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

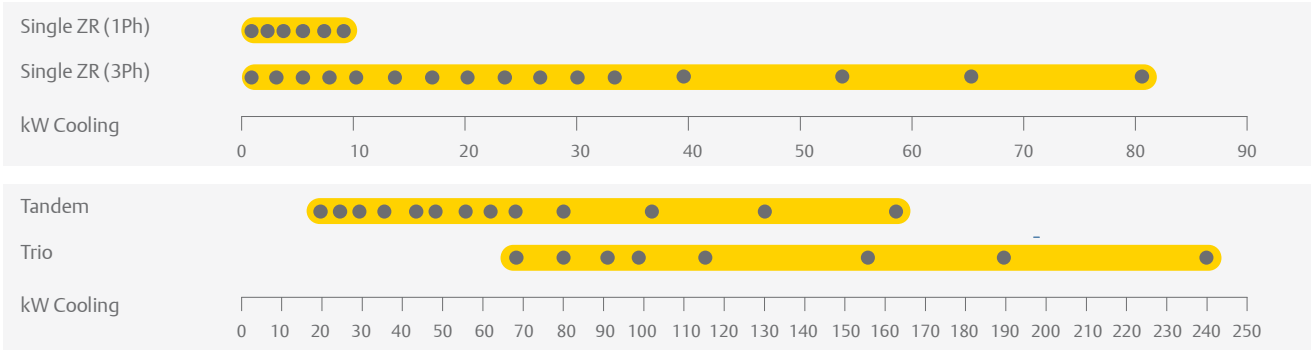
ZR Copeland scroll compressor were developed or comfort and process/precision cooling applications using R513A, R407C and R134a.

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 ZR24 (2hp) to the ZR380 (30hp) for R407C and R134a and from ZR24KRE (2hp) to ZR190KRE (15hp) for R513A, R407C and R134a.

