



# Copeland Scroll™ Air Conditioning

Product Catalogue







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## Pioneering technologies for best-in-class products

Emerson is a world leading provider of heating, ventilation, air conditioning and refrigeration solutions for residential, commercial and industrial applications, supporting the industry with advanced technology, technical support and training services.

For more than 80 years, we have been introducing innovative technology to the market, from the first semi-hermetic and hermetic compressors in the 1940s and 1950s to the high efficiency Discus semi-hermetic, air conditioning and heating scroll compressors in the 1980s and 1990s, to the new Stream semi-hermetic and the Variable Speed scroll compressor technology of today.

Based on this, we have developed an unequalled range of solutions for the refrigeration and air conditioning markets. Our range of Copeland™ brand products addresses the diverse needs of all of these markets. With scrolls and semi-hermetic compressors available for all main refrigerants, equipped with smart electronics and capable of modulation, Emerson has taken compression technology to new heights.

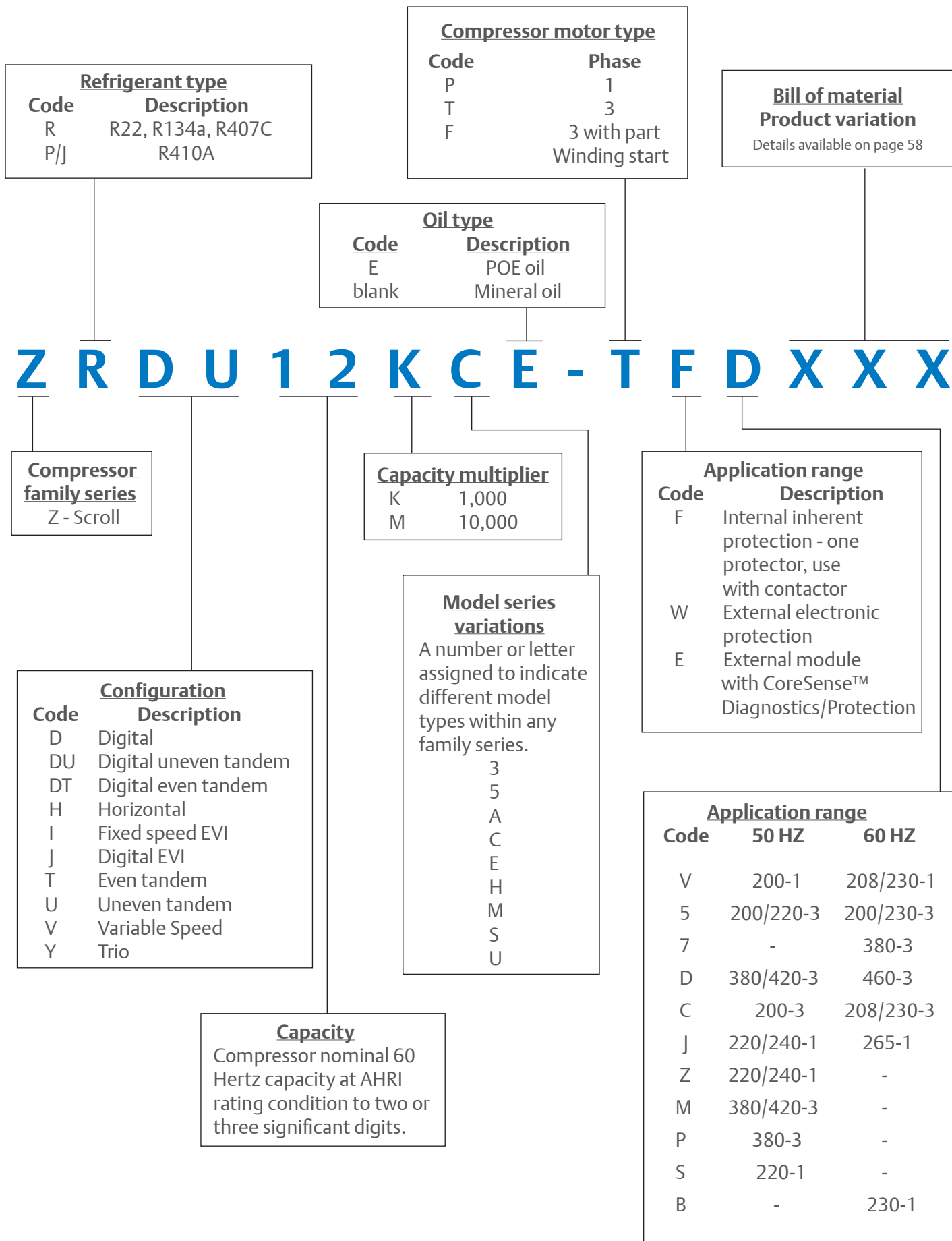


Residential compressors

Commercial compressors



# Nomenclature



# Copeland Scroll™ compressors for R22, R407C and R134a refrigerant

Copeland Scroll compressors for R22, R407C and R134a refrigerants are widely used in air conditioning, process cooling and precision cooling applications.

Applied in the air conditioning industry in diverse applications including split systems, rooftops, packaged units and chillers, 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 be used in large capacity systems to deliver optimal comfort, low operating cost with higher seasonal efficiency.

The range of products goes from ZR18 (1.5HP) to ZR380 (30HP) in single compressor applications and to 60/90 HP in Tandem/trio applications in single module.

## Features and benefits

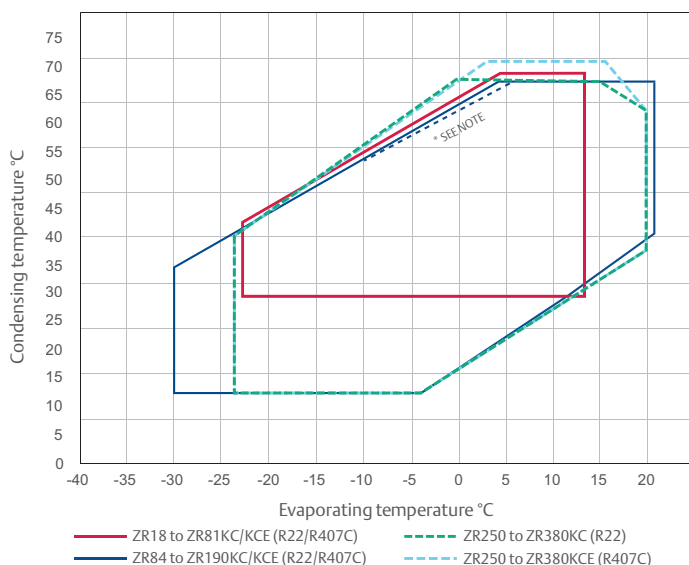
- Copeland Scroll axial and radial compliance for superior reliability and efficiency
- Wide scroll line-up
- Low oil circulation rate
- Superior liquid handling capability
- Low sound and vibration level
- Low Life Cycle Climate Performance (LCCP)
- Copeland qualified tandem and trio configurations for superior seasonal efficiency

## Maximum allowable pressure (PS)

- ZR18 to ZR81: Low Side PS 20 bar(g) / High Side PS 29.5 bar(g)
- ZR84 to ZR380: Low Side PS 20 bar(g) / High Side PS 32 bar(g)

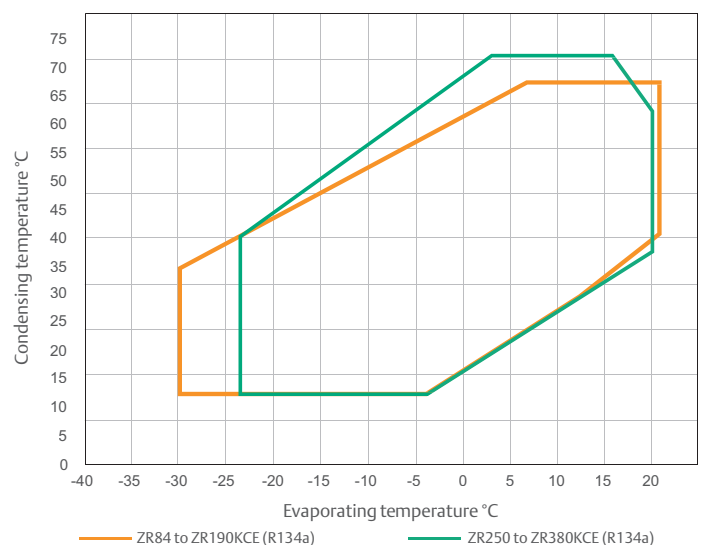
## Operating envelopes

R22 and R407C

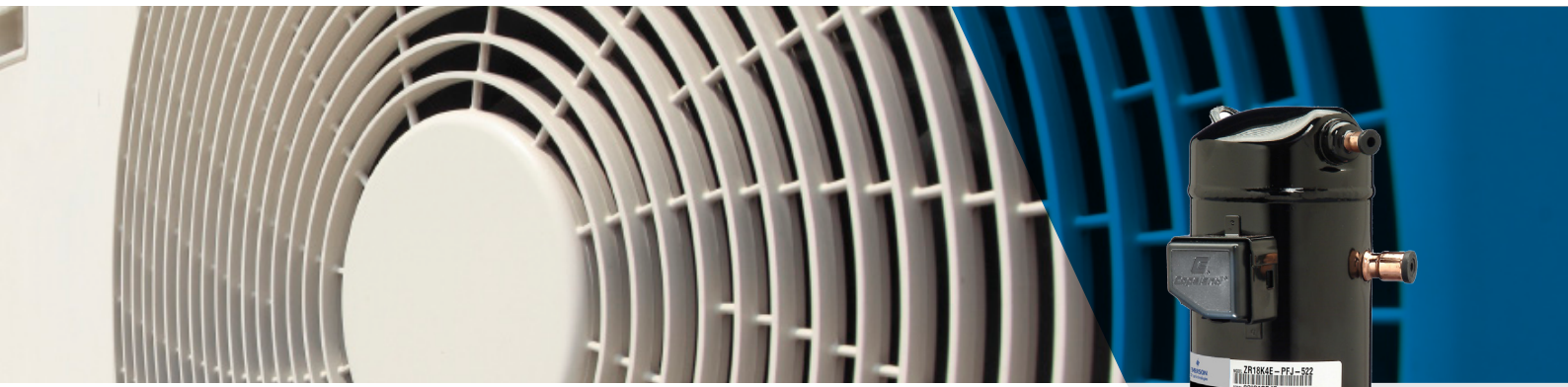


**Note:**  
Dashed blue line indicates the reduced envelope for the ZR144 when operating with R407C

R134a





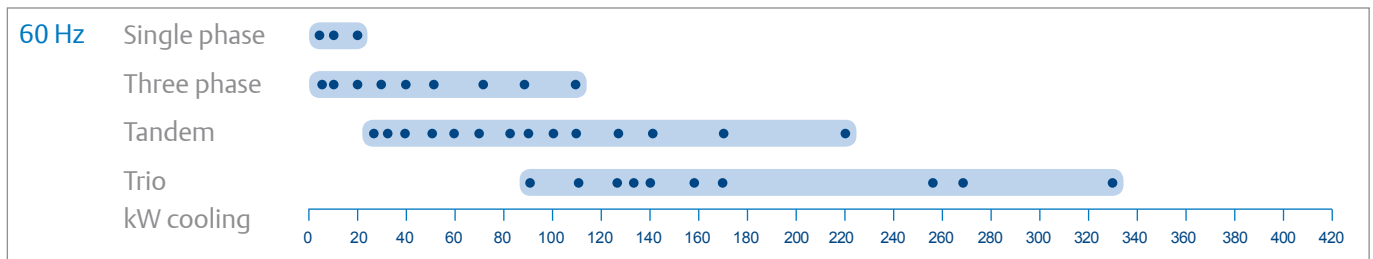
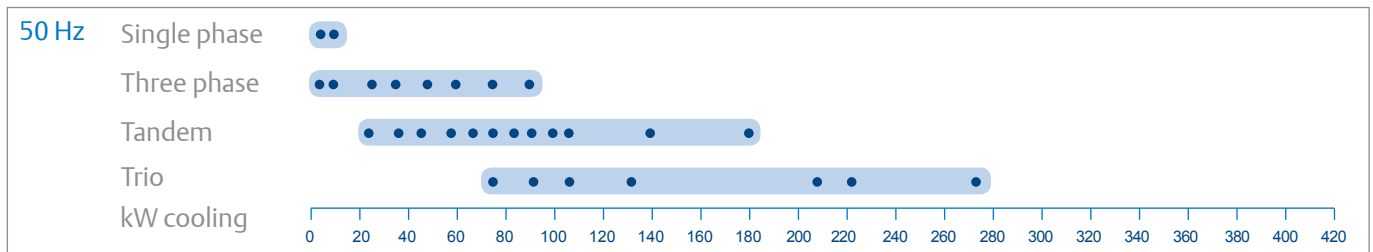


## Compressor line-up

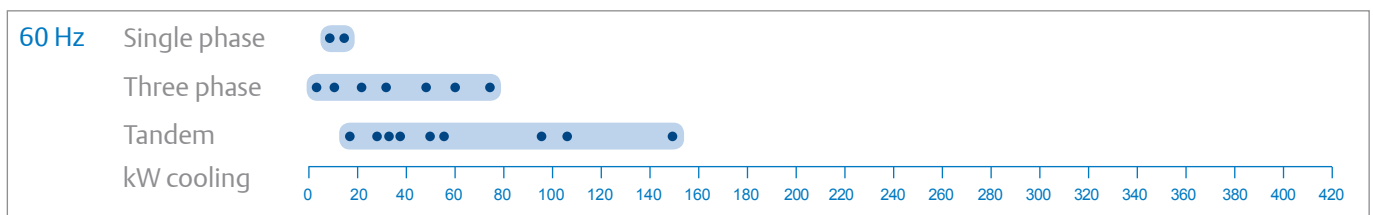
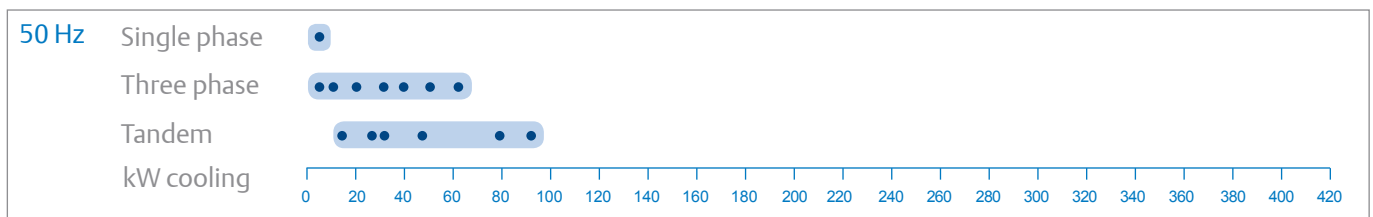
- ZR18 to ZR81: Low Side PS 20 bar(g) / High Side PS 29.5 bar(g)
- ZR84 to ZR380: Low Side PS 20 bar(g) / High Side PS 32 bar(g)



### R22/R407C



### R134a



220-240V ; 50Hz , 1 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)	
		(W)	(Btu/h)										
ZR22K3	PFJ	1.8	5,350	18,200	1,730	8.0	3.08	10.5	30.7	1.12	25.9	47.0	65
ZR24K3	PFJ	2.0	5,900	20,200	1,920	9.2	3.08	10.5	34.0	1.12	25.0	58.0	65
ZR26K3	PFJ	2.2	6,350	21,700	2,010	9.5	3.17	10.8	36.1	1.12	27.2	60.0	65
ZR28KM	PFZ	2.3	6,750	23,000	2,020	9.2	3.34	11.4	37.2	0.77	19.4	52.9	63
ZR30KM	PFZ	2.5	7,350	25,000	2,190	10.1	3.34	11.4	40.5	0.77	19.3	52.9	63
ZR30KS	PFZ	2.5	7,350	25,000	2,230	10.2	3.28	11.2	41.0	0.74	22.1	60.0	68
ZR32KS	PFZ	2.7	7,900	27,000	2,410	10.9	3.28	11.2	44.3	0.74	22.1	66.0	68
ZR34K3	PFJ	2.8	8,250	28,100	2,550	12.1	3.22	11.0	46.2	1.24	28.6	76.0	68
ZR34KH	PFJ	2.8	8200	28000	2520	13.6	3.25	11.1	46.2	1.04	30.4	100.0	66
ZR36K3	PFJ	3.0	8,850	30,200	2,720	13.1	3.25	11.1	49.5	1.24	29.5	82.0	68
ZR36KH	PFJ	3.0	8900	30300	2730	13.6	3.25	11.1	49.5	1.24	30.4	100.0	68
ZR39KH	PFJ	3.3	9850	33600	3000	14.6	3.28	11.2	54.2	1.24	30.4	114.0	68
ZR40K3	PFJ	3.3	9,750	33,300	3,000	14.7	3.25	11.1	54.2	1.24	27.9	100.0	68
ZR42K3	PFJ	3.5	10,250	35,000	3,150	15.2	3.25	11.1	57.2	1.24	30.4	97.0	68
ZR42KH	PFZ	3.5	10,250	35000	3150	15.8	3.25	11.1	57.2	1.2	31.3	114.0	68
ZR45K3	PFJ	3.8	11,200	38,200	3,380	16.4	3.31	11.3	61.1	1.24	32.2	114.0	68
ZR47K3	PFJ	3.9	11,550	39,400	3,460	16.8	3.34	11.4	63.3	1.24	31.3	114.0	68
ZR48K3	PFJ	4.0	11,850	40,500	3,630	17.6	3.28	11.2	65.5	1.24	31.3	114.0	68
ZR61KC	PFZ	5.1	14,950	51,000	4,550	21.7	3.28	11.2	82.6	1.66	42.6	150.0	71
ZR68KC	PFJ	5.7	16,700	57,000	5,130	24.5	3.25	11.1	93.0	1.83	40.4	150.0	72

208-230V ; 60Hz , 1 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)	
		(W)	(Btu/h)										
ZR18K5	PFV	1.5	5,300	18,000	1,705	7.8	3.09	10.6	25.2	0.74	22.2	55.0	68
ZR20KH	PFB	1.6	5840	19900	1810	8.3	3.23	11.0	26.7	0.77	20.0	60.0	66
ZR22K3	PFV	1.8	6,550	22,400	2,090	9.0	3.14	10.7	30.7	1.12	25.9	56.0	68
ZR24K3	PFV	2.0	7,200	24,500	2,230	10.3	3.22	11.0	34.0	1.12	26.3	61.0	68
ZR26K3	PFV	2.2	7,800	26,600	2,440	11.1	3.19	10.9	36.1	1.12	26.8	67.0	68
ZR28KC	PFV	2.3	8,500	29,000	2,620	12.0	3.22	11.0	39.3	1.12	26.7	73.0	68
ZR28KH	PFB	2.3	8240	28100	2450	10.9	3.34	11.4	37.2	0.77	19.4	61.5	66
ZR28KM	PFV	2.3	8,250	28,100	2,450	10.9	3.34	11.4	37.2	0.77	19.4	61.5	66
ZR30K3	PFV	2.5	9,100	31,100	2,800	12.6	3.25	11.1	42.0	1.24	28.1	73.0	68
ZR32K3	PFV	2.7	9,550	32,600	2,960	13.6	3.22	11.0	43.4	1.24	28.7	83.0	71
ZR34K3	PFV	2.8	10,100	34,400	3,060	14.1	3.28	11.2	46.2	1.24	28.5	88.0	71
ZR34KH	PFJ	2.7	9850	33600	3020	13.6	3.25	11.1	46.2	1.04	36.3	102.0	71
ZR36K3	PFV	3.0	10,800	36,900	3,290	14.9	3.28	11.2	49.5	1.24	29.0	95.0	71
ZR36KH	PFJ	3.0	10640	36300	3280	12.7	3.25	11.1	49.5	1.24	27.2	96.0	71
ZR39KH	PFJ	3.3	11820	40300	3600	14.0	3.28	11.2	54.2	1.24	30.4	113.0	71
ZR40K3	PFV	3.3	11,900	40,600	3,630	16.8	3.28	11.2	54.2	1.24	29.7	104.0	71
ZR42K3	PFV	3.5	12,550	42,800	3,790	17.2	3.31	11.3	57.2	1.24	30.4	109.0	71
ZR47K3	PFV	3.9	14,150	48,200	4,190	18.2	3.37	11.5	63.3	1.24	31.3	137.0	71
ZR48K3	PFV	4.0	14,600	49,800	4,330	19.5	3.37	11.5	65.6	1.24	32.2	137.0	71
ZR54K3	PFV	4.5	16,100	55,000	4,830	21.4	3.34	11.4	73.2	1.66	43.1	148.0	74
ZR57K3	PFV	4.8	17,000	58,000	5,040	23.6	3.37	11.5	77.2	1.66	40.8	148.0	74
ZR61K3	PFV	5.1	18,200	62,000	5,450	24.8	3.34	11.4	82.6	1.66	40.8	148.0	74
ZR68KC	PFV	5.7	20,400	69,500	6,200	28.0	3.28	11.2	93.0	1.77	40.4	176.0	74



## 380-420V ; 50Hz , 3 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)	
		(W)	(Btu/h)										
ZR22K3	TFD	1.8	5,350	18,200	1,770	3.2	3.0	10.3	30.7	1.1	24.5	24.0	65.0
ZR24K3	TFD	2.0	5,900	20,200	1,920	3.5	3.1	10.5	34.0	1.1	25.0	26.0	65.0
ZR26K3	TFD	2.2	6,350	21,700	2,010	3.8	3.2	10.8	36.1	1.1	26.8	26.0	65.0
ZR28K3	TFD	2.3	6,900	23,600	2,150	4.0	3.2	11.0	39.3	1.1	25.4	32.0	65.0
ZR30K3	TFD	2.5	7,400	25,200	2,290	4.2	3.2	11.0	42.0	1.2	25.9	32.0	65.0
ZR32K3	TFD	2.7	7,750	26,500	2,430	4.4	3.2	10.9	43.4	1.2	26.3	35.0	68.0
ZR34K3	TFD	2.8	8,250	28,100	2,500	4.6	3.3	11.2	46.2	1.2	26.9	40.0	68.0
ZR34KH	TFD	2.8	8,200	28,000	2,480	4.7	3.3	11.3	46.2	1.0	36.3	40.0	68.0
ZR36K3	TFD	3.0	8,850	30,200	2,700	4.8	3.3	11.2	49.5	1.2	27.2	40.0	68.0
ZR36KH	TFD	3.0	8,880	30,300	2,680	4.7	3.3	11.3	49.5	1.1	30.0	40.0	68.0
ZR39KH	TFD	3.3	9,850	33,600	2,950	5.3	3.3	11.4	54.2	1.1	30.4	46.0	68.0
ZR40K3	TFD	3.3	9,750	33,300	2,970	5.3	3.3	11.2	54.2	1.2	28.1	46.0	68.0
ZR42K3	TFD	3.5	10,250	35,000	3,110	5.5	3.3	11.3	57.2	1.2	28.2	46.0	68.0
ZR44K5	TFD	3.7	10,600	36,100	3,280	5.4	3.2	11.0	58.4	1.2	28.9	41.0	70.0
ZR45KC	TFD	3.8	11,100	37,900	3,320	6.1	3.3	11.4	61.1	1.4	28.1	48.0	68.0
ZR47KC	TFD	3.9	11,550	39,400	3,430	6.3	3.4	11.5	64.2	1.4	28.1	48.0	68.0
ZR48KC	TFD	4.0	11,850	40,500	3,600	6.1	3.3	11.2	65.5	1.4	28.1	50.0	68.0
ZR48KE	TFM	3.9	11,870	40,500	3,580	6.1	3.3	11.3	65.5	1.4	29.9	48.0	68.0
ZR54KE	TFD	4.5	13,200	45,000	3,920	7.4	3.4	11.5	73.1	1.4	29.9	71.3	69.0
ZR54KS	TFD	4.5	13,200	45,000	3,920	7.1	3.4	11.5	73.1	1.2	29.9	56.0	69.0
ZR57KE	TFD	4.8	13,900	47,500	4,130	7.8	3.4	11.5	77.2	1.4	28.6	71.3	69.0
ZR57KE	TFM	4.6	13,930	47,500	4,130	7.8	3.4	11.5	77.2	1.4	28.6	71.3	69.0
ZR57KS	TFD	4.8	14,050	48,000	4,170	7.5	3.4	11.5	77.2	1.2	30.0	56.0	69.0
ZR61KE	TFD	5.1	14,950	51,000	4,470	8.3	3.3	11.4	82.6	1.4	29.9	58.0	69.0
ZR61KH	TFD	4.9	14,980	51,100	4,440	7.8	3.4	11.5	82.6	1.8	27.2	67.0	72.0
ZR61KS	TFD	5.1	14,950	51,000	4,430	7.9	3.4	11.5	82.6	1.2	29.9	59.0	69.0
ZR68KC	TFD	5.7	16,900	57,500	4,960	8.6	3.4	11.6	93.0	1.8	39.0	74.0	72.0
ZR72KC	TFD	6.0	17,700	60,500	5,200	8.9	3.4	11.7	98.1	1.8	38.6	74.0	72.0
ZR72KC	TFM	5.9	17,740	60,500	5,200	8.9	3.4	11.7	98.1	1.8	38.6	74.0	72.0
ZR81KC	TFD	6.8	19,900	68,000	5,810	10.5	3.4	11.7	107.8	1.8	39.0	101.0	72.0
ZR84KC	TFD	7.0	20,800	71,000	6,000	11.4	3.5	11.8	113.6	2.5	57.2	100.0	74.0
ZR94KC	TFD	7.8	23,300	79,500	6,750	12.5	3.5	11.8	127.2	2.5	57.2	95.0	73.0
ZR108KC	TFD	9.0	26,400	90,000	7,550	13.7	3.5	12.0	142.9	3.3	59.9	111.0	74.0
ZR125KC	TFD	10.4	31,000	106,000	9,000	15.8	3.5	11.8	167.2	3.3	61.2	118.0	75.0
ZR144KC	TFD	12.0	35,000	120,000	10,100	17.6	3.5	11.9	190.9	3.3	61.2	118.0	76.0
ZR160KC	TFD	13.3	38,000	130,000	11,300	20.3	3.4	11.5	209.1	3.3	64.9	140.0	79.0
ZR190KC	TFD	15.8	45,500	155,000	13,600	25.6	3.3	11.4	249.2	3.3	66.2	174.0	82.0
ZR250KC	TWD	20.8	60,000	204,000	17,700	29.6	3.4	11.5	325.2	4.7	139.3	225.0	83.0
ZR310KC	TWD	25.8	74,000	253,000	22,000	37.9	3.4	11.5	410.6	6.8	160.1	272.0	85.0
ZR380KC	TWD	31.7	92,500	315,000	26,500	45.1	3.5	11.9	502.7	6.3	176.9	310.0	88.0

**Note:**

All values as per AHRI standards: evaporating temp. : 7.2°C , condensing temp. : 54.4°C , subcooling : 8.3K , superheat : 11.1K , ambient temp. : 35°C

460V / 200-230V / 380V ; 60 Hz , 3 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)								
		(W)	(Btu/h)																	
ZR22K3	TFD	1.8	6,500	22,100	2090	3.2	3.11	10.6	30.7	1.12	24.5	22.4	68							
	TF5													2080	6	3.14	10.7			
ZR24K3	TFD	2	7250	24,800	2310	3.5	3.14	10.7	34	1.12	25	27	68							
	TF5													7	3.14	10.7				
ZR26K3	TFD	2.2	7700	26,200	2430	3.8	3.17	10.8	36.1	1.12	26.8	27	68							
	TF5													7750	26,500	2450	7	3.17	10.8	
ZR28K3	TFD	2.3	8450	28,900	2630	4	3.22	11	39.3	1.12	25.4	31	68							
	TF5													7.9	3.22	11				
ZR30K3	TFD	2.5	9100	31,100	2830	4.2	3.22	11	42	1.24	25.9	31	68							
	TF5													8.3	3.22	11				
ZR32K3	TFD	2.7	9,550	32,600	2,910	4.4	3.28	11.2	43.4	1.24	26.3	35	71							
	TF5													8.7	3.28	11.2				
ZR34K3	TFD	2.8	9,950	34,000	2,970	4.6	3.34	11.4	46.2	1.24	26.9	39	71							
	TF5				2,970									9.1	3.34	11.4				
	TF7				3,200									5.4	3.11	10.6				
ZR34KH	TFD	2.8	9850	33600	2980	4.7	3.31	11.3	46.2	1.0	36.3	39	71							
ZR36K3	TFD	3	10,800	36,900	3,250	4.9	3.31	11.3	49.5	1.24	27.2	39	71							
	TF5													9.7	3.31	11.3	49.5	1.24	27.3	77
ZR36KH	TFD	3.0	10640	36300	3220	4.9	3.31	11.3	49.5	1.2	13.6	39	71							
ZR39KH	TFD	3.4	11820	40300	3470	5.3	3.40	11.6	54.2	1.2	30.4	44	71							
ZR40K3	TFD	3.3	11,900	40,600	3,560	5.4	3.34	11.4	54.2	1.24	28.1	44	71							
	TF5													10.7	3.34	11.4	54.2	1.24	27.9	88
ZR42K5	TFD	3.5	12,350	42,200	3,750	5.7	3.3	11.3	56.5	1.24	27.6	48	73							
	TF5													11.3	3.3	11.3	56.5	1.24	27.7	93
ZR45KC	TFD	3.8	13,500	46,000	4,000	6.1	3.37	11.5	61.1	1.36	28.1	46	71							
	TF5													12.1	3.37	11.5	61.1	1.36	28.1	91
ZR47KC	TFD	3.9	13,900	47,500	4,130	6.1	3.37	11.5	64.2	1.36	28.1	46	71							
	TF5								64.2					12.2	3.37	11.5	64.2	91		
	TF7								63.4					7.4	3.37	11.5	63.4	54		
ZR48KC	TFD	4	14,400	49,100	4,270	6.3	3.37	11.5	65.5	1.36	28.1	50	71							
	TF5													12.6	3.37	11.5	65.5	1.36	28.1	91
	TF7													7.6	3.37	11.5	65.5	1.36	28.1	54
ZR54KE	TFD	4.5	16,100	55,000	4,780	7.6	3.37	11.5	73.1	1.36	29.9	74.8	72							
	TF5													16,900	57,500	4,960	15.3	3.37	11.5	73.1
ZR54KS	TFD	4.5	16,000	54,500	4,670	7.2	3.4	11.6	73.1	1.24	29.9	59	72							
	TF5				4,670									14.3	3.4	11.6	73.1	1.24	29.9	125
	TF7				4,700									8.3	3.4	11.6	73.1	1.24	29.9	65
ZR54K5	TFD	4.5	15,700	53,500	4,740	6.8	3.31	11.3	72	1.24	31	52	73							
	TF5				4,740									13.6	3.31	11.3	72	1.24	31	114
	TF7				4,730									7.9	3.31	11.3	72	1.24	31	65
ZR57KE	TFD	4.8	17,100	58,400	5,040	8	3.4	11.6	77.2	1.36	28.6	74.8	72							
ZR57KS	TFD	4.8	17,100	58,500	5,050	7.5	3.4	11.6	77.2	1.24	29.9	59	72							
	TF5				5,050									15	3.4	11.6	77.2	1.24	29.9	125
	TF7				5,100									8.9	3.37	11.5	77.2	1.24	29.9	65
ZR61KE	TFD	5.1	18,300	62,500	5,390	8.4	3.4	11.6	82.6	1.36	29.9	74.8	69							



