

# ZR Copeland Scroll™ Compressor Range for R407C and R134a

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

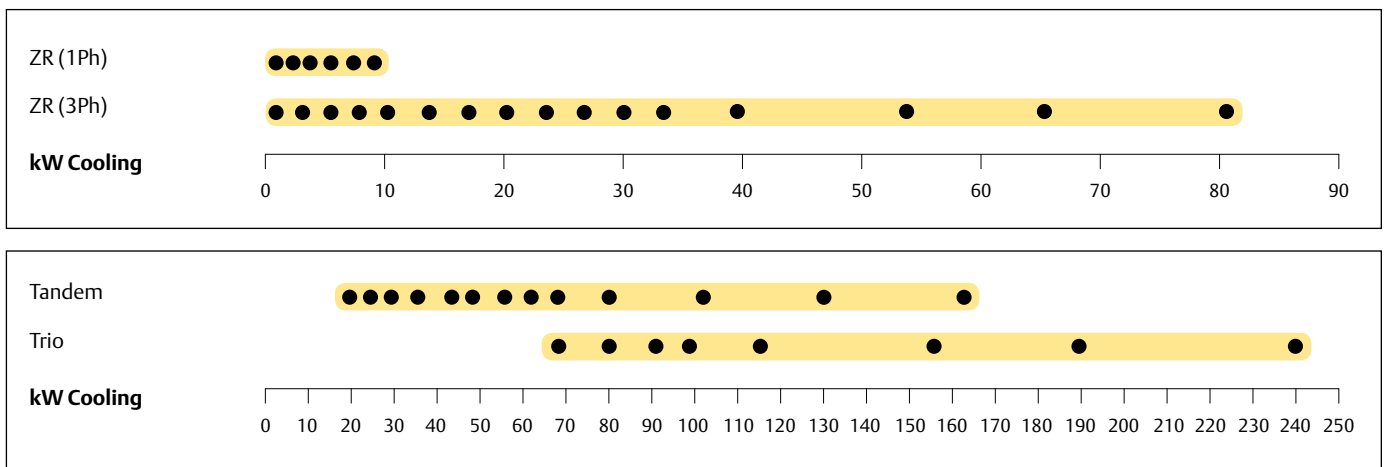
Applied in the air conditioning and comfort industry for water chillers, rooftops and close control unit applications, scroll compressors are now the most used compression technology replacing reciprocating and screw compressors due to its undeniable superiority. Several, fully Copeland™ qualified, multiple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

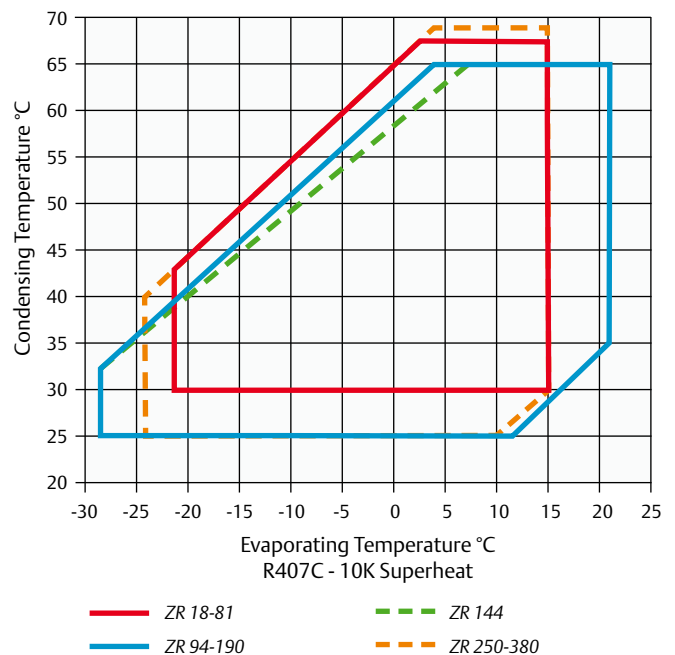
## Features and Benefits

- 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)

