


**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	2.85	3.56	4.40	5.38	6.52	7.83	8.41	9.34	10.15
30	2.74	3.45	4.27	5.23	6.34	7.62	8.18	9.08	9.89
35	2.57	3.28	4.08	5.00	6.07	7.29	7.83	8.69	9.45
40	2.38	3.09	3.88	4.78	5.80	6.97	7.49	8.31	9.04
45		2.88	3.66	4.54	5.53	6.65	7.14	7.93	8.63
50			3.39	4.26	5.22	6.30	6.78	7.53	8.20
55			3.06	3.92	4.86	5.91	6.37	7.09	7.74
60				3.50	4.43	5.45	5.89	6.59	7.21
65					3.90	4.91	5.34	6.01	6.62
	Power Input kW								
	-20	-15	-10	-5	0	5	7	10	12.5
27	1.21	1.21	1.20	1.18	1.16	1.14	1.13	1.11	1.09
30	1.30	1.29	1.29	1.27	1.26	1.23	1.22	1.21	1.19
35	1.45	1.45	1.44	1.43	1.41	1.39	1.38	1.36	1.35
40	1.61	1.61	1.60	1.59	1.58	1.56	1.55	1.53	1.51
45		1.80	1.79	1.78	1.76	1.74	1.73	1.71	1.69
50			2.01	2.00	1.98	1.95	1.94	1.92	1.90
55			2.27	2.26	2.23	2.20	2.19	2.17	2.15
60				2.57	2.54	2.50	2.49	2.46	2.44
65					2.90	2.86	2.84	2.81	2.78
	Current 230V, A								
	-20	-15	-10	-5	0	5	7	10	12.5
27	5.98	5.95	5.91	5.86	5.77	5.66	5.60	5.51	5.42
30	6.34	6.32	6.29	6.23	6.16	6.05	6.00	5.91	5.82
35	6.97	6.95	6.92	6.87	6.80	6.70	6.65	6.57	6.49
40	7.67	7.65	7.61	7.57	7.49	7.40	7.35	7.27	7.19
45		8.46	8.42	8.36	8.29	8.18	8.13	8.05	7.97
50			9.38	9.31	9.22	9.11	9.05	8.96	8.88
55			10.56	10.47	10.36	10.22	10.16	10.06	9.97
60				11.87	11.74	11.58	11.51	11.39	11.29
65					13.41	13.22	13.14	13.01	12.89
	Mass Flow g/s								
	-20	-15	-10	-5	0	5	7	10	12.5
27	16.60	20.50	25.00	30.20	36.20	43.00	46.00	50.80	55.00
30	16.40	20.30	24.80	30.00	36.00	42.70	45.70	50.40	54.60
35	16.00	20.00	24.60	29.80	35.70	42.40	45.40	50.00	54.10
40	15.40	19.70	24.40	29.60	35.50	42.20	45.10	49.70	53.80
45		19.20	24.00	29.40	35.30	42.00	44.80	49.40	53.50
50			23.30	28.80	34.90	41.60	44.40	49.00	53.10
55			22.10	27.90	34.10	40.90	43.80	48.40	52.40
60				26.20	32.70	39.70	42.60	47.30	51.40
65					30.50	37.80	40.80	45.60	49.80

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

Displacement @ 50 Hz, cu.m/h	6.8
Length/Width, mm	242/242
Height, mm	363
Net Weight, kg	25
Gross Weight, kg	29
Stub Suction, inch	3/4
Stub Discharge, inch	1/2
Oil Quantity, l	1
Base mounting (hole dia), mm	190 x 190 (8.5)
Sound Pressure @ 1m, dBA	54
Sound Power, dBA	65
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	2.9

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

Maximum Operating Current, A	14.8
Locked Rotor Current, A	61
Start Winding Resistance, ohm	2.2
Winding Resistance, ohm	1.2
Default Enclosure Class	IP 21 (IEC 34)

**ACCESSORIES INCLUDED**

Discharge Temperature Protection	Internal Thermodisk
Mounting Grommets	Standard

**ACCESSORIES OPTIONAL**

Crankcase Heater	70W External
Single Phase Equipment	Run Capacitor

**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>
220-240 V/1~/50Hz	230	PFJ		PSC	1.00
265 V/1~/60Hz	265	PFJ		PSC	0.75

# 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: ZR28K3E-PFJ

### **PERFORMANCE AT SPECIFIED OPERATING POINT** **ZR28K3E-PFJ Data at 50 Hz**

Operating conditions outside Compressor limits

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

Length/Width, mm 242/242	Height, mm 363
Net Weight, kg 25	Gross Weight, kg 29
Stub Suction, inch 3/4	Stub Discharge, inch 1/2
Oil Quantity, l 1	Sound Power, dBA 65
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 2.9	
Displacement @ 50 Hz, cu.m/h 6.8	
Base mounting (hole dia), mm 190 x 190 (8.5)	
Sound Pressure @ 1m, dBA 54	