460V / 200-230V / 380V ; 60 Hz , 3 Phase (continuation)

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)	
		(W)	(Btu/h)										
ZR61KS	TFD	5.1	18,200	62,000	5,350	7.9	3.4	11.6	82.6	1.24	29.9	56	
	TF5											125	
	TF7											65	
ZR61KH	TFD	5.2	18120	61800	5430	8.1	3.34	11.4	82.6	1.8	27.2	68	75
ZR68KC	TFD	5.7	20,500	70,000	5,950	8.8	3.46	11.8	93	1.77	39	75	
	TF5											156	
	TF7											70	
ZR72KC	TFD	6	21,500	73,500	6,250	9.1	3.43	11.7	98.1	1.77	38.6	75	
	TF5											156	
	TF7											70	
ZR81KC	TFD	6.8	24,000	82,000	6,950	11	3.46	11.8	107.8	1.77	39	100	
	TF5											164	
	TF7											100	
ZR84KC	TFD	7	25,100	85,500	7,300	11.4	3.46	11.8	113.6	2.51	57.2	100	
	TF5											196	
	TF7											135	
ZR94KC	TFD	7.8	28,300	96,500	8,200	12.8	3.46	11.8	127.2	2.51	57.2	95	
	TF5											195	
	TF7											123	
ZR108KC	TFD	9	32,000	109,000	9,200	14.1	3.49	11.9	142.9	3.25	59.9	114	
	TF5											225	
	TF7											140	
ZR125KC	TFD	10.4	37,500	128,000	10,900	16.3	3.43	11.7	167.2	3.25	61.2	125	
	TF5											239	
	TF7											145	
ZR144KC	TFD	12	43,000	146,000	12,300	18.2	3.46	11.8	190.9	3.25	61.2	125	
	TF5											245	
	TF7											145	
ZR160KC	TFD	13.3	47,000	160,000	13,900	20.8	3.37	11.5	209.1	3.25	64.9	150	
	TF7		45,500	155,000		24.2	3.28	11.2				138	
	TWD		47,000	160,000		20.8	3.37	11.5				150	
ZR160KC	TW5	13.3	47,000	160,000	13,900	43.2	3.37	11.5	209.1	3.25	66.2	300	
	TW7					24.2						139	
ZR190KC	TFD	15.8	55,500	190,000	16,800	26.5	3.34	11.4	249.2	3.25	66.2	179	
	TWD					26.5						173	
	TW5					53.2						340	
	TW7					32						196	
ZR250KC	TWD	20.8	73,500	250,000	21,700	30.5	3.37	11.5	325.2	4.67	139.3	225	
	TW5					66.6			325.2		138.8	505	
	TW7					36.9			318.1		139.3	280	
ZR310KC	TWD	25.8	89,500	306,000	27,100	38.8	3.31	11.3	410.6	6.8	160.1	272	
	TW5					81.6						605	
	TW7					47						353	
ZR380KC	TWD	31.7	111,000	379,000	32,700	47.1	3.4	11.6	502.7	6.3	176.9	310	
	TW5					94.2						599	
	TW7					57						358	

**Note:**  
All values as per AHRI standards: evaporating temp. : 7.2°C , condensing temp. : 54.4°C , subcooling : 8.3K , superheat : 11.1K , ambient temp. : 35°C

# Technical overview

# R407C

## 220-240V ; 50Hz , 1 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZR18K5E PFJ	1.5	4,200	14,400	1,455	7	2.9	9.9	25.2	0.74	22.4	45	65
ZR22K3E PFJ	1.8	5,100	17,400	1,740	8.1	2.93	10	30.7	1.12	25.9	47	65
ZR24K3E PFJ	2	5,700	19,400	1,940	9.2	2.93	10	34	1.12	25	58	65
ZR26K3E PFJ	2.2	6,050	20,600	2,010	9.6	2.99	10.2	36.1	1.12	27.2	60	65
ZR28K3E PFJ	2.3	6,650	22,700	2,190	10.4	3.02	10.3	39.3	1.12	27.2	61	65
ZR30K3E PFJ	2.5	7,100	24,300	2,330	11.2	3.05	10.4	42	1.24	28.1	74	65
ZR34K3E PFJ	2.8	7,900	27,000	2,580	12.3	3.05	10.4	46.2	1.24	28.6	76	68
ZR36K3E PFJ	3	8,450	28,800	2,740	13.1	3.08	10.5	49.5	1.24	29.5	82	68
ZR40K3E PFJ	3.3	9,300	31,800	3,040	14.3	3.08	10.5	54.2	1.24	28	100	68
ZR42K3E PFJ	3.5	9,750	33,200	3,150	15.2	3.11	10.6	57.2	1.24	30.4	97	68
ZR45K3E PFJ	3.8	10,400	35,500	3,360	16.6	3.11	10.6	61.1	1.24	32.2	114	68
ZR47K3E PFJ	3.9	10,950	37,400	3,480	16.9	3.14	10.7	63.3	1.24	31.3	114	68
ZR48K3E PFJ	4	11,400	38,900	3,610	17.3	3.17	10.8	65.5	1.24	31.3	114	68
ZR68KCE PFJ	5.7	15,700	53,500	5,200	25.1	3.02	10.3	93	1.83	40.4	150	72

## 208-230V ; 60Hz , 1 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZR18K5E PFV	1.5	5,050	17,300	1,750	7.6	2.89	9.9	25.2	0.74	22.2	55.0	57.0
ZR21K5E PFV	1.8	5,900	20,200	2,040	8.7	2.90	9.9	29.0	0.74	21.3	56.0	57.0
ZR24K3E PFV	2.0	6,850	23,400	2,260	10.2	3.02	10.3	34.0	1.12	26.3	61.0	57.0
ZR28K3E PFV	2.3	7,950	27,200	2,600	11.7	3.08	10.5	39.3	1.12	26.7	72.5	57.0
ZR30K3E PFV	2.5	8,550	29,200	2,760	12.4	3.11	10.6	42.0	1.24	28.1	73.0	57.0
ZR34K3E PFV	2.8	9,550	32,600	3,060	13.8	3.11	10.6	46.2	1.24	28.5	88.0	60.0
ZR36K3E PFV	3.0	10,250	34,900	3,260	14.9	3.14	10.7	49.5	1.24	29.0	95.0	60.0
ZR40K3E PFV	3.3	11,300	38,500	3,580	16.6	3.17	10.8	54.2	1.24	29.7	104.0	60.0
ZR48K3E PFV	4.0	13,850	47,200	4,410	20.3	3.14	10.7	65.6	1.24	32.2	137.0	60.0
ZR61KCE PFV	5.1	17,700	60,050	5,300	24.8	3.34	11.4	82.6	1.66	39.5	144.0	63.0
ZR68KCE PFV	5.7	19,000	65,000	6,050	27.5	3.14	10.7	93.0	1.77	40.4	176.0	64.0

## 380-420V ; 50Hz , 3 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZR22K3E TFD	1.8	5,150	17,500	1,670	3.1	3.1	10.5	30.7	1.12	24.6	24.0	65
ZR24K3E TFD	2.0	5,700	19,400	1,920	3.7	3.0	10.1	34.0	1.12	25.0	26.0	65
ZR26K3E TFD	2.2	6,400	21,800	2,190	4.1	2.9	10.0	36.1	1.12	26.8	26.0	65
ZR28K3E TFD	2.3	6,650	22,700	2,140	3.9	3.1	10.6	39.3	1.12	25.4	32.0	65
ZR30K3E TFD	2.5	7,400	25,200	2,270	4.4	3.3	11.1	42.0	1.24	25.9	32.0	65

**Note:**

All values as per AHRI standards: evaporating temp. : 7.2°C , condensing temp. : 54.4°C , subcooling : 8.3K , superheat : 11.1K , ambient temp. : 35°C



380-420V ; 50Hz , 3 Phase (continuation)

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)	
		(W)	(Btu/h)										
ZR32K3E	TFD	2.7	7,400	25,200	2,410	7.6	3.1	10.4	43.4	1.24	26.3	35.0	68
ZR34K3E	TFD	2.8	7,900	27,000	2,530	4.7	3.1	10.7	46.2	1.24	26.9	40.0	68
ZR36K3E	TFD	3.0	8,450	28,800	2,700	4.8	3.1	10.7	49.5	1.24	27.2	40.0	68
ZR38K5E	TFD	3.2	8,800	30,000	2,900	5.4	3.0	10.4	50.9	1.24	27.5	47.0	70
ZR40K3E	TFD	3.3	9,300	31,700	2,960	5.4	3.1	10.7	54.2	1.24	28.1	46.0	68
ZR42K3E	TFD	3.5	9,750	33,300	3,110	5.3	3.1	10.7	57.2	1.24	28.2	46.0	68
ZR45KCE	TFD	3.8	10,500	35,800	3,340	6.1	3.1	10.7	61.1	1.36	28.1	48.0	68
ZR47KCE	TFD	3.9	10,950	37,400	3,440	6.5	3.2	10.9	64.2	1.36	28.1	48.0	71
ZR48KCE	TFD	4.0	11,300	38,600	3,590	6.3	3.1	10.7	65.5	1.36	28.1	50.0	71
ZR48K5E	TFD	4.0	11,200	38,300	3,450	6.2	3.3	11.1	63.4	1.24	29.1	60.0	70
ZR48KEE	TFM	4.1	11280	38500	3500	6.1	3.2	11.0	65.6	1.36	30.0	48.0	68
ZR49K3E	TFD	4.1	11,350	38,800	3,670	6.4	3.1	10.6	67.1	1.95	37.2	51.5	69
ZR54KSE	TFD	4.5	13,350	45,600	4,190	7.4	3.2	10.9	73.1	1.24	29.9	56.0	69
ZR54K5E	TFD	4.5	12,500	42,700	3,880	6.6	3.2	11.0	72.0	1.24	31.0	52.0	70
ZR54KEE	TFM	4.5	12950	44200	3980	7.5	3.3	11.1	73.1	1.36	30.0	71.3	69
ZR57KSE	TFD	4.8	14,250	48,700	4,450	7.8	3.2	10.9	77.2	1.24	30.0	56.0	72
ZR57KEE	TFM	4.8	13570	46300	4220	7.8	3.2	11.0	77.2	1.36	30.0	71.3	69
ZR61KSE	TFD	5.1	15,200	52,000	4,760	8.2	3.2	11.0	82.6	1.24	29.9	59.0	72
ZR61KHE	TFM	5.1	14,350	48,900	4,470	8.0	3.2	10.9	82.6	1.77	39.5	67.0	72
ZR61KEE	TFM	5.1	14650	50000	4550	8.2	3.2	11.0	82.6	1.36	30.0	71.3	69
ZR68KCE	TFD	5.7	15,800	54,000	5,100	8.9	3.1	10.6	93.0	1.77	39.0	74.0	72
ZR72KCE	TFD	6.0	16,600	56,500	5,150	9.1	3.2	11.0	98.1	1.77	38.6	74.0	72
ZR72KEE	TFM	6.0	17870	61000	5250	9.2	3.4	11.6	98.1	1.77	39.0	73.0	72
ZR81KCE	TFD	6.8	18,600	63,500	5,900	10.9	3.2	10.8	107.8	1.77	39.0	101.0	72
ZR84KCE	TFD	7.0	19,600	67,000	6,150	11.4	3.2	10.9	113.6	2.51	57.2	100.0	79
ZR94KCE	TFD	7.8	23,000	78,600	6,950	12.9	3.3	11.4	127.2	2.51	57.2	95.0	74
ZR108KCE	TFD	9.0	25,800	88,100	7,580	13.8	3.4	11.6	142.9	3.25	59.9	111.0	74
ZR125KCE	TFD	10.4	30,000	103,000	8,950	16.0	3.4	11.6	167.2	3.25	61.2	118.0	74
ZR144KCE	TFD	12.0	34,500	118,000	10,150	17.7	3.4	11.6	190.9	3.25	61.2	118.0	75
ZR160KCE	TFD TWD	13.3	37,500	128,000	11,450	20.5	3.3	11.2	209.1	3.25	64.9	140.0	78
ZR190KCE	TFD TWD	15.8	44,000	150,000	13,650	26.5	3.2	11.0	249.2	3.25	66.2	174.0	82
ZR250KCE	TWD	20.8	58,500	200,000	18,000	30.1	3.3	11.1	325.2	4.67	139.3	225.0	83
ZR310KCE	TWD	25.8	72,500	248,000	22,300	37.9	3.3	11.1	410.6	6.80	160.1	272.0	85
ZR380KCE	TWD	31.7	91,500	313,000	26,700	45.5	3.4	11.7	502.7	6.30	176.9	310.0	88

Note:

All values as per AHRI standards: evaporating temp. : 7.2°C , condensing temp. : 54.4°C , subcooling : 8.3K , superheat : 11.1K , ambient temp. : 35°C

460V / 200-230V / 380V / 208-230V ; 60Hz, 3 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZR22K3E TFD TF5	1.8	6,100 6,200	20,800 21,100	2,110 2,090	3.3 8.9	2.87 2.96	9.8 10.1	30.7	1.12	24.5	22.4 45.0	57.0
ZR24K3E TFD TF5	2.0	7,200 6,900	24,600 23,500	2,240 2,190	1.7 7.2	3.22 3.14	11.0 10.7	34.0	1.12	25.0	27.0 55.0	57.0
ZR26K3E TFD TF5	2.2	7,750 7,700	26,400 26,200	2,470 2,490	3.7 7.0	3.14 3.08	10.7 10.5	36.1	1.12	26.8	27.0 55.0	57.0
ZR28K3E TFD TF5	2.3	8,000	27,300	2,530	3.9 7.8	3.17	10.8	39.3	1.12	25.4	31.0 63.0	57.0
ZR30K3E TFD TF5	2.5	8,500	29,000	2,750	4.3 8.5	3.08	10.5	42.0	1.24	25.9	31.0 63.0	57.0
ZR32K3E TFD TF5	2.7	9,000	30,700	2,850	4.4 8.7	3.17	10.8	43.4	1.24	26.3	35.0 77.0	60.0
ZR34K3E TFD TF5 TF7	2.8	9,650	33,000	3,010 3,010 3,320	4.6 9.2 5.4	3.22 3.22 2.90	11.0 11.0 9.9	46.2	1.24	26.9 26.9 31.3	39.0 77.0 39.0	60.0
ZR36K3E TFD TF5	3.0	10,250	34,900	3,180	4.9 9.7	3.22	11.0	49.5	1.24	27.2 27.3	39.0 77.0	60.0
ZR40K3E TFD TF5	3.3	11,200	38,300	3,490	5.4 10.7	3.22	11.0	54.2	1.24	28.1 27.9	44.0 88.0	60.0
ZR42K3E TFD TF5	3.5	11,800	40,200	3,730	5.5 11.0	3.17	10.8	57.2	1.24	28.2 28.1	44.0 88.0	60.0
ZR47KCE TFD TF5	3.9	13,050	44,600	4,150	6.2 12.4	3.14	10.7	64.2	1.36	28.1	46.0 91.0	60.0
ZR48KCE TFD TF5 TF7	4.0	13,750	47,000	4,330	6.3 12.6 7.6	3.19	10.9	65.5	1.36	28.1	50.0 91.0 54.0	60.0 64.0 60.0
ZR54KCE TF7	4.5	15,800	54,000	4,880	9.0	3.25	11.1	73.2	1.95	37.2	65.8	63.0
ZR54KSE TFD TF5	4.5	16,100	55,000	5,050 4,970	7.6 14.7	3.19 3.25	10.9 11.1	73.1	1.24	29.9	59.0 125.0	61.0
ZR57KSE TFD TF5	4.8	17,100	58,500	5,350	8.0 15.7	3.19	10.9	77.2	1.24	29.9	59.0 125.0	64.0 61.0
ZR61KCE TF7	5.1	17,100	58,500	5,300	9.2	3.25	11.1	82.6	1.95	36.3	64.0	63.0
ZR61KSE TFD TF5	5.1	17,400 18,300	59,500 62,500	5,450 5,750	8.0 16.5	3.22 3.19	11.0 10.9	82.6	1.24	29.9	56.0 125.0	64.0 61.0
ZR68KCE TFD TF5	5.7	19,200	65,500	6,000	9.2 18.4	3.19	10.9	93.0	1.77	39.0	75.0 156.0	64.0
ZR72KCE TFD TF5 TF7	6.0	20,400	69,500	6,200	8.8 18.1 10.7	3.28	11.2	98.1	1.77	38.6	75.0 156.0 70.0	64.0

Note:

All values as per AHRI standards: evaporating temp. : 7.2°C , condensing temp. : 54.4°C , subcooling : 8.3K , superheat : 11.1K , ambient temp. : 35°C

460V / 200-230V / 380V / 208-230V ; 60Hz , 3 Phase (continuation)

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZR81KCE TFD TF5 TF7	6.8	22,600	77,000	7,150	11.0 21.9 13.3	3.17	10.8	107.8	1.77	39.0	100.0 164.0 100.0	64.0
ZR84KCE TFD TF5 TF7	7.0	23,900	81,500	7,300	11.6 23.2 14.0	3.28	11.2	113.6	2.51	57.2	100.0 196.0 135.0	71.0
ZR94KCE TFD TF5 TF7	7.8	27,500	94,000	8,310	12.8 25.6 15.5	3.34	11.4	127.2	2.51	57.2 56.7 57.2	95.0 195.0 123.0	68.0
ZR108KCE TFD TF5 TF7	9.0	31,000	106,000	9,220	14.0 28.0 17.0	3.37	11.5	142.9	3.25	59.9 59.9 60.3	114.0 225.0 140.0	69.0
ZR125KCE TFD TF5 TF7	10.4	36,500	125,000	10,850	16.3 32.6 19.8	3.40	11.6	167.2	3.25	61.2	125.0 239.0 145.0	69.0
ZR144KCE TFD TF5 TF7	12.0	41,500	142,000	12,350	18.2 36.3 22.0	3.40	11.6	190.9	3.25	61.2	125.0 245.0 145.0	69.0
ZR160KCE TFD TF7	13.3	45,000	154,000	13,850	20.8 25.1	3.28	11.2	209.1	3.25	64.9	150.0 138.0	71.0
ZR160KCE TWD TW5 TW7	13.3	45,000	154,000	13,850	20.8 41.5 25.1	3.28	11.2	209.1	3.25	64.9 66.2 64.9	150.0 300.0 139.0	71.0
ZR190KCE TFD	15.8	53,000	181,000	16,650	26.2	3.19	10.9	249.2	3.25	66.2	179.0	72.0
ZR190KCE TWD TW5 TW7	15.8	53,000	181,000	16,650	26.2 52.4 31.7	3.19	10.9	249.2	3.25	66.2	173.0 340.0 196.0	72.0
ZR250KCE TWD TWC TW7	20.8	70,500	240,000	21,700	31.1 67.8 37.6	3.25	11.1	325.2 325.2 318.1	4.67	139.3 138.8 139.3	225.0 505.0 280.0	77.0
ZR310KCE TWD TWC TW7	25.8	87,000	297,000	27,500	39.0 82.0 47.2	3.17	10.8	410.6	6.80	160.1	272.0 605.0 353.0	79.0
ZR380KCE TWD TWC TW7	31.7	109,500	374,000	32,800	47.3 94.6 57.3	3.34	11.4	502.7	6.30	176.9	310.0 599.0 358.0	81.0

Note:

All values as per AHRI standards: evaporating temp. : 7.2°C , condensing temp. : 54.4°C , subcooling : 8.3K , superheat : 11.1K , ambient temp. : 35°C



## 220-240V ; 50Hz , 1 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZR22K3E PFJ	1.8	3,500	12,000	1,190	5.5	2.96	10.1	30.7	1.12	25.9	47.0	54.0
ZR28K3E PFJ	2.3	4,700	16,000	1,510	7.4	3.11	10.6	39.3	1.12	27.2	61.0	54.0
ZR34K3E PFJ	2.8	5,600	19,100	1,780	8.8	3.14	10.7	46.2	1.24	28.6	76.0	57.0
ZR40K3E PFJ	3.3	6,450	22,000	2,170	11.5	2.96	10.1	54.2	1.24	27.9	100.0	57.0
ZR47K3E PFJ	3.9	7,950	27,200	2,620	16.2	3.05	10.4	63.3	1.24	31.3	114.0	57.0
ZR48K3E PFJ	4.0	8,150	27,800	2,670	16.5	3.05	10.4	65.5	1.24	31.3	114.0	57.0

## 208-230V ; 60Hz , 1 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZR40K3E PFV	3.3	7,950	27,100	2,550	12.2	3.11	10.6	54.2	1.24	29.7	104.0	60.0
ZR61KCE PFV	5.1	12,200	41,700	3,590	20.4	3.40	11.6	82.6	1.66	39.5	144.0	63.0
ZR68KCE PFV	5.7	13,750	46,900	4,420	22.2	3.11	10.6	93.0	1.77	40.4	176.0	64.0

## 380-420V ; 50Hz , 3 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZR22K3E TFD	1.8	3,600	12,300	1,230	2.4	2.93	10.0	30.7	1.12	24.5	24.0	54.0
ZR28K3E TFD	2.3	4,750	16,200	1,570	3.2	3.02	10.3	39.3	1.12	25.4	32.0	54.0
ZR34K3E TFD	2.8	5,550	18,900	1,830	3.7	3.02	10.3	46.2	1.24	26.9	40.0	57.0
ZR36K3E TFD	3.0	5,400	18,500	1,992	3.8	2.72	9.3	49.5	1.24	27.2	40.0	57.0
ZR40K3E TFD	3.3	6,500	22,100	2,090	4.1	3.11	10.6	54.2	1.24	28.1	46.0	57.0
ZR48KCE TFD	4.0	7,900	26,900	2,420	4.8	3.25	11.1	65.5	1.36	28.1	50.0	60.0
ZR61KCE TFD	5.1	10,050	34,300	2,990	6.3	3.37	11.5	82.6	1.95	36.1	65.5	60.0
ZR81KCE TFD	6.8	13,300	45,400	4,010	8.6	3.31	11.3	107.8	1.77	39.0	101.0	61.0
ZR84KCE TFD	7.0	13,350	45,600	4,200	10.0	3.18	10.9	113.6	2.51	57.2	100.0	68.0
ZR94KCE TFD	7.8	15,700	53,500	4,710	10.4	3.33	11.4	127.2	2.51	57.2	95.0	63.0
ZR108KCE TFD	9.0	17,600	59,900	5,260	11.6	3.34	11.4	142.9	3.25	59.9	111.0	63.0
ZR125KCE TFD	10.4	20,500	70,000	6,150	12.2	3.34	11.4	167.2	3.25	61.2	118.0	63.0
ZR144KCE TFD	12.0	23,300	79,500	6,950	13.6	3.37	11.5	190.9	3.25	61.2	118.0	64.0
ZR160KCE TFD TWD	13.3	25,500	87,000	7,600	15.7	3.37	11.5	209.1	3.25	64.9	140.0	67.0
ZR190KCE TFD TWD	15.8	30,500	104,000	9,200	20.6	3.31	11.3	249.2	3.25	66.2	174.0 173.0	71.0
ZR250KCE TWD	20.8	40,000	137,000	12,200	22.6	3.28	11.2	325.2	4.67	139.3	225.0	72.0
ZR310KCE TWD	25.8	50,000	170,000	15,300	28.3	3.25	11.1	410.6	6.80	160.1	272.0	74.0
ZR380KCE TWD	31.7	63,000	215,000	18,800	35.6	3.34	11.4	502.7	6.30	176.9	310.0	77.0

**Note:**

All values as per AHRI standards: evaporating temp. : 7.2°C , condensing temp. : 54.4°C , subcooling : 8.3K , superheat : 11.1K , ambient temp. : 35°C

# Technical overview

# R134a

## 460V / 200-230V / 380V ; 60Hz , 3 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/WWh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZR22K3E TFD	1.8	4,350	14,800	1,480	2.9	2.93	10.0	30.7	1.12	24.5	22.4	57.0
ZR28K3E TFD TF5	2.3	5,800	19,800	1,910	3.3 6.6	3.02	10.3	39.3	1.12	25.4	31.0 63.0	57.0
ZR34K3E TFD	2.8	6,850	23,300	2,250	3.9	3.05	10.4	46.2	1.24	26.9	39.0	60.0
ZR36K3E TFD	3.0	7,150	24,400	2,390	3.8	2.99	10.2	49.5	1.24	27.2	39.0	60.0
ZR40K3E TFD	3.3	7,900	26,900	2,580	4.1	3.05	10.4	54.2	1.24	28.1	44.0	60.0
ZR48KCE TFD	4.0	9,600	32,800	2,970	5.0	3.22	11.0	65.5	1.36	28.2	50.0	60.0
ZR48K3E TFD TF5	4.0	9,500 9,650	32,500 32,900	3,090 2,990	5.0 9.8	3.08 3.22	10.5 11.0	65.5	1.36	28.1 32.7	50.0 91.0	60.0
ZR61KCE TFD TF5	5.1	12,350 12,150	42,200 41,500	3,550 3,710	6.4 13.1	3.49 3.28	11.9 11.2	82.6	1.95	36.1 35.4	63.0 128.0	63.0
ZR68KCE TFD	5.7	13,850	47,200	4,030	6.5	3.43	11.7	93.0	1.77	39.0	75.0	64.0
ZR81KCE TFD TF5	6.8	16,100 16,000	55,000 54,500	4,950 4,760	8.9 16.0	3.25 3.37	11.1 11.5	107.8	1.77	39.0	100.0 164.0	64.0
ZR84KCE TFD TF5 TF7	7.0	16,200	55,400	5,150	9.8 19.5 11.8	3.15	10.8	113.6	2.51	57.2	100.0 196.0 135.0	71.0
ZR94KCE TFD TF5 TF7	7.8	18,800	64,000	5,700	11.4 22.8 13.8	3.28	11.2	127.2	2.51	57.2 56.7 57.2	95.0 195.0 123.0	68.0
ZR108KCE TFD TF5 TF7	9.0	21,100	72,100	6,440	11.5 22.9 13.9	3.28	11.2	142.9	3.25	59.9 59.9 60.3	114.0 225.0 140.0	69.0
ZR125KCE TFD TF5 TF7	10.4	24,900	85,000	7,570	12.4 24.8 15.0	3.30	11.3	167.2	3.25	61.2	125.0 239.0 145.0	69.0
ZR144KCE TFD TF5 TF7	12.0	28,300 28,400 28,300	96,400 96,900 96,400	8,500 8,480 8,500	13.7 30.0 16.5	3.33 3.34 3.33	11.4	190.9	3.25	61.2	125.0 245.0 145.0	69.0
ZR160KCE TFD	13.3	31,000	105,000	9,500	16.3	3.25	11.1	209.1	3.25	64.9	150.0	71.0
ZR160KCE TWD TW5 TW7	13.3	31,000	105,000	9,500	16.3 32.6 19.8	3.25	11.1	209.1	3.25	64.9 66.2 64.9	150.0 300.0 139.0	71.0
ZR190KCE TFD	15.8	37,000	127,000	11,300	21.4	3.28	11.2	249.2	3.25	66.2	179.0	72.0
ZR190KCE TWD TW5 TW7	15.8	37,000	127,000	11,300	21.4 42.8 25.9	3.28	11.2	249.2	3.25	66.2	173.0 340.0 196.0	72.0
ZR250KCE TWD TW5 TW7	20.8	48,500	166,000	15,100	22.7 49.6 27.5	3.22	11.0	325.2 325.2 318.1	4.67	139.3 138.8 139.3	225.0 505.0 280.0	77.0
ZR310KCE TWD TW7	25.8	60,000	205,000	18,800	28.3 34.3	3.19	10.9	410.6	6.80	160.1	272.0 353.0	79.0
ZR380KCE TWD TW5 TW7	31.7	74,000	253,000	22,400	34.7 69.4 42.0	3.31	11.3	502.7	6.30	176.9	310.0 599.0 358.0	81.0

# Copeland Scroll™ compressors for R410A refrigerant

Copeland Scroll compressors are perfectly suitable for split systems, rooftops, packaged units and chiller applications. These compressors offer an advantage of fewer moving parts with scroll sets wearing in. Both axial and radial compliance allows the scroll compressor to be more tolerant of liquid refrigerant and debris thus enhancing reliability. Furthermore, Emerson's well established expertise in multiple compressors provides a unique advantage and an assured benefit for the manufacturing of large capacity systems (air cooled and water cooled chillers).

The broad range of products goes from ZP14 (1.2HP) to ZP725 (60HP) in single compressor applications and to 180 HP in Tandem/Trio applications.

