



Project Report

Refrigerant	R404A Dew Point
High Side Properties:	
Condensing Temperature, °C	50.00
Abs. Condensing Pressure, bar	22.98
Dew Point, °C	50.00
Bubble Point, °C	49.70
Saturated vapour enthalpy, kJ/kg	382.00
Specific volume of saturated vapour, dm ³ /kg	7.30
Liquid Temperature, °C	49.70
Liquid enthalpy, kJ/kg	277.00
Low Side Properties:	
Evaporating Temperature, °C	-10.00
Evaporating Abs. Pressure, bar	4.34
Dew Point, °C	-10.00
Bubble Point, °C	-10.60
With vapour at, °C	20.00
Specific volume, dm ³ /kg	53.00
Enthalpy, kJ/kg	388.00
Operating Conditions:	
Evaporating Temperature, °C	-10.00
Condensing Temperature, °C	50.00
Suction Return Temperature, °C	20.00
Subcooling, K	0.00
Compressor Selected	ZB21KQE-PFJ

**PERFORMANCE AT SPECIFIED OPERATING POINT
ZB21KQE-PFJ Data at 50 Hz**

Cooling Capacity, kW	4.67
Power, kW	2.91
COP	1.60
Current at 230 V, A	13.74
Suction Mass Flow, g/s	42.00
Heating Capacity, kW	7.58
Isentropic Eff., %	56.62

COMPRESSOR MECHANICAL AND PHYSICAL DATA

Displacement @ 50 Hz, m ³ /h	8.61
Length/Width, mm	241/241
Height, mm	405
Net Weight, kg	27.2
Gross Weight, kg	30
Stub Suction, inch	3/4
Stub Discharge, inch	1/2
Oil Quantity, l	1.24
Oil type (original charge)	POE RL32-3MAF
Oil type (approved oils)	POE RL32-3MAF, POE MOBIL EAL Arctic 22 CC
Base mounting (hole dia), mm	190 x 190 (8.5)
Sound Pressure @ 1m (MT), dBA	58
Sound Power (MT), dBA	69
Sound Conditions (MT, Temperatures: Evap./Cond./Suction at freq./speed)	-10 / 45 / 20 °C at 50 Hz
High Side PS gauge, bar	28.8
Low Side PS gauge, bar	21
Refrigerant's GWP	3922
Refrigerant's classification	A1

COMPRESSOR ELECTRICAL DATA (220-240 V / 1~ / 50 Hz)

Maximum Operating Current, A	16.4
Locked Rotor Current, A	82
Winding Resistance, ohm	0.89/1.84 (R/S)
Default Enclosure Class	IP 21 (IEC 34)

ACCESSORIES INCLUDED

Discharge Temperature Protection
Mounting Grommets
Single Phase Equipment

Internal Thermodisk
Standard
Run Capacitor

ACCESSORIES OPTIONAL

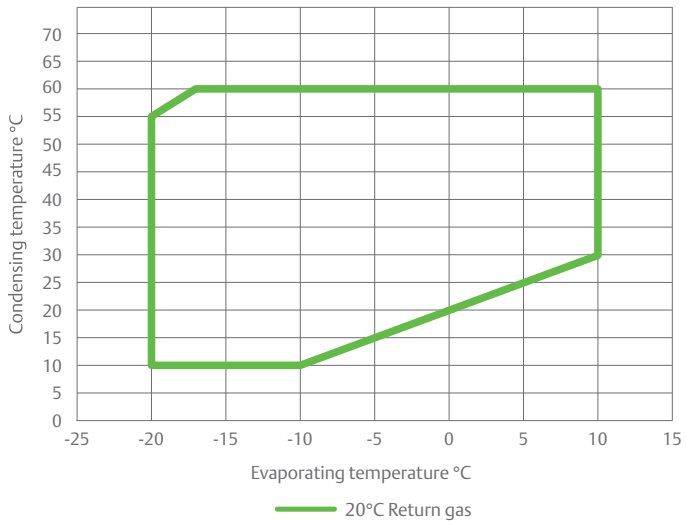
Crankcase Heater
Single Phase Equipment
Rotalock valves

