



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	4.87	6.16	7.60	9.24	11.10	13.25	14.15	15.65	17.00
30	4.73	6.00	7.42	9.04	10.90	13.00	13.90	15.35	16.70
35	4.46	5.70	7.09	8.66	10.45	12.50	13.40	14.80	16.10
40	4.17	5.37	6.72	8.24	9.98	11.95	12.80	14.20	15.45
45		5.03	6.33	7.79	9.46	11.35	12.20	13.55	14.75
50			5.91	7.31	8.91	10.75	11.55	12.80	13.95
55			5.49	6.82	8.33	10.05	10.85	12.05	13.15
60				6.31	7.74	9.39	10.10	11.30	12.30
65					7.15	8.69	9.37	10.45	11.45
	Power Input kW								
	-20	-15	-10	-5	0	5	7	10	12.5
27	2.14	2.15	2.14	2.11	2.06	1.98	1.94	1.87	1.81
30	2.29	2.30	2.30	2.27	2.23	2.16	2.12	2.06	2.01
35	2.56	2.57	2.56	2.54	2.51	2.45	2.42	2.37	2.32
40	2.85	2.85	2.84	2.83	2.80	2.75	2.72	2.68	2.63
45		3.17	3.16	3.14	3.11	3.06	3.04	3.00	2.96
50			3.52	3.49	3.46	3.42	3.39	3.36	3.32
55			3.94	3.90	3.87	3.82	3.80	3.76	3.73
60				4.39	4.34	4.29	4.27	4.23	4.19
65					4.90	4.84	4.82	4.77	4.74
	Current 400V, A								
	-20	-15	-10	-5	0	5	7	10	12.5
27	4.77	4.79	4.79	4.76	4.71	4.60	4.54	4.44	4.34
30	4.92	4.94	4.94	4.92	4.87	4.77	4.72	4.63	4.53
35	5.21	5.21	5.21	5.19	5.15	5.07	5.02	4.94	4.86
40	5.53	5.53	5.52	5.50	5.47	5.39	5.36	5.28	5.21
45		5.90	5.89	5.86	5.83	5.76	5.73	5.66	5.60
50			6.32	6.29	6.25	6.19	6.16	6.10	6.04
55			6.84	6.80	6.75	6.69	6.66	6.61	6.55
60				7.40	7.35	7.28	7.25	7.20	7.15
65					8.05	7.98	7.95	7.90	7.84
	Mass Flow g/s								
	-20	-15	-10	-5	0	5	7	10	12.5
27	28.40	35.50	43.20	51.90	61.70	72.70	77.50	85.00	92.00
30	28.20	35.30	43.10	51.90	61.80	72.80	77.50	85.50	92.00
35	27.70	34.90	42.80	51.70	61.60	72.80	77.50	85.50	92.00
40	27.00	34.30	42.30	51.20	61.10	72.40	77.00	85.00	92.00
45		33.50	41.50	50.40	60.40	71.70	76.50	84.50	91.50
50			40.60	49.50	59.50	70.70	75.50	83.50	90.50
55			39.60	48.50	58.40	69.60	74.50	82.50	89.00
60				47.30	57.20	68.30	73.20	81.00	88.00
65					55.90	66.90	71.70	79.50	86.50

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

Displacement @ 50 Hz, cu.m/h	11.4
Length/Width, mm	242/242
Height, mm	417
Net Weight, kg	30.8
Gross Weight, kg	32.7
Stub Suction, inch	7/8
Stub Discharge, inch	1/2
Oil Quantity, l	1.4
Base mounting (hole dia), mm	190 x 190 (8.5)
Sound Pressure @ 1m, dBA	57
Sound Power, dBA	68
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	3.3

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

Maximum Operating Current, A	10
Locked Rotor Current, A	50
Winding Resistance, ohm	3.9
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**

<i>Power Supply</i>	<i>Nominal Voltage</i>	<i>Motor Code</i>	<i>Start Connection</i>	<i>DOL Connection</i>	<i>Amps Factor</i>
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: ZR48K3E-TFD

### **PERFORMANCE AT SPECIFIED OPERATING POINT** **ZR48K3E-TFD Data at 50 Hz**

Operating conditions outside Compressor limits

### **COMPRESSOR MECHANICAL AND PHYSICAL DATA**

Length/Width, mm 242/242	Height, mm 417
Net Weight, kg 30.8	Gross Weight, kg 32.7
Stub Suction, inch 7/8	Stub Discharge, inch 1/2
Oil Quantity, l 1.4	Sound Power, dBA 68
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 3.3	
Displacement @ 50 Hz, cu.m/h 11.4	
Base mounting (hole dia), mm 190 x 190 (8.5)	
Sound Pressure @ 1m, dBA 57	