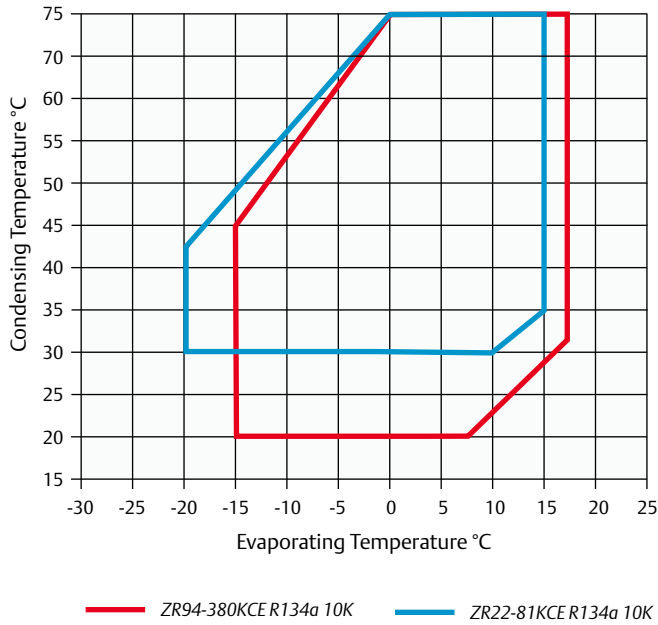
## Maximum Allowable Pressure (PS)

- 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 <sup>3</sup> /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
ZR61KSE	6.5	8.1	9.9	11.9	14.4	17.2	20.6	ZR61KsE	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
<b>Tandem ZRT - Tandem Uneven ZRU - Trio ZRY</b>						
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.

# ZP Copeland Scroll™ Compressor Range for R410A

ZP Copeland Scroll compressors, for R410A, for comfort and process/precision cooling applications. Emerson Climate Technologies 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.

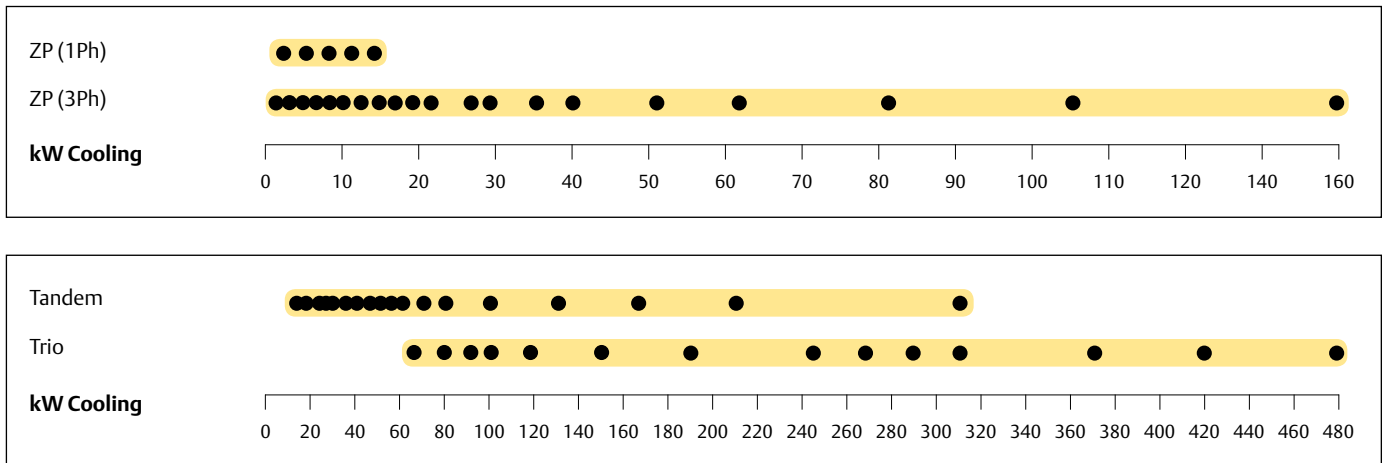
The new ZP232 and ZP292KCE for large chillers feature advanced monitoring capabilities, improved part load information and optimized seasonal performance.