70 W External
Run Capacitor
suction and discharge

Operating envelopes

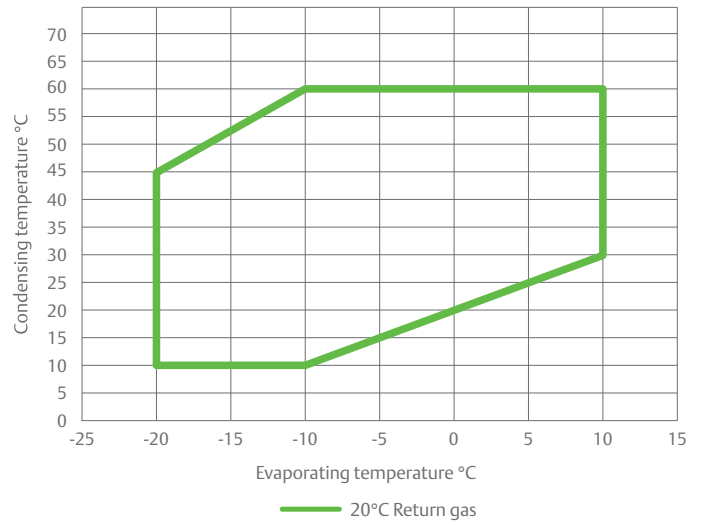
ZB15KQE~ZB76KQE

R404A



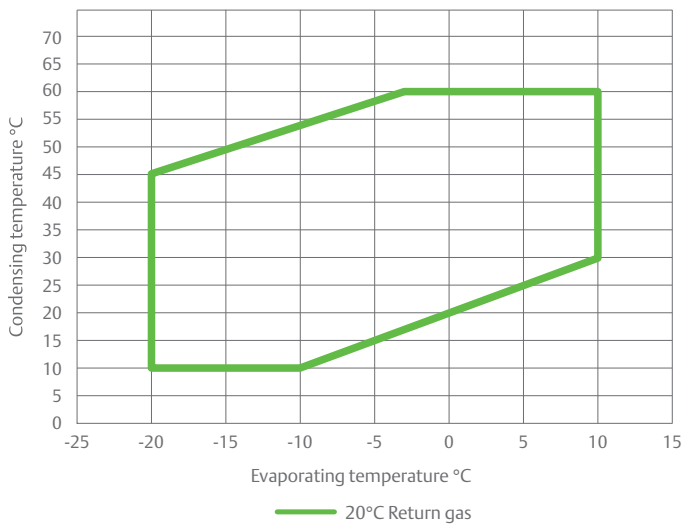
ZB95KQE~ZB114KQE, ZB130KQE

R404A



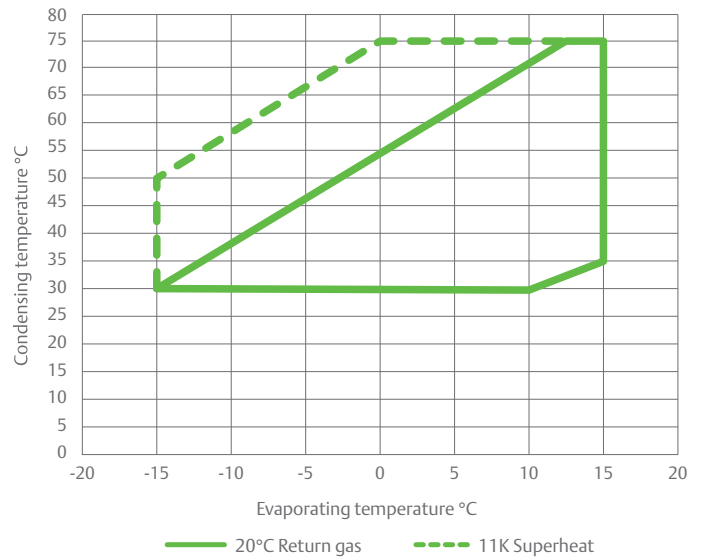
ZB190KQE~ZB220KQE

R404A



ZB15KQE~ZB76KQE, ZB130KQE~ZB220KQE

R134a



Performance data

Q=Capacity (kW) P=Power input (kW) 1-Phase

R404A

50 Hz

Model		Condensing temperature °C	Evaporating temperature (°C)						
			-20	-15	-10	-5	0	5	10
ZB15KQE	Q	10	3.7	4.5	5.5				
		20	3.4	4.1	4.9	5.9	7.0		
		30	3.0	3.6	4.4	5.3	6.2	7.3	8.6
		40	2.6	3.2	3.8	4.6	5.4	6.4	7.5
		50	2.2	2.6	3.2	3.8	4.5	5.4	6.3
		60		2.1	2.5	3.0	3.6	4.3	5.1
	P	10	0.7	0.7	0.7				
		20	0.9	0.9	0.9	0.9	0.9		
		30	1.2	1.2	1.2	1.2	1.2	1.2	1.1
		40	1.4	1.5	1.5	1.5	1.5	1.5	1.4
ZB19KQE	Q	10	4.2	5.1	6.2				
		20	3.9	4.7	5.7	6.8	8.2		
		30	3.5	4.2	5.1	6.1	7.3	8.6	10.1
		40	3.0	3.7	4.4	5.3	6.3	7.5	8.8
		50	2.5	3.0	3.7	4.4	5.3	6.2	7.3
		60		2.4	2.9	3.4	4.1	4.9	5.8
	P	10	0.9	0.9	0.9				
		20	1.1	1.1	1.1	1.1	1.1		
		30	1.4	1.4	1.4	1.4	1.4	1.4	1.4
		40	1.8	1.8	1.8	1.8	1.8	1.8	1.8
