR Scroll Compressor Line-up R407C



Conditions EN12900: Evaporating 5°C, Condensing 50°C, Superheat 10K, Subcooling 0K

ZR Scroll Compressor Line-up R513A



Conditions EN12900: Evaporating 5°C, Condensing 50°C, Superheat 10K, Subcooling 0K

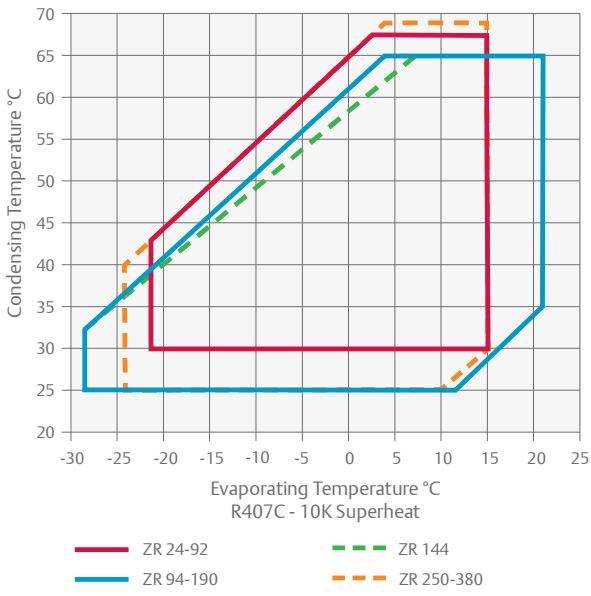
Features and Benefits

- Copeland Scroll axial and radial compliance for superior reliability and efficiency
- Wide scroll line-up for R407C, R134 and R513A
- Low TEWI (Total Equivalent Warming Impact)
- Low sound and vibration level
- Low oil circulation rate
- Copeland qualified tandem and trio configurations for superior seasonal efficiency (SEER)

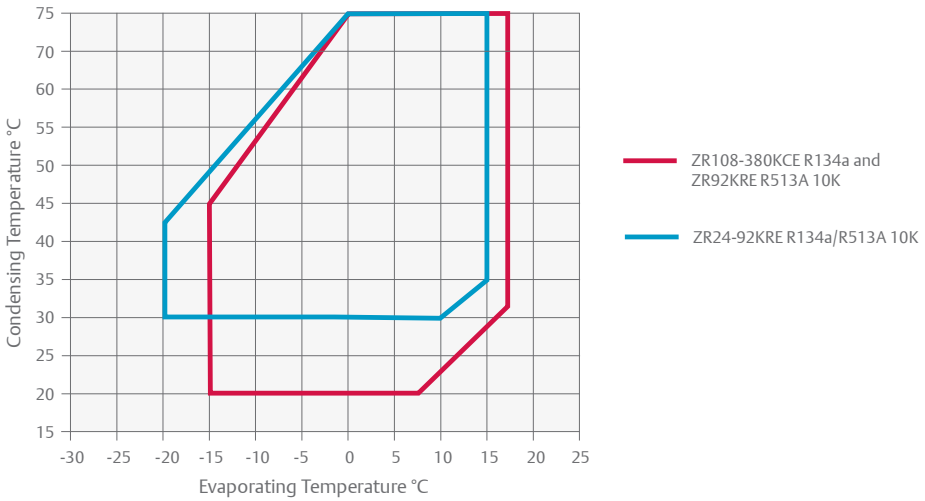
Maximum Allowable Pressure (PS)

- ZR24 to ZR81:
  Low side PS 21 bar(g) / High Side PS 29 bar(g)
- ZR94 to ZR380:
  Low side PS 20 bar(g) / High Side PS 32 bar(g)

