



Minimum evaporating temp. with:

———— 25°C Suction Gas Return

- - - 10K Suction Superheat

Suction Superheat 10.0K

Evaporating Temperature °C

Liquid subcooling 0.0K

Cond °C	Capacity kW								
	-20	-15	-10	-5	0	5	7	10	12.5
27	8.24	10.35	12.85	15.60	18.60	21.80	23.20	25.20	27.00
30	7.97	10.05	12.50	15.25	18.25	21.50	22.80	24.90	26.70
35	7.54	9.53	11.90	14.55	17.55	20.80	22.20	24.30	26.10
40	7.13	8.98	11.25	13.85	16.80	20.00	21.40	23.50	25.30
45		8.44	10.55	13.05	15.90	19.05	20.40	22.50	24.30
50			9.86	12.20	14.95	18.05	19.35	21.40	23.20
55			9.16	11.35	13.95	16.90	18.20	20.20	21.90
60				10.45	12.90	15.70	16.90	18.85	20.60
65					11.80	14.40	15.60	17.45	19.10
	Power Input kW								
	-20	-15	-10	-5	0	5	7	10	12.5
27	3.10	3.14	3.18	3.22	3.27	3.34	3.37	3.42	3.47
30	3.31	3.35	3.39	3.43	3.48	3.54	3.57	3.62	3.67
35	3.68	3.73	3.77	3.81	3.85	3.91	3.94	3.98	4.03
40	4.09	4.14	4.18	4.22	4.27	4.32	4.34	4.39	4.43
45		4.61	4.65	4.69	4.73	4.78	4.80	4.84	4.88
50			5.17	5.21	5.25	5.30	5.32	5.35	5.38
55			5.76	5.80	5.84	5.88	5.90	5.93	5.96
60				6.45	6.49	6.53	6.55	6.57	6.60
65					7.22	7.26	7.28	7.30	7.32
	Current 400V, A								
	-20	-15	-10	-5	0	5	7	10	12.5
27	7.65	7.70	7.74	7.78	7.84	7.92	7.97	8.04	8.11
30	7.86	7.91	7.95	8.00	8.05	8.13	8.17	8.24	8.31
35	8.25	8.31	8.35	8.40	8.45	8.53	8.57	8.63	8.70
40	8.71	8.78	8.83	8.87	8.93	9.00	9.03	9.10	9.16
45		9.33	9.38	9.43	9.49	9.55	9.59	9.64	9.70
50			10.03	10.09	10.14	10.21	10.24	10.29	10.34
55			10.79	10.85	10.90	10.97	11.00	11.05	11.10
60				11.73	11.78	11.85	11.87	11.92	11.97
65					12.79	12.86	12.88	12.93	12.97
	Mass Flow g/s								
	-20	-15	-10	-5	0	5	7	10	12.5
27	48.10	59.70	73.00	87.50	103.50	120.00	127.00	137.00	146.00
30	47.60	59.20	72.60	87.50	103.50	120.50	127.50	138.50	147.50
35	46.80	58.30	71.80	87.00	103.50	121.00	128.50	139.50	149.50
40	46.10	57.20	70.60	86.00	103.00	121.00	128.50	140.50	150.00
45		56.20	69.30	84.50	101.50	120.00	128.00	140.00	151.00
50			67.70	83.00	100.00	119.00	127.00	139.50	150.00
55			66.10	80.50	97.50	117.00	125.00	137.50	148.50
60				78.50	95.00	114.00	122.50	135.50	146.50
65					92.00	111.00	119.00	132.50	143.50

Copeland Scroll - Compressor - Air Conditioning - Standard
COMPRESSOR MECHANICAL AND PHYSICAL DATA

Displacement @ 50 Hz, cu.m/h	18.8
Length/Width, mm	242/242
Height, mm	446
Net Weight, kg	39
Gross Weight, kg	45
Rotalock Suction, inch	1 1/4
Rotalock Discharge, inch	1 1/4
Stub Suction, inch	7/8
Stub Discharge, inch	3/4
Oil Quantity, l	1.8
Base mounting (hole dia), mm	190 x 190 (8.5)
Sound Pressure @ 1m, dBA	61
Sound Power, dBA	72
PED Category	1
High Side PS, bar(g)	29.5
Low Side PS, bar(g)	20
Low Side TS Max., °C	50
Internal Free Volume, l	4.2

COMPRESSOR ELECTRICAL DATA (380/420V - 3~ - 50Hz)

Maximum Operating Current, A	15
Locked Rotor Current, A	101
Winding Resistance, ohm	1.8
Default Enclosure Class	IP 21 (IEC 34)

ACCESSORIES INCLUDED

Discharge Temperature Protection	Internal Thermodisk
Mounting Grommets	Standard

ACCESSORIES OPTIONAL

Crankcase Heater	70W External
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MOTOR OPTIONS

Power Supply	Nominal Voltage	Motor Code	Start Connection	DOL Connection	Amps Factor
380-420 V/3~/50H	400	TFD		Y	1.00
200-220 V/3~/50H	200	TF5		Y	2.09
200-230 V/3~/60H	230	TF5		Y	2.09
460 V/3~/60Hz	460	TFD		Y	1.04

Copeland Selection Software

REFRIGERANT R22

Operating Conditions:

Evaporating Temperature: -10.0°C
 Condensing Temperature: 45.0°C
 Liquid subcooling: 0.0K
 Suction Return Temperature: 20.0°C