ZB21KQE	Q	10	5.4	6.6	8.0				
		20	4.9	6.0	7.3	8.7	10.4		
		30	4.4	5.4	6.5	7.8	9.3	11.0	12.9
		40	3.8	4.7	5.6	6.8	8.1	9.5	11.2
		50	3.2	3.9	4.7	5.6	6.7	8.0	9.4
		60		3.0	3.6	4.4	5.3	6.3	7.4
	P	10	1.2	1.2	1.2				
		20	1.5	1.5	1.5	1.5	1.5		
		30	1.8	1.8	1.8	1.8	1.8	1.8	1.8
		40	2.3	2.3	2.3	2.3	2.3	2.3	2.2
ZB26KQE	Q	10	6.0	7.3	8.9				
		20	5.4	6.6	8.1	9.8	11.8		
		30	4.7	5.8	7.1	8.7	10.4	12.5	14.8
		40	4.0	4.9	6.1	7.4	9.0	10.8	12.9
		50	3.1	3.9	4.9	6.0	7.4	8.9	10.8
		60		2.8	3.6	4.5	5.7	7.0	8.5
	P	10	1.5	1.5	1.4				
		20	1.9	1.9	1.8	1.8	1.7		
		30	2.4	2.3	2.3	2.2	2.2	2.1	2.0
		40	3.0	3.0	2.9	2.8	2.7	2.6	2.5
ZB29KQE	Q	10	7.1	8.7	10.6				
		20	6.5	7.9	9.6	11.6	13.8		
		30	5.7	7.1	8.6	10.3	12.3	14.5	17.0
		40	4.9	6.1	7.4	8.9	10.7	12.6	14.8
		50	4.0	5.0	6.2	7.4	8.9	10.5	12.4
		60		3.8	4.8	5.8	7.0	8.3	9.8
	P	10	1.6	1.7	1.7				
		20	1.9	2.0	2.0	2.0	2.1		
		30	2.3	2.4	2.4	2.4	2.4	2.5	2.5
		40	2.8	2.9	2.9	2.9	2.9	3.0	3.0
	50	3.4	3.5	3.5	3.5	3.5	3.6	3.6	
	60		4.2	4.2	4.3	4.3	4.3	4.3	

*20°C Return gas temperature in non-shaded region

*11K Suction superheat in shaded region

*0K Subcooling