Operating Envelope R407C



Operating Envelope R134a & R513A



Technical Overview ZR*KRE

Models	Nominal hp	R513A/R134a Capacity (kW)	R407C Capacity (kW)	EER	Displacement (m^3/h)	Stub Suction (inch)	Stub 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 (dBA) ***
											1 Ph*	3 Ph**	1 Ph*	3 Ph**	1 Ph*	3 Ph**	
ZR24KRE	2.0	3.5	5.0	3.0	5.9	3/4	1/2	0.7	239/245/364	25	PFJ	TFD	13	5	58	26	54
ZR28KRE	2.5	4.2	5.9	2.9	6.8	3/4	1/2	1.1	239/245/364	27	PFJ	TFD	13	7	61	32	54
ZR36KRE	3.0	5.2	7.6	3.1	8.6	3/4	1/2	1.2	239/245/387	29	PFJ	TFD	16	7	82	40	55
ZR42KRE	3.5	6.2	8.9	3.2	10.0	3/4	1/2	1.1	239/245/400	28	PFJ	TFD	19	9	97	46	56
ZR48KRE	4.0	6.9	10.3	3.1	11.4	7/8	1/2	1.5	239/245/417	29		TFD		10		50	57
ZR61KRE	5.0	9.0	13.0	3.2	14.4	7/8	1/2	1.9	246/257/438	37		TFD		13		66	58
ZR69KRE	5.5	10.2	14.3	3.2	16.2	7/8	1/2	1.9	246/257/438	43	PFJ		36		150		59
ZR72KRE	6.0	10.6	15.4	3.4	17.1	7/8	1/2	1.9	246/257/438	40		TFD		13		74	61
ZR81KRE	6.5	11.6	16.6	3.2	18.8	7/8	3/4	1.8	246/257/443	39		TFD		14		101	61
ZR92KRE	8.0	13.5	18.8	3.2	21.4	7/8	3/4	1.9	246/257/443	40		TFD		16		102	65
ZR108KRE	9.0	15.8	23.0	3.2	25.0	1 3/8	7/8	3.3	281/285/533	60		TFD		18		111	63
ZR125KRE	10.0	18.4	27.0	3.3	29.1	1 3/8	7/8	3.3	264/285/533	61		TFD		20		118	63
ZR144KRE	12.0	20.8	30.9	3.2	33.2	1 3/8	7/8	3.3	281/285/533	61		TFD		22		118	64
ZR160KRE	13.0	22.9	33.4	3.1	36.4	1 3/8	7/8	3.4	281/285/552	65		TFD		28		140	68
ZR190KRE	15.0	27.4	39.3	3.1	43.3	1 3/8	7/8	3.4	281/285/552	66		TFD		35		174	71

Conditions EN12900 : Evaporating 5°C, Condensing 50°C, Superheat 10K, Subcooling 0K
* 1 Ph: 230V/ 50Hz
** 3 Ph: 380-420V/ 50Hz
*** @ 1m: sound pressure level at 1m distance from the compressor, free field condition
Preliminary data

Technical Overview ZR*KCE

Models	Nominal hp	R407C Capacity (kW)	EER	Displacement (m^3/h)	Stub Suction (inch)	Stub 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 (dBA) ***
										3 Ph**	3 Ph**	3 Ph**	
ZR108KCE	9.0	23.0	3.4	25.0	1 3/8	7/8	3.3	281/285/533	60	TFD	18	111	63
ZR125KCE	10.0	27.0	3.4	29.1	1 3/8	7/8	3.3	264/285/533	61	TFD	20	118	63
ZR144KCE	12.0	30.9	3.4	33.2	1 3/8	7/8	3.3	281/285/533	61	TFD	22	118	64
ZR160KCE	13.0	33.4	3.2	36.4	1 3/8	7/8	3.4	281/285/552	65	TFD	28	140	67
ZR190KCE	15.0	39.3	3.2	43.3	1 3/8	7/8	3.4	281/285/552	66	TFD	35	174	69
ZR250KCE	20.0	52.2	3.2	56.6	1 5/8	1 3/8	4.7	427/376/726	139	TWD	42	225	72
ZR310KCE	25.0	65.0	3.2	71.4	1 5/8	1 3/8	6.8	447/390/724	160	TWD	52	272	74
ZR380KCE	30.0	80.1	3.4	87.5	1 5/8	1 3/8	6.3	447/427/724	177	TWD	63	310	77

Conditions EN12900 : Evaporating 5°C, Condensing 50°C, Superheat 10K, Subcooling 0K
** 3 Ph: 380-420V/ 50Hz
*** @ 1m: sound pressure level at 1m distance from the compressor, free field condition
Models ZR22K3E-ZR48K3E, ZR61KSE and ZR61KCE-ZR81KCE are available as service compressors