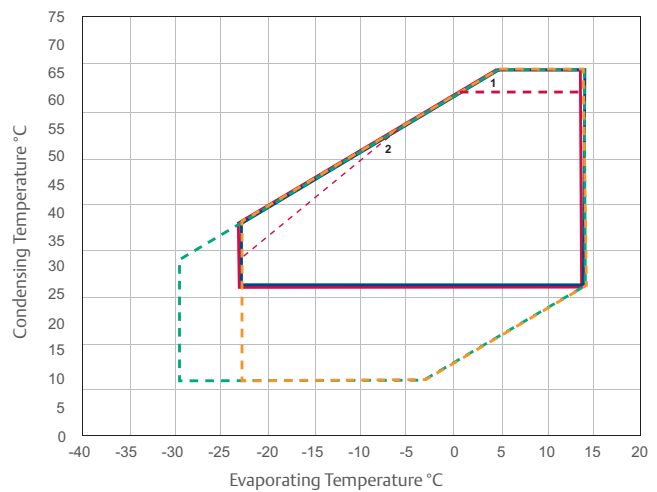
## Features and benefits

- Copeland qualified tandem and trio configurations for superior seasonal efficiency
- Copeland Scroll axial and radial compliance for superior reliability and efficiency
- Low Total Equivalent Warming Impact
- Wide scroll line-up in R410A
- Low sound and vibration level
- Low oil circulation rate
- Extended 5K suction superheat operating envelope suitable for heat pump applications - contact Application Engineering for more information

## Maximum allowable pressure (PS)

- ZP14 to ZP91: Low Side PS 28 bar(g) / High Side PS 43 bar(g)
- ZP90 to ZP725: Low Side PS 29.5 bar(g) / High Side PS 45 bar(g)

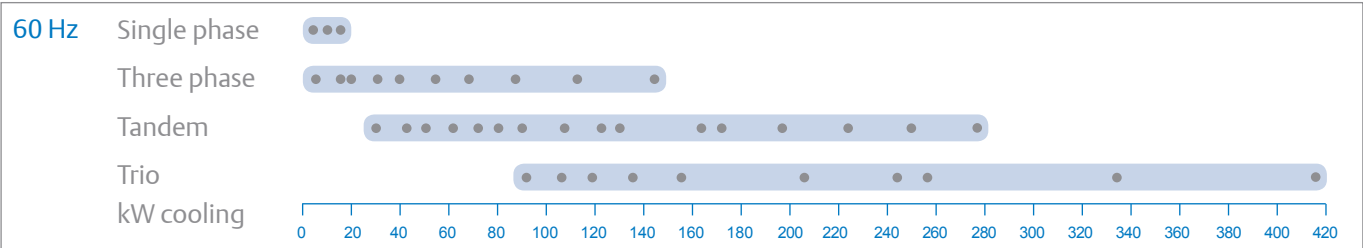
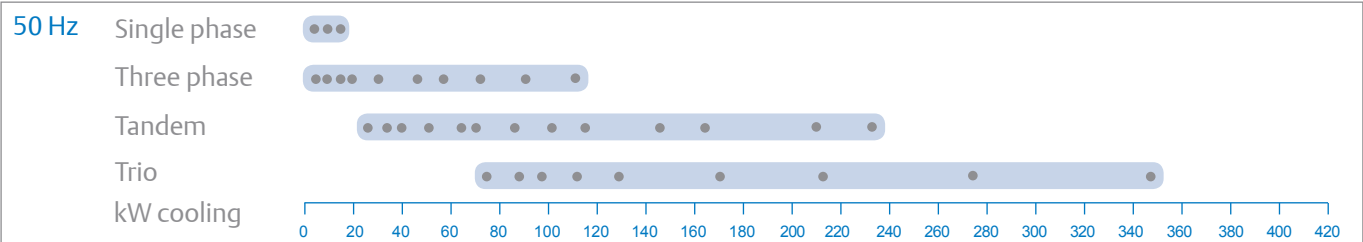
## Operating envelopes



### Note:

Dashed red line 1 indicates 63°C condensing limit For ZP51 to ZP61K5E - PFV  
Dashed red line 2 indicates the limit of operation with constant return gas temperature of 35°C

## Compressor line-up





## Technical overview

### 220-240V ; 50Hz , 1 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZP20KSE PFZ	1.7	4,800	16,300	1,750	8.1	2.73	9.3	19.3	0.74	21.7	52	66
ZJ22KHE PFZ	2.0	5,400	18,400	2,000	8.4	2.99	10.2	20.7	0.77	20.0	53	66
ZP23K3E PFZ	1.9	5,700	19,400	2,050	9.5	2.78	9.5	23.2	1.12	28.6	61	65
ZP24KSE PFZ	2.0	5,750	19,600	2,000	9.3	2.87	9.8	22.8	0.74	21.9	60	66
ZP25KSE PFZ	2.1	5,950	20,300	2,110	9.8	2.81	9.6	23.9	0.74	22.0	60	66
ZJ25KHE PFZ	2.1	6,007	20,500	2,010	9.5	2.99	10.2	23.3	0.77	20.0	60	66
ZP26K3E PFZ	2.2	6,050	20,700	2,300	11.0	2.64	9.0	25.2	1.12	28.9	74	65
ZJ27KHE PFZ	2.5	6,563	22,400	2,180	10.3	3.01	10.3	25.8	0.77	20.0	60	66
ZP29KSE PFZ	2.4	6,900	23,500	2,400	11.0	2.87	9.8	27.5	0.74	22.8	67	66
ZP31KSE PFZ	2.6	7,350	25,100	2,550	11.8	2.89	9.9	29.5	0.74	22.8	67	66
ZP31KHE PFZ	2.6	7,350	25,100	2,500	11.9	2.93	10.0	0.0	0.86	22.5	67	66
ZP32K3E PFJ	2.7	7,550	25,700	2,860	13.2	2.64	9.0	30.7	1.24	31.3	82	67
ZP36KSE PFZ	3.0	8,800	30,000	2,940	14.1	2.99	10.2	34.4	1.24	29.4	98	68
ZP36KHE PFZ	3	8800	30000	2940	14	2.99	10.2	34.4	1.24	32.4	98	68
ZJ36KHE PFZ	3.0	8,800	30,000	2,910	13.9	3.05	10.4	34.6	1.24	30.4	102	68
ZP39KSE PFZ	3.3	9,200	31,400	3,140	14.5	2.93	10.0	36.9	1.24	33.1	98	68
ZP39KHE PFZ	3.3	9,210	31,400	3,140	14.5	2.93	10.0	41.8	1.24	33.1	98	68
ZP41K3E PFZ	3.4	9,850	33,600	3,510	17.2	2.80	9.6	39.3	1.24	29.5	114	67
ZP41K3E PFZ	3.4	9,850	33,600	3,510	17	2.8	9.6	39.3	1.24	29.5	114	67
ZP42KSE PFZ	3.5	10,200	34,800	3,480	16.7	2.93	10.0	39.8	1.24	33.1	128	68
ZP44KHE PFZ	3.8	10,760	36,700	3,620	16.8	2.99	10.2	42.0	1.24	32.7	119	71
ZP50K3E PFZ PFJ	4.2	12,500	42,600	4,100	19.5	3.05	10.4	48.2	1.66	44.0	136	62
ZP51KSE PFZ	4.3	12,150	41,500	4,050	19.8	3.00	10.3	48.2	1.24	34.4	126	68
ZP54KSE PFZ	4.5	13,050	44,500	4,320	20.9	3.02	10.3	51.1	1.24	34.4	116	70
ZP57K3E PFJ	4.8	13,950	47,600	4,700	24.0	2.96	10.1	54.3	1.66	41.7	153	72
ZP61KCE PFZ	5.1	14,800	50,500	4,950	23.3	2.99	10.2	58.1	1.77	40.3	147	72
ZP67KCE PFZ	5.6	16,100	55,000	5,450	25.7	2.96	10.1	63.0	1.77	39.9	155	72

### 208-230V ; 60Hz , 1 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZP14KSE PFV	1.2	4300	14650	1580	7	2.73	9.3	14.3	0.74	22.5	46.0	55.0
ZP16KSE PFV	1.3	4550	15500	1660	7.3	2.73	9.3	15.1	0.74	21.5	48.0	55.0
ZJ17KHE PFB	1.7	4922.4	16800	1647	7.4	2.9886	10.2	16.1	0.8	20.0	67	66
ZP20KSE PFV	1.7	5850	20000	204	9.1	2.87	9.8	19.3	0.74	21.5	58.3	55.0
ZJ22KHE PFB	2	6446	22000	2141	9.4	3.01	10.3	20.7	0.8	20.0	82	66
ZJ25KHE PFB	2.1	7325	25000	2378	10.9	3.08	10.5	23.3	0.8	20.0	82	66
ZP25KSE PFV	2.1	7400	25200	2520	11.1	2.93	10	23.9	0.74	22.0	73.0	55.0

**Note:**

All values as per AHRI standards: Evaporating temp. : 7.2°C , Condensing temp. : 54.4°C , Subcooling : 8.3K , Superheat : 11.1K , Ambient temp. : 35°C



## 208-230V ; 60Hz , 1 Phase (continuation)

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZJ27KHE PFB	2.25	7911	27000	2569	11.6	3.08	10.5	25.8	0.8	20.0	80	66
ZP29K5E PFV	2.4	8500	29000	2870	12.7	2.96	10.1	27.5	0.74	22.5	77.0	57
ZP31K5E PFV	2.6	9100	31100	3070	13.5	2.96	10.1	29.5	0.74	22.5	79.0	57
ZP31KHE PFB	2.6	9112.3	31100	3078	13.5	2.96	10.1	29.6	0.9	22.5	77	68
ZP32K3E PFJ	2.7	7550	25700	2860	13.2	2.64	9	30.7	1.2	31.3	82	67
ZP34K5E PFV	2.8	10100	34500	3380	15.6	2.99	10.2	32.8	1.24	32.3	112	57
ZP34KHE PFB	2.8	10109	34500	3370	15.6	3	10.2	32.9	1.2	32.3	112	68
ZP35KHE PFB	2.8	10109	34500	3320	15.3	3.05	10.4	32.8	1.2	34.8	112	68
ZJ36KHE PFB	3	10548	36000	3392	15.2	3.11	10.6	42.1	1.2	30.4	112	68
ZP36K5E PFV	3.0	10550	36000	3540	16.4	2.99	10.2	34.4	1.24	32.3	112	57
ZP39K5E PFV	3.3	11450	39000	3790	17.5	3.02	10.3	36.9	1.24	32.8	109	57
ZJ39KHE* PFB	3.3	11427	39000	3190	14.2	3.11	10.6	36.9	1.24	30.4	112	68
ZP42K5E PFV	3.5	12300	42000	4,070	18.4	3.02	10.3	39.8	1.24	33.1	117	68
ZJ42KHE* PFB	3.5	12310	42000	3990	15.6	3.14	10.7	39.8	1.24	30.4	112	68
ZJ44KHE* PFB	3.7	13200	45100	4160	18.6	3.2	10.8	42.0	1.24	30.4	128	68
ZP44K5E PFV	3.7	13000	44,400	4270	19.3	3.05	10.4	42	1.24	33.5	135	68
ZP49K5E PFV	4.1	14500	49400	4690	21.2	3.09	10.6	46.4	1.24	34.4	134	68
ZP49KHE PFB	4.1	14560	49700	4730	21.3	3.08	10.5	46.5	1.2	34.3	134	68
ZP51K5E PFV	4.3	14950	51,000	4860	21.8	3.08	10.5	48.2	1.24	34.4	134	68
ZJ51KHE PFB	4	14100	51000	4570	21.6	3.16	10.8	48.3	1.2	30.3	138	68
ZP57K5E PFV	4.8	16700	57,000	5460	25.5	3.05	10.4	53.5	1.24	34.3	178	68
ZP61K5E PFV	5.1	18000	61,500	5860	27.2	3.08	10.5	57.2	1.24	35	178	68

## 380-420V ; 50Hz , 3 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZP24K5E TFD	2.0	5,700	19,400	2,020	3.6	2.81	9.6	22.8	0.74	21.3	28.0	55.0
ZP26K3E TFD	2.2	6,200	21,100	2,270	4.1	2.73	9.3	25.2	1.12	27.2	32.0	54.0
ZP29K5E TFD	2.4	6,800	23,200	2,420	4.4	2.81	9.6	27.5	0.74	21.8	38.0	55.0
ZP29K5E TFM	2.4	7,000	23,900	2,380	4.3	2.93	10.0	27.5	0.74	22.3	38.0	55.0
ZP31K5E TFM	2.6	7,350	25,000	2,580	4.6	2.84	9.7	29.5	0.74	22.3	38.0	55.0
ZP32K3E TFD	2.7	7,400	25,200	2,680	4.7	2.75	9.4	30.7	1.24	28.1	35.0	56.0
ZP34K5E TFD	2.8	8,200	28,000	2,830	5.2	2.90	9.9	32.8	1.24	28.9	46.0	57.0
ZP36K5E TFD	3.0	8,600	29,300	2,940	5.4	2.93	10.0	34.4	1.24	29.2	46.0	57.0
ZJ36KHE TFM	3	8790	30000	2854	5.3	3.08	10.5	34.6	1.24	30.4	55	71
ZP38K3E TFD	3.2	9,050	30,800	3,120	5.5	2.90	9.9	36.1	1.24	29.9	48.0	59.0
ZP39KHE TFM	3.2	9523	32500	3125	5.3	3.05	10.4	37.0	1.24	30.4	43	68
ZP41K3E TFD	3.4	9,800	33,500	3,380	6.0	2.90	9.9	39.3	1.24	29.5	48.0	56.0
ZJ42KHE TFM	3.5	10255	35000	3297	5.9	3.11	10.6	39.9	1.24	30.4	55	71
ZP44K5E TFD	3.7	10,700	36,500	3,540	6.1	3.02	10.3	42.0	1.24	30.9	52.0	57.0
ZP49K5E TFD	4.1	11,950	40,700	3,870	6.5	3.09	10.6	46.4	1.24	33	51.5	68
ZP49KHE TFM	4.1	11950	40700	3870	6.5	3.10	10.6	46.4	1.24	33.0	51.5	68
ZP50K3E TFD	4.2	12,400	42,300	4,100	7.3	3.02	10.3	48.2	1.9	39.5	64	58
ZJ51KHE TFM	4	12452.5	42500	3971	7.5	3.14	10.7	47.2	1.24	29.9	72	71
ZP51K5E TFM	4.3	12,150	41,500	4,040	7.0	3.02	10.3	48.2	1.24	33.0	51.5	57.0
ZP51KHE TFM	4.3	12050	41200	4000	7.0	3.01	10.3	48.2	1.24	32.4	51.5	68
ZJ54KHE TFM	4.5	13185	45000	4245	7.9	3.11	10.6	50.0	1.24	30.4	72	71
ZP57KHE TFM	4.7	12050	47000	4390	7.5	2.74	10.7	53.4	1.24	34.3	51.5	71
ZP61KCE TFD	5.1	14,650	50,000	4,750	8.3	3.11	10.6	58.1	1.66	40.3	64.0	60.0
ZP67KCE TFD	5.6	16,100	55,000	5,200	9.1	3.11	10.6	63.0	1.77	39.9	74.0	61.0
ZP72KCE TFD	6.0	17,100	58,500	5,700	9.8	3.02	10.3	67.1	1.77	39.9	75.0	61.0
ZP76KCE TFD	6.3	18,400	62,700	5,850	11.0	3.14	10.7	70.8	1.77	39.5	100.0	61.0
ZP83KCE TFD	6.9	19,900	68,000	6,400	11.7	3.11	10.6	77.2	1.77	39.5	101.0	61.0
ZP90KCE TFD	7.5	21,800	74,500	6,950	12.3	3.14	10.7	84.2	2.51	57.6	95.0	61.0
*ZP91KCE TFD	7.6	21,700	74,000	6,790	12.4	3.19	10.9	84.6	1.77	40.8	101.0	61.0
ZP103KCE TFD	8.6	25,200	86,000	7,800	14.4	3.22	11.0	96.4	3.25	61.2	111.0	63.0

Note:  
\*Preliminary data

## 380-420V ; 50Hz , 3 Phase (continuation)

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)	
		(W)	(Btu/h)										
*ZP104KCE	TFD	8.7	25,400	86,800	7,790	14.3	3.27	11.2	96.4	2.51	48.0	128.0	63.0
ZP120KCE	TFD	10.0	29,300	100,000	9,110	16.6	3.22	11.0	113.6	3.25	61.2	118.0	63.0
*ZP122KCE	TFD	10.2	29,600	101,000	9,060	16.6	3.27	11.2	112.3	2.51	48.8	139.0	63.0
ZP137KCE	TFD	11.4	32,500	111,000	10,200	18.3	3.19	10.9	127.2	3.25	62.1	118.0	66.0
ZP144KCE	TFD	12.0	35,500	120,000	10,800	19.1	3.30	11.2	134.6	3.25	60.8	144	75
ZP154KCE	TFD TWD	12.8	37,000	127,000	11,600	20.8	3.22	11.0	142.9	3.25	64.9	140.0	65.0 66.0
ZP182KCE	TFD TWD	15.2	44,000	150,000	13,500	26.3 25.7	3.25	11.1	167.2	3.25	66.2	174.0 173.0	66.0 68.0
ZP385KCE	TWD	32.1	92,500	316,000	28,500	48.1	3.25	11.1	349.4	6.30	176.9	310.0	74.0
ZP485KCE	TWD	40.4	117,000	400,000	36,100	60.3	3.25	11.1	444.5	6.30	200.0	408.0	78.0
<sup>Δ</sup> ZP725KCE	FED	60.0	180,000	615,000	54,800	93.5	3.29	11.2	550.0	6.30	250.0	567.0	79.0

## 460V / 200-230V / 380V / 208-230V ; 60Hz , 3 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)	
		(W)	(Btu/h)										
ZP20K3E	TFD TF5	1.7	6,000 5,900	20,400 20,200	2,210 2,220	3.2 6.6	2.71 2.67	9.3 9.1	18.9	1.12	25.9	22.4 55	68
ZP24K5E	TFD TF5	2.0	7,050	24,000	2,420	3.7 7.3	2.9	9.9	22.8	0.74	21.3 21.2	28 58	69
ZP26K5E	TFD TF5	2.2	7,550 7,450	25,700 25,500	2,650 2,630	4 8	2.84	9.7	25.2	1.12	27.2	31 63	68
ZP31K5E	TFD TF5	2.6	9,150	31,200	3,060	4.6 9.1	2.99	10.2	29.5	0.74	22 21.8	38 73	69
ZP32K3E	TFD TF5	2.7	8,950 9,300	30,500 31,800	3,110 3,250	4.7 9.4	2.87	9.8 9.8	30.7	1.24	28.1	35 77	70
ZJ34KHE*	TF7	2.8	9,903	33800	3170	5.8	3.02	10.3	31.5	1.24	30.4	65	71
ZP36K5E	TFD TF5 TF7	3 3 3.0	10,550 10,550 10,500	36,000 36,000 36,800	3,490 3,490 3,381	5.5 10.8 6.3	3.02 3.0 3.11	10.3 10.8 10.6	34.4 34.4 34.6	1.24 1.24 1.24	29.2 28.9 30.4	44 88 65	71 71 71
ZP39K5E	TF7 TF7	3.3 3.3	11,450 11,430	39,000 39,000	3,750 3,750	6.4 6.75	3.05 3.05	10.4 10.4	36.9 37.0	1.24 1.24	30.4 30.4	51.8 51.8	71 71
ZP41K3E	TFD TF5	3.4	11,950 12,050	40,700 41,200	3,950 4,000	6 12	3.02	10.3	39.3	1.24	29.5	46 91	70
ZP42K5E	TFD TF5	3.5	12,300 12,350	41,900 42,200	4,060 4,020	5.5 11.3	3.02 3.08	10.3 10.5	39.8	1.24	30.4	41 83.1	71
ZJ42KHE*	TF7	3.5	12,306	42,000	3,890	7.3	3.05	10.4	39.8	1.24	30.4	65	71
ZP44K5E	TFD TF5 TF7	3.7	13,050 13,050 13,150	44,500 44,500 44,900	4,220 4,220 4,250	6.2 12.2 7.6	3.09	10.6 10.6 10.6	42	1.24	30.9 30.9 30.6	55 98 64	71
ZJ44KHE	TF7	3.7	13,160	44,900	4,160	8	3.19	10.9	42.1	1.24	30.4	78	71
ZP49K5E	TFD TF5 TF7	4.1	14,650 14,550 14,350	50,000 49,700 48,900	4,650 4,650 4,500	6.5 13.4 8.3	3.15 3.14 3.20	10.8 10.7 10.9	46.4	1.24	33 33 30.4	52 110 78	71
ZP51K5E	TFD TF5 TF7	4.3	15,100	51,500 51,500 51,600	4,810	6.8 13.8 8.3	3.14 3.14 3.15	10.7 10.7 10.8	48.2	1.24	32.4 32.5 32.9	52 110 66	71
ZJ51KHE	TF7	4.0	15,090	51,500	4,680	8.5	3.24	11.0	47.2	1.24	30.4	78	71
ZP54K5E	TFD TF5 TF7	4.5	15,900 15,900 15,600	54,300 54,300 53,400	5,070 5,070 5,100	7.2 14.4 8.8	3.14 3.14 3.08	10.7 10.7 10.5	51.1	1.24	32.4 32.5 33	52 110 65.6	71
ZJ54KHE	TF7	4.5	15,800	54,000	4,950	9.2	3.19	10.9	50.0	1.24	29.9	78	71
ZP57K5E	TF7	4.8	16,900	57,500	5,320	9.2	3.17	10.8	53.5	1.24	34.3	83	71
ZP61K5E	TF7	5.1	18,000	61,500	5,700	9.7	3.17	10.8	57.2	1.24	35	83	71
ZP61KCE	TFD TF5 TF7	5.1	18,000	61,500	5,700	8.3 16.8 10.5	3.17	10.8	58.1	1.66	40.3	62 123 78	74

**Note:**

All values as per AHRI standards: Evaporating temp. : 7.2°C, Condensing temp. : 54.4°C , Subcooling : 8.3K, Superheat : 11.1K, Ambient temp. : 35°C

\* New improved models

460V / 200-230V / 380V / 208-230V ; 60Hz , 3 Phase (continuation)

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)		
		(W)	(Btu/h)											
ZP67KCE	TF7	5.6	19,800	67,500	6,260	11	3.17	10.8	63	1.66	44	88	75	
ZP72KCE	TFD	6	21,100	72,000	6,750	9.7	3.14	10.7	67.1	1.77	39.9	75	75	
	TF5		21,100	72,000	6,750	20.1	3.14	10.7			67.1	39.9	164	75
	TF7		20,800	71,000	6,850	11.5	3.05	10.4			40.9	73	74	
ZP76KCE	TFD	6.3	22,600	77,000	7,060	11.1	3.19	10.9	70.8	1.77	39.5	100	75	
	TF5					20.8						164		
	TF7					12.4						94.3		
ZP83KCE	TFD	7	24,300	83,000	7,650	11.8	3.17	10.8	77.2	1.77	39.5	100	75	
	TF5		24,300	83,000	7,650	22					39.5	164		
	TF7		24,200	82,500	7,600	13					39.9	94.3		
ZP90KCE	TFD	7.5	26,500	90,500	8,370	13	3.17	10.8	84.2	2.51	57.6	95	77	
	TF5				8,350	26.3					57.6	195		
	TF7				8,350	15.4					58.1	123		
ZP91KCE	TFD	7.5	26,500	90,500	8,230	12.6	3.22	11	84.6	1.77	40.8	100	75	
	TF5				24.8	191								
	TF7				15.2	123								
ZP103KCE	TFD	8.5	31,000	105,000	9,550	14.3	3.22	11	96.4	3.25	61.2	114	77	
	TF5		31,000	105,000		28.6	3.22	11			60.8	225		
	TF7		30,500	104,000		17.8	3.19	10.9			59.9	140		
ZP104KCE	TFD	8.5	31,000	106,000	9,380	14.4	3.31	11.3	96.4	2.51	48	130	77	
	TF5					27.2					239			
	TF7					16					135			
ZP120KCE	TFD	10	36,000	123,000	11,100	16.4	3.25	11.1	113.6	3.25	61.2	125	79	
	TF5					32.8					239			
	TF7					20.4					145			
ZP122KCE	TFD	10	36,500	124,000	11,000	16.9	3.31	11.3	112.3	2.51	48.8	140	77	
	TF5					30.9					240			
	TF7					18.7					151.6			
ZP137KCE	TFD	11.5	39,500	135,000	12,300	18	3.22	11	127.2	3.25	62.1	125	80	
	TF5		40,000	137,000	12,400	38	3.22	11			62.6	245		
	TF7		40,000	137,000	12,700	22.6	3.17	10.8			62.6	145		
ZP144KCE	TFD	12	43,000	144,000	13,000	19	3.30	11.2	134.6	3.25	60.8	137	80	
ZP154KCE	TF5	13	45,500	155,000	14,000	21	3.25	11.1	142.9	3.25	64.9	150	80	
	TF7					24.4					138			
	TWD					21					150			
ZP154KCE	TW5	13	45,500	155,000	14,000	42.8	3.25	11.1	142.9	3.25	66.2	300	80	
	TW7					24.4					139			
ZP182KCE	TFD	15	53,500	183,000	16,300	26.3	3.28	11.2	167.2	3.25	66.2	179	80	
	TWD					26.3					173			
ZP182KCE	TW5	15	53,500	183,000	16,300	52	3.28	11.2	167.2	3.25	66.2	340	82	
	TW7					31.7					196			
ZP236KCE*	TE5	19.7	69170	236000	21300	64.3	3.25	11.1	217.1	4.5	127.1	538	87	
	TE7	19.8	69760	238000	21500	37	3.25				290			
	TED	19.8	69760	238000	21500	30.7	3.25				229			
ZP296KCE*	TE5	24.8	87340	298000	26900	77	3.25	11.1	267.3	4.5	132.7	605	90	
	TE7					46.3					380			
	TED					38.25					320			
ZP385KCE*	TWD	32	113,000	385,000	34,700	49.9	3.25	11.1	349.4	6.3	176.9	310	89	
	TWC					99.8						599		
	TW7					60.4						358		
	TW5					99.8						599		
	TE5					99.8						599		
ZP385KCE*	TE7	32.1	112840	385000	34700	60.4	3.25	11.1	349.4	6.3	176.9	358	89	
	TEC					99.8					599			
	TED					49.9					310			
ZP485KCE*	TE7	40.4	142150	485,000	43,600	75.65	3.25	11.1	444.4	6.3	190.1	564	93	
	TED					62.4					408			
ZP725KCE*	FED	60	216,000	739,000	67,800	96	3.19	10.9	550	6.3	250	567	94	

Note:  
 \*Preliminary data  
 \*IP rating 54







# Copeland Scroll™ compressors with CoreSense™ communications

## Enhanced reliability and increased uptime in commercial air conditioning applications.

### *Communication, protection and diagnostics onboard.*

For years, Copeland Scroll compressors have been setting the standard in commercial applications with proven reliability and superior performance. Now, commercial customers can receive advanced diagnostic and protection benefits onboard Copeland Scroll compressors.

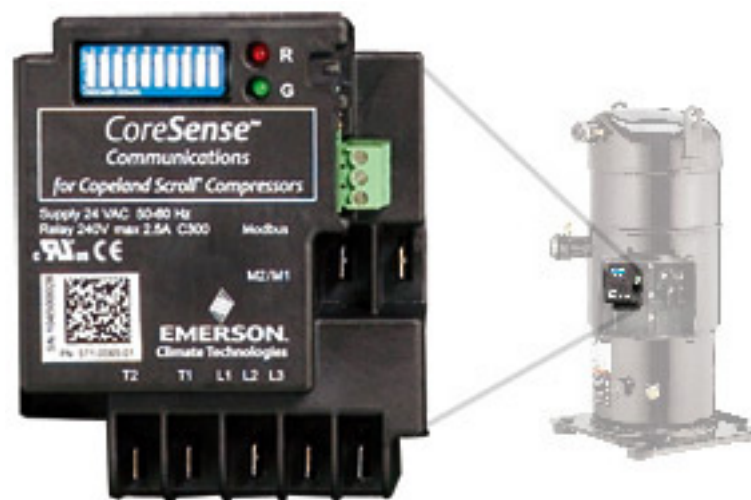
Introducing the industry's first ever Copeland Scroll compressors with CoreSense Communications onboard. With this added feature, Copeland Scroll compressors can stream real-time diagnostics information on the compressor's operation to the system controller. By using the compressor as a sensor, valuable data from inside the system can be accessed and monitored in real time by the controller, improving performance and reliability even proactively shutting down the compressor to prevent a catastrophic failure.

### Real time communication enables improved protection.

Temperature protection inside the compressor is a critical feature to ensure the reliability you have come to expect with Copeland Scroll compressors. With the ability to stream data real time to the system controller, your system now has a level of control never before offered in the industry. Proactive measures can now be taken to maintain overall comfort and maximum uptime, something your customers will love.

### Unlock new, invaluable information.

Not only can Copeland Scroll compressors with CoreSense Communications provide real time data to the system controller, but it can also provide you with historical information. Faults that might have occurred in the past week and over the entire life of the compressor are available at your fingertips. Having this information allows the technician on the job to know exactly what the system is experiencing. That means shorter and fewer site visits, saving you and your customer time and money.



Integrated Course™ technology delivers enhanced reliability for Copeland Scroll™ compressors.



## Diagnostics and protection

- Missing phase
- Reverse phase
- Short cycling protection
- Motor temperature protection
- Fault history

## Communication protocol

- Modbus - current
- BACnet - future

## Emerson CoreSense™ technology

CoreSense technology gives technicians access to information inside the compressor so they can identify performance issues quickly and accurately to ensure greater reliability. When adverse operating conditions are detected, CoreSense shuts the compressor down to prevent system damage, saving contractors and end-users money.

For improved system performance and end-user peace-of-mind, make sure you install systems with Copeland Scroll compressors with CoreSense communications.



# Modulation technologies

Air conditioning units with conventional fixed capacity compressors are typically designed for peak load performance and usually have more capacity than is required for normal everyday usage. These units turn on and off frequently to reduce output under light load conditions. This can cause broad temperature swings and poor humidity control, as well as decreases in efficiency and overall reliability. In response, manufacturers have worked to develop technologies that specifically meet part-load challenges and provide higher efficiency, improved comfort, and better system performance.

## Commercial air conditioning

Modulating compressor technologies are also good solution for the specific challenges facing the commercial air conditioning industry, including precisely managing varying temperature and humidity load requirements in the most efficient manner. As the main power consumer in rooftop systems, compressors account for over half of the system's total energy use, making them a primary target for improvements in efficiency.

## Modulation range

### Multiple compressors



### Ultratech (two-step)



## Residential air conditioning

The residential air conditioning market in particular continues to face an increasing need for enhanced energy efficiency and improved comfort.

## Types of compressor modulation

While capacity modulation is still growing in adoption, Emerson has identified four compressor modulation technologies that are helping manufacturers meet capacity and energy efficiency needs.

1. Multiple compressors
2. Ultratech (two-step)
3. Digital (continuous)
4. Variable Speed

### Digital (continuous)



### Variable Speed



Tandems / Trios



Copeland Scroll UltraTech™



Digital™



Variable Speed - Residential



Variable Speed - Commercial





Modulation type	Full load efficiency	Part load efficiency	Applied cost	Range
Multiple compressors	High	High	Medium	3-180 Tons
Ultratech (two-step)	Medium/high	High	Low	2-5 Tons
Digital (continuous)	High	Medium	High	3-15 Tons
Variable Speed	Medium	Highest	Highest	2-15 Tons

## Copeland Scroll™ digital compressors for R22, R407C and R410A refrigerant

Copeland Scroll Digital compressors offer stepless capacity modulation in air conditioning applications and a flexible solution for R22, R407C and R410A refrigerant.

In many cooling and heating systems, load and operating conditions vary over a wide range, thus, requiring the use of capacity modulation. The Digital scroll is a simple compressor solution able to assure stepless modulation down to 10% of the nominal capacity allowing for precise temperature and humidity control, superior comfort and energy saving.

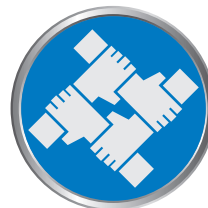
This compressor range is the preferred choice for Variable Refrigerant Flow(VRF), rooftop, chilled water, Variable Air Volume (VAV) and process cooling applications.

