

## Copeland™ ZP 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.

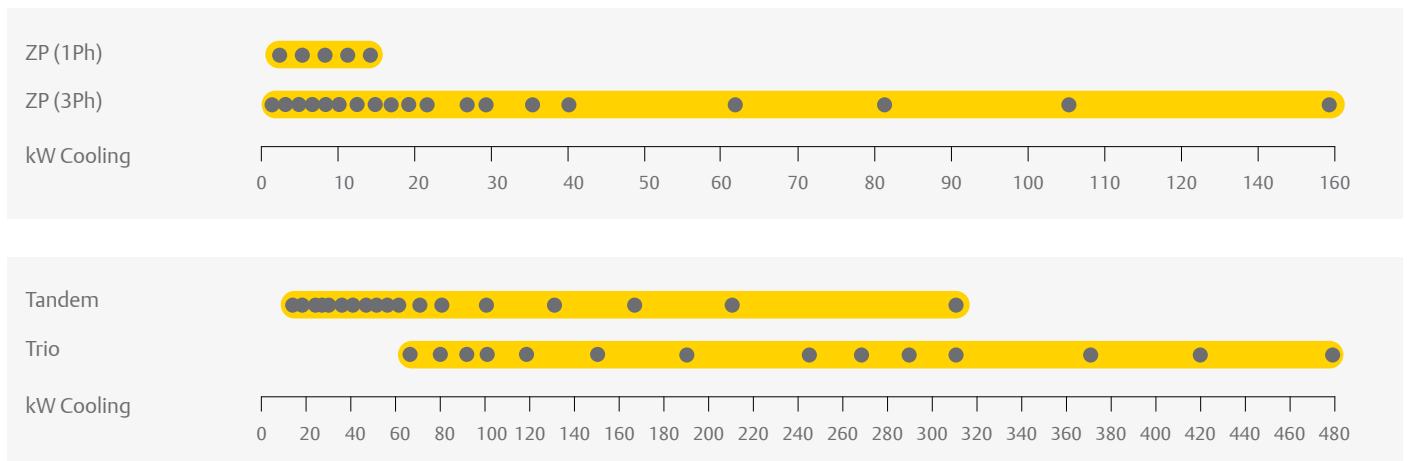
ZP Copeland scroll compressors are perfectly suitable for air-cooled chiller systems up to 900kW (1100 kW if water-cooled) featuring high comfort and superior seasonal efficiency (SEER / SEPR / SCOP). Whether used in stand-alone, tandem or trio configurations, the broad ZP Copeland scroll line-up meets 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

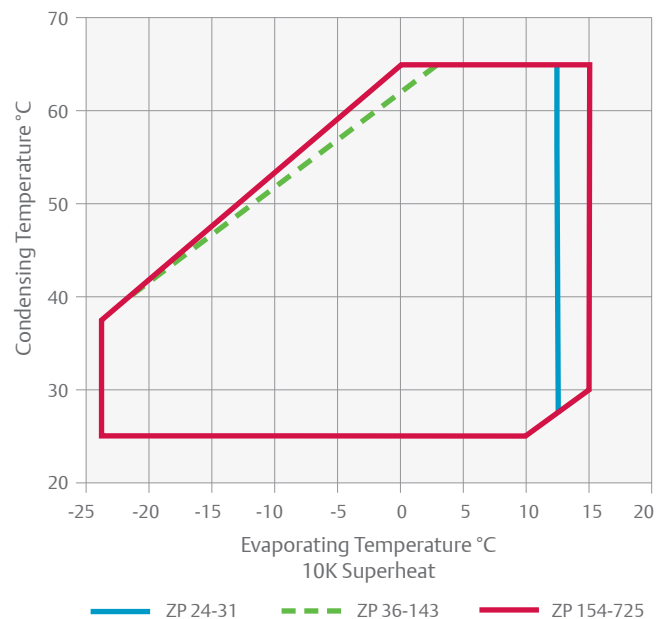
## Features and Benefits

- Copeland qualified tandem and trio (now also uneven configurations for superior seasonal efficiency (SEER / SEPR / 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 29.5 bar(g) / High side PS 45 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 <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 (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
ZP233KZE	20.0	50.6	3.3	36.6	1 5/8	1 1/8	4.4	315/315/661	92		TED		38		241	72
ZP293KZE	25.0	63.3	3.3	45.7	1 5/8	1 1/8	4.4	315/315/661	92		TED		49		288	72
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	+15	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
ZP233KZE		28.5	34.9	42.2	50.6	60.1	70.8	ZP233KZE		15.2	15.3	15.3	15.3	15.3	15.3
ZP293KZE		36.1	44.0	53.1	63.3	74.8	87.6	ZP293KZE		19.4	19.5	19.4	19.4	19.3	19.3
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
<b>Tandem ZPT - Tandem Uneven ZPU</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	•	
ZPT 286 KCE	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 K	15 + 20	90		•
ZPT 466 KZE	2 x 20	101	•	
ZPU 477 K	15 + 25	103		•
ZPU 530 KZE	20 + 25	114		•
ZPT 586 KZE	2 x 25	125	•	
ZPU 680 K	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 ZP233KZE and ZP293KZE  
 Conditions EN 12900: Evaporating 5°C, Condensing 50°C, Superheat 10K, Subcooling 0K  
 Tandem assemblies by system manufacturers. Emerson can provide full technical support.