Capacity Data

Condensing Temperature 50°C															
R513A / R134a	Cooling Capacity (kW)							R513A / R134a	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-15	-10	-5	0	+5	+		Model	-15	-10	-5	0	+5		
ZR24KRE	1.3	1.7	2.2	2.8	3.5	4.4	5.3	ZR24KRE	1.3	1.3	1.2	1.2	1.2	1.2	1.2
ZR28KRE	1.6	2.1	2.7	3.4	4.2	5.1	6.2	ZR28KRE	1.4	1.4	1.4	1.4	1.4	1.4	1.4
ZR36KRE	2.1	2.7	3.4	4.2	5.2	6.4	7.8	ZR36KRE	1.8	1.8	1.7	1.7	1.7	1.7	1.7
ZR42KRE	2.4	3.1	4.0	5.0	6.2	7.5	9.1	ZR42KRE	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ZR48KRE	2.8	3.6	4.5	5.6	6.9	8.4	10.3	ZR48KRE	2.3	2.3	2.3	2.3	2.3	2.3	2.3
ZR61KRE	3.5	4.6	5.9	7.3	9.0	11.0	13.2	ZR61KRE	2.9	2.9	2.9	2.8	2.8	2.8	2.9
ZR69KRE**	4.0	5.2	6.6	8.2	10.2	12.4	14.9	ZR69KRE**	3.2	3.2	3.2	3.2	3.2	3.2	3.2
ZR72KRE	4.2	5.4	6.9	8.6	10.6	12.9	15.5	ZR72KRE	3.3	3.3	3.2	3.2	3.2	3.2	3.2
ZR81KRE	4.8	6.1	7.6	9.4	11.6	14.2	17.1	ZR81KRE	3.8	3.8	3.8	3.7	3.7	3.7	3.7
ZR92KRE	5.7	7.1	8.9	11.0	13.5	16.4	19.8	ZR92KRE	3.8	3.9	4.0	4.1	4.2	4.4	4.5
ZR108KCE		8.1	10.3	12.8	15.7	19.1	23.0	ZR108KCE		4.6	4.6	4.7	4.7	4.7	4.7
ZR125KCE		9.1	11.8	14.8	18.3	22.3	26.9	ZR125KCE		5.3	5.4	5.4	5.4	5.5	5.5
ZR144KCE		11.2	14.3	17.5	21.0	24.8	29.0	ZR144KCE		6.1	6.3	6.3	6.3	6.3	6.4
ZR160KCE		11.1	14.5	18.3	22.7	27.8	33.6	ZR160KCE		6.8	6.9	6.9	7.0	7.0	7.2
ZR190KCE		13.6	17.5	22.0	27.2	33.1	40.1	ZR190KCE		8.5	8.5	8.6	8.6	8.6	8.7
ZR250KCE		18.4	23.2	28.9	35.5	43.3	52.2	ZR250KCE		10.9	10.9	11.0	11.1	11.2	11.4
ZR310KCE		22.3	28.3	35.2	43.3	52.8	63.7	ZR310KCE		13.3	13.5	13.6	13.7	13.9	14.1
ZR380KCE		29.2	36.6	45.3	55.4	67.0	80.5	ZR380KCE		16.3	16.6	16.8	17.1	17.3	17.6

Conditions: Suction Superheat 10K / Subcooling 0K
** Single Phase only
Preliminary data

Condensing Temperature +50°C															
R407C	Cooling Capacity (kW)							R407C	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-15	-10	-5	0	+5	+10	+	Model	-15	-10	-5	0	+5	+10	+15
ZR24KRE		2.6	3.3	4.1	5.0	6.1	7.3	ZR24KRE		1.8	1.8	1.7	1.7	1.7	1.7
ZR28KRE		3.0	3.8	4.8	5.9	7.2	8.6	ZR28KRE		2.0	2.0	2.0	2.0	1.9	1.9
ZR36KRE		4.0	5.0	6.2	7.6	9.2	11.0	ZR36KRE		2.4	2.4	2.4	2.4	2.4	2.4
ZR42KRE		4.6	5.9	7.3	8.9	10.8	12.8	ZR42KRE		2.9	2.9	2.8	2.8	2.8	2.8
ZR48KRE		5.4	6.8	8.4	10.3	12.5	14.9	ZR48KRE		3.2	3.2	3.2	3.2	3.1	3.1
ZR61KRE		7.1	8.8	10.8	13.0	15.6	18.7	ZR61KRE		4.0	4.0	4.0	4.1	4.1	4.1
ZR69KRE**		7.8	9.6	11.8	14.3	17.3	20.6	ZR69KRE**		4.9	4.8	4.7	4.5	4.3	4.1
ZR72KRE		8.0	10.1	12.5	15.4	18.6	22.2	ZR72KRE		4.7	4.7	4.7	4.7	4.7	4.7
ZR81KRE		8.2	10.6	13.3	16.6	20.3	24.6	ZR81KRE		5.3	5.3	5.3	5.3	5.3	5.4
ZR92KRE		9.6	12.2	15.2	18.8	22.9	27.6	ZR92KRE		6.0	6.1	6.2	6.2	6.2	6.2
ZR94KCE		10.3	13.4	16.8	20.6	24.9	29.7	ZR94KCE		6.3	6.3	6.3	6.3	6.2	6.2
ZR108KCE		12.2	15.3	18.9	23.0	27.9	33.4	ZR108KCE		6.8	6.8	6.9	6.9	6.9	6.9
ZR125KCE		14.0	17.7	22.0	27.0	32.6	39.1	ZR125KCE		8.0	8.0	8.0	8.1	8.1	8.1
ZR144KCE			20.1	25.2	30.9	37.4	44.8	ZR144KCE			9.1	9.1	9.1	9.1	9.2
ZR160KCE		15.9	20.8	26.7	33.4	41.3	50.3	ZR160KCE		10.3	10.3	10.3	10.3	10.4	10.4
ZR190KCE		19.8	25.5	31.9	39.3	47.7	57.3	ZR190KCE		12.2	12.3	12.3	12.3	12.4	12.5
ZR250KCE		27.5	34.5	42.7	52.2	63.2	75.8	ZR250KCE		15.9	16.0	16.1	16.3	16.4	16.6
ZR310KCE		33.5	42.4	52.8	65.0	79.1	95.4	ZR310KCE		20.0	20.0	20.0	20.2	20.4	20.6
ZR380KCE		40.1	51.8	64.9	80.1	97.6	118.0	ZR380KCE		23.9	24.1	24.3	24.4	24.6	24.9