### Features and benefits

- Wide modulation range from 10% to 100% for immediate load adjustment, precise temperature control and optimal comfort
- Energy efficient operation at part load conditions
- Copeland Scroll axial and radial compliance offers high reliability
- Fewer starts/stops
- Constant speed operation means simpler system oil return management
- Easy to install, commission and maintain - simple system architecture, no complicated electronics and no EMI/EMC problems
- CoreSense™ is available for digital compressors



Efficiency



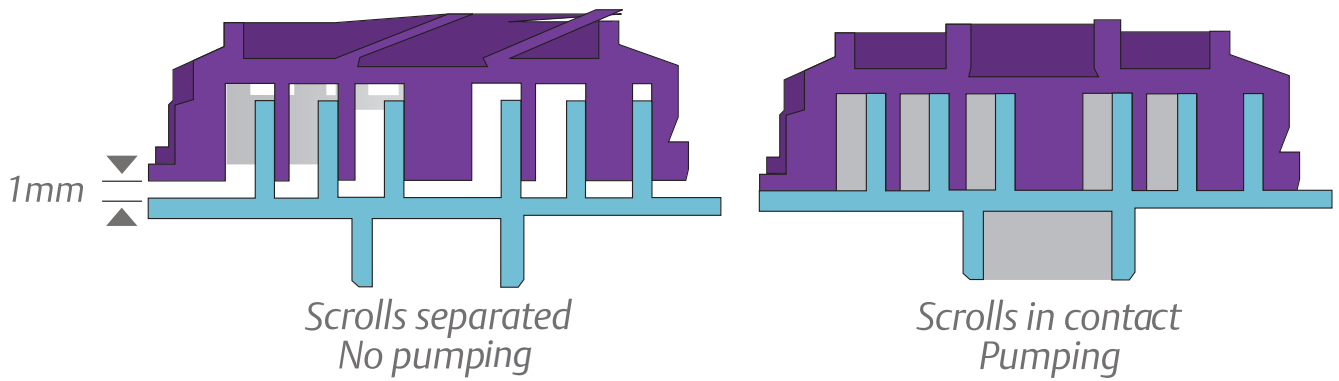
Reliability



Low life cycle cost

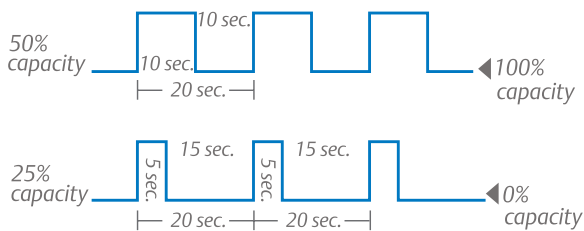


## The modulation mechanism of a Copeland Digital Scroll compressor



Compressor in loaded state operates as a standard scroll and delivers full capacity and mass flow. During the unloaded state, however, the system delivers no capacity and no mass flows through.

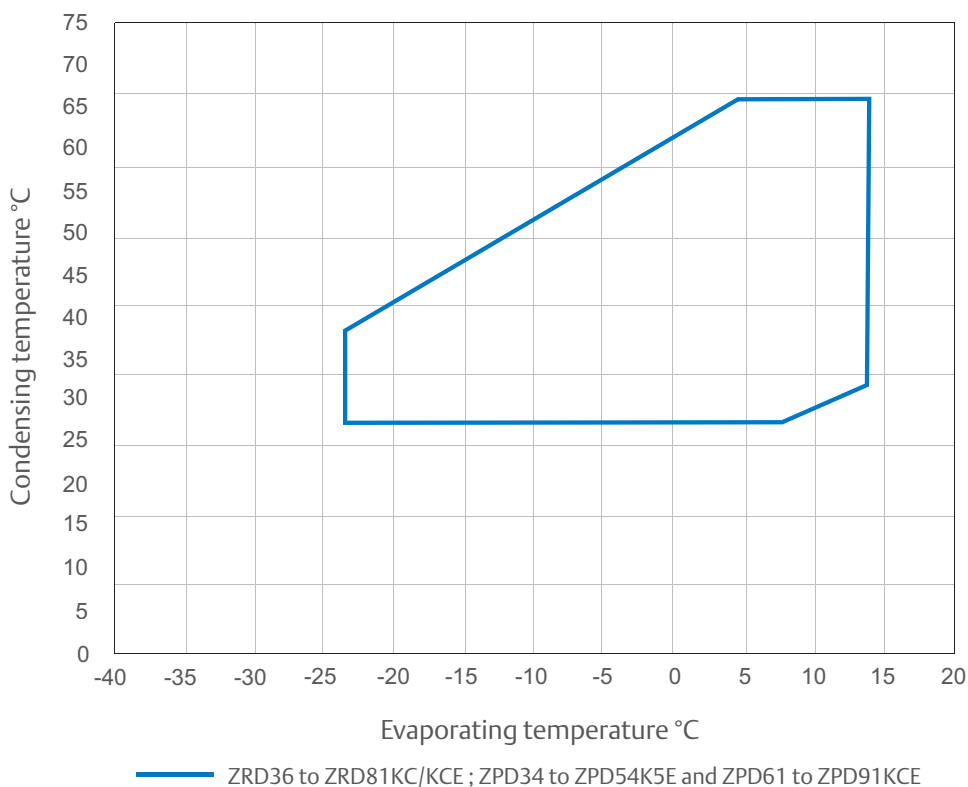
## The concept of cycle time



Varying the 'loaded state' and the 'unloaded state' times, any capacity between 10% and 100% can be delivered by the compressor.

## Operating envelope

### R22, R407C and R410A



Internal valve



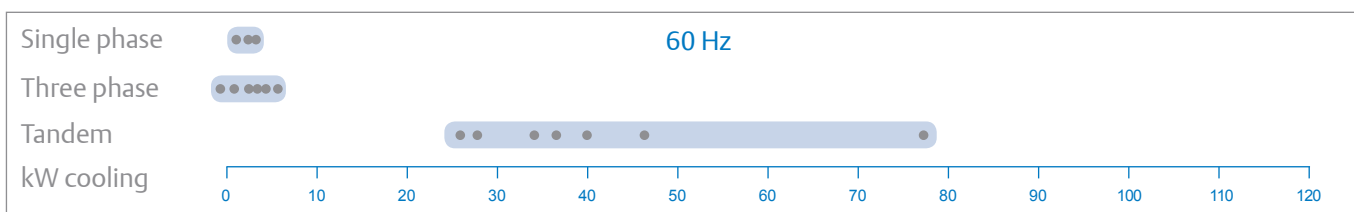
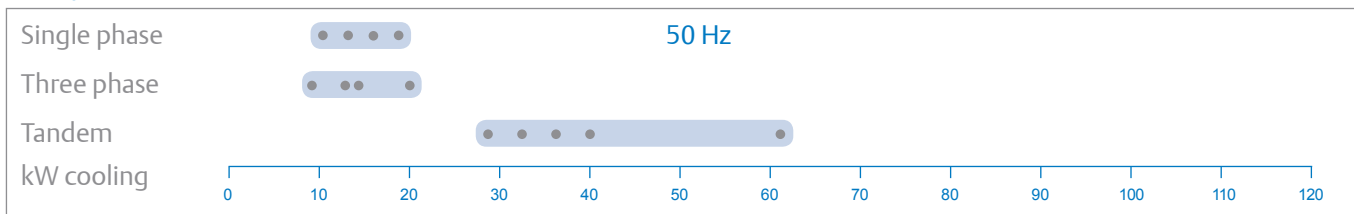
External valve

## Maximum allowable pressure (PS)

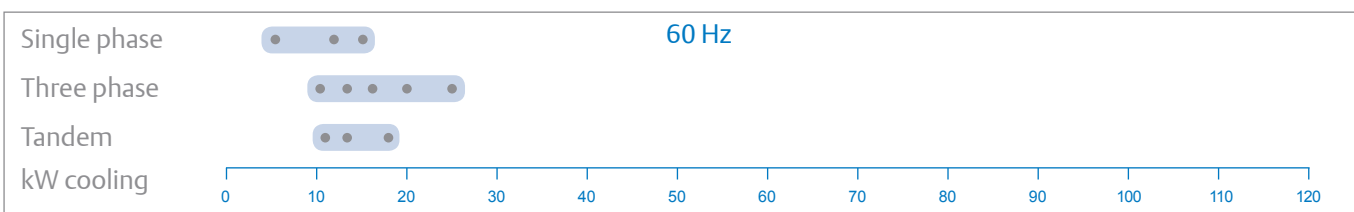
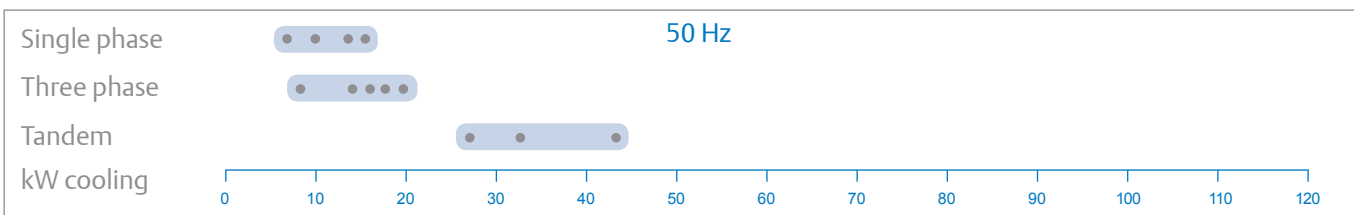
- Digital ZRD36 to ZRD81:  
Low Side PS 20bar(g) / High Side PS 29.5 bar(g)
- Digital ZRD94 to ZRD125:  
Low Side PS 20bar(g) / High Side PS 32 bar(g)
- Digital ZPD34 to ZPD91:  
Low Side PS 28 bar(g) / High Side PS 43 bar(g)

## Compressor line-up

### R22/R407C



### R410A



220-240V ; 50Hz , 1 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZRD42KC PFJ	3.5	10,300	35,100	3,200	15.3	3.22	11.0	57.2	1.24	31.2	97.0	60.0
ZRD48KC PFZ	4.0	11,950	40,800	3,630	16.7	3.28	11.2	65.6	1.36	32.8	125.0	57.0
ZRD61KC PFZ	5.0	14,950	51,000	4,640	22.5	3.22	11.0	82.6	1.89	38.1	150.0	63.0
<sup>a</sup> ZRD68KC PFZ	6.0	16,700	57,000	5,150	23.9	3.22	11.0	93.0	2.01	39.0	142.0	63.0

208-230V ; 60Hz , 1 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZRD36KC PFV	3.0	10,550	36,000	3,300	14.5	3.19	10.9	48.0	1.24	30.2	95.0	62.0
ZRD48KC PFV	4.0	14,550	49,700	4,320	19.5	3.37	11.5	65.6	1.48	33.5	137.0	62.0
ZRD49KC PFV	4.0	14,550	49,600	4,550	20.8	3.19	10.9	67.1	1.89	42.6	129.0	63.0
ZRD61KC PFV	5.0	18,200	62,000	5,650	26.1	3.19	10.9	82.6	1.89	38.1	148.0	66.0

380-420V ; 50Hz , 3 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZRD42KC TFD	3.5	10,400	35,500	3,080	5.4	3.37	11.5	57.2	1.24	31.2	46.0	60.0
ZRD48KC TFD	4.0	11,950	40,800	3,510	6.1	3.40	11.6	65.6	1.36	32.7	48.0	64.0
ZRD49KC TFD	4.0	12,050	41,100	3,660	7.1	3.28	11.2	67.1	1.89	42.6	51.5	-
ZRD61KC TFD	5.0	14,950	51,000	4,550	8.1	3.28	11.2	82.6	1.89	38.1	64.0	67.0
ZRD68KC TFD	6.0	17,100	58,500	5,100	8.9	3.37	11.5	93.0	1.89	40.2	74.0	63.0
ZRD72KC TFD	6.0	17,600	60,200	5,330	9.6	3.31	11.3	98.1	1.89	39.9	74.0	60.0
ZRD81KC TFD	7.0	19,900	68,000	6,000	11.1	3.31	11.3	107.8	1.89	40.8	100.0	67.0

460V / 200-230V / 380V ; 60Hz , 3 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)		
		(W)	(Btu/h)											
ZRD36KC TF5	3.0	10,600	36,200	3,120	9.3	3.40	11.6	48.0	1.24	30.2	77.0	62.0		
ZRD42KC TFD	3.5	12,750	43,500	3,770	5.5	3.37	11.5	57.2	1.24	31.2	44.0	62.0		
ZRD48KC TFD TF5 TF7	4.0	14,600	49,800	4,330	6.2	3.37	11.5	65.6	1.36	32.7	46.0	65.0		
		14,600	49,800	4,220	12.1	3.46	11.8				110.0			
		14,450	49,300	4,320	7.6	3.34	11.4				54.0			
ZRD49KC TFD TF5 TF7	4.0	14,550	49,600	4,460	6.5	3.25	11.1	67.1	1.89	42.6	47.5	61.0		
					13.0						115.0			
					7.9						57.0			
ZRD61KC TFD TF5 TF7	5.0	18,000	61,500	5,450	8.0	3.31	11.3	82.6	1.89	38.1	62.0	67.0		
				5,450	16.0						3.31		11.3	137.0
				5,550	9.5						3.25		11.1	64.0
ZRD68KC TFD	6.0	20,800	71,000	6,150	8.9	3.37	11.5	93.0	1.89	40.2	75.0	67.0		
ZRD72KC TFD TF5 TF7	6.0	21,400	72,900	6,460	9.3	3.31	11.3	98.1	1.89	39.9	70.0	63.0		
					18.6					156.0				
					11.3					70.0				
ZRD81KC TFD TF7	7.0	23,700	81,500	7,500	11.7	3.19	10.9	107.8	1.89	40.8	100.0	67.0		
				7,400	12.4						78.0			

Note:  
<sup>a</sup>Preliminary data

220-240V ; 50Hz , 1 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZRD42KCE PFJ	3.5	10,350	35,400	3,430	16.4	3.02	10.3	57.2	1.24	31.2	97.0	60.0
ZRD48KCE PFZ	4.0	11,250	38,400	3,690	17.1	3.05	10.4	65.6	1.36	32.8	125.0	57.0
ZRD61KCE PFZ	5.0	14,200	48,500	4,750	22.2	2.99	10.2	82.6	1.89	38.1	150.0	63.0

208-230V ; 60Hz , 1 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZRD36KCE PFV	3.0	10,650	36,400	3,550	15.6	3.02	10.3	48.0	1.24	30.2	95.0	62.0
ZRD48KCE PFV	4.0	14,650	50,000	4,640	21.0	3.17	10.8	65.6	1.48	33.5	137.0	62.0
ZRD61KCE PFV	5.0	16,900	57,500	5,700	25.9	2.96	10.1	82.6	1.89	38.1	148.0	66.0

380-420V ; 50Hz , 3 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZRD36KCE TFD	3.0	8,450	28,800	2,610	4.6	3.24	11.1	48.0	1.24	27.3	38.0	62.0
ZRD42KCE TFD	3.5	10,000	34,100	3,130	5.6	3.19	10.9	57.2	1.24	31.2	46.0	60.0
ZRD48KCE TFD	4.0	12,050	41,200	3,780	6.6	3.19	10.9	65.6	1.36	32.7	48.0	64.0
ZRD49KCE TFD	4.0	11,200	38,300	3,700	6.9	3.05	10.4	67.1	1.89	42.6	51.5	61.0
ZRD61KCE TFD	5.0	14,150	48,300	4,610	8.1	3.08	10.5	82.6	1.89	38.1	64.0	65.0
ZRD68KCE TFD	6.0	15,700	53,500	5,200	9.2	3.02	10.3	93.0	1.89	40.2	74.0	63.0
ZRD72KCE TFD	6.0	16,900	57,500	5,350	9.3	3.14	10.7	98.1	1.89	39.9	74.0	63.0
ZRD81KCE TFD	7.0	20,100	68,500	6,450	12.0	3.11	10.6	107.8	1.89	40.8	100.0	67.0

460V / 200-230V / 380V ; 60Hz , 3 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZRD36KCE TFD TF5 TF7	3.0	- 10,750 10,150	- 36,700 34,700	- 3,350 3,150	- 10.0 5.5	- 3.19 3.22	- 10.9 11.0	48.0	1.24	27.3 30.2 27.2	37.5 77.0 38.0	- 62.0 62.0
ZRD42KCE TFD	3.5	12,200	41,700	3,960	7.0	3.08	10.5	57.2	1.24	31.2	44.0	62.0
ZRD48KCE TFD TF5 TF7	4.0	14,050 9,400 14,550	48,000 32,100 49,700	4,400 3,160 4,640	6.4 9.7 8.1	3.19 2.99 3.14	10.9 10.2 10.7	65.6	1.36	32.7	46.0 110.0 54.0	65.0
ZRD49KCE TFD	4.0	13,550	46,200	4,540	6.7	2.99	10.2	67.1	1.89	42.6	47.5	61.0
ZRD61KCE TFD TF5 TF7	5.0	17,400	59,500	5,740	8.5 16.9 10.3	3.05	10.4	82.6	1.89	38.1	62.0 137.0 64.0	63.0
ZRD68KCE TFD	6.0	19,500	66,500	6,250	9.1	3.11	10.6	93.0	1.89	40.2	75.0	67.0
ZRD72KCE TFD TF5 TF7	6.0	20,700	70,500	6,550	9.5 19.0 11.5	3.17	10.8	98.1	1.89	39.9 39.9 39.5	70.0 156.0 70.0	63.0
ZRD81KCE TFD TF7	7.0	22,900 24,200	78,000 82,500	7,700 7,950	12.2 10.9	2.99 3.05	10.2 10.4	107.8	1.89	40.8	100.0 78.0	67.0

## 220-240V ; 50Hz , 1 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZPD34K5E PFZ PFJ	3.0	8,200	28,000	2,830	13.6	2.90	9.9	32.8	1.24	30.9	87.0	66.0
ZPD34K5E PFZ	3.0	8,200	28,000	2,830	13.6	2.90	9.9	32.8	1.24	30.9	87.0	66.0
ZPD42K5E PFZ	3.5	10,250	35,000	3,400	16.7	3.02	10.3	39.8	1.24	32.8	128.0	66.0
ZPD42K5E PFZ	3.5	10,250	35,000	3,400	16.7	3.02	10.3	39.8	1.24	32.8	128.0	66.0
ZPD51K5E PFZ	4.5	12,350	42,200	4,100	19.7	3.02	10.3	48.2	1.24	34.8	128.0	66.0
ZPD51K5E PFZ	4.5	12,350	42,200	4,100	19.7	3.02	10.3	48.2	1.24	34.8	128.0	66.0
ZPD54K5E PFZ	4.5	12,900	44,000	4,240	20.2	3.03	10.4	51.1	1.24	34.8	130.0	66.0
ZPD54K5E PFZ	4.5	13,050	44,500	4,320	20.4	3.02	10.3	51.1	1.24	34.8	130.0	59.0
ZPD61KCE PFZ	5.0	14,800	50,500	5,000	23.2	2.96	10.1	58.1	1.89	45.2	147.0	63.0
ZPD67KCE PFZ	5.5	16,000	54,500	5,400	25.7	2.96	10.1	63.0	1.89	45.3	155.0	63.0

## 208-230V ; 60Hz , 1 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZPD34K5E PFV	3.0	10,100	34,500	3,380	15.5	2.99	10.2	32.8	1.24	30.9	112.0	66.0
ZPD42K5E PFV	3.5	12,300	42,000	4,090	17.8	3.02	10.3	39.8	1.24	32.8	117.0	66.0
ZPD51K5E PFV	4.5	15,100	51,500	4,910	21.5	3.08	10.5	48.2	1.24	34.8	134.0	66.0
ZPD54K5E PFV	4.5	15,800	54,000	5,140	22.5	3.08	10.5	51.1	1.24	34.8	134.0	66.0

## 380-420V ; 50Hz , 3 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZPD34K5E TFD	3.0	8,200	28,000	2,830	5.1	2.90	9.9	32.8	1.24	30.9	46.0	66.0
ZPD42K5E TFD	3.5	10,300	35,200	3,350	5.7	3.08	10.5	39.8	1.24	32.8	52.0	66.0
ZPD51K5E TFD	4.5	12,350	42,100	4,040	6.8	3.05	10.4	48.2	1.24	33.0	52.0	66.0
ZPD54K5E TFD	4.5	13,200	45,100	4,280	7.5	3.08	10.5	51.1	1.24	34.8	62.0	67.0
ZPD61KCE TFD	5.0	14,800	50,500	4,930	8.5	3.02	10.3	58.1	1.89	40.3	64.0	64.0
ZPD67KCE TFD	5.5	16,200	55,200	5,260	9.3	3.08	10.5	63.0	1.89	45.3	74.0	67.0
ZPD72KCE TFD	6.0	17,100	58,500	5,750	9.8	2.99	10.2	67.1	1.89	40.9	75.0	67.0
ZPD83KCE TFD	7.0	20,000	68,100	6,630	12.0	3.02	10.3	77.2	1.77	40.8	101.0	66.0
ZPD91KCE TFD	7.5	21,600	73,800	6,900	12.5	3.14	10.7	84.6	1.77	41.5	101.0	69.0
<sup>Δ</sup> ZPD104KCE TFD	9.0	25,600	87,500	8,100	14.6	3.15	10.8	96.4	2.51	48.8	128.0	77.0
<sup>Δ</sup> ZPD122KCE TFD	10.0	29,900	102,000	9,450	17.2	3.15	10.8	112.3	2.51	48.8	139.0	77.0

Note:  
<sup>Δ</sup>Preliminary data



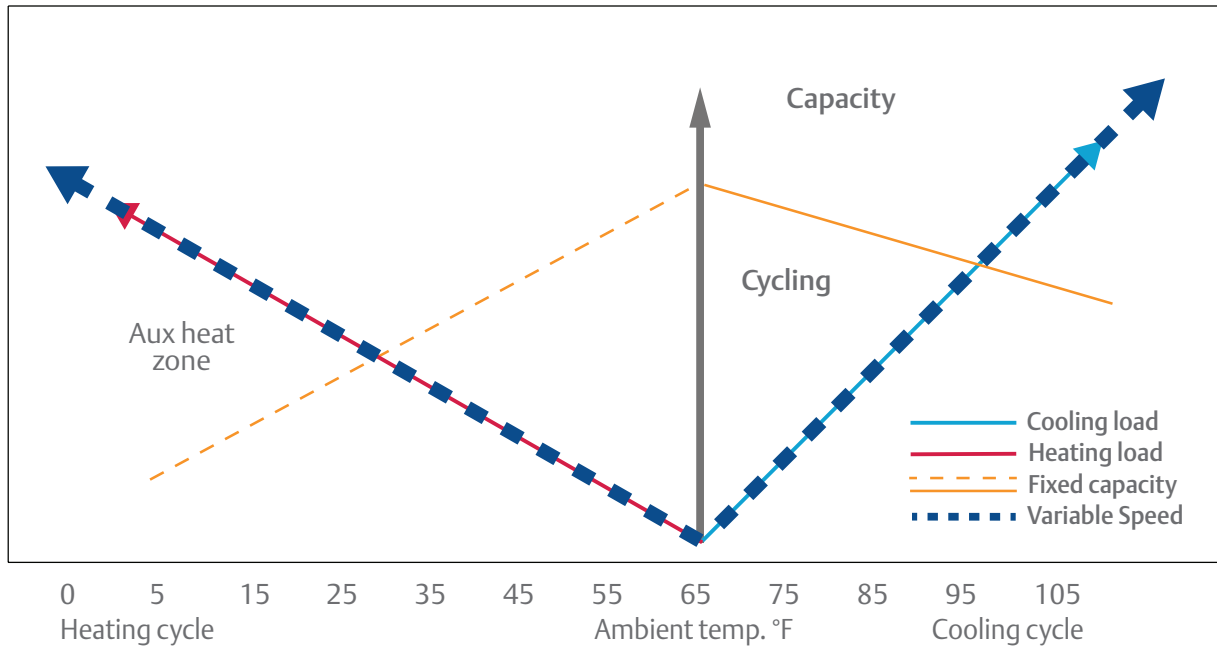
460V / 200-230V / 380V ; 60Hz , 3 Phase

Model	Nominal HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (cc/ Rev.)	Oil quantity (l)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)									
ZPD34K5E TFD TF5 TF7	3.0	10,150	34,600	3,390	5.2 10.2 6.2	2.99	10.2	32.8	1.24	30.9	44.0 88.0 52.7	66.0
ZPD42K5E TFD TF5 TF7	3.5	12,500 12,600 12,500	42,600 43,000 42,700	3,980 4,020 4,040	5.7 12.1 7.4	3.14 3.14 3.11	10.7 10.7 10.6	39.8	1.24	32.8	52.0 110.0 65.6	66.0 66.0 67.0
ZPD51K5E TFD TF5 TF7	4.5	14,950 15,100 14,750	51,000 51,400 50,400	4,790 4,810 4,710	6.9 13.8 8.5	3.11 3.14 3.14	10.6 10.7 10.7	48.2	1.24	33.0 34.8 34.8	52.0 110.0 65.6	66.0 66.0 67.0
ZPD54K5E TFD TF5 TF7	4.5	16,000	54,500 54,600 54,500	5,080 5,060 5,140	7.6 14.5 9.0	3.14 3.17 3.11	10.7 10.8 10.6	51.1	1.24	34.8	62.0 110.0 65.6	67.0 67.0 66.0
ZPD61KCE TFD TF5 TF7	5.0	18,200 18,500 18,000	62,000 63,000 61,500	5,900 5,800 5,850	8.6 17.0 10.1	3.08 3.19 3.08	10.5 10.9 10.5	58.1	1.89	40.3	62.0 156.0 64.0	64.0 64.0 65.0
ZPD67KCE TFD	5.5	19,800	67,700	6,320	8.5	3.14	10.7	63.0	1.89	45.3	75.0	64.0
ZPD72KCE TFD TF5 TF7	6.0	21,000 21,100 20,800	71,500 72,000 71,000	6,800 6,850 6,900	9.8 20.4 11.6	3.08 3.08 2.99	10.5 10.5 10.2	67.1	1.89	40.9	75.0 164.0 73.0	67.0
ZPD83KCE TFD TF5 TF7	7.0	24,400 24,200 24,200	83,100 82,500 82,500	7,980 7,850 7,850	12.3 23.0 13.2	3.05 3.08 3.08	10.4 10.5 10.5	77.2	1.77	40.8	100.0 186.6 94.3	67.0
ZPD91KCE TFD TF5 TF7	7.5	26,400	90,100	8,300 8,270 8,270	12.8 25.3 15.2	3.18 3.19 3.19	10.9	84.6	1.77	41.5	100.0 191.0 123.0	70.0
<sup>A</sup> ZPD104KCE TFD TF7	9.0	31,000	106,000	9,750 9,770	14.7 16.6	3.18	10.9	96.4	2.51	48.8	130.0 135.0	80.0
<sup>A</sup> ZPD122KCE TFD TF7	10.0	36,500	124,000	11,400	17.3 19.4	3.18	10.9	112.3	2.51	48.8	140.0 152.0	80.0

# Copeland Scroll™ Variable Speed compressors

Variable Speed compressors offer the highest part load efficiencies over any other modulation technology. This technology is specifically designed to be highly efficient in both residential and commercial applications. Variable Speed technology regulates the heating and cooling capacity of a particular space, and provides an effective way of maintaining the optimal indoor environment. By continuously adjusting its output to match loads, variable speed compressors offer breakthrough energy savings with exceptional year round comfort, lower humidity levels and better temperature control.

## Fixed Speed vs. Variable Speed capacity



With less cycling and longer run times, Variable Speed compressor are able to maintain precise temperature control (roughly within 1/10th of a degree)

## Benefits

With a Variable Speed compressor, systems can deliver significant improvement in year-round comfort for homeowners and end-users. By maintaining capacity at low ambient temperatures, systems equipped with Variable Speed can supply continuous hot air, which is essential for heat pump. In addition, summer humidity control is significantly improved with up to 75 percent capacity reduction.

- Improved temperature and humidity control
- Improved system efficiency
- Hot air supply

## How it works

Variable Speed systems modulate refrigerant flow by varying the speed of the compressor motor. This compressor motor speed variance determines the speed of the refrigerant flow. Therefore, by varying the motor frequency, capacity can be modulated. Capacity output increases and decreases with motor speed. Although this allows precise temperature and humidity control, oil management hardware and electronics are needed to ensure enough oil is in the compressor during slow motor conditions. This will ensure that excessive oil amounts do not get pushed out of the compressor during fast motor conditions.

Variable Speed compressors are used in conjunction with a variable frequency drive, which dynamically adjust compressor speed to ensure optimum efficiency. The drive also offers important compressor protection and diagnostic features.

## Advantages of Variable Speed compressor modulation

Modulation capability	Up to 7:1 turndown ratio achievable
Efficiency	High system efficiency is obtained by matching capacity with cooling/heating demand. Highest part-load efficiencies of any modulation technology
Reliability	Capable of superior reliability due to active protection provided by the motor control drive
Temperature and humidity control	Precise control is achieved

Model		Performance				
Compressor	Displacement cc.	Speed range RPM	Capacity (Btu/h)	EER/IEER (Btu/WWh)	Condition evap/cond	Nominal speed RPM
ZPV021	21	900-7,000	35,500	13.6/27.3	10/49	4,500
ZPV028*	28	900-7,000	47,000	14.4/27.1	10/49	4,500
ZPV034	34	900-7,000	56,000	14.1/28.3	10/49	4,500
ZPV038	38	900-7,000	64,000	14.1/27.8	10/49	4,500
ZPV063	63	1,000-7,200	126,000	13.8/25.8	10/49	5,400
ZPV066*	66	1,000-7,200	133,000	14.6/29.6	10/49	5,400
ZPV096*	96	1,200-7,200	197,000	14.5/29.6	10/49	5,400

Drive model	Drive size kW
EV2055	5.5
EV2080	8
EVC115	15
EVC185*	18.5



# Copeland Scroll™ Ultratech compressors for R410A refrigerant

## A greater level of comfort

The next generation Copeland Scroll UltraTech compressor provides superior comfort with a revolutionary two-step capacity design. At part-load capacity, systems with Copeland Scroll UltraTech compressors run longer, to reduce humidity and allow precise temperature control by modulating capacity. This eliminates uneven cooling peaks and valleys and allows for steady cooling comfort.

