

# 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.

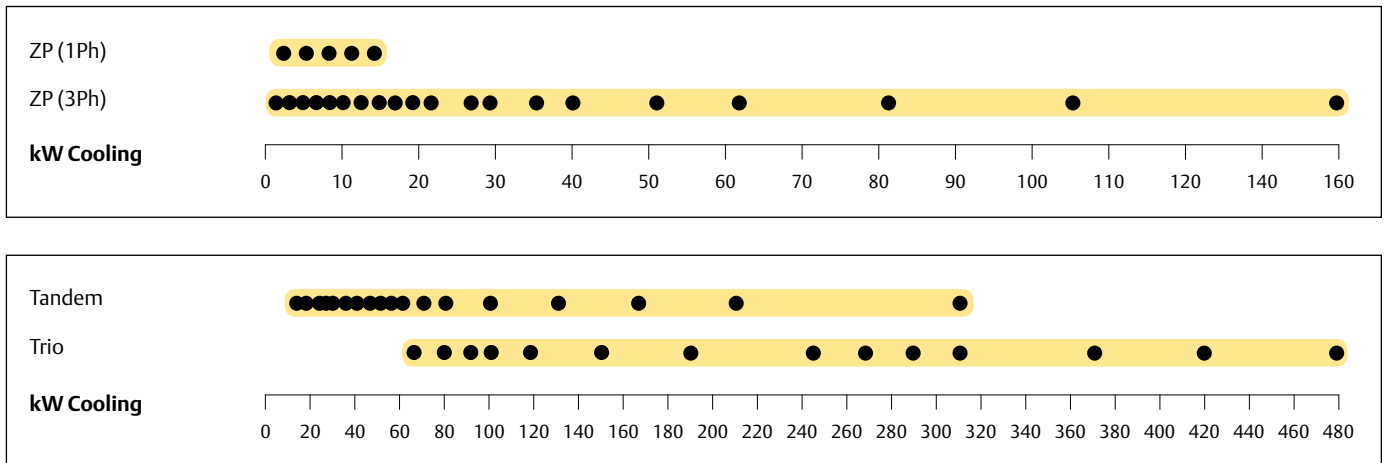
The new ZP232 and ZP292KCE for large chillers feature advanced monitoring capabilities, improved part load information and optimized seasonal performance.

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

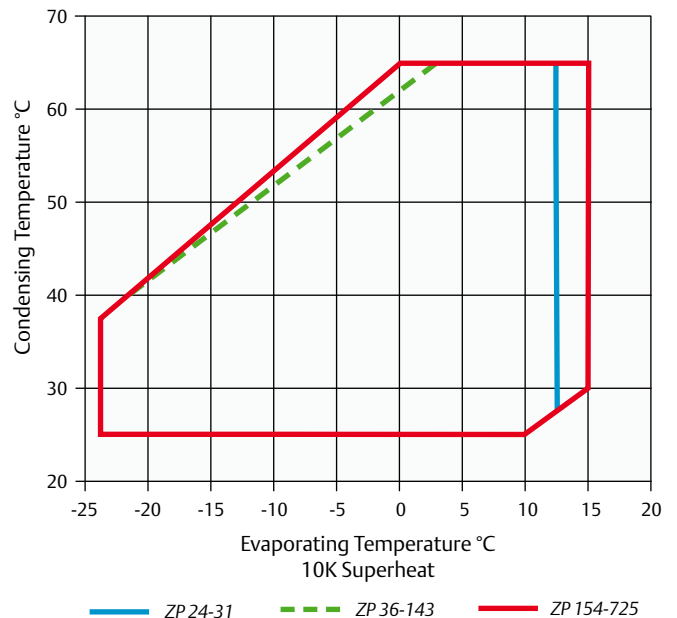
## Features and Benefits

- 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.