Conditions: Suction Superheat 10K / Subcooling 0K

ZR*KRE Tandem* Model Overview

Model	Tandem Assembly	Cooling Capacity (kW)		
		R407C	R513A	R134a
Even Tandem				
ZRT 48 KRE	2 x ZR24 KRE	10.0	7.0	7.2
ZRT 56 KRE	2 x ZR28 KRE	11.8	8.4	8.3
ZRT 72 KRE	2 x ZR36 KRE	15.2	10.4	10.5
ZRT 84 KRE	2 x ZR42 KRE	17.7	12.4	12.1
ZRT 96 KRE	2 x ZR48KRE	20.6	13.8	13.2
ZRT 122 KRE	2 x ZR61KRE	26.0	18.0	17.5
ZRT 144 KRE	2 x ZR72KRE	30.7	21.2	21.0
ZRT 162 KRE	2 x ZR81KRE	33.1	23.2	23.6
ZRT 184 KRE	2 x ZR92KRE	37.5	27.0	26.7
ZRT 216 KRE	2 x ZR108KRE	n/a	31.6	31.3
ZRT 250 KRE	2 x ZR125KRE	n/a	36.8	36.5
ZRT 288 KRE	2 x ZR144KRE	n/a	41.6	42.0
ZRT 320 KRE	2 x ZR160KRE	n/a	45.8	45.4
ZRT 380 KRE	2 x ZR190KRE	n/a	54.8	54.3

Conditions EN 12900: Evaporating 5°C, Condensing 50°C, Superheat 10K, Subcooling 0K
* Tandem Assemblies by System Manufacturers. Emerson can provide full technical support.
Preliminary data

ZR*KCE Tandem Model Overview

Model	Tandem Assembly	Cooling Capacity (kW)	
		R407C	R134a
Even Tandem			
ZRT 188 KCE	2 x ZR94KCE	41.2	26.9
ZRT 216 KCE	2 x ZR108KCE	46.0	31.3
ZRT 250 KCE	2 x ZR125KCE	54.0	36.5
ZRT 288 KCE	2 x ZR144KCE	61.8	42.0
ZRT 320 KCE	2 x ZR160KCE	66.8	45.4
ZRT 380 KCE	2 x ZR190KCE	78.6	54.4
ZRT 500 KCE*	2 x ZR250KCE	104.0	71.0
ZRT 620 KCE*	2 x ZR300KCE	130.0	84.4
ZRT 760 KCE*	2 x ZR380KCE	163.0	110.8
Uneven Tandem			
ZRU 315 KCE*	ZR125KCE + ZR190KCE	66.3	45.5
ZRU 350 KCE*	ZR160KCE + ZR190KCE	72.7	49.9
ZRU 440 KCE*	ZR190KCE + ZR250KCE	91.5	62.7
ZRU 500 KCE*	ZR190KCE + ZR300KCE	99.8	69.4
ZRU 560 KCE*	ZR250KCE + ZR300KCE	112.7	77.7
ZRU 690 KCE*	ZR300KCE + ZR380KCE	140.6	97.6

Conditions EN 12900: Evaporating 5°C, Condensing 50°C, Superheat 10K, Subcooling 0K
* Tandem Assemblies by System Manufacturers. Emerson can provide full technical support.