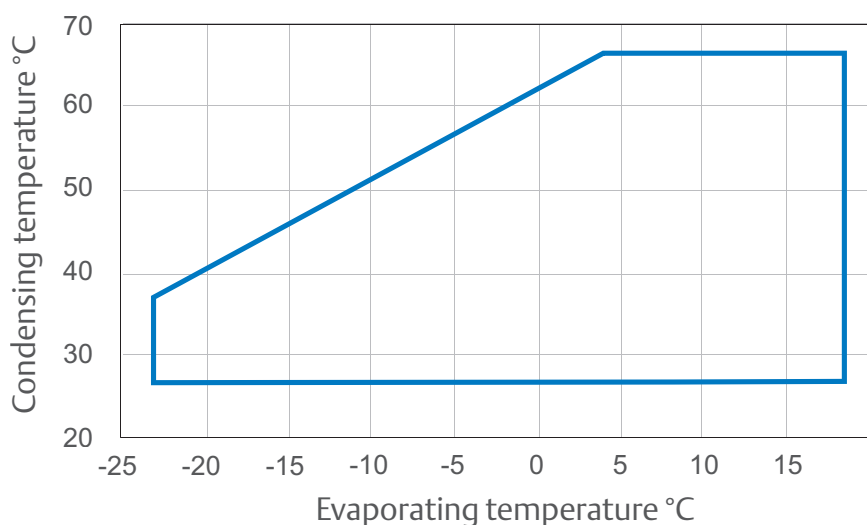
## Features and benefits

With the Copeland Scroll UltraTech compressor, two internal bypass ports enable the system to run at 67 percent part-load capacity, for enhanced efficiency and humidity control. This new, innovative design uses an internal pressure differential to actuate the modulation assembly significantly reducing the power required to modulate the valve. It also minimizes the expansion volume created during full-load operation which ultimately improves full-load performance by 1.5-5.5 percent. As a result, the next generation Copeland Scroll UltraTech compressor offers contractors a solution that not only provides better performance, but also provides a more reliable product due to the inherently simpler design.



- Enhanced humidity and temperature control with up to 5.5 percent increase in efficiency
- Two stages of capacity modulated by pressure differential that instantly shifts between full-load and part-load capacity
- Optimized for comfort and energy savings
- Significant reduction in VA load
- Improved sound

## Operating envelope (ZPS49K5E-TFD (HFC-410A))



# Technical overview

## 220-240V ; 50Hz , 1Phase

Model	Nominal power HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (in. <sup>3</sup> /Rev)	Displacement (cc/ Rev.)	Oil charge (oz.)	Oil quantity (l)	Net weight (lbs.)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)												
ZPS20K5E PFJ	1.7	4900	16400	1690	7.75	2.9	9.7	1.21	19.83	25	0.74	47.3	21.45	52.0	66
ZPS26K5E PFJ	2.2	6300	21200	2130	9.80	3.0	9.95	1.53	25.07	25	0.74	47.3	21.45	60.0	66
ZPS30K5E PFJ	2.5	7300	24900	2520	11.45	2.9	9.85	1.78	29.17	25	0.74	49.6	22.50	67.0	72
ZPS40K5E PFJ	3.3	10000	33800	3240	15.05	3.1	10.45	2.39	39.17	42	1.24	72.9	33.07	99.6	72
ZPS51K5E PFJ	4.3	12500	42600	4100	19.50	3.0	10.4	2.96	48.51	42	1.24	76.5	34.70	126.0	75

## 208-230V / 265V ; 60Hz , 1Phase

Model	Nominal power HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (in. <sup>3</sup> /Rev)	Displacement (cc/ Rev.)	Oil charge (oz.)	Oil quantity (l)	Net weight (lbs.)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)												
ZPS20K5E PFV	1.7	6000	20200	2040	9.00	2.9	9.9	1.21	19.83	25	0.74	47.3	21.45	58.3	66
ZPS21K5E PFV	1.8	6800	23100	2150	9.45	3.2	9.95	1.26	20.65	25	0.74	47.3	21.45	58.3	66
ZPS26K5E PFV	2.2	7800	26400	2580	11.35	3.0	10.2	1.53	25.07	25	0.74	47.3	21.45	73.0	66
ZPS30K5E PFV	2.5	9000	30600	2980	13.30	3.0	10.3	1.78	29.17	25	0.74	49.6	22.50	83.0	70
ZPS31K5E PFV	2.6	9300	31500	3060	13.60	3.0	10.3	1.84	30.15	25	0.74	49.6	22.50	83.0	68
ZPS35K5E PFV	2.9	10800	36800	3500	15.50	3.1	10.5	2.14	35.07	42	1.24	72.9	33.07	96.0	72
ZPS40K5E PFV	3.3	12100	41200	3980	18.75	3.0	10.35	2.39	39.17	42	1.24	72.9	33.07	104.0	70
ZPS49K5E PFV	4.1	14400	49100	4590	21.15	3.1	10.7	2.82	46.21	42	1.24	76.5	34.70	152.9	70
ZPS51K5E PFV	4.3	15300	52000	4860	22.15	3.1	10.7	2.96	48.51	42	1.24	76.5	34.70	152.9	70
ZPS60K5E PFV	5	17900	60900	5740	27.40	3.1	10.6	3.39	55.55	42	1.24	77.1	34.97	179.2	72
ZPS20K5E PFJ	1.7	6000	20400	2020	7.80	3.0	10.05	1.21	19.83	25	0.74	47.3	21.45	54.0	66
ZPS26K5E PFJ	2.2	7800	26500	2580	9.90	3.0	10.25	1.53	25.07	25	0.74	47.3	21.45	60.0	70
ZPS30K5E PFJ	2.5	9100	30900	2990	11.40	3.0	10.3	1.78	29.17	25	0.74	49.6	22.50	72.0	72
ZPS40K5E PFJ	3.3	12100	41200	3900	14.95	3.1	10.56	2.39	39.17	42	1.24	72.9	33.07	109.7	72
ZPS51K5E PFJ	4.3	15300	51900	4900	18.40	3.1	10.6	2.96	48.51	42	1.24	76.5	34.70	130.0	74

## 380-420V / 200/220V ; 50Hz , 3Phase

Model	Nominal power HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (in. <sup>3</sup> /Rev)	Displacement (cc/ Rev.)	Oil charge (oz.)	Oil quantity (l)	Net weight (lbs.)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)												
ZPS20K5E TFD	1.7	4800	16150	1735	3.10	2.8	9.3	1.21	19.83	25	0.74	47.3	21.45	27.0	66
ZPS20K5E TF5	1.7	4800	16150	1735	6.00	2.8	9.3	1.21	19.83	25	0.74	47.3	21.45	57.0	66
ZPS26K5E TFD	2.2	6200	21000	2160	3.80	2.9	9.7	1.53	25.07	25	0.74	47.3	21.45	28.0	66
ZPS26K5E TF5	2.2	6200	21100	2150	7.45	2.9	9.8	1.53	25.07	25	0.74	47.3	21.45	59.0	66
ZPS30K5E TFD	2.5	7300	24700	2490	4.50	2.9	9.9	1.78	29.17	25	0.74	49.6	22.50	38.0	72
ZPS30K5E TF5	2.5	7300	24900	2520	8.70	2.9	9.9	1.78	29.17	25	0.74	49.6	22.50	73.0	70
ZPS35K5E TFD	2.9	8800	30000	2940	4.80	3.0	10.2	2.14	35.07	42	1.24	63.8	28.94	46.0	72



## Technical overview

### 380-420V / 200/220V ; 50Hz , 3Phase (continuation)

Model	Nominal power HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (in. <sup>3</sup> /Rev)	Displacement (cc/ Rev.)	Oil charge (oz.)	Oil quantity (l)	Net weight (lbs.)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)												
ZPS35K5E TF5	2.9	8900	30100	2940	10.85	3.0	10.2	2.14	35.07	42	1.24	63.8	28.94	95.0	72
ZPS40K5E TFD	3.3	9900	33600	3290	5.55	3.0	10.2	2.39	39.17	42	1.24	67	30.39	43.0	70
ZPS40K5E TF5	3.3	9900	33600	3220	10.55	3.1	10.45	2.39	39.17	42	1.24	67	30.39	80.7	72
ZPS49K5E TFD	4.1	12000	40700	3770	6.35	3.2	10.8	2.82	46.21	42	1.24	72.8	33.02	51.5	71
ZPS49K5E TF5	4.1	12000	40700	3770	13.20	3.2	10.8	2.82	46.21	42	1.24	72.8	33.02	110.0	71
ZPS51K5E TFD	4.3	12600	42700	4020	6.80	3.1	10.6	2.96	48.51	42	1.24	71.5	32.43	51.5	71
ZPS51K5E TF5	4.3	12600	42900	3970	13.50	3.2	10.8	2.96	48.51	42	1.24	71.5	32.43	110.0	71
ZPS60K5E TFD	5	14700	50100	4680	7.75	3.1	10.7	3.39	55.55	42	1.24	75.6	34.29	67.1	71
ZPS60K5E TF5	5	14700	50100	4680	15.45	3.1	10.7	3.39	55.55	42	1.24	75.6	34.29	146.0	71

### 460V / 200V/230V ; 60Hz , 3Phase

Model	Nominal power HP	Capacity		Input power (W)	Current (A)	COP (W/W)	EER (Btu/Wh)	Displacement (in. <sup>3</sup> /Rev)	Displacement (cc/ Rev.)	Oil charge (oz.)	Oil quantity (l)	Net weight (lbs.)	Net weight (kg)	LRA (A)	Sound power (dBA)
		(W)	(Btu/h)												
ZPS20K5E TFD	1.7	6000	20200	2070	3.10	2.9	9.75	1.21	19.83	25	0.74	47.3	21.45	28.0	66
ZPS20K5E TF5	1.7	6000	20200	2060	6.10	2.9	9.8	1.21	19.83	25	0.74	47.3	21.45	55.4	68
ZPS26K5E TFD	2.2	7700	26100	2580	3.85	3.0	10.15	1.53	25.07	25	0.74	47.3	21.45	28.0	70
ZPS26K5E TF5	2.2	7700	26100	2540	7.45	3.0	10.3	1.53	25.07	25	0.74	47.3	21.45	58.0	66
ZPS30K5E TFD	2.5	9000	30600	2980	4.50	3.0	10.25	1.78	29.17	25	0.74	49.6	22.50	38.0	72
ZPS30K5E TF5	2.5	9000	30600	3000	8.90	3.0	10.2	1.78	29.17	25	0.74	49.6	22.50	73.0	70
ZPS35K5E TFD	2.9	10800	36800	3560	5.45	3.0	10.3	2.14	35.07	42	1.24	63.8	28.94	44.0	72
ZPS35K5E TF5	2.9	10900	36900	3500	10.75	3.1	10.55	2.14	35.07	42	1.24	63.8	28.94	88.0	72
ZPS40K5E TFD	3.3	12100	41200	3900	5.50	3.1	10.55	2.39	39.17	42	1.24	67	30.39	41.0	72
ZPS40K5E TF5	3.3	12100	41200	3920	11.00	3.1	10.55	2.39	39.17	42	1.24	67	30.39	83.1	72
ZPS49K5E TFD	4.1	14500	49300	4530	6.40	3.2	10.9	2.82	46.21	42	1.24	72.8	33.02	52.0	70
ZPS49K5E TF5	4.1	14500	49300	4530	13.35	3.2	10.9	2.82	46.21	42	1.24	72.8	33.02	110.0	72
ZPS51K5E TFD	4.3	15300	52100	4790	6.75	3.2	10.9	2.96	48.51	42	1.24	71.5	32.43	52.0	72
ZPS51K5E TF5	4.3	15300	52100	4790	13.85	3.2	10.9	2.96	48.51	42	1.24	71.5	32.43	110.0	72
ZPS60K5E TFD	5	17900	60900	5690	8.05	3.1	10.7	3.39	55.55	42	1.24	75.6	34.29	66.1	72
ZPS60K5E TF5	5	17900	61000	5660	16.05	3.2	10.8	3.39	55.55	42	1.24	75.6	34.29	136.0	72

# Copeland Scroll™ multiples

## Step modulation

One form of stepped modulation technology applied in some air conditioning applications is an approach that utilizes multiple compressors connected with a manifold, commonly referred to as tandems. Similar to other modulation approaches, tandems offer improved part-load efficiencies, including Integrated Energy Efficiency Ratio (IEER) and Integrated Part Load Value (IPLV), while maximizing full-load efficiency. A user also has the option to ‘tandemize’ other modulating compressors with a fixed capacity scroll compressor. This combination offers a very simple solution to deliver continuous capacity modulation while providing exceptional part-load efficiencies, such as Integrated Part Load Value (IPLV).

When Emerson first pioneered the use of scroll technology in compressors, it changed the industry forever. Since then, Copeland Scroll technology remains at the forefront for HVACR applications. With the broadest product line in the industry, Copeland Scroll compressors range from 1-40 HP for single compressor configurations and 3-180 HP in tandem and trio configurations. This includes 51 uneven and 69 even tandem compressor combinations.



## Advantages of stepped modulation

- Efficiency: High system efficiency at both full load and part-load
- Installation costs: Least expensive form of modulation
- Reliability: Comparable to fixed compressor systems
- Flexibility: Wide and smooth system lineup with a limited number of compressor models
- Oil management: No extra oil management hardware needed
- Electromagnetic interference issues: None
- Stepped capacity modulation for precision load matching which enables OEMs to boost system part load efficiency levels to meet new energy standards and aggressive DOE challenges

### Example

System capacity can be modulated by using multiple refrigeration circuits or by using multiple compressors in single-circuit systems. In a four circuit system, commonly used in packaged rooftops, individual compressors can be turned on and off to achieve a specific output. Six to eight compressors per unit can be used, which means, depending on the even or uneven combination, up to 12 capacity steps available to match the load by cycling the compressors on and off.



## Tandems

Model with voltage variations	Compressor combination	45°/130° 60Hz		Mechanical				Connection size		Cap. steps	Cap. (HP)
		Capacity (Btu/h)	EER (Btu/h)	L (in)	W (in)	H (in)	Net Wt. (lbs)	Suct. dia. (in)	Disch. dia. (in)		
ZPT32K5E-PFV	ZP16K5E + ZP16K5E	30,800	9.3	24	11.1	17.3	110	0.875	0.75	2	3
ZPT40K5E-PFV	ZP20KCE + ZP20KCE	39,800	9.8	24	11.1	17.3	110	0.875	0.75	2	3
ZPU47K5E-PFV	ZP16K5E + ZP31K5E	46,900	9.6	24.2	11.1	17.3	114	0.875	0.75	3	4
ZPT50K5E-PFV	ZP25KCE + ZP25KCE	50,200	9.9	24	11.1	17.3	112	0.875	0.75	2	4
ZPU56K5E-TFD	ZP25K5E + ZP31K5E	55,600	9.9	24	11.1	17.3	110	0.875	0.75	3	5
ZPU58K5E-TF5/TFD/TFE	ZP24K5E + ZP34K5E	59,000	10.3	24.4	11.6	18.4	116	1.125	0.75	3	5
ZPU62K5E-TF5/TFD/TFE	ZP24K5E + ZP38K5E	61,800	10.4	24.4	11.6	18.4	120	1.125	0.75	3	5
ZPU76K5E-TF5/TFD/TFE	ZP34K5E + ZP42K5E	77,300	10.4	24.3	11.4	18.4	136	1.125	0.75	3	6
ZPU78K5E-TF5/TFD/TFE	ZP34K5E + ZP44K5E	80,400	10.6	24.3	11.4	18.4	136	1.125	0.75	3	7
ZPU85K5E-TF5/TFD/TFE	ZP34K5E + ZP51K5E	86,900	10.6	24.3	11.4	18.4	136	1.125	0.75	3	7
ZPT88K5E-PFV	ZP44KCE + ZP44KCE	88,300	10.4	24.3	11.4	18.4	148	1.125	0.75	2	7
ZPU87K5E-TF5/TFD/TFE	ZP36K5E + ZP51K5E	88,600	10.6	24.3	11.4	18.4	136	1.125	0.75	3	7
ZPT88K5E-TF5/TFD/TFE	ZP44KCE + ZP44KCE	88,600	10.6	24.3	11.4	18.4	136	1.125	0.75	2	7
ZPU88K5E-TF5/TFD/TFE	ZP34K5E + ZP54K5E	89,900	10.6	24.3	11.4	18.4	136	1.125	0.75	3	7
ZPU95K5E-TF5/TFD/TFE	ZP34K5E + ZP61K5E	97,200	10.6	24.3	11.6	18.5	142	1.125	0.75	3	8
ZPT98K5E-PFV	ZP49K5E + ZP49K5E	98,400	10.5	24.3	11.4	18.4	136	1.125	0.75	2	8
ZPT98K5E-TF5/TFD/TFE	ZP49K5E + ZP49K5E	98,800	10.6	24.3	11.4	18.4	136	1.125	0.75	2	8
ZPU100K5E-TF5/TFD/TFE	ZP39K5E + ZP61K5E	100,500	10.6	24.3	11.6	18.5	145	1.125	0.75	3	8
ZPT100K3E-TF5/TFD/TFE	ZP50K3E + ZP50K3E	101,000	10.3	24.7	11.7	18.8	217	1.125	0.75	2	8
ZPT108K3E-TF5/TF7/TFD/TFE	ZP54K3E + ZP54K3E	107,000	10.2	24.7	11.7	18.8	217	1.125	0.75	2	9
ZPT108K5E-PFV	ZP54K5E + ZP54K5E	108,000	10.5	24.3	11.4	18.4	136	1.125	0.75	2	9
ZPT108K5E-TF5/TFD/TFE/PFV	ZP54K5E + ZP54K5E	108,000	10.6	24.3	11.4	18.4	136	1.125	0.75	2	9
ZPT114K3E-PFV	ZP57K3E + ZP57K3E	113,000	10	24.7	11.7	18.8	217	1.125	0.75	2	9
ZPT114K5E-PFV	ZP57K5E + ZP57K5E	113,500	10.2	24.3	11.4	18.4	150	1.125	0.75	2	9
ZPT114K3E-TF5/TF7/TFD/TFE	ZP57K3E + ZP57K3E	114,000	10.4	24.3	11.4	18.4	217	1.125	0.75	2	10
ZPT114K5E-TF5/TFD/TFE	ZP57K5E + ZP57K5E	114,000	10.8	24.3	11.4	18.4	150	1.125	0.75	2	10
ZPT122KCE-TF5/TF7/TFD/TFE	ZP61KCE + ZP61KCE	121,000	10.6	24.3	11.4	18.4	217	1.125	0.75	2	10
ZPU122KCE-TF5/TFD/TFE	ZP50KCE + ZP72KCE	122,000	10.4	24.7	11.7	18.8	217	1.125	0.75	3	10
ZPT122K5E-PFV	ZP61K5E + ZP61K5E	122,000	10.4	24.3	11.4	18.4	160	1.125	0.75	2	10
ZPT122K5E-TF5/TFD/TFE	ZP61K5E + ZP61K5E	122,000	10.8	24.7	11.7	18.8	160	1.125	0.75	2	10
ZPT134KCE-TF5/TF7/TFD/TFE	ZP67KCE + ZP67KCE	133,000	10.6	24.6	11.6	17.9	205	1.125	0.75	2	11
ZPT144KCE-TF5/TF7/TFD/TFE	ZP72KCE + ZP72KCE	141,000	10.4	24.6	11.6	17.9	205	1.125	0.75	2	12
ZPU152KCE-TF5/TF7/TFD/TFE	ZP61KCE + ZP91KCE	149,000	10.6	24.7	11.7	18.8	190	1.125	0.75	3	12
ZPT152KCE-TF5/TF7/TFD/TFE	ZP76KCE + ZP76KCE	152,500	10.8	24.7	11.7	18.8	186	1.125	0.75	2	13
ZPT166KCE-TF5/TF7/TFD/TFE	ZP83KCE + ZP83KCE	164,000	10.7	24.7	11.7	18.8	187	1.125	0.75	2	14
ZPU174KCE-TF5/TF7/TFD/TFE	ZP83KCE + ZP91KCE	168,500	10.4	24.7	11.7	18.8	190	1.125	0.75	3	14
ZPT182KCE-TF5/TF7/TFD/TFE	ZP91KCE + ZP91KCE	179,500	10.9	24.7	12.1	19	190	1.125	1.125	2	15
ZPT180KCE-TF5/TF7/TFD/TFE	ZP90KCE + ZP90KCE	181,000	10.8	25	12.3	19.5	270	1.625	1.375	2	15
ZPT206KCE-TF5/TF7/TFD/TFE	ZP103KCE + ZP103KCE	210,000	10.9	25	12.3	22.7	282	1.625	1.375	2	18
ZPU210KCE-TF5/TF7/TFD/TFE	ZP90KCE + ZP120KCE	213,000	10.9	29.4	17.1	22.7	271	1.625	1.375	3	18



Tandems (continued)

Model with voltage variations	Compressor combination	45°/130° 60Hz		Mechanical				Connection size		Cap. steps	Cap. (HP)
		Capacity (Btu/h)	EER (Btu/h)	L (in)	W (in)	H (in)	Net Wt. (lbs)	Suct. dia. (in)	Disch. dia. (in)		
ZPU223KCE-TF5/TF7/TFD/TFE	ZP103KCE + ZP120KCE	225,000	10.9	29.4	17.1	22.7	286	1.625	1.375	3	19
ZPU240KCE-TF5/TF7/TFD/TFE	ZP103KCE + ZP137KCE	237,000	10.8	29.4	17.1	22.7	286	1.625	1.375	3	20
ZPT240KCE-TF5/TF7/TFD/TFE	ZP120KCE + ZP120KCE	246,000	11	25	12.3	22.7	289	1.625	1.375	2	21
ZPU257KCE-TF5/TF7/TFD/TFE	ZP120KCE + ZP137KCE	255,000	10.9	29.4	17.1	22.7	289	1.625	1.375	3	21
ZPU258KCE-TX5/TX7/TXD/TXE	ZP103KCE + ZP154KCE	258,000	10.9	25	12.3	23.5	278	1.625	1.375	3	22
ZPT274KCE-TF5/TF7/TFD/TFE	ZP137KCE + ZP137KCE	270,000	10.9	25	12.3	22.7	289	1.625	1.375	2	23
ZPU272KCE-TFD	ZP90KCE + ZP182KCE	273,000	11	25	12.3	23.5	271	1.625	1.375	3	23
ZPU272KCE-TX5/TX7/TXD/TXE	ZP90KCE + ZP182KCE	273,000	11	23.5	12.3	23.5	271	1.625	1.375	3	23
ZPU274KCE-TFD	ZP120KCE + ZP154KCE	273,000	10.9	25	12.3	23.5	278	1.625	1.375	3	23
ZPU274KCE-TX5/TX7/TXD/TXE	ZP120KCE + ZP154KCE	273,000	10.9	25	12.3	23.5	278	1.625	1.375	3	23
ZPU285KCE-TFD	ZP103KCE + ZP182KCE	286,000	11	25	12.3	23.5	278	1.625	1.375	3	24
ZPU285KCE-TX5/TX7/TXD/TXE	ZP103KCE + ZP182KCE	286,000	11	25	12.3	23.5	278	1.625	1.375	3	24
ZPU302KCE-TFD	ZP120KCE + ZP182KCE	301,000	11	25	12.3	23.5	281	1.625	1.375	3	25
ZPU302KCE-TX5/TX7/TXD/TXE	ZP120KCE + ZP182KCE	301,000	11	25	12.3	23.5	287	1.625	1.375	3	25
ZPT308KCE-TF7/TFD	ZP154KCE + ZP154KCE	307,000	10.9	25	12.3	23.5	286	1.625	1.375	2	26
ZPT308KCE-TW5/TW7/TWD/TWE	ZP154KCE + ZP154KCE	307,000	10.9	25	12.3	23.5	286	1.625	1.375	2	26
ZPU319KCE-TFD	ZP137KCE + ZP182KCE	314,000	11	25	12.3	23.5	281	1.625	1.375	3	26
ZPU319KCE-TX5/TX7/TXD/TXE	ZP137KCE + ZP182KCE	314,000	11	25	12.3	23.5	287	1.625	1.375	3	26
ZPU336KCE-TFD	ZP154KCE + ZP182KCE	335,000	11	25	12.3	23.5	289	1.625	1.375	3	28
ZPU336KCE-TW5/TW7/TWD/TWE	ZP154KCE + ZP182KCE	335,000	11	25	12.3	23.5	289	1.625	1.375	3	28
ZPT360KCE-TW7/TWC/TWD/TWE	ZP180KCE + ZP180KCE	360,000	11.2	37.2	20.3	24.6	473	2.125	1.375	2	30
ZPT364KCE-TW5/TW7/TWD/TWE	ZP182KCE + ZP182KCE	361,000	11.1	25	12.3	23.5	292	1.625	1.375	2	30
ZPU418KCE-TY5/TY7/TYD/TYE	ZP182KCE + ZP236KCE	417,000	11.1	36.6	22.5	28.4	488	2.125	1.375	3	35
ZPT472KCE-TE5/TE7/TED/TEE	ZP236KCE + ZP236KCE	471,000	10.9	39.5	20.9	28.4	606	2.625	1.375	2	39
ZPU532KCE-TE5/TE7/TED/TEE	ZP236KCE + ZP296KCE	528,000	10.6	39.5	20.7	28.4	618	2.625	1.375	3	44
ZPT570KCE-TW5/TW7/TWC/TWD/TWE	ZP285KCE + ZP285KCE	555,000	11.2	42.2	22.5	29.4	884	2.625	1.625	2	46
ZPU567KCE-TW7/TWC/TWD/TWE	ZP182KCE + ZP385KCE	565,000	11	34.3	21.2	29.3	536	2.125	1.375	3	47
ZPT592KCE-TE5/TE7/TED/TEE	ZP296KCE + ZP296KCE	582,000	10.6	39.5	20.9	28.4	631	2.625	1.375	2	49
ZPU681KCE-TE5/TE7/TED/TEE	ZP296KCE + ZP385KCE	680,000	10.9	41.6	14	29.4	727	2.625	1.625	3	57
ZPT770KCE-TE5/TE7/TED/TEE	ZP385KCE + ZP385KCE	759,000	10.9	40.9	21.9	29.4	826	2.625	1.625	2	63
ZPU870KCE-TED	ZP385KCE + ZP485KCE	856,000	10.7	40.6	22.3	30.6	878	2.625	1.625	3	71
ZPT970KCE-TED/TE7/TEE	ZP485KCE + ZP485KCE	947,000	10.9	40.9	21.9	30.6	932	2.625	1.625	2	79

Model with voltage variations	Compressor combination	45°/130° 60Hz		Mechanical				Connection size		Cap. steps	Cap. (HP)
		Capacity (Btu/h)	EER (Btu/h)	L (in)	W (in)	H (in)	Net Wt. (lbs)	Suct. dia. (in)	Disch. dia. (in)		
ZRT96KCE-TF5/TFD	ZR48KCE + ZR48KCE	92,800	10.8	24.3	11.4	18	136	1.125	0.75	2	8
ZRT96K3E-PFV	ZR48K3E + ZR48K3E	93,000	10.6	24.3	11.4	18	136	1.125	0.75	2	8
ZRT96K3E-TF5/TFD/TFE	ZR48K3E + ZR48K3E	94,000	10.5	24.3	11.4	18	136	1.125	0.75	2	8
ZRT108K3E-TF5/TFD/TFE	ZR54K3E + ZR54K3E	101,000	10.4	24.7	11.7	18.8	200	1.125	0.75	2	8
ZRT122K3E-TF5/TFD/TFE/PFV	ZR61K3E + ZR61K3E	116,000	10.7	24.7	11.7	18.8	223	1.125	0.75	2	10
ZRT122KCE-TFD	ZR61KCE + ZR61KCE	116,000	10.9	24.7	11.7	18.8	223	1.125	0.75	2	10
ZRT136KCE-TF5/TFD/TFE	ZR68KCE + ZR68KCE	132,000	11.1	24.7	11.7	18.8	205	1.125	0.75	2	11
ZRT144KCE-TF5/TF7/TFD/TFE	ZR72KCE + ZR72KCE	137,000	10.7	24.7	11.7	18.8	205	1.125	0.75	2	11
ZRT162KCE-TF5/TF7/TFD	ZR81KCE + ZR81KCE	154,000	10.8	24.7	12.5	19	205	1.125	1.125	2	13
ZRT168KCE-TF5/TF7/TFD/TFE	ZR84KCE + ZR84KCE	161,500	11	25	12.3	19.5	270	1.625	1.375	2	13
ZRT188KCE-TF5/TF7/TFD/TFE	ZR94KCE + ZR94KCE	186,500	11.2	25	12.3	19.5	270	1.625	1.375	2	16
ZRT216KCE-TF5/TF7/TFD/TFE	ZR108KCE + ZR108KCE	209,000	11.3	25	12.3	22.7	283	1.625	1.375	2	17
ZRT250KCE-TF5/TF7/TFD/TFE	ZR125KCE + ZR125KCE	237,000	10.8	25	12.3	22.7	289	1.625	1.375	2	20
ZRT288KCE-TF5/TF7/TFD/TFE	ZR144KCE + ZR144KCE	272,000	11	25	12.3	22.7	289	1.625	1.375	2	23
ZRU285KCE-TX5/TX7/TXD/TXE	ZR125KCE + ZR160KCE	274,000	10.9	25	12.3	23.5	278	1.625	1.375	3	23
ZRU315KCE-TX5/TX7/TXD/TXE	ZR125KCE + ZR190KCE	300,000	10.8	25	12.3	23.5	281	1.625	1.375	3	25
ZRT320KCE-TF7/TFD	ZR160KCE + ZR160KCE	307,000	11	29.4	12.3	23.5	289	1.625	1.375	2	26
ZRT320KCE-TW5/TW7/TWD/TWE	ZR160KCE + ZR160KCE	307,000	11	29.4	12.3	23.5	289	1.625	1.375	2	26
ZRU334KCE-TX5/TX7/TXD/TXE	ZR144KCE + ZR190KCE	316,000	10.8	25	12.3	23.5	281	1.625	1.375	3	26
ZRU350KCE-TW5/TW7/TWD/TWE	ZR160KCE + ZR190KCE	327,000	10.5	25	12.3	23.5	292	1.625	1.375	3	27
ZRT380KCE-TFD	ZR190KCE + ZR190KCE	361,000	10.8	29.4	12.3	23.5	289	1.625	1.375	2	30
ZRT380KCE-TW5/TW7/TWD/TWE	ZR190KCE + ZR190KCE	361,000	10.8	29.4	12.3	23.5	289	1.625	1.375	2	30
ZRT500KCE-TW5/TW7/TWC/TWD/TWE	ZR250KCE + ZR250KCE	471,000	10.9	41.4	21.6	29.5	659	2.625	1.625	2	39
ZRT600KCE-TW5/TW7/TWC/TWD/TWE	ZR300KCE + ZR300KCE	580,000	11.3	42.2	23.1	29.4	864	3.125	1.625	2	48
ZRT760KCE-TW5/TW7/TWC/TWD/TWE	ZR380KCE + ZR380KCE	740,000	11.3	42.2	22.7	29.4	826	3.125	1.625	2	62