Required Capacity: 20.0 kW
 Compressor Selected: ZR81KCE-TFD

PERFORMANCE AT SPECIFIED OPERATING POINT **ZR81KCE-TFD Data at 50 Hz**

Operating conditions outside Compressor limits

COMPRESSOR MECHANICAL AND PHYSICAL DATA

Length/Width, mm 242/242	Height, mm 446
Net Weight, kg 39	Gross Weight, kg 45
Rotalock Suction, inch 1 1/4	Stub Suction, inch 7/8
Stub Discharge, inch 3/4	Oil Quantity, l 1.8
Sound Power, dBA 72	PED Category 1
High Side PS, bar(g) 29.5	Low Side PS, bar(g) 20
Low Side TS Max., °C 50	Internal Free Volume, l 4.2
Displacement @ 50 Hz, cu.m/h 18.8	
Rotalock Discharge, inch 1 1/4	
Base mounting (hole dia), mm 190 x 190 (8.5)	
Sound Pressure @ 1m, dBA 61	

COMPRESSOR ELECTRICAL DATA (380/420V - 3~ - 50Hz)

Locked Rotor Current, A 101	Winding Resistance, ohm 1.8
Maximum Operating Current, A 15	
Default Enclosure Class IP 21 (IEC 34)	

ACCESSORIES INCLUDED

Discharge Temperature Protection	Internal Thermodisk
Mounting Grommets	Standard

ACCESSORIES OPTIONAL

Crankcase Heater	70W External
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Model: ZR81KCE-TFD
 Suction Return Temperature 20.0°C

Refrigerant: R22
 Liquid subcooling 0.0K

S.I.
 50Hz

	Evaporating Temperature °C								
	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5
	Capacity kW								
27.0	8.20	10.30	12.75	15.50	18.50	21.80	23.10	25.20	27.00
30.0		10.00	12.40	15.15	18.15	21.40	22.80	24.90	26.70
35.0		9.52	11.85	14.50	17.50	20.80	22.10	24.30	26.10
40.0			11.25	13.85	16.75	19.95	21.30	23.50	25.30
45.0				13.10	15.90	19.05	20.40	22.50	24.30
50.0				12.30	15.00	18.05	19.35	21.40	23.20
55.0					14.00	16.95	18.20	20.20	21.90
60.0						15.75	16.95	18.85	20.50
65.0						14.50	15.65	17.45	19.05

	Power Input kW								
	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5
27.0	3.10	3.14	3.18	3.22	3.27	3.34	3.37	3.42	3.47
30.0		3.35	3.39	3.43	3.48	3.54	3.57	3.62	3.67
35.0		3.73	3.77	3.81	3.85	3.91	3.94	3.98	4.03
40.0			4.18	4.22	4.27	4.32	4.34	4.39	4.43
45.0				4.69	4.73	4.78	4.80	4.84	4.88
50.0				5.21	5.25	5.30	5.32	5.35	5.38
55.0					5.84	5.88	5.90	5.93	5.96
60.0						6.53	6.55	6.57	6.60
65.0						7.26	7.28	7.30	7.32

	COP								
	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5
27.0	2.64	3.28	4.01	4.81	5.65	6.52	6.87	7.38	7.79
30.0		2.99	3.66	4.41	5.22	6.05	6.39	6.88	7.29
35.0		2.55	3.15	3.81	4.54	5.31	5.62	6.09	6.48
40.0			2.69	3.27	3.92	4.62	4.91	5.35	5.71
45.0				2.79	3.36	3.99	4.25	4.65	4.99
50.0				2.36	2.85	3.41	3.64	4.00	4.31
55.0					2.40	2.88	3.09	3.41	3.68
60.0						2.41	2.59	2.87	3.11
65.0						2.00	2.15	2.39	2.60

	Current 400V, A								
	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5
27.0	7.65	7.70	7.74	7.78	7.84	7.92	7.97	8.04	8.11
30.0		7.91	7.95	8.00	8.05	8.13	8.17	8.24	8.31
35.0		8.31	8.35	8.40	8.45	8.53	8.57	8.63	8.70
40.0			8.83	8.87	8.93	9.00	9.03	9.10	9.16
45.0				9.43	9.49	9.55	9.59	9.64	9.70
50.0				10.09	10.14	10.21	10.24	10.29	10.34
55.0					10.90	10.97	11.00	11.05	11.10
60.0						11.85	11.87	11.92	11.97
65.0						12.86	12.88	12.93	12.97

Model: ZR81KCE-TFD

Refrigerant: R22

	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5
	Mass Flow g/s								
27.0	42.80	54.00	67.10	82.00	99.00	117.00	125.00	137.00	148.00
30.0		53.60	66.80	82.00	99.00	118.00	126.00	138.50	149.50
35.0		52.80	66.00	81.50	99.00	118.50	126.50	139.50	151.00
40.0			65.00	80.50	98.50	118.00	127.00	140.50	152.00
45.0				79.00	97.00	117.50	126.50	140.00	152.00
50.0				77.50	95.50	116.00	125.00	139.50	152.00
55.0					93.50	114.00	123.00	137.50	151.00
60.0						111.50	120.50	135.50	148.50
65.0						108.50	117.50	132.50	145.50

	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5
	Heating Capacity kW								
27.0	11.15	13.30	15.75	18.55	21.60	24.90	26.30	28.50	30.30
30.0		13.20	15.65	18.40	21.50	24.80	26.20	28.40	30.20
35.0		13.05	15.45	18.15	21.20	24.50	25.90	28.10	29.90
40.0			15.20	17.85	20.80	24.10	25.50	27.60	29.50
45.0				17.55	20.40	23.60	25.00	27.10	28.90
50.0				17.25	20.00	23.10	24.40	26.50	28.30
55.0					19.55	22.50	23.80	25.80	27.60
60.0						21.90	23.20	25.10	26.80
65.0						21.40	22.50	24.40	26.00