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

Locked Rotor Current, A 61	Winding Resistance, ohm 1.2
Maximum Operating Current, A 14.8	
Start Winding Resistance, ohm 2.2	
Default Enclosure Class IP 21 (IEC 34)	

### **ACCESSORIES INCLUDED**

Discharge Temperature Protection	Internal Thermodisk
Mounting Grommets	Standard

***ACCESSORIES OPTIONAL***

Crankcase Heater  
Single Phase Equipment

70W External  
Run Capacitor

Model: ZR28K3E-PFJ  
 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	2.85	3.55	4.37	5.35	6.48	7.80	8.39	9.34	10.20
30.0		3.45	4.26	5.21	6.31	7.60	8.17	9.08	9.90
35.0		3.29	4.08	4.99	6.05	7.27	7.82	8.69	9.47
40.0			3.89	4.78	5.80	6.97	7.48	8.31	9.05
45.0				4.55	5.53	6.65	7.14	7.93	8.64
50.0				4.29	5.24	6.31	6.78	7.53	8.20
55.0					4.89	5.93	6.37	7.09	7.73
60.0						5.47	5.91	6.59	7.20
65.0						4.94	5.36	6.01	6.60

	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5
		Power Input kW							
27.0	1.21	1.21	1.20	1.18	1.16	1.14	1.13	1.11	1.09
30.0		1.29	1.29	1.27	1.26	1.23	1.22	1.21	1.19
35.0		1.45	1.44	1.43	1.41	1.39	1.38	1.36	1.35
40.0			1.60	1.59	1.58	1.56	1.55	1.53	1.51
45.0				1.78	1.76	1.74	1.73	1.71	1.69
50.0				2.00	1.98	1.95	1.94	1.92	1.90
55.0					2.23	2.20	2.19	2.17	2.15
60.0						2.50	2.49	2.46	2.44
65.0						2.86	2.84	2.81	2.78

	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5
		COP							
27.0	2.35	2.93	3.65	4.51	5.56	6.84	7.42	8.39	9.30
30.0		2.66	3.30	4.08	5.01	6.15	6.66	7.52	8.31
35.0		2.27	2.83	3.49	4.28	5.22	5.65	6.36	7.01
40.0			2.42	3.00	3.67	4.47	4.83	5.43	5.97
45.0				2.55	3.14	3.82	4.13	4.63	5.09
50.0				2.15	2.65	3.23	3.49	3.92	4.31
55.0					2.19	2.69	2.91	3.27	3.60
60.0						2.19	2.38	2.68	2.95
65.0						1.73	1.89	2.14	2.37

	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5
		Current 230V, A							
27.0	5.98	5.95	5.91	5.86	5.77	5.66	5.60	5.51	5.42
30.0		6.32	6.29	6.23	6.16	6.05	6.00	5.91	5.82
35.0		6.95	6.92	6.87	6.80	6.70	6.65	6.57	6.49
40.0			7.61	7.57	7.49	7.40	7.35	7.27	7.19
45.0				8.36	8.29	8.18	8.13	8.05	7.97
50.0				9.31	9.22	9.11	9.05	8.96	8.88
55.0					10.36	10.22	10.16	10.06	9.97
60.0						11.58	11.51	11.39	11.29
65.0						13.22	13.14	13.01	12.89

Model: ZR28K3E-PFJ

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	14.90	18.60	23.10	28.30	34.60	42.00	45.30	50.80	55.70
30.0		18.50	22.90	28.20	34.40	41.80	45.10	50.40	55.30
35.0		18.20	22.70	28.00	34.20	41.50	44.70	50.00	54.80
40.0			22.50	27.80	34.00	41.20	44.50	49.70	54.50
45.0				27.60	33.80	41.00	44.20	49.40	54.10
50.0				27.10	33.40	40.60	43.80	49.00	53.70
55.0					32.60	39.90	43.20	48.40	53.10
60.0						38.80	42.10	47.30	52.10
65.0						37.00	40.30	45.60	50.40

	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5
	Heating Capacity kW								
27.0	4.00	4.70	5.51	6.47	7.59	8.89	9.46	10.40	11.25
30.0		4.68	5.48	6.42	7.51	8.77	9.33	10.25	11.05
35.0		4.66	5.45	6.35	7.39	8.60	9.13	9.98	10.75
40.0			5.42	6.30	7.30	8.45	8.95	9.76	10.50
45.0				6.25	7.21	8.31	8.79	9.56	10.25
50.0				6.19	7.12	8.17	8.63	9.36	10.00
55.0					7.01	8.02	8.46	9.15	9.77
60.0						7.85	8.27	8.93	9.52
65.0						7.65	8.05	8.68	9.24