ZP Copeland Scroll™ Compressor Range for R410A

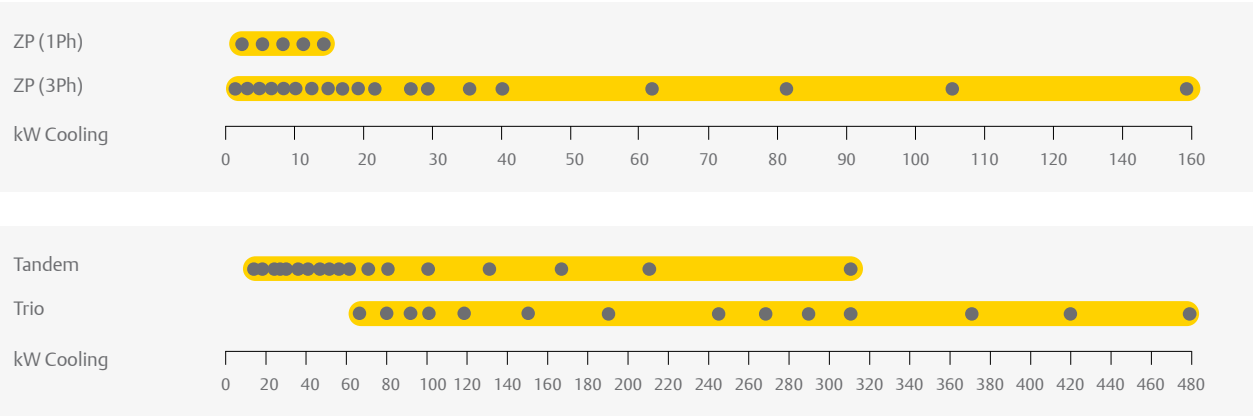
ZP Copeland Scroll compressors, for R410A, for comfort and process precision cooling applications. Emerson has been the pioneer in launching the first complete line-up of R410A commercial scroll compressors.

ZP Copeland Scroll compressors are perfectly suitable for air-cooled chiller systems up to 900kW (1100 kW if water-cooled) featuring high comfort and superior seasonal efficiency (ESEER). Whether used in stand-alone, tandem or trio configurations, the broad ZP Copeland Scroll line-up meets today's market requirements with unmatched flexibility, efficiency and proven reliability.

ZP104, ZP122 and ZP143KCE compressors for light commercial systems have a reduced footprint and weight for more compact systems. Their high efficiency helps to reduce operating costs.

ZP Scroll Compressor

ZP Scroll Compressor Line-up



Conditions EN12900: Evaporating 5°C, Condensing 50°C, Superheat 10K, Subcooling 0K

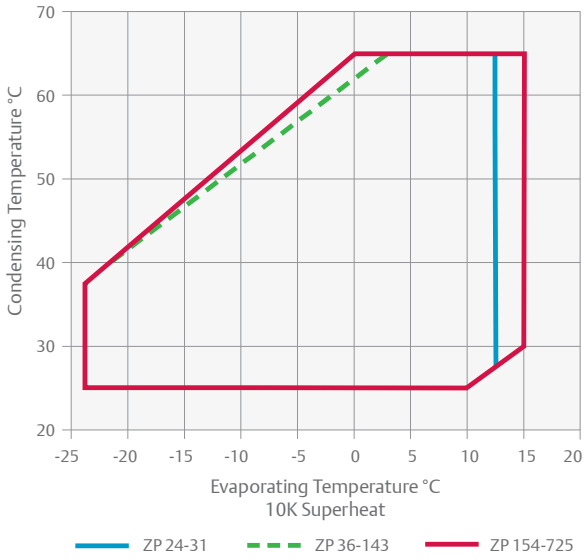
Features and Benefits

- Copeland qualified tandem and trio (now also uneven configurations for superior seasonal efficiency (ESEER and EN14825: SEER and SCOP)
- Copeland Scroll axial and radial compliance for superior reliability and efficiency
- Extended 5K operating envelope suitable for heat pump applications
- Low TEWI (Total equivalent warming impact)
- Wide scroll line-up for R410A
- Low sound and vibration level
- Low oil circulation rate

Maximum Allowable Pressure (PS)

- ZP24 to ZP91:
  Low side PS 28 bar(g) / High side PS 43 bar(g)
- ZP104 to ZP725:
  Low side PS 29.5 bar(g) / High side PS 45 bar(g)