## Technical overview

### Trios

# R410A

Model with voltage variations	Compressor combination	45°/130° 60Hz		Mechanical				Connection size		Cap. steps	Cap. (HP)
		Capacity (Btu/h)	EER (Btu/h)	L (in)	W (in)	H (in)	Net Wt. (lbs)	Suct. dia. (in)	Disch. dia. (in)		
ZPY309KCE-TF5/TF7/TFD/TFE	ZP103KCE + ZP103KCE + ZP103KCE	313,000	10.9	47.1	20.2	22.8	396	3.125	2.125	3	26
ZPY360KCE-TF5/TF7/TFD/TFE	ZP120KCE + ZP120KCE + ZP120KCE	362,000	10.9	47.1	20.2	22.8	405	3.125	2.125	3	30
ZPY411KCE-TF5/TF7/TFD/TFE	ZP137KCE + ZP137KCE + ZP137KCE	404,000	10.9	47.2	20.2	22.8	405	3.125	2.125	3	34
ZPY462KCE-TFD	ZP154KCE + ZP154KCE + ZP154KCE	463,000	11	47.1	20.2	23.5	429	3.125	2.125	3	39
ZPY462KCE-TW5/TW7/TWD/TWE	ZP154KCE + ZP154KCE + ZP154KCE	463,000	11	47.2	20.2	23.5	429	3.125	2.125	3	39
ZPY546KCE-TFD	ZP182KCE + ZP182KCE + ZP182KCE	543,000	11	47.1	20.2	23.5	438	3.125	2.125	3	45
ZPY546KCE-TW5/TW7/TWD/TWE	ZP182KCE + ZP182KCE + ZP182KCE	543,000	11	47.1	20.2	23.5	438	3.125	2.125	3	45
ZPY708KCE-TE5/TE7/TED/TEE	ZP236KCE + ZP236KCE + ZP236KCE	707,000	11	59.9	22	28.4	990	2.625	1.625	3	59
ZPY855KCE-TW5/TW7/TWC/TWD/TWE	ZP285KCE + ZP285KCE + ZP285KCE	827,000	11.1	61.3	25.6	29.4	1,215	3.625	2.125	3	69
ZPY888KCE-TE5/TE7/TED/TEE	ZP296KCE + ZP296KCE + ZP296KCE	893,000	11	59.9	22.4	28.4	1,027	2.625	1.625	3	74
ZPY115MCE-TW5/TW7/TWC/TWD/TWE	ZP385KCE + ZP385KCE + ZP385KCE	1,146,000	10.9	61.2	25.7	29.4	1,326	3.625	2.125	3	96
ZPY145MCE-TED	ZP485KCE + ZP485KCE + ZP485KCE	1,425,000	10.7	62.1	25	30.6	1,479	3.625	2.125	3	119

### Trios

# R407C

Model with voltage variations	Compressor combination	45°/130° 60Hz		Mechanical				Connection size		Cap. steps	Cap. (HP)
		Capacity (Btu/h)	EER (Btu/h)	L (in)	W (in)	H (in)	Net Wt. (lbs)	Suct. dia. (in)	Disch. dia. (in)		
ZRY324KCE-TF5/TF7/TFD/TFE	ZR108KCE + ZR108KCE + ZR108KCE	317,000	11.4	47.1	20.2	22.8	396	3.125	2.125	3	26
ZRY375KCE-TF5/TF7/TFD/TFE	ZR125KCE + ZR125KCE + ZR125KCE	373,000	11.4	47.1	20.2	22.8	405	3.125	2.125	3	31
ZRY432KCE-TF5/TF7/TFD/TFE	ZR144KCE + ZR144KCE + ZR144KCE	425,000	11.4	47.1	20.2	22.8	405	3.125	2.125	3	35
ZRY480KCE-TFD	ZR160KCE + ZR160KCE + ZR160KCE	460,000	11	47.1	20.2	23.5	429	3.125	2.125	3	38
ZRY480KCE-TW5/TW7/TWD/TWE	ZR160KCE + ZR160KCE + ZR160KCE	460,000	11	47.1	20.2	23.5	429	3.125	2.125	3	38
ZRY570KCE-TFD	ZR190KCE + ZR190KCE + ZR190KCE	541,000	10.8	47.1	20.2	23.5	438	3.125	2.125	3	45
ZRY570KCE-TW5/TW7/TWD/TWE	ZR190KCE + ZR190KCE + ZR190KCE	541,000	10.8	47.1	20.2	23.5	438	3.125	2.125	3	45
ZRY750KCE-TW5/TW7/TWC/TWD/TWE	ZR250KCE + ZR250KCE + ZR250KCE	715,000	11	61.5	24.7	29.5	999	3.125	2.125	3	60
ZRY900KCE-TW5/TW7/TWC/TWD/TWE	ZR300KCE + ZR300KCE + ZR300KCE	872,000	11.2	61.2	25.8	29.4	1,293	3.625	2.125	3	73
ZRY930KCE-TWC/TWD	ZR310KCE + ZR310KCE + ZR310KCE	884,000	10.6	61.2	25.7	29.4	1,137	3.625	2.125	3	74
ZRY114MCE-TW5/TW7/TWC/TWD/TWE	ZR380KCE + ZR380KCE + ZR380KCE	1,119,000	11.4	61.2	25.7	29.4	1,293	3.125	2.125	3	93

# Technical overview

## Digital tandems

# R410A

Model with voltage variations	Compressor combination	45°/130° 60Hz		Mechanical				Connection size		Cap. steps	Cap. (HP)
		Capacity (Btu/h)	EER (Btu/h)	L (in)	W (in)	H (in)	Net Wt. (lbs)	Suct. dia. (in)	Disch. dia. (in)		
ZPDU58K5E-TF5/TFD/TFE	ZPD34K5E + ZP24K5E	59,300	10.4	24.4	11.6	20	116	1.125	0.75	Infinite	5
ZPDU76K5E-TF5/TFD/TFE	ZPD34K5E + ZP42K5E	78,500	10.8	24.3	11.6	20	136	1.125	0.75	Infinite	7
ZPDU85K5E-TF5/TFD/TFE	ZPD34K5E + ZP51K5E	86,100	10.5	24.3	11.6	20	136	1.125	0.75	Infinite	7
ZPDU10M5E-TF5/TFD/TFE	ZPD42K5E + ZP61K5E	103,000	10.1	24.3	11.6	20	155	1.125	0.75	Infinite	9
ZPDU12MCE-TF5/TFD/TFE	ZPD72KCE + ZP50K3E	121,000	10.2	24.7	11.6	20.6	218	1.125	0.75	Infinite	10
ZPDT12MCE-TF5/TFD/TFE	ZPD61KCE + ZP61KCE	123,500	10.4	24.6	11.6	20.5	204	1.125	0.75	Infinite	10
ZPDU13MCE-TFD	ZPD72KCE + ZP61KCE	130,000	10.3	24.6	11.6	20.5	205	0.75	1.125	Infinite	11
ZPDT14MCE-TF5/TF7/TFD/TFE	ZPD72KCE + ZP72KCE	143,000	10.1	24.6	11.6	20.5	205	1.125	0.75	Infinite	12
ZPDU15MCE-TF5/TFD/TF7/TFE	ZPD61KCE + ZP91KCE	149,500	10.6	24.7	12.1	19.7	190	1.125	0.75	Infinite	12
ZPDT16MCE-TFD/TFE	ZPD83KCE + ZP83KCE	162,000	10.6	24.6	11.6	20.5	205	1.125	0.75	Infinite	14
ZPDU17MCE-TF5/TFD/TF7/TFE	ZPD83KCE + ZP91KCE	171,000	10.4	24.7	21.1	19.7	190	1.125	0.75	Infinite	14
ZPDT18MCE-TF5/TF7/TFD/TFE	ZPD91KCE + ZP91KCE	179,000	10.9	24.7	12.1	20.6	190	1.125	1.125	Infinite	15
ZPDU21MCE-TF5/TF7/TFD/TFE	ZPD120KCE + ZP90KCE	208,000	10.8	29.4	17.1	22.7	271	1.625	1.375	Infinite	17
ZPDT21MCE-TF5/TF7/TFD/TFE	ZPD103KCE + ZP103KCE	209,000	11	29.4	15.9	22.7	289	1.625	1.375	Infinite	17
ZPDT24MCE-TF5/TF7/TFD/TFE	ZPD120KCE + ZP120KCE	246,000	11	29.4	15.9	22.7	289	1.625	1.375	Infinite	21
ZPDU26MCE-TXD/TX7/TXE	ZPD103KCE + ZP154KCE	258,000	10.9	29.4	17.1	23.5	278	1.625	1.375	Infinite	22
ZPDT27MCE-TF5/TF7/TFD/TFE	ZPD137KCE + ZP137KCE	270,000	11	29.4	15.9	22.7	289	1.625	1.375	Infinite	23
ZPDT31MCE-TW5/TW7/TWD/TWE	ZPD154KCE + ZP154KCE	309,000	11	29.4	17.3	23.5	286	1.625	1.375	Infinite	26
ZPDT36MCE-TW5/TW7/TWD/TWE	ZPD182KCE + ZP182KCE	364,000	11	29.4	17.3	23.5	292	1.625	1.375	Infinite	30

## Digital tandems

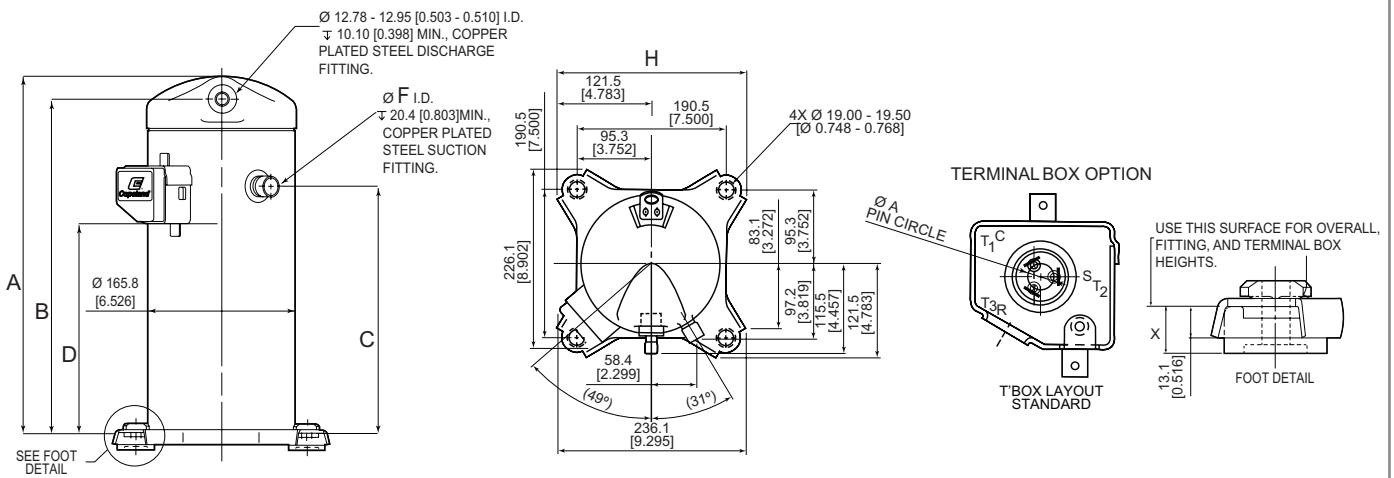
# R407C

Model with voltage variations	Compressor combination	45°/130° 60Hz		Mechanical				Connection size		Cap. steps	Cap. (HP)
		Capacity (Btu/h)	EER (Btu/h)	L (in)	W (in)	H (in)	Net Wt. (lbs)	Suct. dia. (in)	Disch. dia. (in)		
ZRDT96KCE-TF7/TFD	ZRD48KCE + ZR48KCE	89,500	10.2	24.3	11.2	19.9	138	1.125	0.75	Infinite	7
ZRDU13MCE-TF5/TF7/TFD	ZRD72KCE + ZR61KCE	125,000	10.6	24.7	11.7	20.5	185	1.125	0.75	Infinite	10
ZRDT14MCE-TF5/TF7/TFD	ZRD72KCE + ZR72KCE	136,000	10.7	24.7	11.7	20.5	183	1.125	0.75	Infinite	11
ZRDT16MCE-TF7/TFD	ZRD81KCE + ZR81KCE	162,000	10.4	24.7	12.5	20.5	192	1.125	0.75	Infinite	14



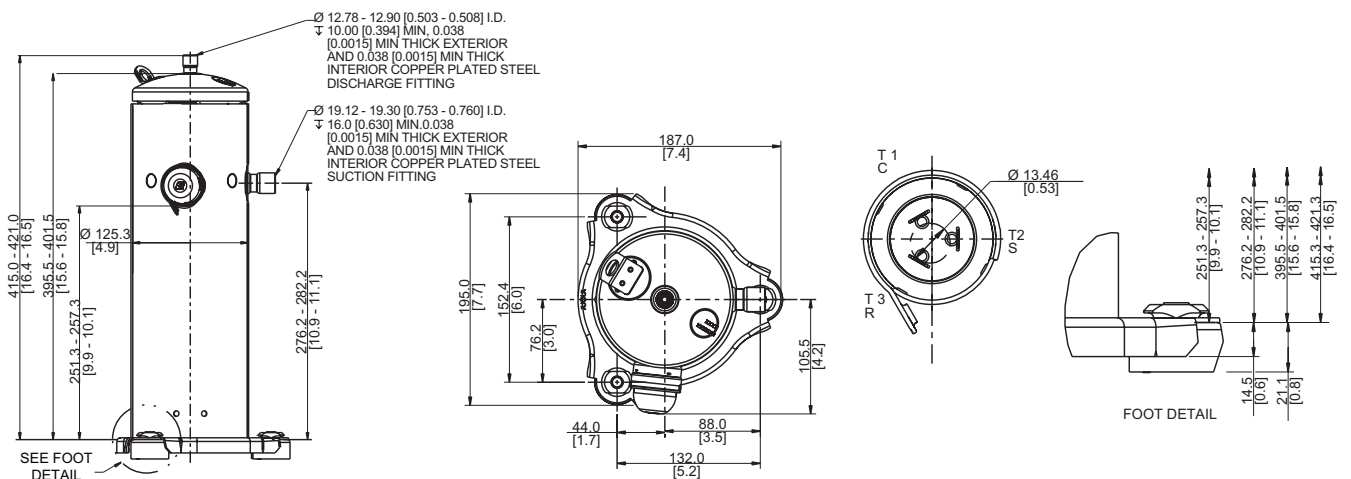
# Mechanical dimensions

## ZR22K3 to ZR48K3/C ZR54KS to ZR61KS Air conditioning models



Model number	Frame size	A	B	C	D	$\varnothing F$ I.D.	H	X			
ZR22K3 to ZR28K3	165.8 [6.526]	363.8 [14.324]	338.3 [13.319]	244.5 [9.626]	202.9 [7.988]	19.12 - 19.30 [0.753 - 0.761]	243 [9.567]	19.1 [0.752]			
ZR30K3 to ZR36K3			360.9 [14.209]	264.4 [10.409]	222.8 [8.772]						
ZR40K3 to ZR42K3		400.2 [15.756]	374.6 [14.748]	277.1 [10.910]	235.5 [9.272]						
ZR45K3 to ZR48K3/C		417.3 [16.429]	391.7 [15.421]	294.2 [11.583]	252 [9.921]				22.30 - 22.48 [0.878 - 0.885]	240 - 246 [9.448 - 9.683]	19.0 [0.748]
ZR54KS to ZR61KS		414.2 - 420.2 [16.31 - 16.54]	388.6 - 394.6 [15.30 - 15.53]	280.5 - 286.5 [11.05 - 11.27]	238.9 - 244.9 [9.5 - 9.6]				22.30 - 22.48 [0.878 - 0.885]	239.7 - 245.7 [9.44 - 9.67]	19.1 [0.75]

## ZR28M to ZR30M Air conditioning models

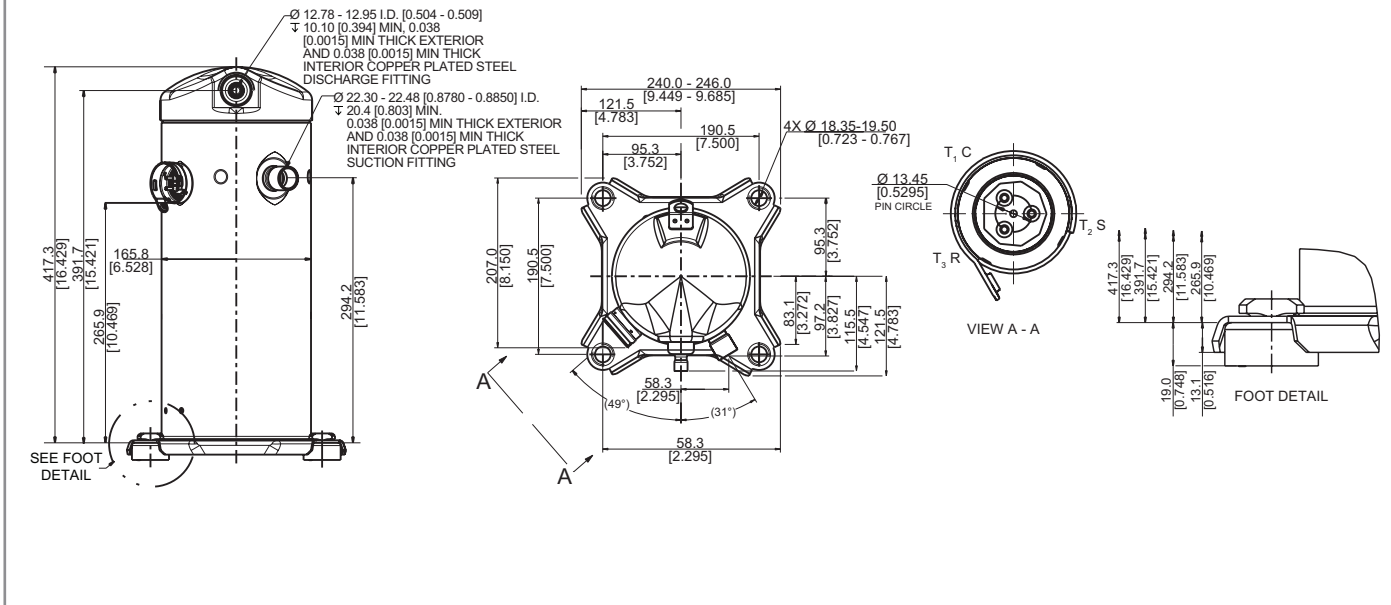


### Notes:

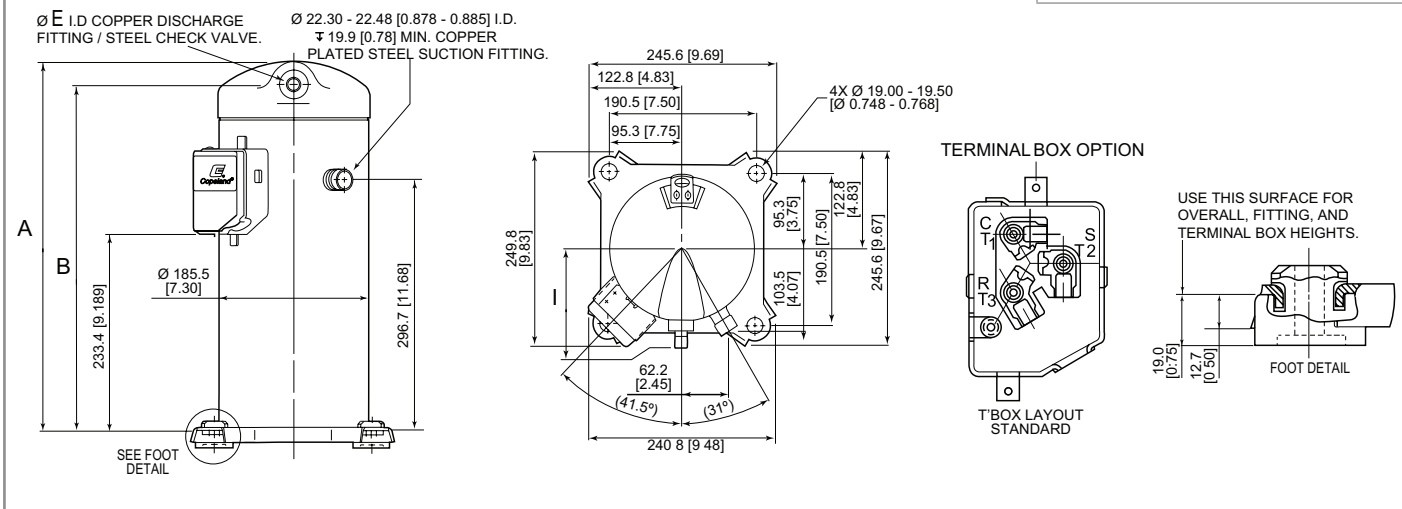
- (1) Nominal dimensions are shown. All tolerances are  $\pm 1.50 [0.060]$  unless otherwise specified.
- (2) Due to the accumulated assembly tolerances, the top of the compressor, terminal box, suction and discharge fitting vary from the mounting feet by  $\pm 3.0 [0.12]$
- (3) Terminal box option is shown.
- (4) Stub tube fittings are shown.
- (5) Linear measurements in [ ] are inch conversions. Third Angle Projection

# Mechanical dimensions

## ZR54KE to ZR61KE Air conditioning models



## ZR68KC to ZR81KC Air conditioning models



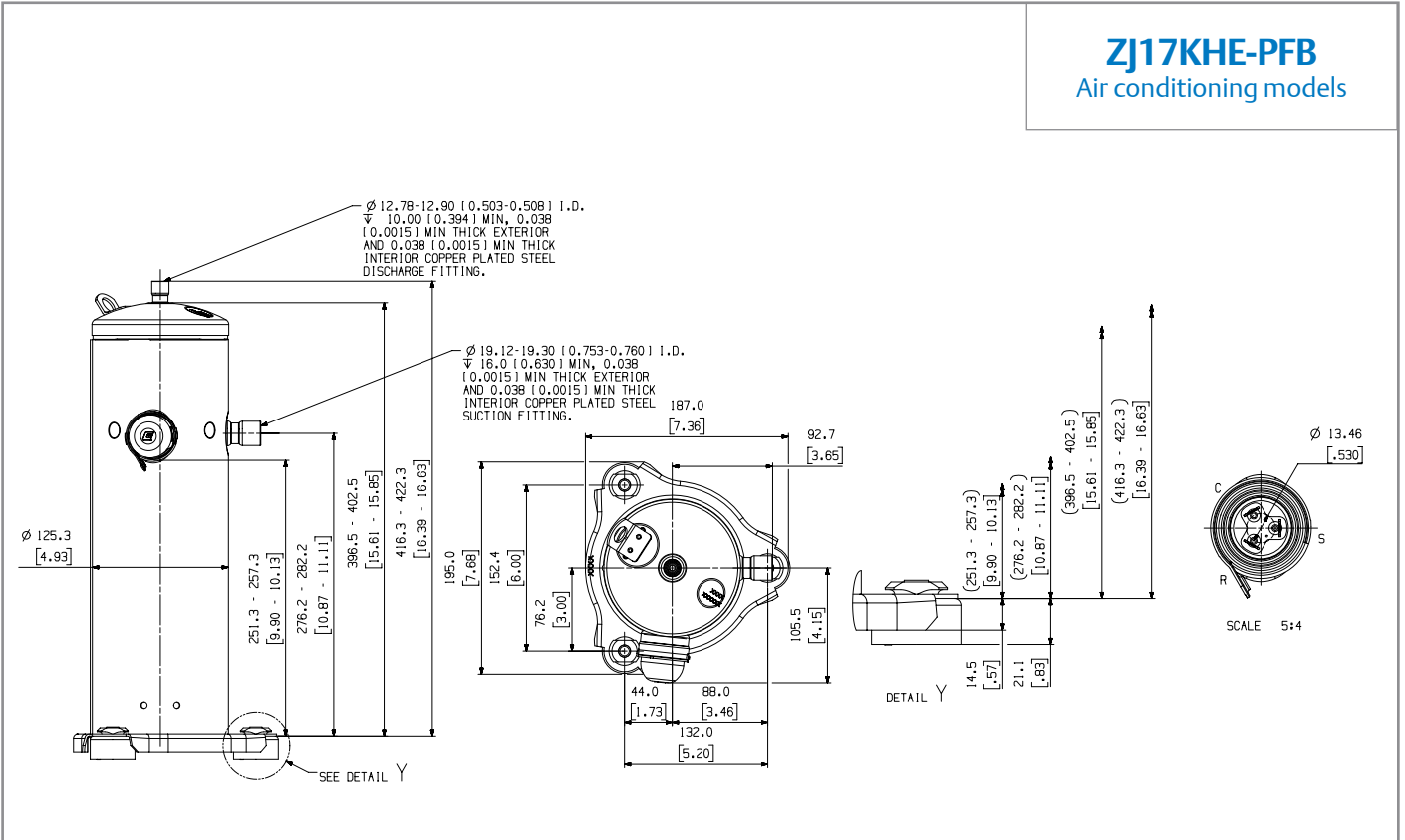
Model number	Frame size	A	B	ØE I.D.	I
ZR68KC	185.5 [7.30]	437.9 [17.240]	409.9 [16.134]	12.84 [0.505]	124.7 [4.91]
ZR72KC		443.4 [17.457]	413.9 [16.30]	19.18 [0.755]	128.7 [5.07]
ZR81KC					

### Notes:

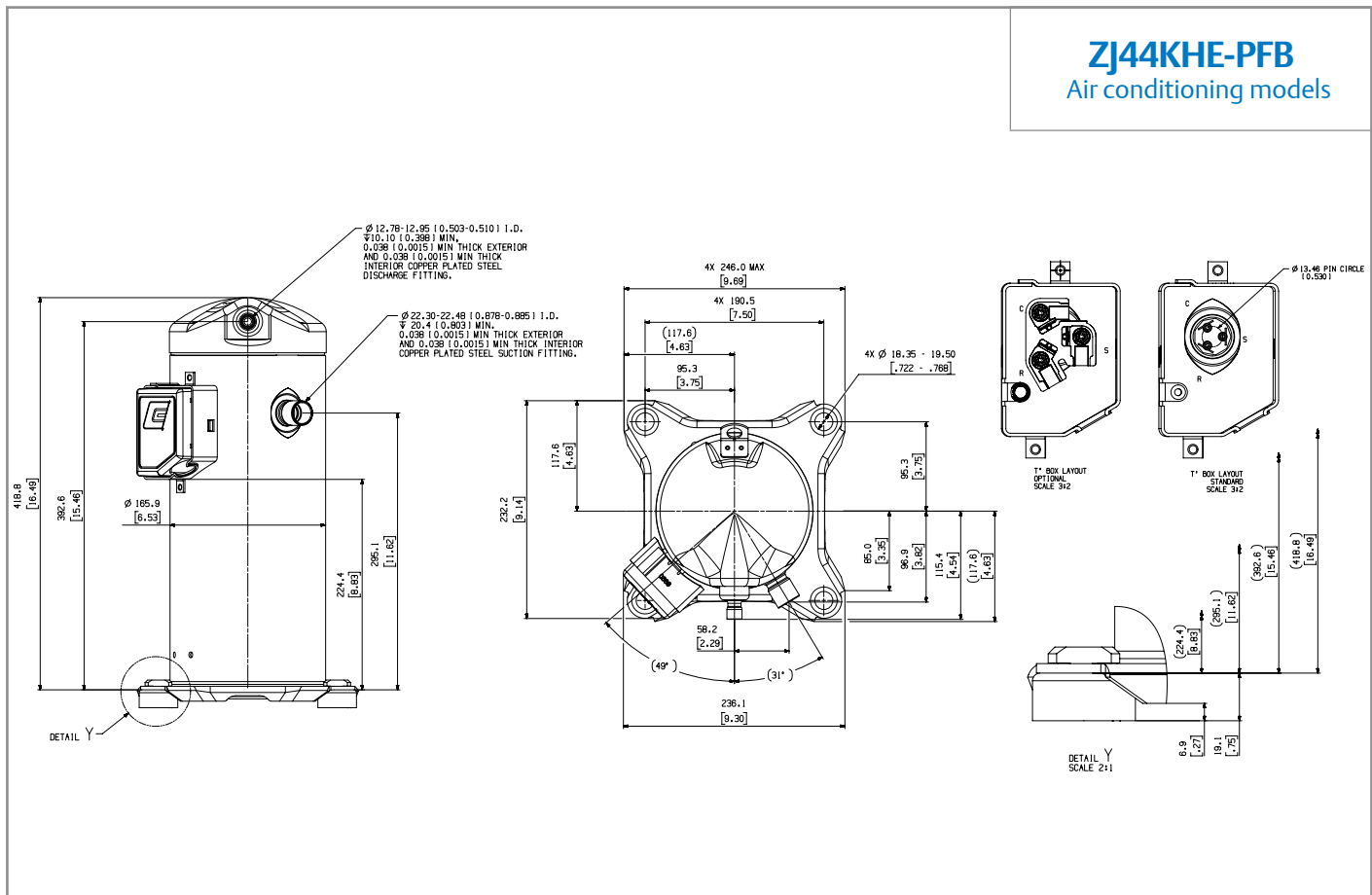
- (1) Nominal dimensions are shown. All tolerances are  $\pm 1.50$  [0.060] unless otherwise specified.
- (2) Due to the accumulated assembly tolerances, the top of the compressor, terminal box, suction and discharge fitting vary from the mounting feet by  $\pm 3.0$  [0.12]
- (3) Terminal box option is shown.
- (4) Stub tube fittings are shown.
- (5) Linear measurements in [ ] are inch conversions. Third Angle Projection