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

Locked Rotor Current, A 50	Winding Resistance, ohm 3.9
Maximum Operating Current, A 10	
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: ZR48K3E-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	4.86	6.12	7.55	9.18	11.05	13.20	14.15	15.65	17.05
30.0		5.97	7.38	8.99	10.85	12.95	13.90	15.35	16.70
35.0		5.70	7.07	8.64	10.40	12.45	13.35	14.80	16.15
40.0			6.73	8.24	9.96	11.95	12.80	14.20	15.45
45.0				7.81	9.46	11.35	12.20	13.55	14.75
50.0				7.36	8.93	10.75	11.55	12.80	13.95
55.0					8.38	10.10	10.85	12.05	13.15
60.0						9.42	10.15	11.30	12.30
65.0						8.74	9.40	10.45	11.45

	Power Input kW								
	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5
27.0	2.14	2.15	2.14	2.11	2.06	1.98	1.94	1.87	1.81
30.0		2.30	2.30	2.27	2.23	2.16	2.12	2.06	2.01
35.0		2.57	2.56	2.54	2.51	2.45	2.42	2.37	2.32
40.0			2.84	2.83	2.80	2.75	2.72	2.68	2.63
45.0				3.14	3.11	3.06	3.04	3.00	2.96
50.0				3.49	3.46	3.42	3.39	3.36	3.32
55.0					3.87	3.82	3.80	3.76	3.73
60.0						4.29	4.27	4.23	4.19
65.0						4.84	4.82	4.77	4.74

	COP								
	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5
27.0	2.27	2.85	3.53	4.35	5.37	6.67	7.28	8.35	9.40
30.0		2.59	3.22	3.96	4.86	6.00	6.53	7.45	8.33
35.0		2.22	2.76	3.40	4.16	5.09	5.52	6.25	6.95
40.0			2.37	2.91	3.56	4.35	4.71	5.31	5.87
45.0				2.49	3.05	3.71	4.01	4.51	4.98
50.0				2.11	2.58	3.14	3.40	3.82	4.21
55.0					2.17	2.64	2.86	3.21	3.53
60.0						2.20	2.38	2.67	2.94
65.0						1.80	1.95	2.19	2.41

	Current 400V, A								
	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5
27.0	4.77	4.79	4.79	4.76	4.71	4.60	4.54	4.44	4.34
30.0		4.94	4.94	4.92	4.87	4.77	4.72	4.63	4.53
35.0		5.21	5.21	5.19	5.15	5.07	5.02	4.94	4.86
40.0			5.52	5.50	5.47	5.39	5.36	5.28	5.21
45.0				5.86	5.83	5.76	5.73	5.66	5.60
50.0				6.29	6.25	6.19	6.16	6.10	6.04
55.0					6.75	6.69	6.66	6.61	6.55
60.0						7.28	7.25	7.20	7.15
65.0						7.98	7.95	7.90	7.84

Model: ZR48K3E-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	25.40	32.10	39.80	48.70	59.00	71.10	76.50	85.00	93.00
30.0		32.00	39.70	48.70	59.10	71.20	76.50	85.50	93.50
35.0		31.60	39.40	48.40	58.90	71.10	76.50	85.50	93.50
40.0			38.90	48.00	58.50	70.70	76.00	85.00	93.00
45.0				47.30	57.80	70.00	75.50	84.50	92.50
50.0				46.50	56.90	69.10	74.60	83.50	91.50
55.0					55.90	68.00	73.40	82.50	90.50
60.0						66.80	72.10	81.00	89.00
65.0						65.40	70.70	79.50	87.50

	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5
	Heating Capacity kW								
27.0	6.89	8.15	9.58	11.20	13.00	15.10	16.00	17.45	18.75
30.0		8.16	9.56	11.15	12.95	15.00	15.90	17.35	18.65
35.0		8.14	9.51	11.05	12.80	14.80	15.65	17.10	18.35
40.0			9.43	10.95	12.60	14.55	15.40	16.75	17.95
45.0				10.80	12.40	14.25	15.10	16.40	17.55
50.0				10.65	12.20	14.00	14.75	16.00	17.15
55.0					12.05	13.70	14.45	15.65	16.70
60.0						13.50	14.20	15.30	16.30
65.0						13.35	13.95	15.00	15.95