

ZR Copeland Scroll™ Compressor Range for R407C and R134a

ZR Copeland Scroll compressors, for R407C and R134a, for comfort and process/precision cooling applications.

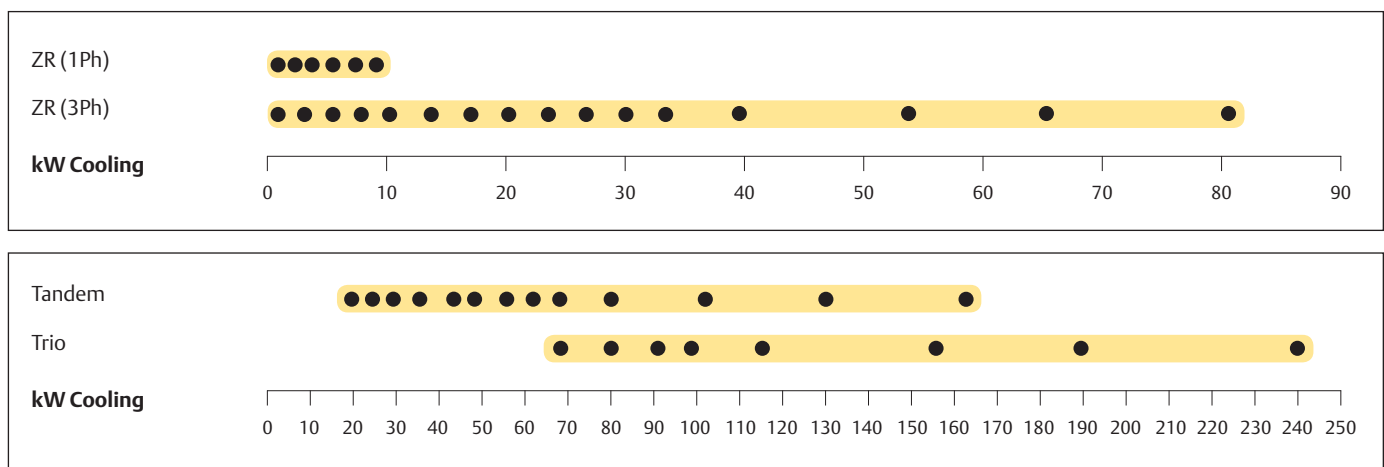
Applied in the air conditioning and comfort industry for water chillers, rooftops and close control unit applications, scroll compressors are now the most used compression technology replacing reciprocating and screw compressors due to its undeniable superiority. Several, fully Copeland™ qualified, multiple 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 (ESEER).

The range of products goes from the ZR18 (1.5Hp) to the ZR380 (30hp)



