

Copeland™ ZPD & ZRD Digital Scroll Compressor Ranges for R513A, R410A and R407C

Stepless capacity modulation in air conditioning applications: flexible solution for R513A, R407C and R410A.

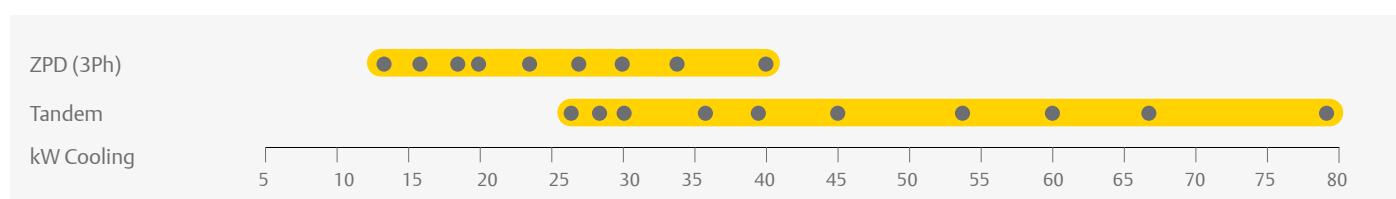
In many cooling and heating systems, the load and the operating conditions vary over a wide range thus requiring the use of capacity modulation. Digital scroll assures stepless modulation down to 10% of the nominal capacity, enabling precise temperature control, superior comfort and energy saving.