# Mechanical dimensions

## ZJ17KHE-PFB Air conditioning models

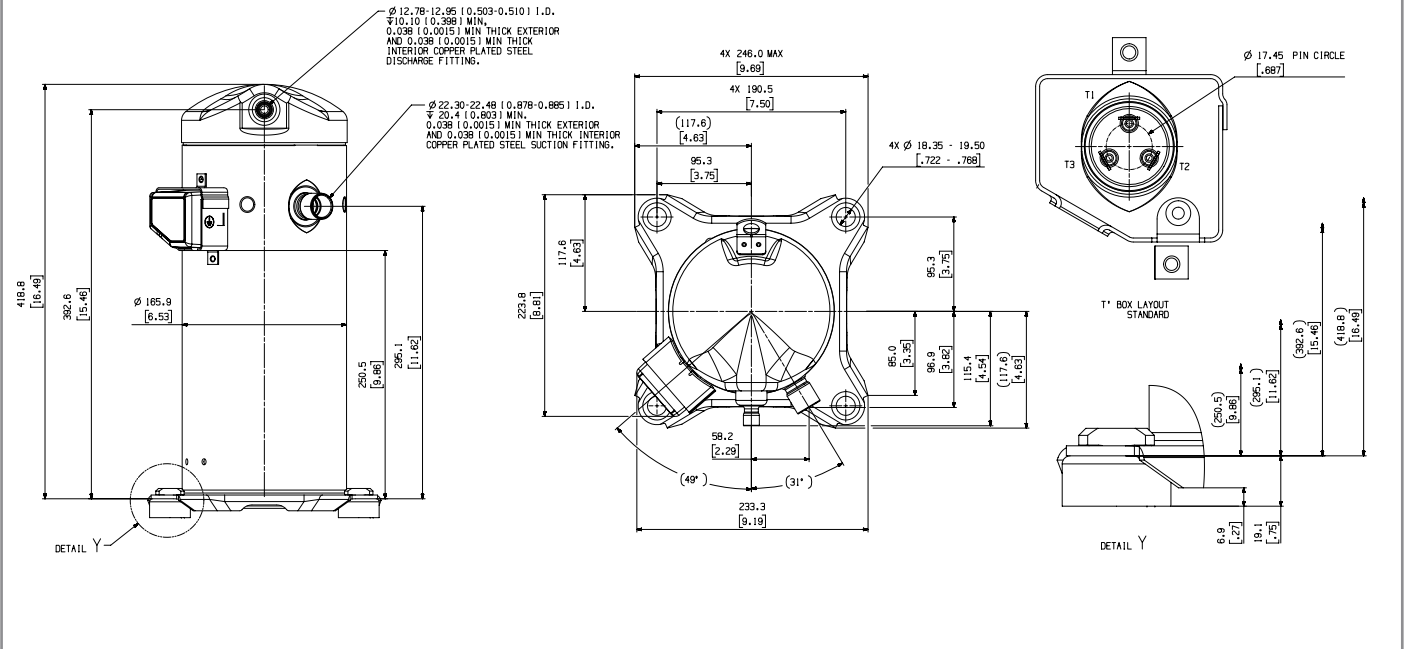


## ZJ44KHE-PFB Air conditioning models

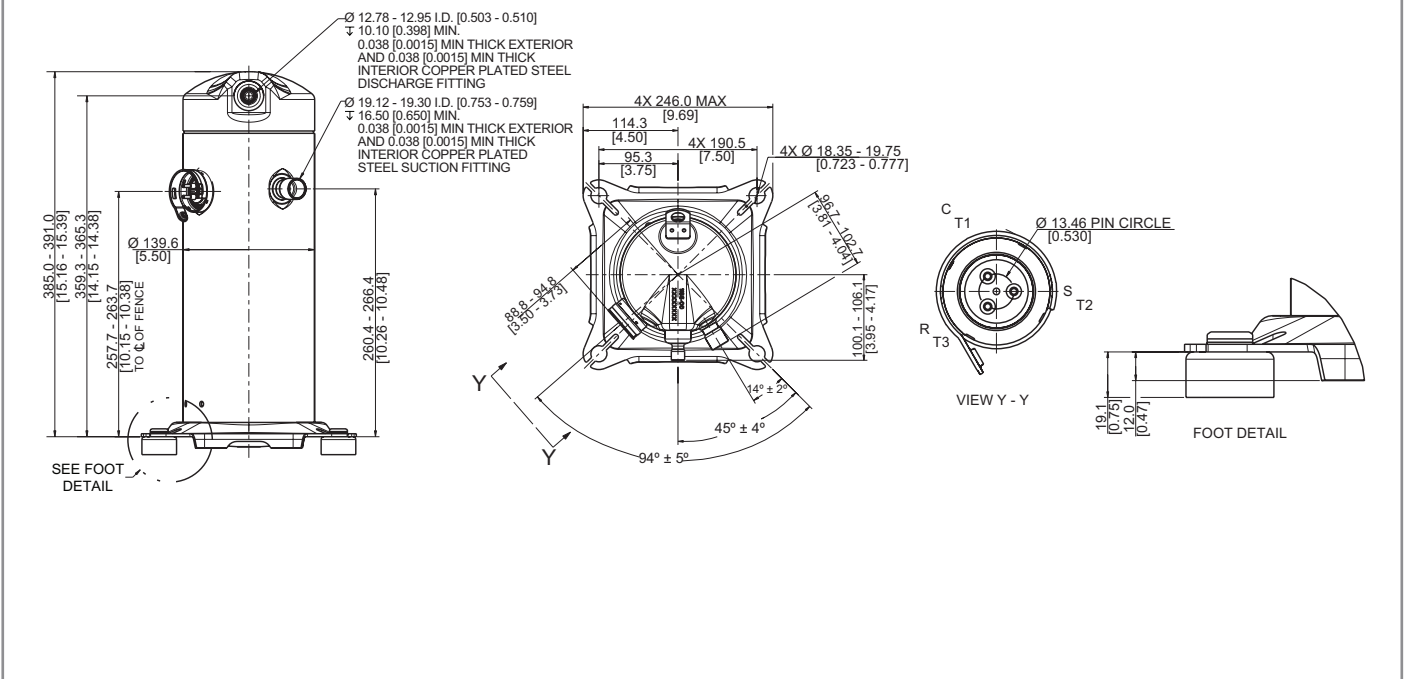


# Mechanical dimensions

## ZJ44KHE-TF7 Air conditioning models



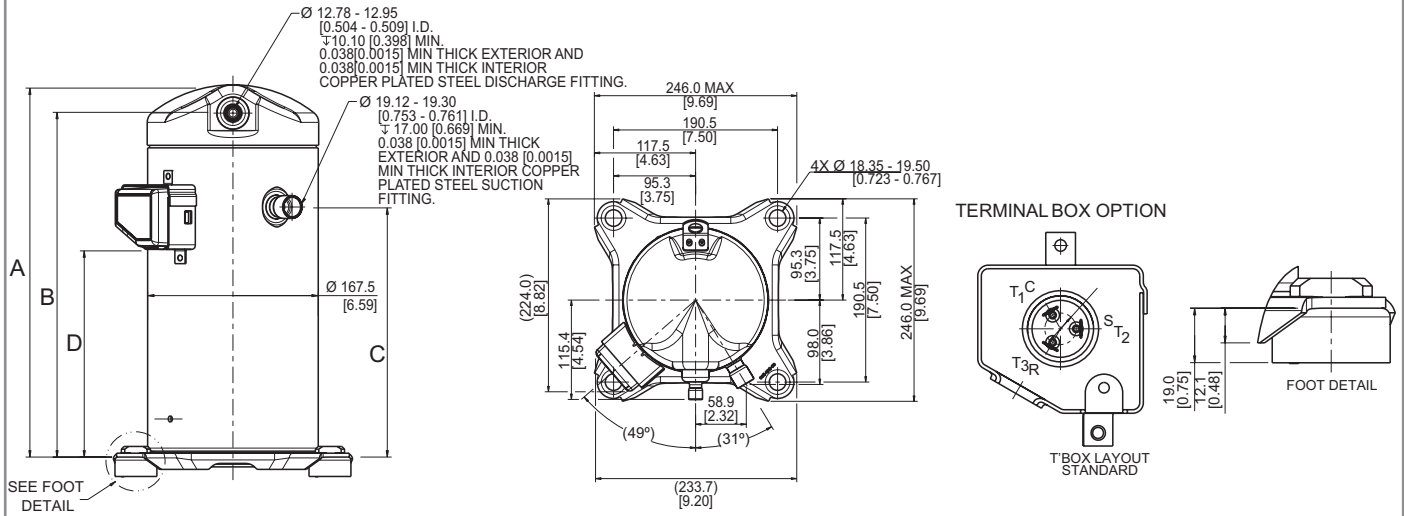
## ZP14K5/S to ZP31K5/S Air conditioning models





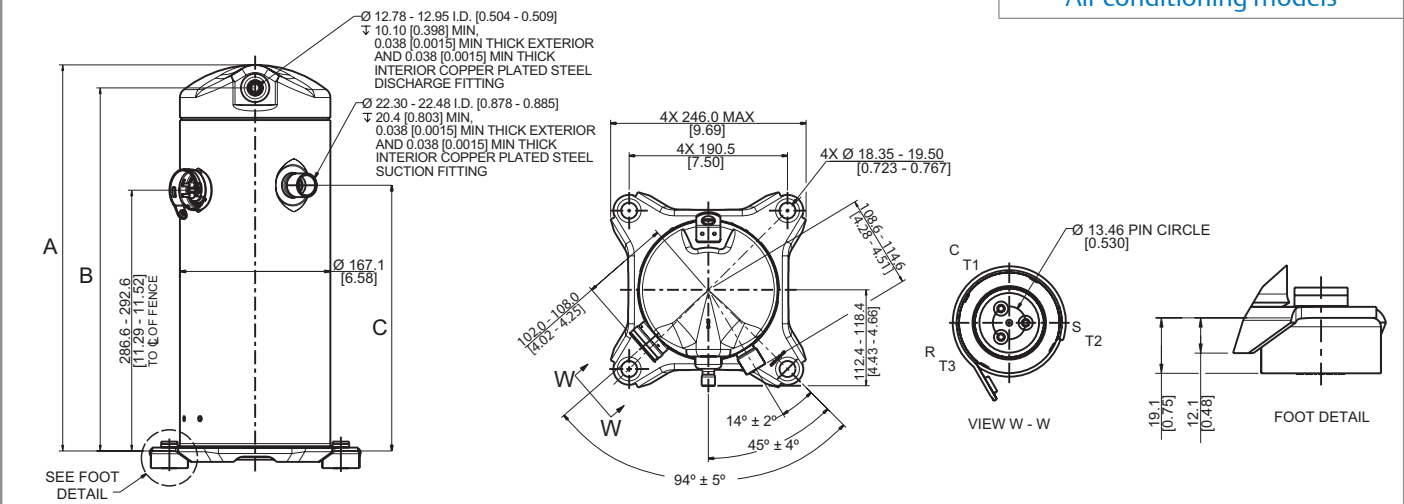
# Mechanical dimensions

## ZP20K3 to ZP44K3 Air conditioning models



Model number	Frame size	A	B	C	D
ZP20K3	167.5 [6.59]	383.8 [15.11]	358.0 [14.09]	264.2 [10.40]	222.0 [8.74]
ZP26K3		362.2 [14.26]	338.4 [13.32]	244.6 [9.63]	202.4 [7.97]
ZP32K3		383.8 [15.11]	358.0 [14.09]	264.2 [10.40]	222.0 [8.74]
ZP36K3					
ZP41K3		397.5 [15.65]	371.5 [14.62]	277.9 [10.94]	236.8 [9.32]
ZP44K3					

## ZP34K5/S to ZP61K5 Air conditioning models



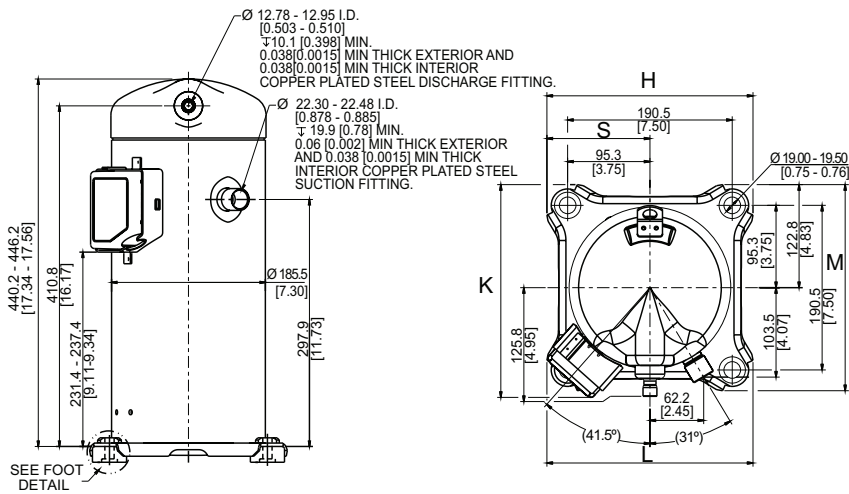
Model number	Frame size	A	B	C
ZP34K5/S to ZP51K5/S	167.1 [6.58]	415.2 - 421.2 [16.35 - 16.58]	389.6 - 395.6 [15.34 - 15.57]	286.6 - 292.6 [11.29 - 11.51]
ZP57K5, ZP61K5		426.5 - 432.5 [16.80 - 17.02]	400.3 - 406.3 [15.76 - 15.99]	292.1 - 298.1 [11.50 - 11.73]

### Notes:

- (1) Nominal dimensions are shown. All tolerances are  $\pm 1.50$  [0.060] unless otherwise specified.
- (2) Due to the accumulated assembly tolerances, the top of the compressor, terminal box, suction and discharge fitting vary from the mounting feet by  $\pm 3.0$  [0.12]
- (3) Terminal box option is shown.
- (4) Stub tube fittings are shown.
- (5) Linear measurements in [ ] are inch conversions. Third Angle Projection

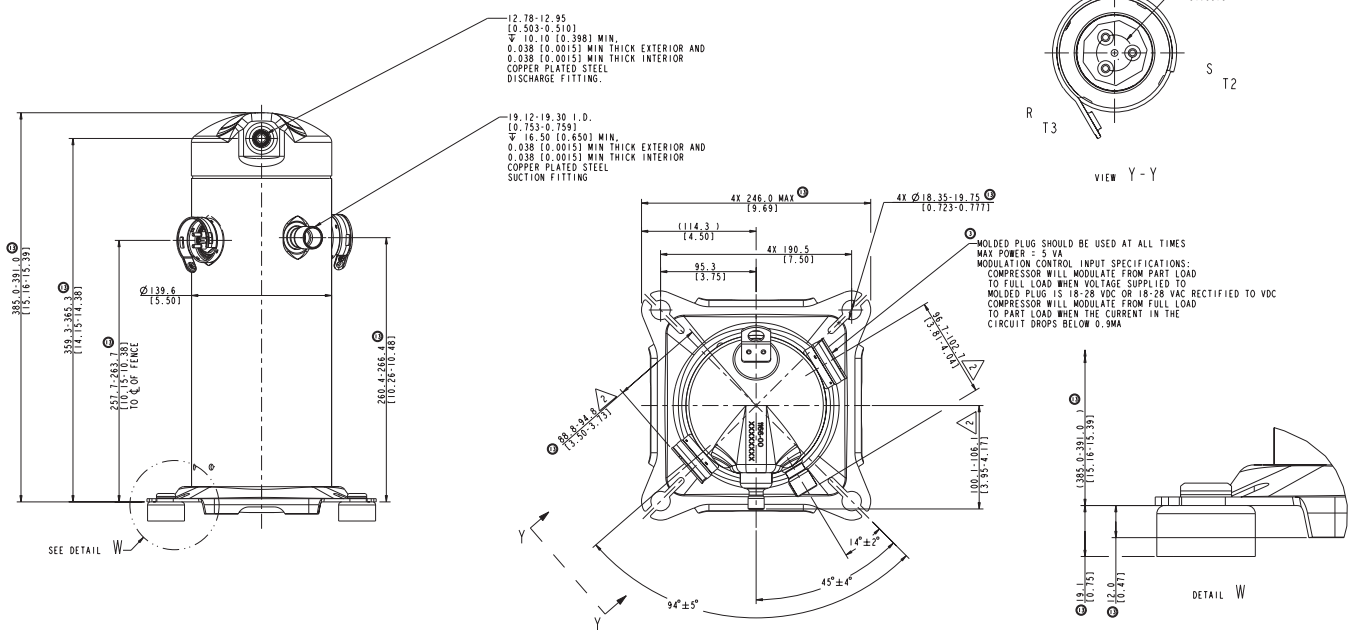
# Mechanical dimensions

## \* ZP50K3 to ZP91KC Air conditioning models



Model number	Frame size	H	K	L	M	S	X	Y
ZP50-83	185.5 [7.30]	245.6 [9.69]	249.8 [9.83]	249.8 [9.83]	245.6 [9.69]	122.8 [4.83]	19.0 [0.75]	12.7 [0.50]
ZP91		246.0 [9.69]	248.1 [9.77]	239.0 [9.41]	246.0 [9.69]	123.0 [4.84]	19.1 [0.75]	11.8 [0.46]

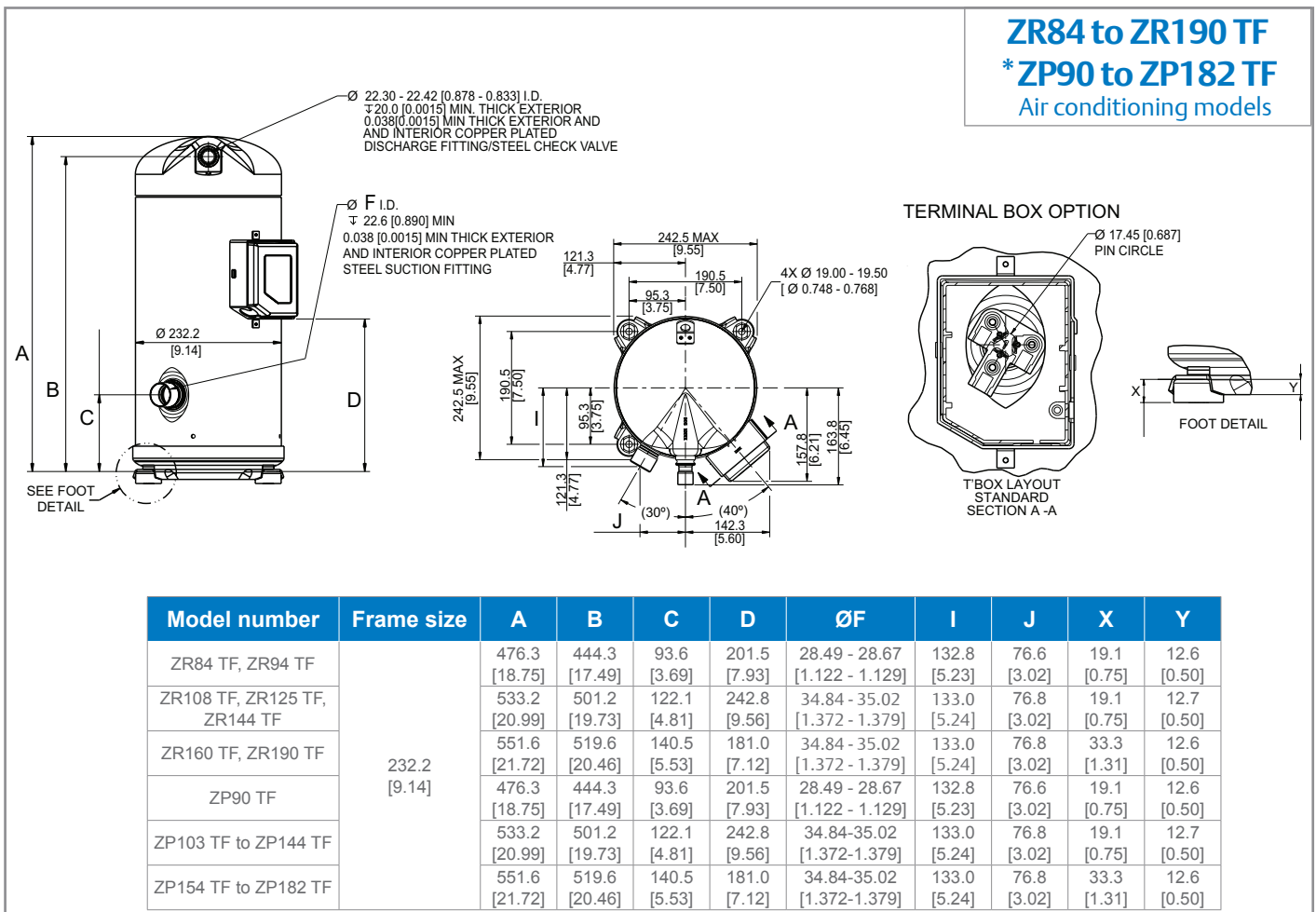
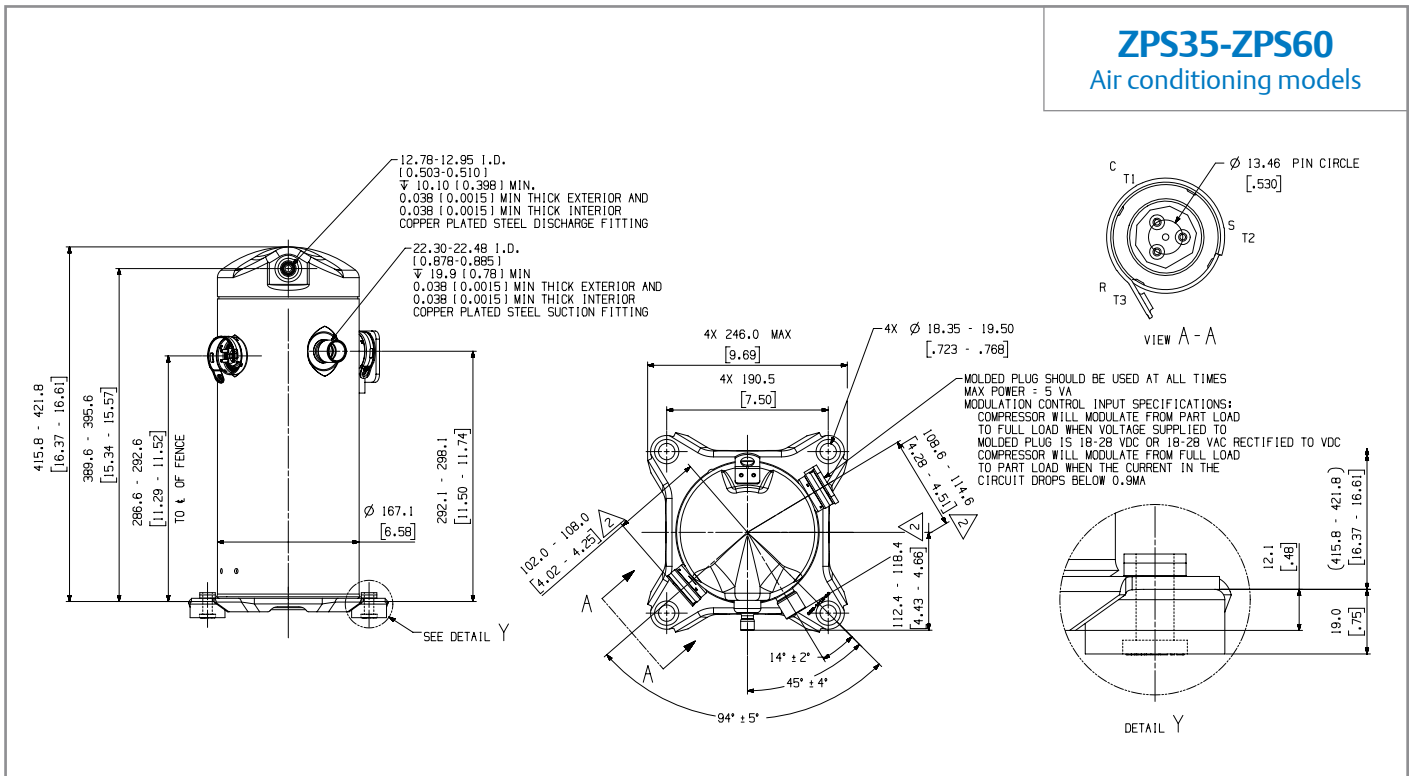
## ZPS20-ZPS30 Air conditioning models



### Notes:

- (1) Nominal dimensions are shown. All tolerances are  $\pm 1.50$  [0.060] unless otherwise specified.
  - (2) Due to the accumulated assembly tolerances, the top of the compressor, terminal box, suction and discharge fitting vary from the mounting feet by  $\pm 3.0$  [0.12]
  - (3) Terminal box option is shown.
  - (4) Stub tube fittings are shown.
  - (5) Linear measurements in [ ] are inch conversions. Third Angle Projection
- \* This range does not include ZP90KC

# Mechanical dimensions

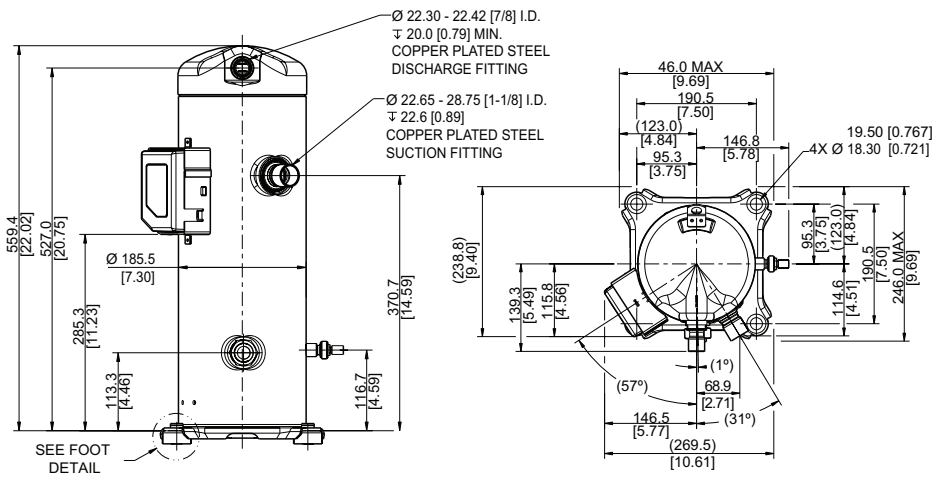


**Notes:**

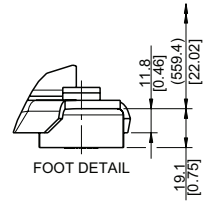
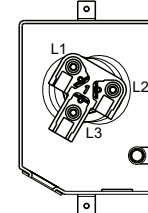
- (1) Nominal dimensions are shown. All tolerances are  $\pm 1.50$  [0.060] unless otherwise specified.
  - (2) Due to the accumulated assembly tolerances, the top of the compressor, terminal box, suction and discharge fitting vary from the mounting feet by  $\pm 3.0$  [0.12]
  - (3) Terminal box option is shown.
  - (4) Stub tube fittings are shown.
  - (5) Linear measurements in [ ] are inch conversions. Third Angle Projection
- \* This range does not include ZP104 and ZP122

# Mechanical dimensions

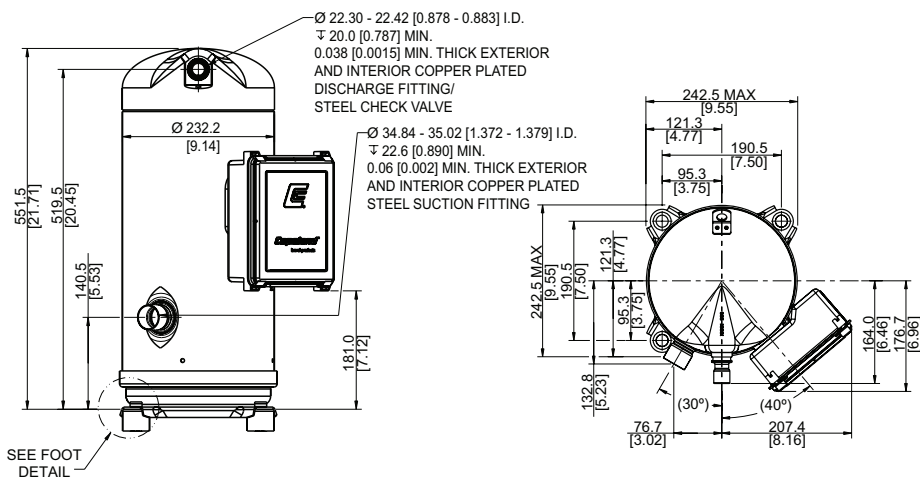
## ZP104, ZP122 Air conditioning models



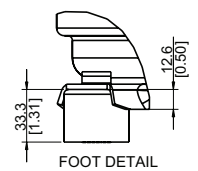
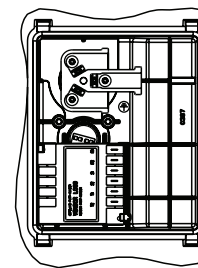
### TERMINAL BOX OPTION