ZR Scroll Compressor

ZR Scroll Compressor Line-up R407C



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

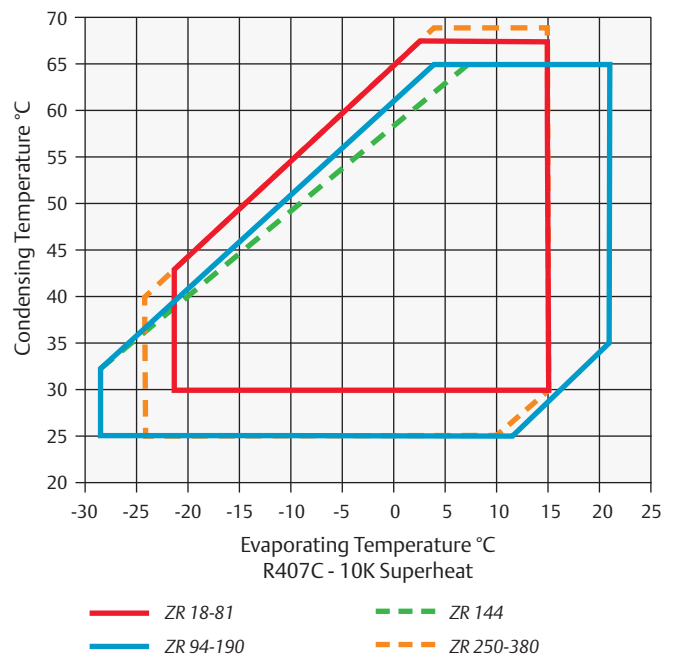
Features and Benefits

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

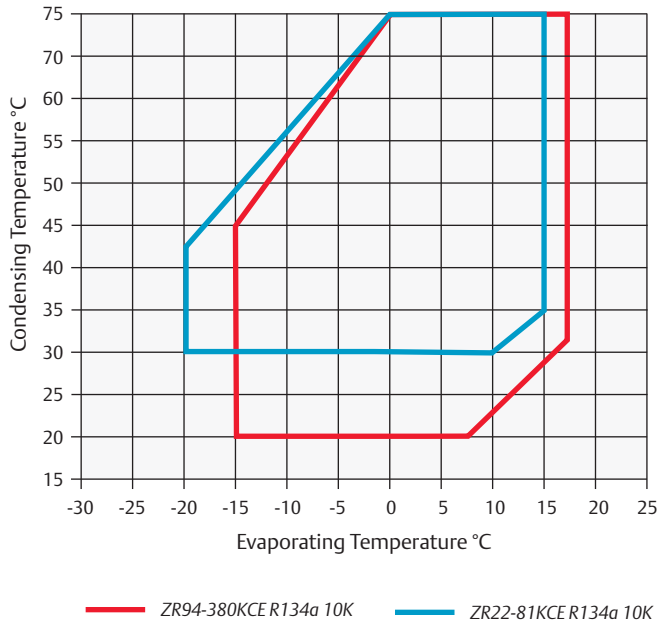
Maximum Allowable Pressure (PS)

- ZR18 to ZR81:
Low Side PS 20 bar(g) / High Side PS 29.5 bar(g)
- ZR94 to ZR380:
Low Side PS 20 bar(g) / High Side PS 32 bar(g)

Operating Envelope R407C



Operating Envelope R134a



Technical Overview

Models	Nominal hp	R407C Capacity (kW)	COP	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 - dB(A) ***
										1 Ph*	3 Ph**	1 Ph*	3 Ph**	1 Ph*	3 Ph**	
ZR18K5E	1.5	3.7	3.0	4.4	¾	½	0.74	242/242/383	20	PFJ		10		35		54
ZR22K3E	2.0	4.5	2.9	5.3	¾	½	1.00	242/242/363	22	PFJ	TFD	11	4	47	24	54
ZR28K3E	2.5	5.9	2.9	6.8	¾	½	1.00	242/242/363	25	PFJ	TFD	15	5	61	32	54
ZR34K3E	2.8	7.0	3.0	8.0	¾	½	1.10	242/242/386	26	PFJ	TFD	17	6	76	40	57
ZR40K3E	3.5	8.2	3.0	9.4	¾	½	1.10	242/242/400	27	PFJ	TFD	23	7	100	46	57
ZR48K3E	4.0	10.1	3.1	11.4	¾	½	1.36	242/242/417	31	PFJ	TFD	23	10	114	50	57
ZR61KCE	5.0	12.5	3.1	14.4	¾	½	1.66	241/247/438	43	PFJ	TFD	30	11	150	65	60
ZR61K5E	5.0	12.8	3.2	14.4	¾	½	1.42	242/242/430	30	PFZ	TFM		11		59	61
ZR72KCE	6.0	14.8	3.2	17.1	¾	½	1.77	242/242/438	39		TFD		13		74	61
ZR81KCE	6.8	16.7	3.2	18.7	¾	¾	1.77	242/242/443	39		TFD		15		101	61
ZR94KCE	8.0	20.6	3.3	22.1	1 ¼	¾	2.65	264/285/476	57		TFD		16		95	63
ZR108KCE	9.0	23.0	3.4	24.9	1 ¾	¾	3.38	264/285/533	60		TFD		17		111	63
ZR125KCE	10.0	27.0	3.4	29.1	1 ¾	¾	3.38	264/285/533	61		TFD		19		118	63
ZR144KCE	12.0	30.9	3.4	33.2	1 ¾	¾	3.38	264/285/533	61		TFD		22		118	64
ZR160KCE	13.0	33.4	3.2	36.4	1 ¾	¾	3.38	264/285/552	65		TFD		28		140	67
ZR190KCE	15.0	39.3	3.2	43.3	1 ¾	¾	3.38	264/285/552	66		TFD		34		174	69
ZR250KCE	20.0	52.2	3.2	56.6	1 ¾	1 ¾	4.70	432/376/717	140		TWD		41		225	72
ZR310KCE	25.0	65.0	3.2	71.4	1 ¾	1 ¾	6.80	448/392/715	160		TWD		52		272	74
ZR380KCE	30.0	81.7	3.4	87.4	1 ¾	1 ¾	6.30	447/427/715	177		TWD		62		310	76