Operating Envelope R410A



Technical Overview

Models	Nominal hp	Capacity (kW)	EER	Displacement (m^3/h)	Stub Suction (inch)	Stub 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 (dBA) ***
										1 Ph*	3 Ph**	1 Ph*	3 Ph**	1 Ph*	3 Ph**	
ZP24K5E	1.9	5.1	2.8	4.0	3/4	1/2	0.7	236/236/387	22	PFJ	TFD	13	5	60	28	55
ZP29K5E	2.2	6.0	2.8	4.8	3/4	1/2	0.7	246/246/387	23	PFJ	TFD	16	6	67	38	55
ZP31K5E	3.0	6.5	2.8	5.1	3/4	1/2	0.7	243/243/388	22	PFJ	TFD	17	7	67	38	55
ZP36K5E	2.6	7.6	2.9	6.0	7/8	1/2	1.2	243/243/506	32	PFJ	TFD	20	7	87	46	57
ZP42K5E	3.5	8.9	2.9	6.9	7/8	1/2	1.2	246/246/418	31	PFJ	TFD	21	8	98	43	57
ZP54K5E	4.6	11.5	3.0	8.9	7/8	1/2	1.2	246/246/418	34	PFJ	TFD	31	10	128	52	59
ZP61K5E	5.0	13.4	3.0	10.0	7/8	1/2	1.2	246/246/445	35		TFD		11		67	57
ZP72KCE	6.0	15.3	3.0	11.7	7/8	1/2	1.7	246/246/455	45		TFD		15		75	59
ZP83KCE	7.0	17.7	3.1	13.5	7/8	1/2	1.8	246/246/443	40		TFD		15		101	61
ZP91KCE	7.5	19.3	3.1	14.7	1 1/4	1 1/4	1.8	243/248/443	41		TFD		16		101	61
ZP104KCE	9.0	22.7	3.2	16.8	1 1/8	7/8	2.5	297/262/559	49		TFD		18		128	60
ZP122KCE	10.0	26.5	3.2	19.6	1 1/8	7/8	2.5	297/262/559	49		TFD		22		139	61
ZP143KCE	12.0	31.6	3.2	23.1	1 1/8	7/8	2.8	270/262/559	49		TFD		25		146	61
ZP154KCE	13.0	33.1	3.2	24.9	1 3/8	7/8	3.3	281/285/552	65		TFD		31		140	66
ZP182KCE	15.0	39.0	3.2	29.1	1 3/8	7/8	3.3	281/285/552	66		TFD		34		174	66
ZP385KCE	30.0	82.4	3.2	60.8	1 5/8	1 3/8	6.3	448/392/715	178		TWD		65		310	74
ZP485KCE	40.0	105.0	3.2	77.3	1 5/8	1 3/8	6.3	368/345/756	190		TWD		83		408	78
ZP725KCE	60.0	159.5	3.2	115.5	2 1/8	1 3/8	6.3	483/460/864	260		FED		123		666	82

Conditions EN12900 : Evaporating 5°C, Condensing 50°C, Superheat 10K, Subcooling 0K
* 1 Ph: 230V/ 50Hz
** 3 Ph: 380-420V/ 50Hz
*** @ 1m: sound pressure level at 1m distance from the compressor, free field condition

Capacity Data

Condensing Temperature +50°C															
R410A	Cooling Capacity (kW)							R410A	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-15	-10	-5	0	+5	+10	+	Model	-15	-10	-5	0	+5	+10	+15
ZP24K5E		2.7	3.4	4.2	5.0	6.0		ZP24K5E		1.9	1.9	1.8	1.8	1.8	
ZP29K5E		3.1	4.0	4.9	6.0	7.3		ZP29K5E		2.3	2.2	2.2	2.2	2.1	
ZP31K5E		3.2	4.2	5.3	6.5	7.9		ZP31K5E		2.4	2.4	2.4	2.3	2.3	
ZP36K5E		4.1	5.1	6.3	7.6	9.1	10.8	ZP36K5E		2.8	2.7	2.7	2.6	2.6	2.5
ZP42K5E		4.5	5.8	7.3	8.9	10.7	12.8	ZP42K5E		3.3	3.2	3.1	3.0	3.0	2.9
ZP54K5E		5.8	7.5	9.3	11.5	13.9	16.6	ZP54K5E		4.0	3.9	3.9	3.8	3.8	3.8
ZP61K5E		7.2	9.0	11.1	13.4	16.0	18.9	ZP61K5E		4.6	4.5	4.5	4.4	4.4	4.4
ZP72KCE		8.6	10.5	12.7	15.3	18.2	21.5	ZP72KCE		5.1	5.1	5.1	5.1	5.1	5.1
ZP83KCE		9.8	12.1	14.7	17.7	21.1	25.1	ZP83KCE		5.7	5.8	5.8	5.8	5.8	5.9
ZP91KCE		10.6	13.2	16.1	19.3	22.9	27.0	ZP91KCE		6.1	6.1	6.1	6.2	6.2	6.2
ZP104KCE		12.6	15.6	18.9	22.7	27.0	31.9	ZP104KCE		7.1	7.1	7.1	7.1	7.1	7.1
ZP122KCE		14.8	18.3	22.1	26.5	31.5	37.2	ZP122KCE		8.3	8.3	8.3	8.3	8.3	8.4
ZP143KCE		17.1	21.4	26.3	31.6	37.6	44.1	ZP143KCE		9.8	9.8	9.8	9.8	9.8	9.8
ZP154KCE		18.7	23.0	27.7	33.1	39.3	46.3	ZP154KCE		10.3	10.3	10.4	10.5	10.6	10.7
ZP182KCE		22.2	27.1	32.7	39.0	46.2	54.6	ZP182KCE		12.0	12.1	12.2	12.3	12.4	12.5
ZP385KCE		46.3	56.6	68.6	82.3	98.1	116.0	ZP385KCE		25.4	25.3	25.4	25.6	25.9	26.3
ZP485KCE		60.2	73.1	88.0	105.0	125.0	147.0	ZP485KCE		31.1	31.5	32.0	32.5	33.2	34.0
ZP725KCE		91.7	111.0	135.5	159.0	188.0	222.0	ZP725KCE		49.7	50.0	50.3	50.5	50.9	51.3