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

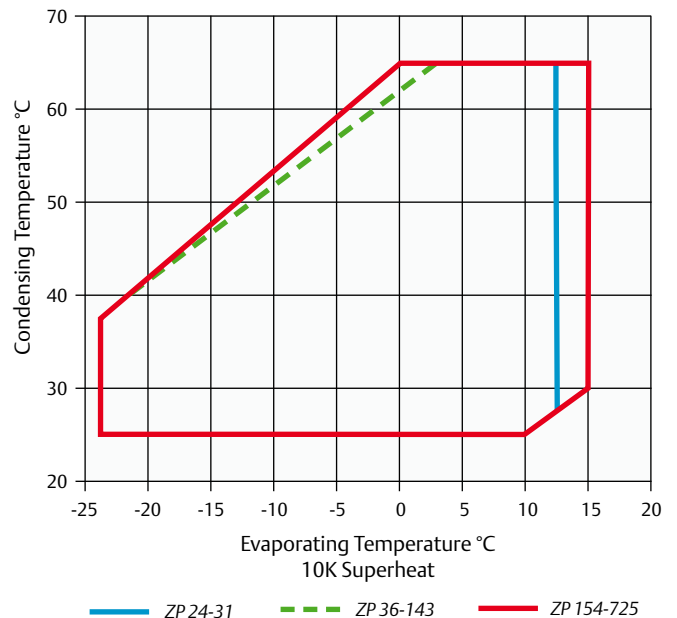
## Features and Benefits

- 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)	COP	Displacement (m <sup>3</sup> /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**	
ZP24K5E	1.9	5.1	2.8	3.9	¾	½	0.74	242/242/387	22	PFJ	TFD	13	5	60	28	55
ZP29K5E	2.2	6.1	2.9	4.8	¾	½	0.74	242/242/387	23	PFJ	TFD	16	6	67	38	55
ZP31K5E	3.0	6.5	2.8	5.0	¾	½	0.74	242/242/388	23	PFJ	TFD	17	6	67	38	55
ZP36K5E	2.6	7.9	3.0	6.0	¾	½	1.25	242/242/418	30	PFJ	TFD	22	7	98	46	57
ZP42K5E	3.4	9.0	2.9	6.9	¾	½	1.25	242/242/418	31	PFJ	TFD	26	8	128	43	57
ZP54K5E	4.6	11.6	3.0	8.9	¾	½	1.24	242/242/418	34	PFJ	TFD	31	10	115	51	59
ZP61K5E	5.0	13.3	3.0	10.0	¾	½	1.24	246/246/443	35		TFD		12		64	60
ZP72K5E	6.0	15.3	3.0	11.7	¾	½	1.77	246/246/443	40		TFD		15		75	64
ZP83K5E	6.5	17.7	3.1	13.4	¾	½	1.77	246/246/443	40		TFD		15		101	61
ZP91K5E	7.5	19.3	3.1	14.7	¾	¾	1.77	246/248/446	41		TFD		16		101	61
ZP104K5E	9.0	22.7	3.2	16.8	1 ¼	¾	2.51	264/284/476	48		TFD		18		128	63
ZP122K5E	10.0	26.5	3.2	19.5	1 ¼	¾	2.51	293/258/559	49		TFD		22		139	63
ZP143K5E	12.0	31.6	3.2	23.1	1 1/8	¾	2.75	297/262/559	49		TFD		25		145	64
ZP154K5E	13.0	33.5	3.2	24.8	1 ¾	¾	3.38	329/298/552	65		TFD		31		140	65
ZP182K5E	15.0	39.6	3.2	29.1	1 ¾	¾	3.38	264/284/552	66		TFD		34		174	66
ZP232K5E	20.0	50.6	3.3	37.8	1 ¾	1 ¼	4.60	344/292/661	91		TED		40		225	72
ZP235K5E	20.0	50.6	3.2	37.8	1 ¾	1 ¼	4.70	427/376/717	140		TWD		40		225	71
ZP292K5E	25.0	63.0	3.3	45.7	1 ¾	1 ¼	4.60	344/292/661	91		TED		48		272	73
ZP295K5E	25.0	63.5	3.2	46.7	1 ¾	1 ¾	6.80	448/392/715	160		TWD		48		272	74
ZP385K5E	30.0	82.4	3.2	60.8	1 ¾	1 ¾	6.30	448/392/715	178		TWD		65		310	74
ZP485K5E	40.0	105.0	3.2	77.3	1 ¾	1 ¾	6.30	391/447/746	190		TWD		82		408	78
ZP725K5E	60.0	160.0	3.2	115	2 ¼	1 ¾	6.30	459/483/863	250		FED		124		567	78