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

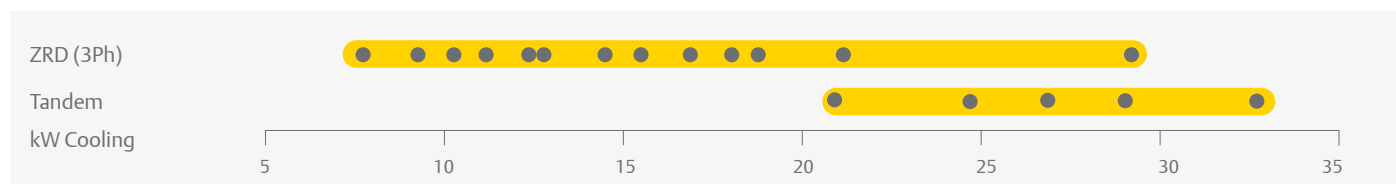
ZPD & ZRD scroll digital compressor



ZPD Digital Scroll Compressor Line-up R410A

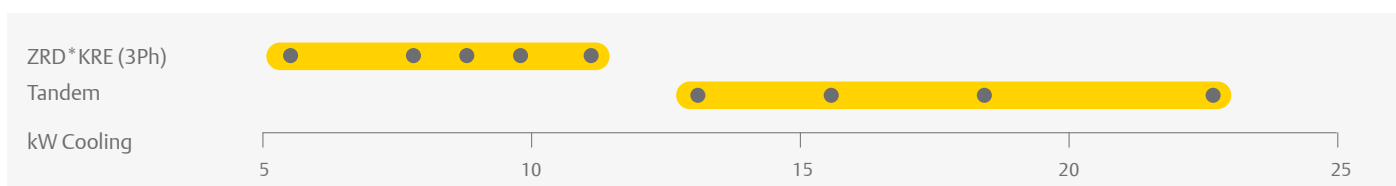


ZRD Digital Scroll Compressor Line-up R407C



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

ZRD* KRE Digital Scroll Compressor Line-up R513A



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

Features and Benefits

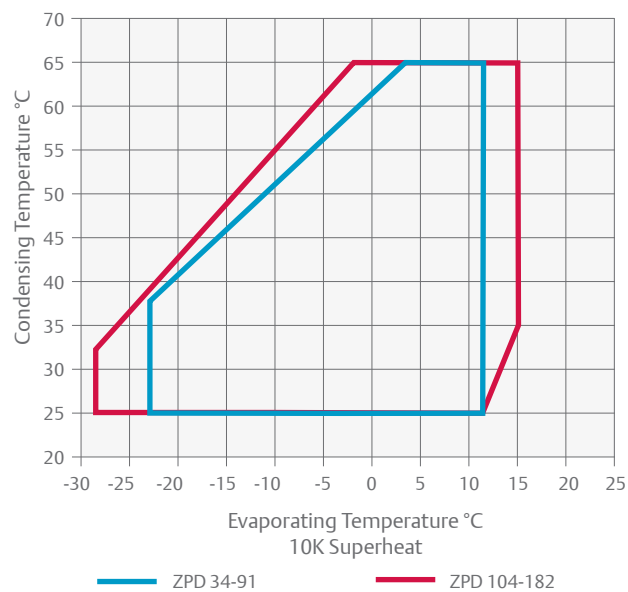
- Wide modulation range from 10% to 100% for immediate load adjustment, close temperature comfort, optimal comfort
- No complex electronics, a quasi-drop-in solution for fast time to market, no EMI/EMC problems, easy installation and maintenance
- No impact on system mechanical balance: no vibration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

Maximum Allowable Pressure (PS)

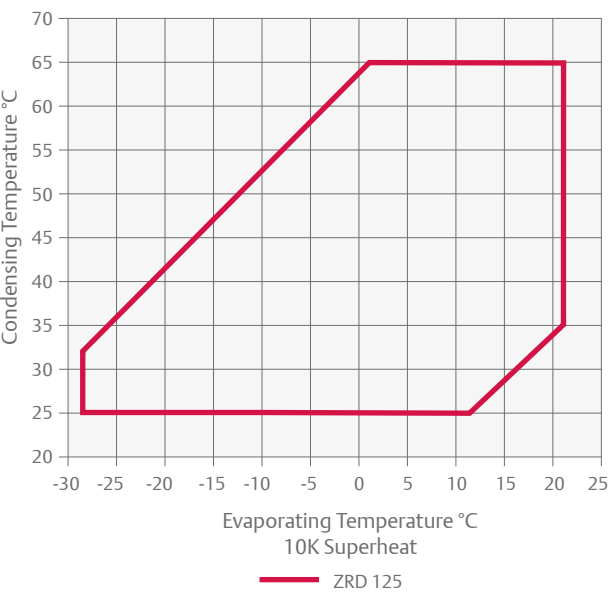
- Digital ZRD42 to ZRD81:
Low Side PS 20 bar(g) / High Side PS 29.5 bar(g)
- Digital ZRD94 to ZRD125:
Low Side PS 20 bar(g) / High Side PS 32 bar(g)
- Digital ZPD42 to ZPD91:
Low Side PS 28 bar(g) / High Side PS 43 bar(g)
- Digital ZPD103 to ZPD182:
Low Side PS 29.5 bar(g) / High Side PS 45 bar(g)