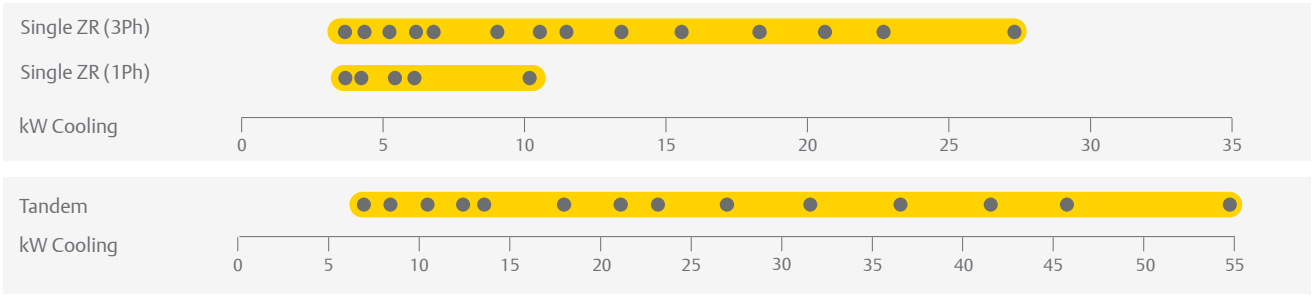
ZR scroll compressor

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

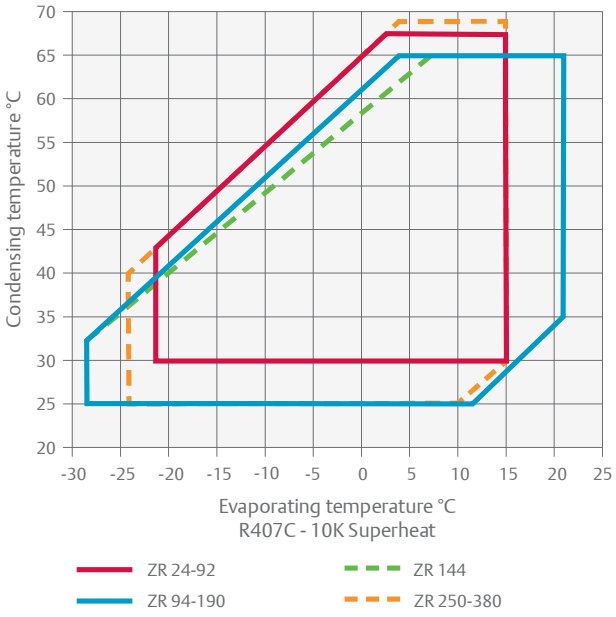
Features and Benefits

- Copeland scroll axial and radial compliance for superior reliability and efficiency
- Wide scroll line-up for R407C, R134a 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)

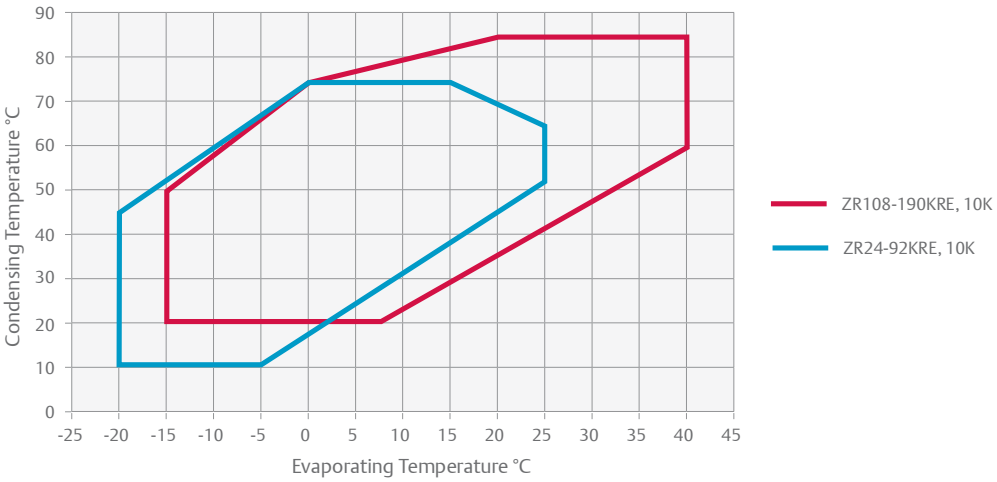
Maximum Allowable Pressure (PS)

- ZR24 to ZR81:
  Low side PS 21 bar(g) / High side PS 29 bar(g)
- ZR108 to ZR380:
  Low side PS 20 bar(g) / High side PS 32 bar(g)

Operating Envelope R407C



Operating Envelope 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	26	PFJ	TFD	13	5	61	32	57
ZR36KRE	3.0	5.2	7.6	3.1	8.6	3/4	1/2	1.2	239/245/387	27	PFJ	TFD	16	6	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	20	7	97	46	56
ZR48KRE	4.0	6.9	10.3	3.1	11.4	7/8	1/2	1.5	239/245/417	29	PFJ	TFD	24	10	114	50	57
ZR61KRE	5.0	9.0	13.0	3.2	14.4	7/8	1/2	1.9	246/257/438	38		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	39		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	44		TFD		16		102	65
ZR108KRE	9.0	15.6	23.0	3.2	24.9	1 3/8	7/8	3.4	281/284/533	60		TFD		18		111	63
ZR125KRE	10.0	18.2	27.0	3.3	29.1	1 3/8	7/8	3.4	281/284/533	61		TFD		20		118	63
ZR144KRE	12.0	20.5	30.9	3.2	33.2	1 3/8	7/8	3.3	281/284/533	61		TFD		22		118	64
ZR160KRE	13.0	22.8	33.4	3.1	36.4	1 3/8	7/8	3.3	281/284/552	65		TFD		28		140	68
ZR190KRE	15.0	27.2	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

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