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

## Capacity Data

Condensing Temperature +40°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
ZP24K5E	2.2	3.0	3.9	4.9	5.9	7.1		ZP24K5E	1.5	1.5	1.4	1.4	1.4	1.3	
ZP29K5E	2.9	3.9	4.9	6.0	7.3	8.6		ZP29K5E	1.8	1.8	1.7	1.7	1.7	1.6	
ZP31K5E	3.2	4.1	5.2	6.3	7.6	9.1		ZP31K5E	1.9	1.9	1.9	1.8	1.8	1.8	
ZP36K5E	4.1	5.1	6.3	7.7	9.2	11.0		ZP36K5E	2.2	2.1	2.1	2.1	2.1	2.1	
ZP42K5E	4.4	5.7	7.1	8.7	10.5	12.5		ZP42K5E	2.4	2.4	2.4	2.4	2.3	2.3	
ZP54K5E	6.0	7.5	9.3	11.3	13.5	16.0		ZP54K5E	3.1	3.1	3.0	3.0	2.9	2.9	
ZP61K5E	6.9	8.6	10.6	12.9	15.5	18.4	21.4	ZP61K5E	3.5	3.5	3.4	3.4	3.4	3.4	3.4
ZP72KCE	8.2	10.1	12.3	14.8	17.7	20.9		ZP72KCE	4.0	4.0	4.0	4.0	4.1	4.1	
ZP83KCE	9.4	11.6	14.2	17.1	20.4	24.2		ZP83KCE	4.5	4.5	4.5	4.6	4.6	4.7	
ZP91KCE	10.2	12.6	15.4	18.6	22.2	26.3	31.0	ZP91KCE	4.9	4.9	4.9	5.0	5.0	5.0	5.3
ZP104KCE	12.0	14.9	18.1	21.9	26.1	31.0	36.5	ZP104KCE	5.7	5.7	5.7	5.7	5.8	5.8	5.9
ZP122KCE	14.1	17.4	21.2	25.5	30.4	36.1	42.4	ZP122KCE	6.6	6.6	6.7	6.7	6.7	6.8	6.9
ZP143KCE	15.9	20.3	25.2	30.5	36.1	41.9	47.8	ZP143KCE	7.5	7.7	7.8	7.9	8.1	8.4	8.8
ZP154KCE	18.2	22.3	27.1	32.6	38.9	46.1	54.3	ZP154KCE	8.1	8.2	8.2	8.3	8.3	8.5	8.8
ZP182KCE	21.4	26.3	32.0	38.4	45.6	53.9	63.3	ZP182KCE	9.5	9.7	9.9	10.0	10.1	10.1	10.0
ZP232KCE	26.5	32.9	40.3	48.8	58.6	69.7	82.3	ZP232KCE	12.4	15.5	12.7	12.8	13.0	13.2	13.4
ZP235KCE	26.5	32.9	40.3	48.8	58.6	69.7	82.3	ZP235KCE	12.5	12.6	12.7	12.8	13.0	13.2	13.5
ZP292KCE	34.5	42.0	50.6	60.6	71.9	84.9	99.7	ZP292KCE	15.2	15.4	15.5	15.6	15.6	15.6	15.6
ZP295KCE	34.2	41.9	50.9	61.3	73.3	86.9	102.5	ZP295KCE	15.8	16.0	16.1	16.2	16.4	16.6	16.8
ZP385KCE	43.7	53.9	65.8	79.5	95.2	113.0	133.5	ZP385KCE	20.3	20.4	20.5	20.7	20.9	21.3	21.7
ZP485KCE	57.5	70.0	84.7	101.6	121.0	143.0	168.0	ZP485KCE	24.9	25.3	25.8	26.3	27.0	27.8	28.8
ZP725KCE	88.0	107.0	129.0	154.0	182.0	215.0	252.0	ZP725KCE	39.0	39.6	40.0	40.0	40.7	41.3	41.1