Operating Envelope

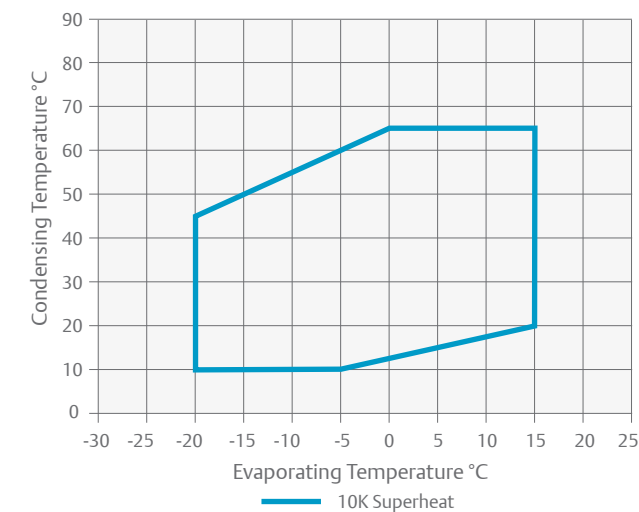
ZPD - R410A



ZRD - R407C



ZRD - R513A



Technical Overview - ZPD R410A Models

Models	Nominal hp	Capacity (kW)	EER	Displacement (m ³ /h)	Stub Suction (inch)	Stub Discharge (inch)	Oil Quantity (l)	Length/Width/Height (mm)	Net Weight (kg)	Motor Version/ Code	Maximum Operating Current (A)	Locked Rotor Current (A)	Sound Pressure @1 m - dB(A) **
										3 Ph *	3 Ph *	3 Ph *	
ZPD61KCE	5.0	13.2	3.0	10.1	7/8	1/2	1.9	241/246/484	41	TFD	12	64	63
ZPD72KCE	5.0	15.3	2.9	11.6	7/8	1/2	1.9	241/246/484	40	TFD	15	75	67
ZPD83KCE	6.5	17.7	3.0	13.5	7/8	1/2	1.8	246/253/481	40	TFD	16	101	64
ZPD91KCE	8.0	19.2	3.1	14.7	7/8	3/4	1.8	246/253/481	40	TFD	16	101	69
ZPD104KCE	9.0	22.7	3.1	16.7	1 1/8	7/8	2.5	270/262/605	61	TFD	18	128	63
ZPD122KCE	10.0	26.3	3.1	19.7	1 1/8	7/8	2.5	270/262/605	62	TFD	21	139	63
ZPD137KCE	12.0	29.4	3.1	22.1	1 3/8	7/8	3.3	293/285/533	62	TFD	25	118	63
ZPD154KCE	13.0	33.1	3.1	24.9	1 3/8	7/8	3.3	314/285/552	65	TFD	27	140	66
ZPD182KCE	15.0	39.0	3.1	29.1	1 3/8	7/8	3.3	314/285/552	67	TFD	34	173	68

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

* 3 Ph: 380-420V/ 50Hz

** @ 1m: sound pressure level at 1m distance from the compressor, free field condition

Technical Overview - ZRD* KRE R407C, R134a and R513A Models

Models	Nominal hp	R513A/R134a Capacity (kW)	R407C Capacity (kW)	EER	Displacement (m ³ /h)	Stub Suction (inch)	Stub Discharge (inch)	Oil Quantity (l)	Length/Width/Height (mm)	Net Weight (kg)	Motor Version/ Code		Maximum Operating Current (A)		Locked Rotor Current (A)		Sound Pressure @1 m *** (dBA)
											1 Ph *	3 Ph **	1 Ph *	3 Ph **	1 Ph *	3 Ph **	
ZRD36KRE	3.0	5.2	7.7	3.2	8.3	3/4	1/2	1.2	239/244/435	30	PFJ	TFD	17	7	97	40	57
ZRD48KRE	4.0	7.0	10.3	3.1	11.4	7/8	1/2	1.4	239/244/466	30		TFD		10		48	64
ZRD61KRE	5.0	8.9	12.4	3.2	14.4	7/8	1/2	1.9	246/257/481	38		TFD		11		64	65
ZRD72KRE	6.0	10.6	15.4	3.1	17.1	7/8	1/2	1.9	246/257/481	40		TFD		12		74	63
ZRD92KRE	8.0	13.4	18.8	3.1	21.4	7/8	3/4	1.9	246/257/481	43		TFD		16		102	64

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

* 1 Ph: 230V/ 50Hz

** 3 Ph: 380-420V/ 50Hz

*** @ 1m: sound pressure level at 1m distance from the compressor, free field condition

Preliminary data

Technical Overview - ZRD* KCE R407C Models

Models	Nominal hp	Capacity (kW)	EER	Displacement (m ³ /h)	Stub Suction (inch)	Stub Discharge (inch)	Oil Quantity (l)	Length/Width/Height (mm)	Net weight (kg)	Motor Version/ Code	Maximum Operating Current (A)	Locked Rotor Current (A)	Sound Pressure @1 m - dB(A) **
										3 Ph *	3 Ph *	3 Ph *	
ZRD125KCE	11.0	27.6	3.3	28.8	1 3/8	7/8	3.3	293/285/533	62	TFD	20	118	64