Conditions: Suction Superheat 10K / Subcooling 0K

Tandem Model Overview

Model	Nominal hp	Cooling Capacity (kW)	Even Tandem	Uneven Tandem
Tandem ZPT - Tandem Uneven ZPU				
ZPT 72 K5E*	2 x 3	16	•	
ZPT 84 K5E*	2 x 3.5	18	•	
ZPT 108 K5E*	2 x 4	23	•	
ZPT 122 K5E*	2 x 5	26	•	
ZPT 144 KCE*	2 x 6	31	•	
ZPT 166 KCE*	2 x 6.5	35	•	
ZPT 182 KCE*	2 x 8	39	•	
ZPT 208 KCE*	2 x 9	45	•	
ZPT 244 KCE*	2 x 10	53	•	
ZPT 286KCE	2 x 12	63	•	
ZPT 308KCE*	2 x 13	67	•	
ZPU 336 KCE*	13 + 15	73		•
ZPT 364 KCE*	2 x 15	79	•	
ZPU 417 KCE*	15 + 20	90		•
ZPT 470 KCE*	2 x 20	101	•	
ZPU 477 KCE*	15 + 25	103		•
ZPU 530 KCE*	20 + 25	114		•
ZPT 590 KCE*	2 x 25	127	•	
ZPU 680 KCE*	25 + 30	146		•
ZPT 770 KCE*	2 x 30	165	•	
ZPU 870 KCE*	30 + 40	187		•
ZPT 970 KCE*	2 x 40	209	•	
ZPU 111 MCE*	30 + 60	240		•
ZPU 121 MCE*	40 + 60	262		•
ZPT 145 MCE*	60 + 60	317	•	

System using ZP235 or ZP295 (20 or 25 hp) shall use ZP232KZE and ZP292KZE (refer to next chapter)
Conditions EN 12900: Evaporating 5°C, Condensing 50°C, Superheat 10K, Subcooling 0K
* Tandem assemblies by system manufacturers. Emerson can provide full technical support.

ZP Copeland Scroll™ Air Conditioning Compressor Range, Optimized for Seasonal Performance

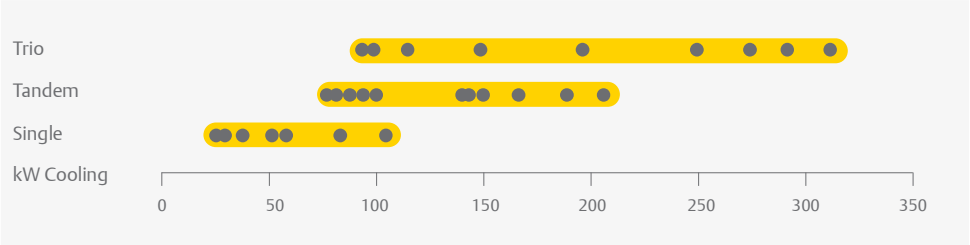
The new ZP*KZE and ZP*KPE scroll compressors for large chillers feature advanced monitoring capabilities and improved part-load cooling efficiency, thanks to a variable compression ratio valve. This will help OEMs meet the minimum seasonal performance level required by the Ecodesign Directive.

The CoreSense™ Communications module they are equipped with ensures enhanced reliability, by providing real time compressor data to the system controller to provide temperature protection.

They are designed for reversible chillers, rooftop or air handling units with a cooling capacity between 30 and 400 kW.

ZP*KZE Scroll Compressor

ZP*KZE & ZP*KPE Compressor Line-up



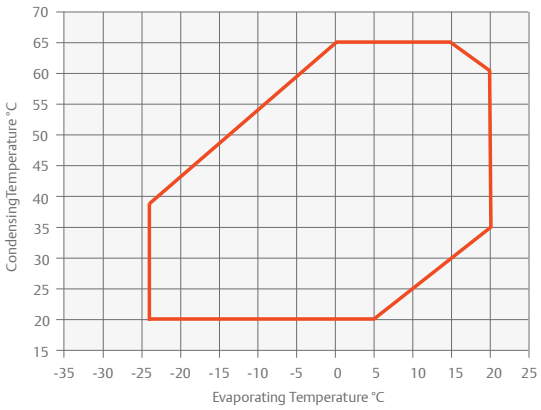
Multiple Copeland Scroll Nominal Cooling kW @(5/50) EN12900 - 1 Circuit

Features and Benefits

- High seasonal performance (SEER)
  5% improved SEER versus previous generation
- Flexibility & reduced complexity
  Wide range of even and uneven tandem and trio assemblies for a full system line-up with a reduced number of compressor models in stock.
- Enhanced reliability through electronics

The CoreSense Communications module provides realtime compressor data via RS485 Modbus that is used by the system controller to provide temperature protection.
This ensures greater reliability for demanding applications.