Conditions: Suction Superheat 10K / Subcooling 0K

Preliminary data

## Tandem and Trio Model Overview

Model	Nominal hp	Cooling Capacity (kW)	Even Tandem	Uneven Tandem	Even Trio	Uneven Trio
<b>Tandem ZPT - Tandem Uneven ZPU - Trio ZPY - Uneven Trio ZPM</b>						
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	•			
ZPT286KCE	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		•		
ZPU418KCE*	20 + 15	90		•		
ZPY 462 KCE*	3 x 13	99			•	
ZPT 470 KCE*	2 x 20	101	•			
ZPT472KCE*	2 x 20	101	•			
ZPU 532KCE*	20 + 25	101	•			
ZPU 477 KCE*	15 + 25	103		•		
ZPU 530 KCE*	20 + 25	114		•		
ZPY 546 KCE*	3 x 15	117			•	
ZPT 592KCE*	2 x 25	125	•			
ZPT 590 KCE*	2 x 25	127	•			
ZPU 681KCE*	30 + 25	144		•		
ZPU 680 KCE*	25 + 30	146		•		
ZPY 705 KCE*	3 x 20	150			•	
ZPY 708KCE*	3 x 20	150			•	
ZPT 770 KCE*	2 x 30	165	•			
ZPU 870 KCE*	30 + 40	187		•		
ZPY 885 KCE*	3 x 25	188			•	
ZPT 970 KCE*	2 x 40	209	•			
ZPU 111 MCE*	30 + 60	240		•		
ZPY 115 MCE*	3 x 30	243			•	
ZPU 121 MCE*	40 + 60	262		•		
ZPM 125 MCE*	30 + 30 + 40	265				•
ZPM 135 MCE*	30 + 40 + 40	287				•
ZPY 145 MCE*	40 + 40 + 40	309			•	
ZPT 145 MCE*	60 + 60	317	•			
ZPM 169 MCE*	40 + 40 + 60	362				•
ZPM 194 MCE*	40 + 60 + 60	416				•
ZPY 218 MCE*	60 + 60 + 60	470			•	

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.



# ZPD & ZRD Copeland Scroll Digital™ Compressor Range for R410A and R407C

Stepless capacity modulation in air conditioning applications:  
Flexible solution for R407C and R410A.

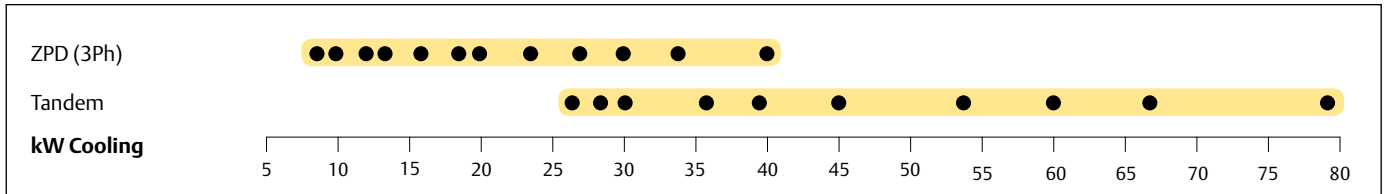
In many cooling and heating systems, the load and the operating conditions vary over a wide range thus requiring the use of capacity modulation. Digital Scroll assures stepless modulation down to 10% of the nominal capacity, enabling precise temperature control, superior comfort and energy saving.