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

* 3 Ph: 380-420V/50Hz

** @1m: sound pressure level at 1m distance from the compressor, free field condition

Capacity Data

Condensing Temperature 50°C															
R410A	Cooling Capacity (kW)							R410A	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-15	-10	-5	0	+5	+10	+15	Model	-15	-10	-5	0	+5	+10	+15
ZPD61KCE		7.3	9.0	10.9	13.2	15.7		ZPD61KCE		4.2	4.3	4.4	4.4	4.5	
ZPD72KCE		8.6	10.5	12.7	15.2	18.1		ZPD72KCE		4.9	5.0	5.1	5.2	5.2	
ZPD83KCE		9.8	12.1	14.7	17.7	21.1		ZPD83KCE		5.9	6.0	6.0	6.0	6.0	
ZPD91KCE		10.6	13.2	16.0	19.2	22.8		ZPD91KCE		6.2	6.2	6.2	6.3	6.3	
ZPD104KCE		13.0	15.8	19.0	22.7	26.9		ZPD104KCE		7.0	7.0	7.1	7.2	7.3	
ZPD122KCE		15.1	18.3	22.0	26.3	31.2		ZPD122KCE		8.0	8.1	8.2	8.3	8.4	
ZPD137KCE		16.0	20.0	24.4	29.4	35.1		ZPD137KCE		9.6	9.5	9.4	9.4	9.3	
ZPD154KCE		18.7	23.0	27.7	33.1	39.2	46.3	ZPD154KCE		10.3	10.3	10.4	10.5	10.6	10.7
ZPD182KCE		23.2	27.9	33.1	39.0	45.8	53.7	ZPD182KCE		12.2	12.3	12.4	12.5	12.6	12.7

Conditions: Suction Superheat 10K / Subcooling 0K

Condensing Temperature 50°C															
R513A / R134a	Cooling Capacity (kW)							R513A / R134a	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-15	-10	-5	0	+5	+10	+15	Model	-15	-10	-5	0	+5	+10	+15
ZRD36KRE	2.1	2.7	3.4	4.3	5.2	6.3	7.5	ZRD36KRE	1.5	1.5	1.6	1.6	1.6	1.6	1.6
ZRD48KRE	2.9	3.7	4.6	5.7	7.0	8.5	10.2	ZRD48KRE	2.3	2.3	2.3	2.3	2.2	2.2	2.3
ZRD61KRE	3.6	4.6	5.8	7.2	8.9	10.8	13.1	ZRD61KRE	2.5	2.6	2.6	2.7	2.8	2.9	2.9
ZRD72KRE	4.3	5.6	7.0	8.7	10.6	12.9	15.5	ZRD72KRE	2.9	3.0	3.1	3.3	3.4	3.5	3.7
ZRD92KRE	5.4	6.9	8.7	10.9	13.4	16.3	19.6	ZRD92KRE	3.7	3.9	4.0	4.2	4.3	4.4	4.4

Conditions: Suction Superheat 10K / Subcooling 0K

Preliminary data

For capacity data for R450A please refer to Emerson's Select Software

Condensing Temperature 50°C															
R407C	Cooling Capacity (kW)							R407C	Power Input (kW)						
	Evaporating Temperature (°C)								Evaporating Temperature (°C)						
Model	-15	-10	-5	0	+5	+10	+15	Model	-15	-10	-5	0	+5	+10	+15
ZRD36KRE		4.1	5.2	6.3	7.7	9.2		ZRD36KRE		2.3	2.4	2.4	2.4	2.4	
ZRD48KRE		5.4	6.8	8.4	10.3	12.5		ZRD48KRE		3.2	3.2	3.2	3.2	3.1	
ZRD61KRE		6.3	8.0	10.0	12.4	15.1		ZRD61KRE		3.9	4.0	4.0	4.0	4.0	
ZRD72KRE		8.0	10.1	12.5	15.4	18.6		ZRD72KRE		4.7	4.7	4.7	4.7	4.7	
ZRD92KRE		9.6	12.2	15.2	18.8	22.9		ZRD92KRE		6.0	6.1	6.2	6.2	6.2	
ZRD125KCE		14.3	18.1	22.5	27.6	33.3	39.4	ZRD125KCE		8.2	8.3	8.4	8.4	8.6	8.7

Conditions: Suction Superheat 10K / Subcooling 0K