## ZR160 TW, ZR190 TW ZP154 TW, ZP182 TW Air conditioning models



### SOLID STATE MODULE OPTION

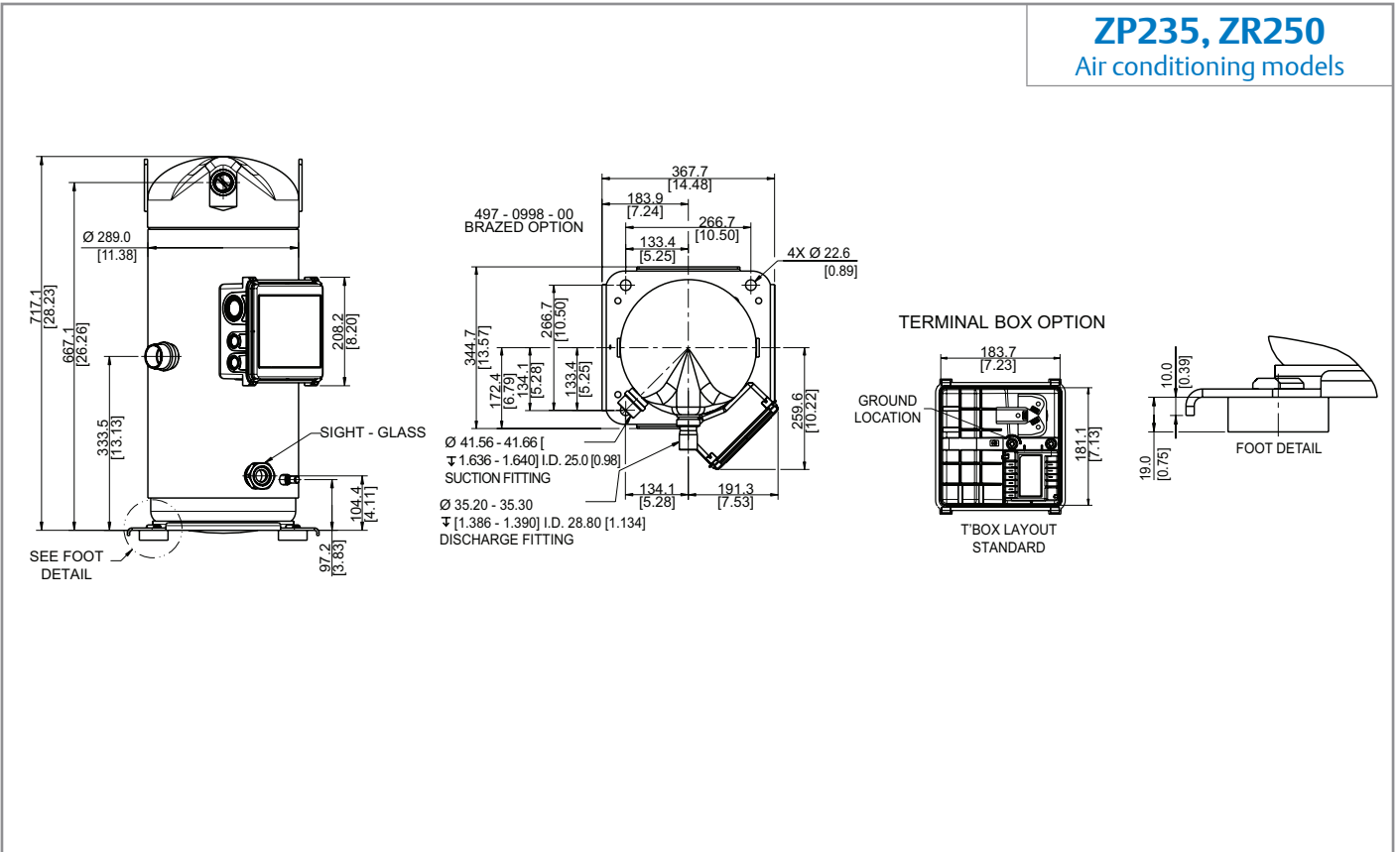


### Notes:

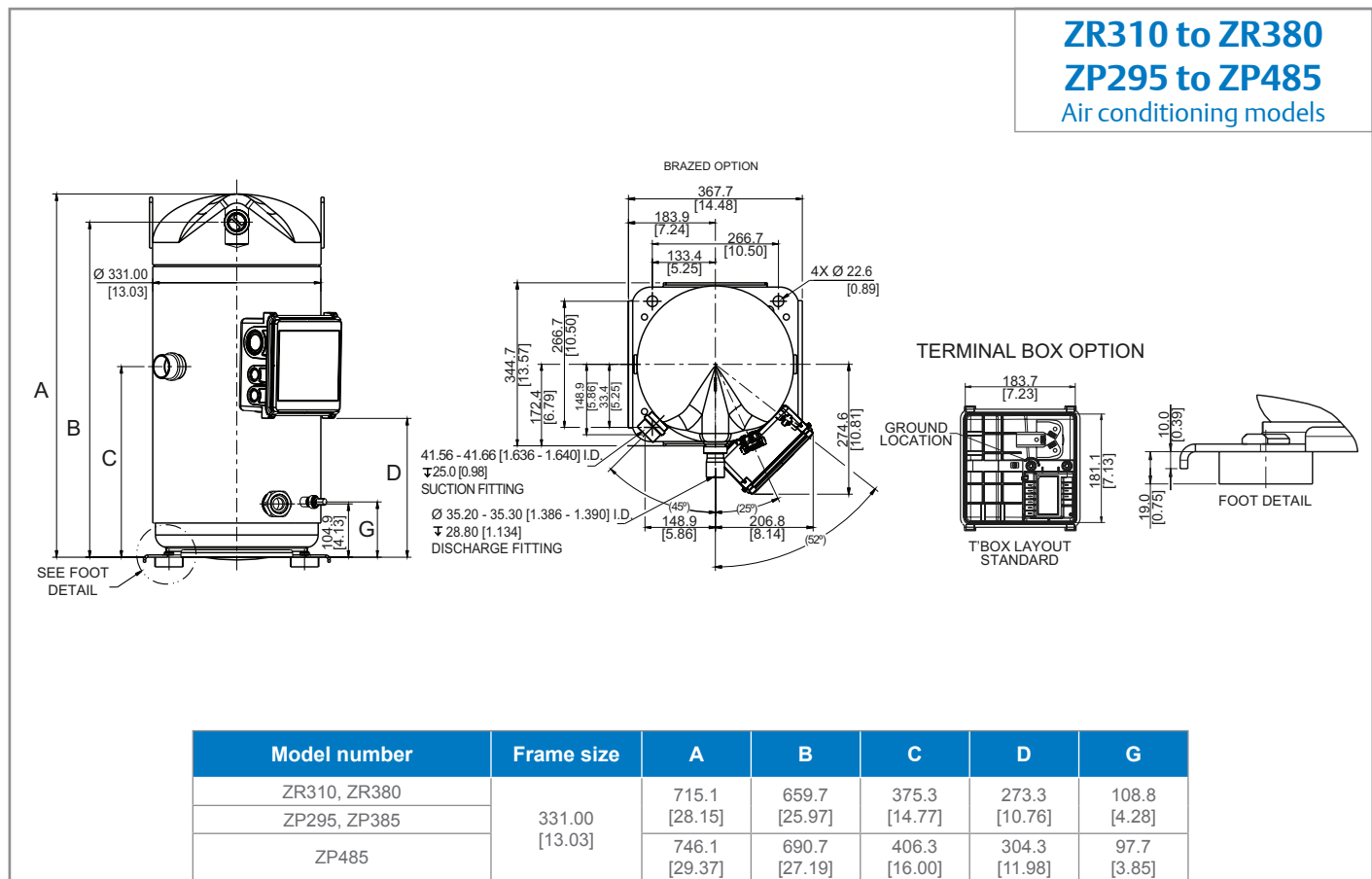
- (1) Nominal dimensions are shown. All tolerances are  $\pm 1.50$  [0.060] unless otherwise specified.
- (2) Due to the accumulated assembly tolerances, the top of the compressor, terminal box, suction and discharge fitting vary from the mounting feet by  $\pm 3.0$  [0.12]
- (3) Terminal box option is shown.
- (4) Stub tube fittings are shown.
- (5) Linear measurements in [ ] are inch conversions. Third Angle Projection

# Mechanical dimensions

## ZP235, ZR250 Air conditioning models



## ZR310 to ZR380 ZP295 to ZP485 Air conditioning models



Model number	Frame size	A	B	C	D	G
ZR310, ZR380	331.00 [13.03]	715.1	659.7	375.3	273.3	108.8
ZP295, ZP385		[28.15]	[25.97]	[14.77]	[10.76]	[4.28]
ZP485		746.1	690.7	406.3	304.3	97.7
		[29.37]	[27.19]	[16.00]	[11.98]	[3.85]

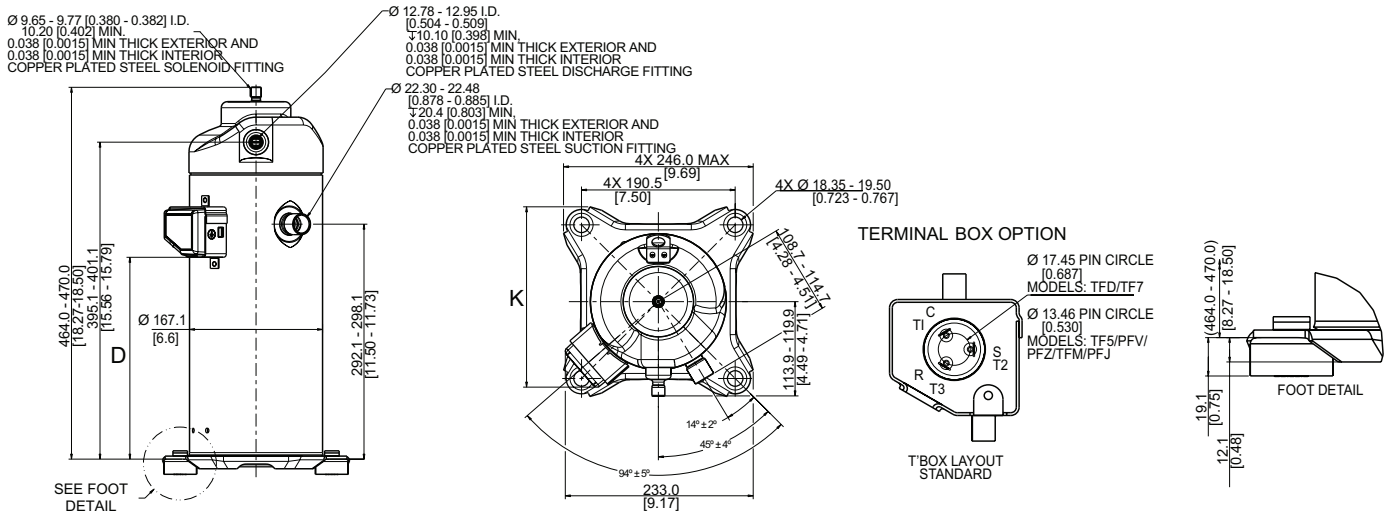
**Notes:**

- (1) Nominal dimensions are shown. All tolerances are  $\pm 1.50$  [0.060] unless otherwise specified.
- (2) Due to the accumulated assembly tolerances, the top of the compressor, terminal box, suction and discharge fitting vary from the mounting feet by  $\pm 3.0$  [0.12]
- (3) Terminal box option is shown.
- (4) Stub tube fittings are shown.
- (5) Linear measurements in [ ] are inch conversions. Third Angle Projection



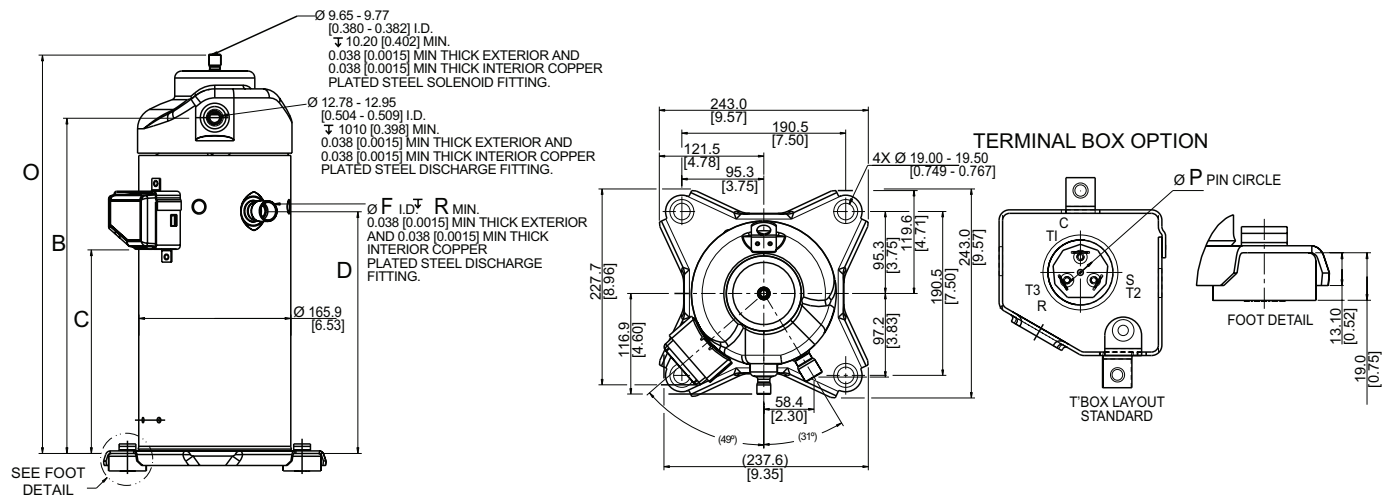
# Mechanical dimensions

## ZPD34 to ZPD54 Air conditioning models



Model number	Frame size	D	K
ZPD34	167.1 [6.6]	250.5 - 256.5 [9.87-10.09]	223.5 [8.80]
ZPD42			
ZPD51			
ZPD54		221.4 - 227.4 [8.72 - 8.95]	231.8 [9.12]

## ZRD36 to ZRD48 Air conditioning models

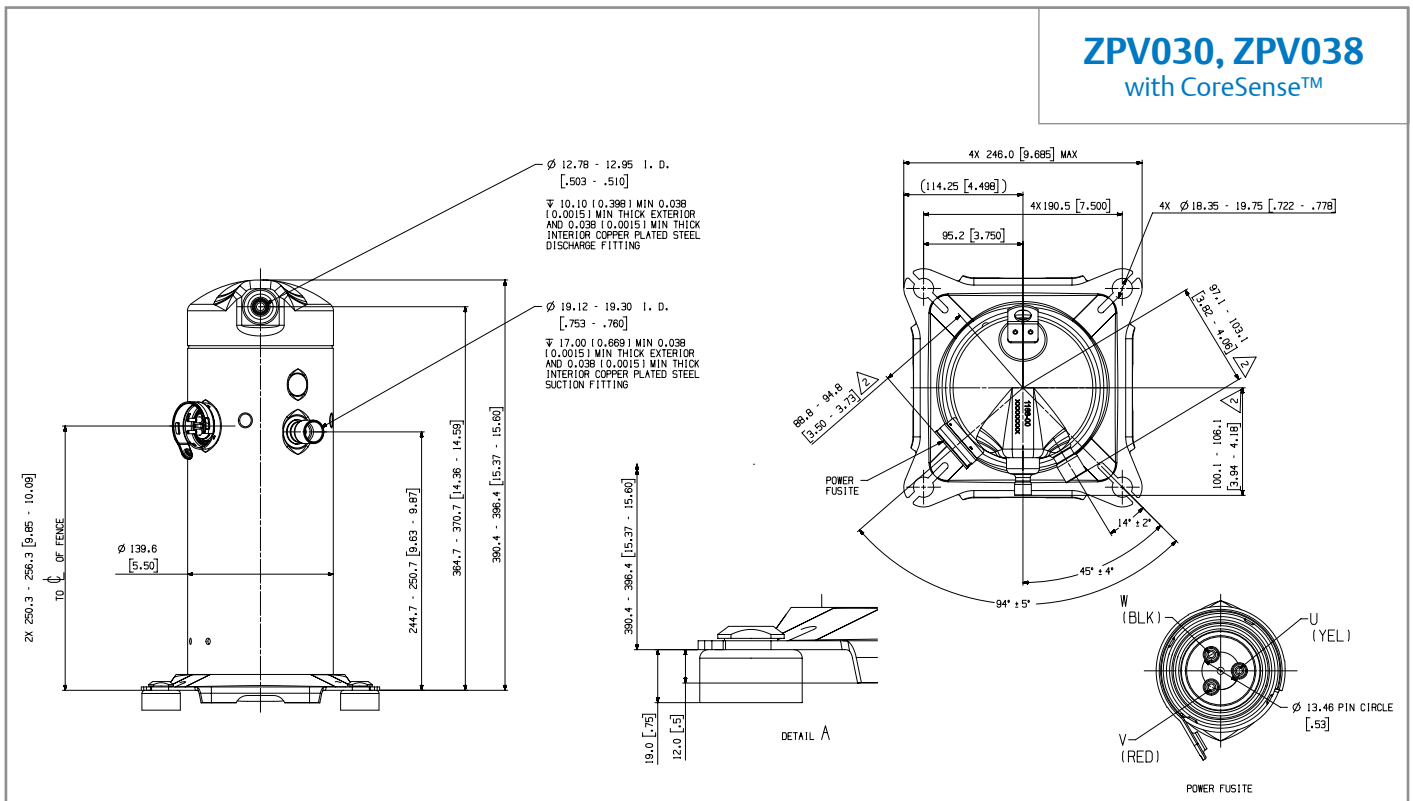
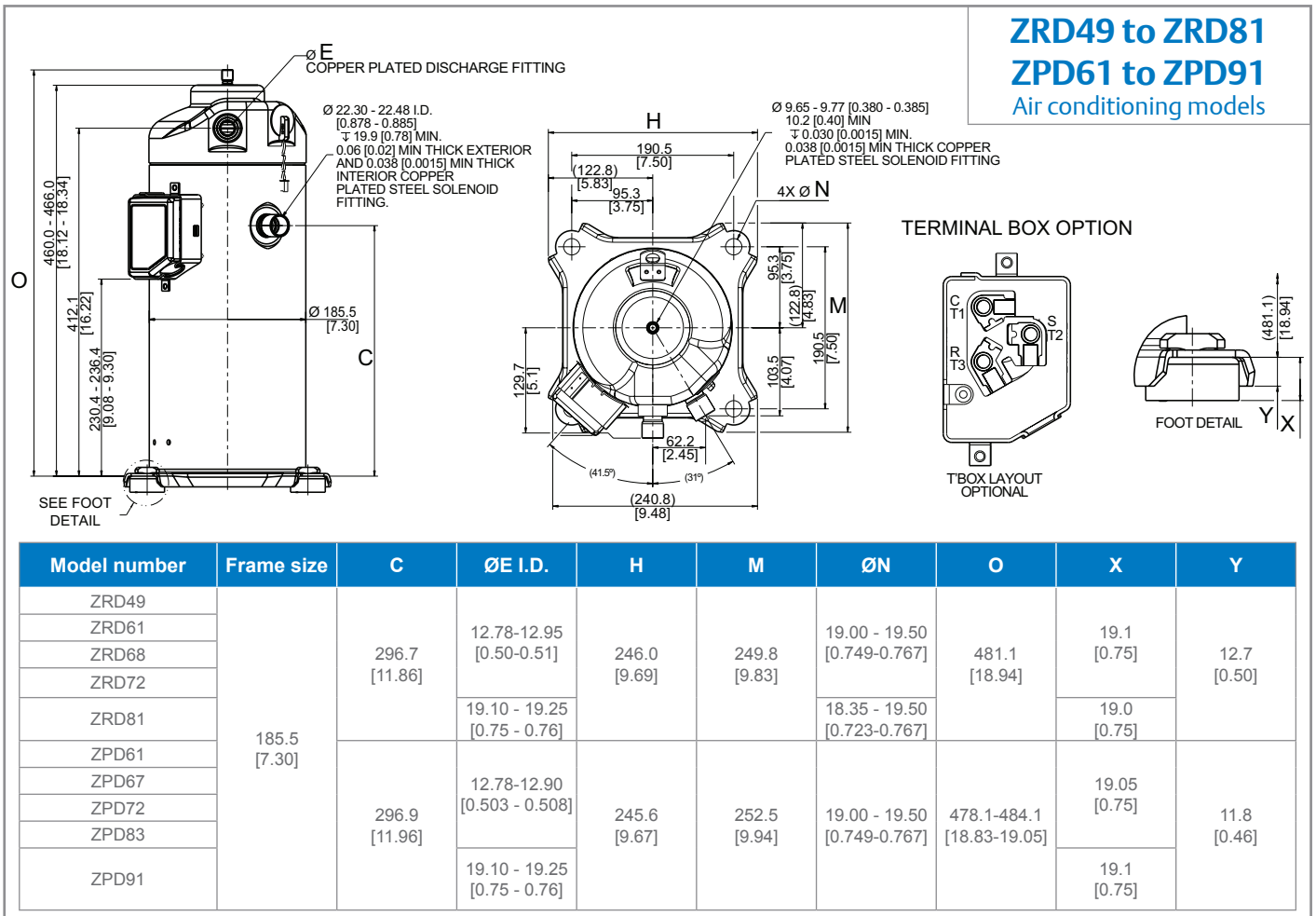


Model number	Frame size	O	B	C	D	$\varnothing F$	$\varnothing P$	R
ZRD36	165.9 [6.53]	434.6 [17.11]	365.7 [14.40]	263.7 [10.38]	222.1 [8.74]	19.12 - 19.30 [0.753 - 0.761]	13.46 - 17.45 [0.530 - 0.687]	17.00 [0.669]
ZRD42		449.0 [17.68]	380.1 [14.96]	277.1 [10.91]	235.1 [9.25]		13.36 [0.530]	
ZRD48		465.4 [18.32]	396.5 [15.61]	293.5 [11.56]	252.0 [9.92]	22.30 - 22.48 [0.878 - 0.885]	22.30 - 22.48 [0.878 - 0.885]	20.40 [0.803]

### Notes:

- (1) Nominal dimensions are shown. All tolerances are  $\pm 1.50$  [0.060] unless otherwise specified.
- (2) Due to the accumulated assembly tolerances, the top of the compressor, terminal box, suction and discharge fitting vary from the mounting feet by  $\pm 3.0$  [0.12]
- (3) Terminal box option is shown.
- (4) Stub tube fittings are shown.
- (5) Linear measurements in [ ] are inch conversions. Third Angle Projection

# Mechanical dimensions

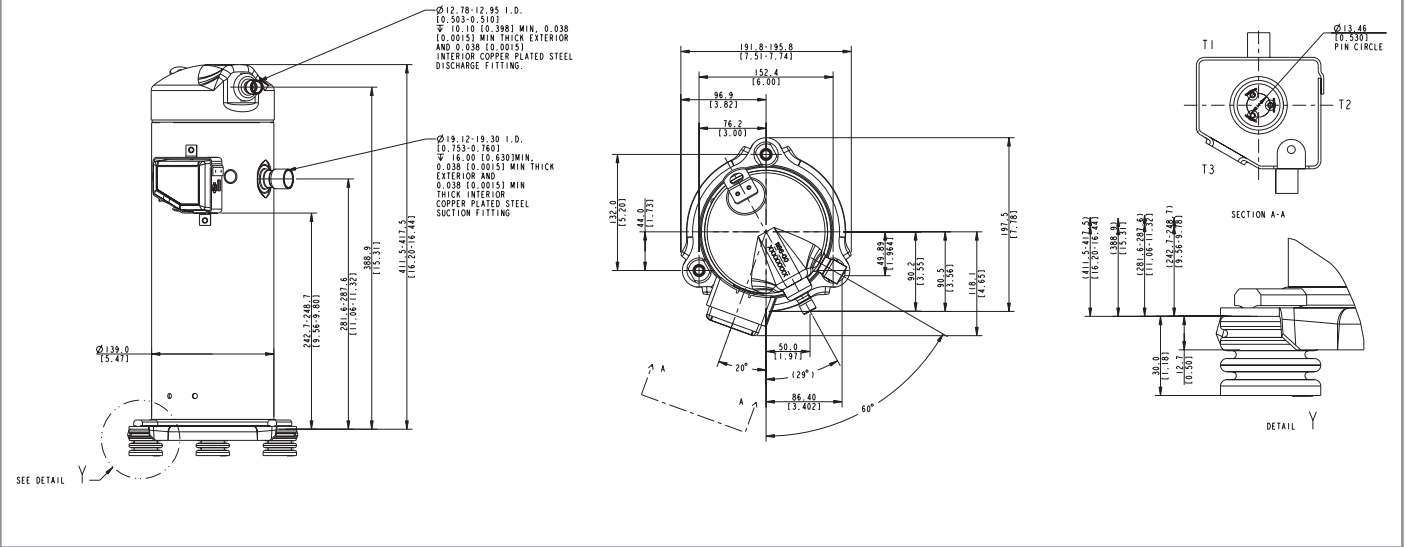


**Notes:**

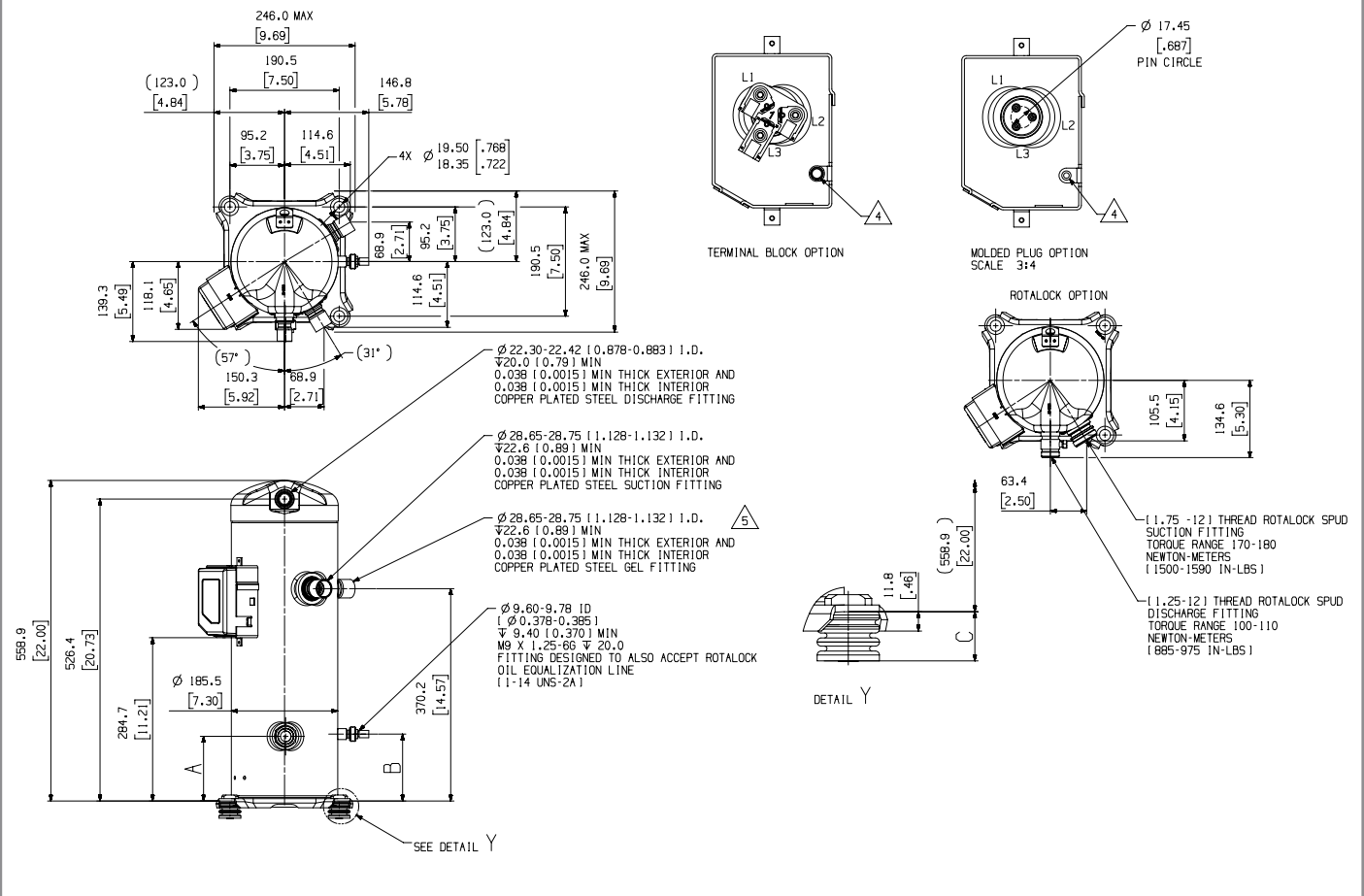
- (1) Nominal dimensions are shown. All tolerances are  $\pm 1.50$  [0.060] unless otherwise specified.
- (2) Due to the accumulated assembly tolerances, the top of the compressor, terminal box, suction and discharge fitting vary from the mounting feet by  $\pm 3.0$  [0.12]
- (3) Terminal box option is shown.
- (4) Stub tube fittings are shown.
- (5) Linear measurements in [ ] are inch conversions. Third Angle Projection

# Mechanical dimensions

## ZPV030, ZPV038 without CoreSense™



## ZPV063, ZPV066, ZPV096 Air conditioning models



- Notes:**
- (1) Nominal dimensions are shown. All tolerances are  $\pm 1.50$  [0.060] unless otherwise specified.
  - (2) Due to the accumulated assembly tolerances, the top of the compressor, terminal box, suction and discharge fitting vary from the mounting feet by  $\pm 3.0$  [0.12]
  - (3) Terminal box option is shown.
  - (4) Stub tube fittings are shown.
  - (5) Linear measurements in [ ] are inch conversions. Third Angle Projection

# Bill of material

BOM #	Model	Stub	Rotalock	Sight glass	Oil equalization	Schrader valve	MTG parts <sup>1</sup>	Grounding	Internal protector	24V module	120/240V module	Tandem-ready
600	ZR16 - ZR18	✓					✓	✓	✓			
622		✓					✓	✓	✓			
582	ZR28 - ZR30 KM	✓					✓	✓	✓			
583		✓					✓	✓	✓			
230	ZR22 - ZR47	✓					✓		✓			
511		✓					✓		✓			
512		✓							✓			
522		✓					✓	✓	✓			
590		✓					✓		✓			
600		✓					✓	✓	✓			
622		✓					✓	✓	✓			
230		✓						✓		✓		
250	ZR48 - ZR81	✓					✓		✓			
422		✓			✓		✓	✓	✓			✓
511		✓						✓		✓		
522/52E		✓					✓	✓	✓			
592		✓					✓	✓	✓			
593		✓					✓	✓	✓			
599		✓					✓		✓			
496		ZP14 - ZP61 KSE/K5E	✓			✓		✓	✓	✓		
499	✓				✓		✓		✓			✓
522	✓						✓	✓	✓			
593	✓						✓	✓	✓			
622	✓						✓	✓	✓			
522/52E	ZP23, ZP76 K3E/KCE	✓					✓	✓	✓			
593		✓					✓	✓	✓			
594		✓					✓		✓			
422/42E	ZR84 - ZR144 ZP83 - ZP137 <sup>2</sup>	✓			✓		✓	✓	✓			✓
425/42H		✓		✓	✓	✓	✓	✓	✓			✓
522/52E		✓					✓	✓	✓			
523/52F			✓				✓	✓	✓			
550/55A		✓		✓			✓	✓	✓			
551			✓	✓			✓	✓	✓			
423	ZP104, ZP122	✓			✓		✓	✓	✓			✓
522		✓					✓	✓	✓			

BOM #	Model	Stub	Rotalock	Sight glass	Oil equalization	Schrader valve	MTG parts <sup>1</sup>	Grounding	Internal protector	24V module	120/240V module	Tandem-ready
422	ZR160 - ZR190 TF ZP154 - ZP182 TF	✓			✓		✓	✓	✓			✓
425		✓		✓	✓	✓	✓	✓	✓			✓
522		✓					✓	✓	✓			
523			✓				✓	✓	✓			
550		✓		✓		✓	✓	✓	✓			
551			✓	✓			✓	✓	✓			
425	ZR160 - ZR190 TW ZP154 - ZP182 TW	✓		✓	✓	✓	✓			✓		✓
522		✓					✓				✓	
523			✓				✓				✓	
550		✓		✓		✓	✓				✓	
551			✓	✓			✓	✓				✓
522	ZR250 - ZR380 ZP235 - ZP485 ZP236 - ZP296	✓					✓				✓	
523			✓				✓				✓	
582	ZJ17, 22, 25, 27	✓					✓	✓	✓			
502 <sup>3</sup>	ZJ36, 39, 42, 44, 49, 51	✓					✓ <sup>3</sup>	✓	✓			
52E	ZJ34, 36, 39, 42, 44, 49, 51, 54	✓					✓	✓	✓			

**Notes:**

1. BOM 4XX has hard mounting parts and BOM 5XX has soft mounting parts
2. This range does not include ZP104 and ZP122
3. Same as 522 but with Tblock screw connection type
4. 6XX is molded plug

## Variable Speed bill of material

### Commercial Variable Speed compressor

Bill of material	Terminal connections		Tubing connections		Manufacturing parts	Grnd. screw	Tandem ready (OEL & GEL)	Oil additive	Notes
	T-block	Molded plug	Stub tubes	Rotalock tubes					
412	✓		✓		✓	✓	✓	✓	OEM use, tandem ready, w/o sight glass
415	✓		✓		✓	✓	✓	✓	OEM use, tandem ready, with sight glass
522	✓		✓		✓	✓		✓	Single, no sight glass/oil fitting
550	✓		✓		✓	✓		✓	Single, with sight glass/oil fitting
551	✓			✓	✓	✓		✓	Single, with sight glass/oil fitting

### Residential Variable Speed compressor

Bill of material	Terminal connections		Tubing connections		Manufacturing parts	Grnd. screw	Tandem ready (OEL & GEL)
	Molded plug		Stub tubes	Rotalock tubes			
498	✓		✓				✓
499	✓		✓		✓		✓
622	✓		✓		✓	✓	



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