Digital Scroll compressors are the preferred choice for process cooling, refrigeration racks, refrigeration units, VRF, rooftop and air handling unit systems.

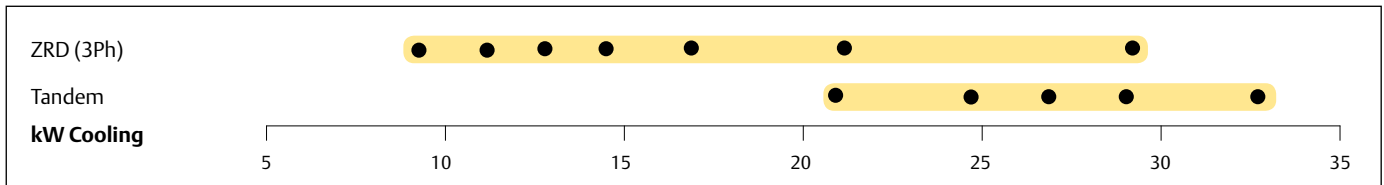


ZPD & ZRD Copeland Scroll Digital Compressor

## ZPD & ZRD Digital Scroll Compressor Line-up R410A



## ZPD & ZRD Digital Scroll Compressor Line-up R407C



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

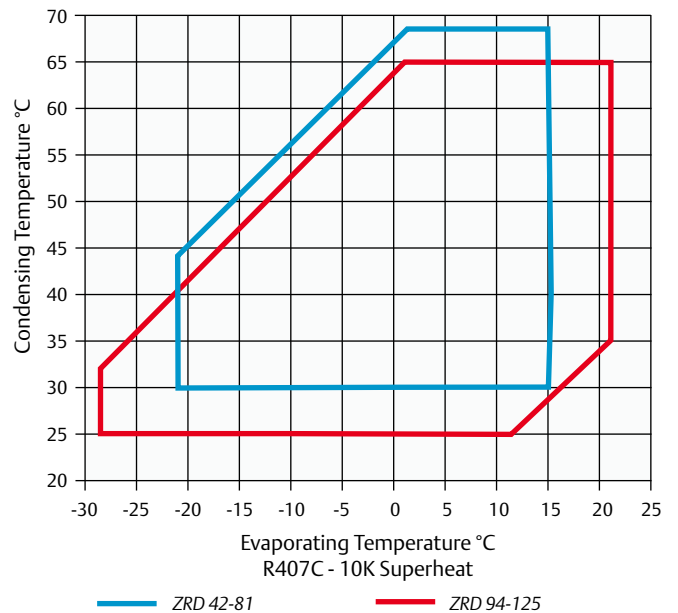
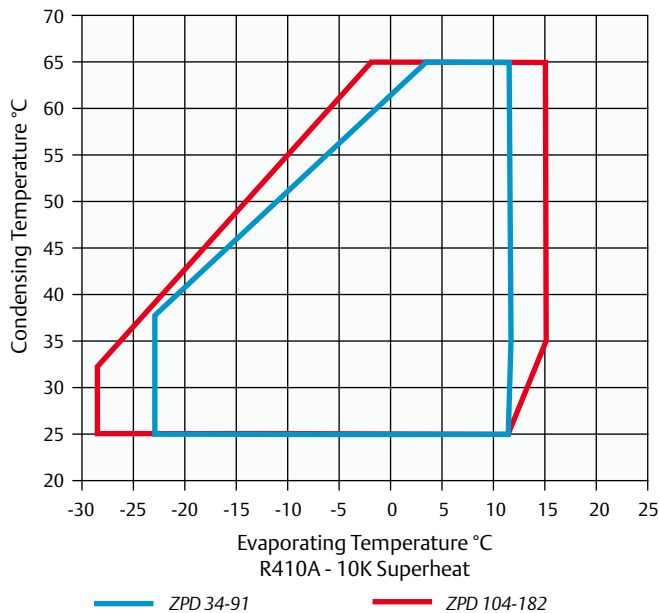
### Features and Benefits