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 +40°C															
R134a	Cooling Capacity (kW)							R134a	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
ZR22K3E	1.4	1.8	2.3	2.9	3.6	4.4	5.3	ZR22K3E	0.9	0.9	0.9	0.9	0.9	0.8	0.8
ZR28K3E	1.8	2.3	3.0	3.8	4.7	5.7	6.9	ZR28K3E	1.1	1.2	1.1	1.1	1.1	1.1	1.1
ZR34K3E	2.2	2.9	3.6	4.5	5.5	6.7	8.1	ZR34K3E	1.4	1.4	1.4	1.3	1.3	1.3	1.3
ZR40K3E	2.5	3.3	4.2	5.2	6.4	7.8	9.3	ZR40K3E	1.6	1.5	1.5	1.5	1.5	1.5	1.5
ZR48K3E	3.1	4.0	5.1	6.3	7.8	9.5	11.5	ZR48K3E	1.8	1.8	1.8	1.8	1.8	1.8	1.8
ZR61KCE	4.0	5.2	6.5	8.1	9.9	12.1	14.6	ZR61KCE	2.1	2.1	2.2	2.2	2.2	2.2	2.3
ZR72KCE	4.8	6.2	7.8	9.7	11.9	14.5	17.4	ZR72KCE	2.6	2.6	2.6	2.6	2.6	2.6	2.7
ZR81KCE	5.5	7.0	8.8	10.8	13.2	16.0	19.2	ZR81KCE	2.8	2.9	2.9	2.9	2.9	3.0	3.0
ZR94KCE	5.3	7.5	10.5	13.0	15.9	19.2	23.0	ZR94KCE	3.4	3.4	3.4	3.4	3.4	3.4	3.5
ZR108KCE	7.3	9.3	11.7	14.3	17.5	21.3	25.7	ZR108KCE	3.7	3.8	3.8	3.8	3.8	3.9	3.9
ZR125KCE	8.3	10.7	13.5	16.7	20.5	24.9	30.1	ZR125KCE	4.3	4.4	4.4	4.4	4.4	4.5	4.5
ZR144KCE	10.4	13.3	16.5	20.0	23.7	27.8	32.4	ZR144KCE	4.7	4.9	4.9	5.0	5.0	5.2	5.5
ZR160KCE	10.1	13.3	16.9	21.0	25.7	31.2	37.5	ZR160KCE	5.5	5.5	5.5	5.6	5.7	5.8	5.9
ZR190KCE	12.3	16.0	20.2	25.0	30.7	37.2	44.7	ZR190KCE	6.8	6.9	6.9	7.0	7.0	7.1	7.3
ZR250KCE	16.1	20.5	25.6	31.8	39.0	47.4	57.2	ZR250KCE	8.6	8.7	8.9	9.0	9.1	9.2	9.4
ZR310KCE	20.0	25.6	32.1	39.7	48.6	59.0	71.1	ZR310KCE	10.6	10.8	10.9	10.0	11.2	11.5	11.7
ZR380KCE	25.5	32.2	40.1	49.4	60.3	73.0	87.8	ZR380KCE	12.6	12.9	13.1	13.4	13.6	14.0	14.4