Operating Envelope R410A



Technical Overview

Models	Nominal hp	Capacity (kW)	EER	Displacement (m³/h)	Stub Suction (inch)	Stub 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 (dBA) ***
										3 Ph**	3 Ph**	3 Ph**	
ZP137KPE	12.0	29.5	3.1	22.1	1 3/8	7/8	3.3	264/285/533	63	TFD	25	118	64
ZP154KPE	13.0	33.0	3.1	24.9	1 3/8	7/8	3.3	281/285/552	65	TFD	31	140	65
ZP182KPE	15.0	38.8	3.1	29.1	1 3/8	7/8	3.3	326/295/552	66	TFD	34	174	66
ZP232KZE	20.0	50.6	3.3	36.6	1 5/8	1 1/8	4.4	315/315/661	92	TND	38	241	72
ZP292KZE	25.0	63.3	3.3	45.7	1 5/8	1 1/8	4.4	315/315/661	92	TND	49	288	72
ZP385KPE	30.0	82.9	3.2	60.8	1 5/8	1 3/8	6.3	447/427/724	177	TWD	65	310	74
ZP485KPE	40.0	105.0	3.2	77.3	1 5/8	1 3/8	6.3	368/345/756	190	TWD	83	408	78

Conditions EN12900 : Evaporating 5°C, Condensing 50°C, Superheat 10K, Subcooling 0K
** 3 Ph: 380-420V/ 50Hz
*** @ 1m: sound pressure level at 1m distance from the compressor, free field condition

Capacity Data

Condensing Temperature +50°C														
R410A	Cooling Capacity (kW)							R410A	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-15	-10	-5	0	+5	+10	+15	Model	-15	-10	-5	0	+5	+10	+15
ZP137KPE		16.0	20.0	24.5	29.5	35.2	41.5	ZP137KPE		9.8	9.7	9.6	9.5	9.5	9.4
ZP154KPE		18.3	22.5	27.4	33.0	39.4	46.6	ZP154KPE		11.0	10.9	10.8	10.7	10.5	10.5
ZP182KPE		21.6	26.7	32.4	38.8	46.0	54.2	ZP182KPE		12.8	12.8	12.7	12.6	12.5	12.4
ZP232KZE		28.5	34.9	42.2	50.6	60.1	70.8	ZP232KZE		15.2	15.3	15.3	15.3	15.3	15.3
ZP292KZE		36.1	44.0	53.1	63.3	74.8	87.6	ZP292KZE		19.4	19.5	19.4	19.4	19.3	19.3
ZP385KPE		47.0	57.3	69.2	82.9	98.6	116.5	ZP385KPE		25.9	25.9	25.8	25.8	25.9	26.1
ZP485KPE		60.7	73.5	88.2	105.0	124.5	146.0	ZP485KPE		32.9	32.9	32.9	33.0	33.1	33.4

Conditions: Suction Superheat 10K / Subcooling 0K
Preliminary data

Tandem Model Overview

Model	Nominal Horsepower hp	Cooling Capacity kW
Even Tandem ZPT		
ZPT 274 K	2 x ZP137 KZE	58
ZPT 308 K	2 x ZP154 KPE	67
ZPT 364 K	2 x ZP182 KPE	77
ZPT 464 K	2 x ZP232 KZE	101
ZPT 584 K	2 x ZP292 KZE	125
ZPT 770 K	2 x ZP385 KPE	165
ZPT 970 K	2 x ZP485 KPE	209
Uneven Tandem ZPU		
ZPU 336 K	ZP154 KPE + ZP182 KPE	72
ZPU 414 K	ZP182 KPE + ZP232 KZE	89
ZPU 474 K	ZP182 KPE + ZP292 KZE	102
ZPU 524 K	ZP232 KZE + ZP292 KZE	114
ZPU 677 K	ZP292 KZE + ZP385 KPE	146
ZPU 717 K	ZP232 KZE + ZP485 KPE	155
ZPU 870 K	ZP385 KPE + ZP485 KPE	187

Conditions EN 12900: Evaporating 5°C, Condensing 50°C, Superheat 10K, Subcooling 0K
* Tandem assemblies by system manufacturers. Emerson can provide full technical support.