- Wide modulation range from 10% to 100% for immediate load adjustment, close temperature comfort, optimal comfort
- No complex electronics, a quasi-drop-in solution for fast time to market, no EMI/EMC problems, easy installation and maintenance
- No impact on system mechanical balance: no vibration and resonance phenomenon, no frame / piping redesign necessary

### Maximum Allowable Pressure (PS)

- Digital ZRD42 to ZRD81:  
Low Side PS 20bar(g) / High Side PS 29.5 bar(g)
- Digital ZRD94 to ZRD125:  
Low Side PS 20bar(g) / High Side PS 32 bar(g)
- Digital ZPD34 to ZPD91:  
Low Side PS 28 bar(g) / High Side PS 43 bar(g)
- Digital ZPD103 to ZPD182:  
Low Side PS 29.5 bar(g) / High Side PS 45 bar(g)

### Operating Envelope R410A/R407C



## Technical Overview

Models	Nominal hp	Capacity (kW)	COP	Displacement (m <sup>3</sup> /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)**
										3 Ph*	3 Ph*	3 Ph*	
ZPD34KCE	3.0	7.3	2.8	5.7	¾	½	1.24	243/243/448	31	TFM	12	64	66
ZPD42KCE	3.5	9.1	3.0	6.9	¾	½	1.24	243/243/464	31	TFM	8	52	66
ZPD54KCE	4.5	11.5	3.0	8.9	¾	½	1.24	236/236/479	35	TFM	10	62	67
ZPD61KCE	5.0	13.2	2.9	10.1	¾	½	1.89	241/246/484	41	TFD	12	64	63
ZPD72KCE	5.0	15.2	2.9	11.6	¾	½	1.89	241/246/484	40	TFD	15	75	67
ZPD83KCE	6.0	17.7	3.0	13.4	¾	½	1.77	246/253/481	40	TFD	16	101	64
ZPD91KCE	7.5	19.2	3.1	14.7	¾	¾	1.80	246/253/481	40	TFD	16	101	69
ZPD104KCE	9.0	22.7	3.1	16.7	1 ½	¾	3.25	270/262/605	61	TFD	18	128	63
ZPD122KCE	10.0	26.3	3.1	19.7	1 ½	¾	3.25	270/262/605	62	TFD	21	139	63
ZPD137KCE	12.0	29.5	3.1	22.1	1 ¾	¾	3.25	293/285/533	62	TFD	25	118	63
ZPD154KCE	13.0	33.1	3.1	24.8	1 ¾	¾	3.25	314/285/552	65	TFD	27	140	66
ZPD182KCE	15.0	39.0	3.1	29.0	1 ¾	¾	3.25	314/285/552	67	TFD	34	173	68

Conditions EN12900 R410A: 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	Nominal hp	Capacity (kW)	COP	Displacement (m <sup>3</sup> /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)**
										3 Ph*	3 Ph*	3 Ph*	
ZRD42KCE	3.5	8.9	2.9	9.9	¾	½	1.24	241/241/462	31	TFD	7	46	60
ZRD48KCE	4.0	10.5	3.0	11.4	¾	½	1.36	241/241/465	32	TFD	10	48	64
ZRD61KCE	5.0	12.5	3.0	14.3	¾	½	1.89	241/246/481	38	TFD	9.6	64	65
ZRD72KCE	6.0	14.3	2.9	17.0	¾	¾	1.89	241/246/481	40	TFD	13	74	63
ZRD81KCE	6.0	17.0	3.1	18.7	¾	¾	1.89	241/246/481	41	TFD	15	100	67
ZRD94KCE	7.5	21.0	3.3	22.1	1 ½	¾	2.51	293/285/476	58	TFD	16	95	64
ZRD125KCE	10.0	27.7	3.3	28.8	1 ¾	¾	3.25	293/285/533	61	TFD	20	118	64