Conditions: Suction Superheat 10K / Subcooling 0K

Condensing Temperature +40°C															
R407C	Cooling Capacity (kW)							R407C	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
ZR18K5E	1.8	2.3	2.8	3.5	4.2	5.1	6.1	ZR18K5E	1.0	1.0	1.0	1.0	1.0	1.0	1.0
ZR22K3E	2.1	2.7	3.4	4.2	5.2	6.3	7.5	ZR22K3E	1.2	1.2	1.2	1.2	1.2	1.2	1.1
ZR28K3E	2.7	3.5	4.4	5.5	6.7	8.1	9.6	ZR28K3E	1.6	1.6	1.6	1.5	1.5	1.5	1.5
ZR34K3E	3.2	4.1	5.2	6.5	7.9	9.6	11.5	ZR34K3E	1.8	1.8	1.8	1.8	1.8	1.8	1.7
ZR40K3E	3.8	4.9	6.1	7.6	9.4	11.3	13.5	ZR40K3E	2.2	2.2	2.2	2.1	2.1	2.1	2.0
ZR48K3E	4.8	6.1	7.6	9.4	11.5	13.8	16.6	ZR48K3E	2.6	2.6	2.6	2.6	2.6	2.5	2.5
ZR61K5E	6.5	8.1	9.9	11.9	14.4	17.2	20.6	ZR61K5E	3.0	3.0	3.1	3.2	3.2	3.1	2.9
ZR72KCE	7.0	9.0	11.3	13.9	16.9	20.3	24.2	ZR72KCE	3.6	3.7	3.7	3.7	3.7	3.7	3.8
ZR81KCE	7.8	10.1	12.7	15.6	19.1	23.0	27.7	ZR81KCE	4.1	4.1	4.1	4.1	4.2	4.2	4.3
ZR94KCE	9.8	12.6	15.8	19.3	23.3	27.9	33.1	ZR94KCE	4.9	5.0	5.0	5.0	5.0	4.9	4.9
ZR108KCE	11.3	14.2	17.6	21.5	26.2	31.5	37.6	ZR108KCE	5.4	5.4	5.5	5.5	5.5	5.6	5.7
ZR125KCE	13.1	16.6	20.5	25.2	30.5	36.7	43.7	ZR125KCE	6.3	6.3	6.4	6.4	6.4	6.5	6.6
ZR144KCE	14.5	18.7	23.4	28.9	35.0	42.0	50.1	ZR144KCE	7.1	7.1	7.2	7.2	7.3	7.3	7.4
ZR160KCE	14.9	19.5	24.9	31.3	38.7	47.3	57.1	ZR160KCE	8.0	8.1	8.2	8.2	8.3	8.4	8.5
ZR190KCE	18.5	23.8	29.8	36.7	44.7	53.8	64.2	ZR190KCE	9.7	9.7	9.8	9.8	9.9	10.1	10.4
ZR250KCE	25.7	32.2	39.9	48.9	59.3	71.3	85.0	ZR250KCE	12.5	12.6	12.7	12.9	13.0	13.0	13.0
ZR310KCE	31.2	39.7	49.7	61.4	75.0	90.7	108.5	ZR310KCE	15.6	15.7	15.9	16.1	16.3	16.6	17.0
ZR380KCE	38.1	49.1	61.7	76.2	93.1	113.0	136.5	ZR380KCE	18.6	18.8	19.0	19.2	19.4	19.8	20.3

Conditions: Suction Superheat 10K / Subcooling 0K

Tandem and Trio Model Overview

Model	Nominal hp	Cooling Capacity R407C (kW)	Cooling Capacity R134a (kW)	Even Tandem	Uneven Tandem	Trio
Tandem ZRT - Tandem Uneven ZRU - Trio ZRY						
ZRT 96 K3E	2 x 4	20	14	•		
ZRT 122 K3E	2 x 5	25	18	•		
ZRT 144 K3E	2 x 6	30	21	•		
ZRT 162 K3E	2 x 6.5	33	24	•		
ZRT 188 K3E	2 x 8	41	28	•		
ZRT 216 K3E	2 x 9	46	31	•		
ZRT 250 K3E	2 x 10	52	37	•		
ZRT 288 K3E	2 x 12	59	42	•		
ZRU 315 KCE*	10 + 15	66	45		•	
ZRT 320 K3E	2 x 13	67	46	•		
ZRU 350 KCE*	13 + 15	73	50		•	
ZRT 380 K3E	2 x 15	78	54	•		
ZRU 440 KCE*	15 + 20	92	63		•	
ZRY 480 KCE*	3 x 13	99	67			•
ZRT 500 K3E*	2 x 20	104	71	•		
ZRU 500 KCE*	15 + 25	104	71		•	
ZRU 560 KCE*	20 + 25	117	79		•	
ZRY 570 KCE*	3 x 15	116	80			•
ZRT 620 K3E*	2 x 25	130	88	•		
ZRU 690 KCE*	25 + 30	147	99		•	
ZRY 750 KCE*	3 x 20	154	105			•
ZRT 760 K3E*	2 x 30	163	111	•		
ZRY 930 KCE*	3 x 25	192	129			•
ZRY 114 KCE*	3 x 30	241	164			•

Conditions EN 12900: Evaporating 5°C, Condensing 50°C, Superheat 10K, Subcooling 0K

* Tandem / Trio assemblies by system manufacturers. Emerson Climate Technologies can provide full technical support.