Conditions EN12900 R407C: 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 +40°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	
ZPD34KSE	3.9	5.0	6.2	7.6	9.2	11.0		ZPD34KSE	2.1	2.1	2.1	2.0	2.0	2.0		
ZPD42KSE	4.8	5.9	7.3	8.8	10.6	12.6		ZPD42KSE	2.3	2.3	2.4	2.4	2.4	2.3		
ZPD54KSE	6.5	7.9	9.5	11.4	13.5	16.0		ZPD54KSE	3.1	3.1	3.1	3.0	3.0	3.0		
ZPD61KCE	6.9	8.6	10.5	12.7	15.3	18.2		ZPD61KCE	3.3	3.4	3.5	3.5	3.6	3.6		
ZPD72KCE	8.2	10.1	12.3	14.8	17.6	20.9		ZPD72KCE	3.9	4.0	4.1	4.1	4.2	4.2		
ZPD83KCE	9.7	11.9	14.4	17.2	20.5	24.1		ZPD83KCE	4.5	4.6	4.7	4.7	4.8	4.9		
ZPD91KCE	10.1	12.6	15.3	18.5	22.1	26.2	30.9	ZPD91KCE	4.9	5.0	5.0	5.0	5.1	5.0	5.0	
ZPD104KCE	12.3	15.1	18.3	21.9	26.1	30.8	36.2	ZPD104KCE	5.6	5.7	5.7	5.9	6.0	6.1	6.2	
ZPD122KCE	14.2	17.5	21.2	25.4	30.3	35.8	42.0	ZPD122KCE	6.4	6.5	6.6	6.7	6.8	6.9	7.0	
ZPD137KCE	15.5	19.4	23.7	28.7	34.2	40.3	47.2	ZPD137KCE	7.5	7.5	7.5	7.4	7.4	7.5	7.6	
ZPD154KCE	17.8	22.0	26.6	31.9	38.0	45.0	53.0	ZPD154KCE	8.2	8.3	8.4	8.5	8.6	8.7	8.9	
ZPD182KCE	22.3	26.8	32.0	37.9	44.6	52.5	61.6	ZPD182KCE	9.8	9.9	10.0	10.1	10.2	10.4	10.5	

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	
ZRD42KCE	4.3	5.4	6.7	8.3	10.1	12.2	14.6	ZRD42KCE	2.0	2.1	2.1	2.2	2.2	2.3	2.3	
ZRD48KCE	4.9	6.4	8.0	10.0	12.3	15.0	18.1	ZRD48KCE	2.5	2.6	2.6	2.7	2.7	2.8	2.9	
ZRD61KCE	6.1	7.7	9.5	11.7	14.2	17.3	21.0	ZRD61KCE	3.0	3.1	3.2	3.4	3.4	3.4	3.3	
ZRD72KCE	3.5	6.0	8.9	12.3	16.2	20.6	25.6	ZRD72KCE	3.5	3.6	3.7	3.8	4.0	4.1	4.3	
ZRD81KCE	8.0	10.2	12.8	15.8	19.2	23.2	27.7	ZRD81KCE	4.3	4.4	4.4	4.5	4.6	4.7	4.8	
ZRD94KCE	10.0	12.7	16.0	19.8	24.1	28.9	34.5	ZRD94KCE	5.0	5.1	5.1	5.1	5.1	5.2	5.3	
ZRD125KCE	13.2	16.9	21.3	26.3	31.7	37.6	43.7	ZRD125KCE	6.5	6.6	6.6	6.7	6.8	6.9	7.1	

Conditions: Suction Superheat 10K / Subcooling 0K