

Model: ZB21KCE-TFD

Data

Type: Hermetic scroll compressors

Producer: Copeland

Series: ZB

Model: ZB21KCE-TFD

Technical data

Displacement [m ³ /h]:	8,6
Sound power [dBA]:	69
Sound pressure level [dB]:	58
Net Weight [kg]:	29
Oil charge [dm ³]:	1,2
Maximum high pressure [bar]:	28,8
Maximum standstill pressure [bar]:	21
Minimal lowside temperature [°C]:	-35
Maximum lowside temperature [°C]:	50
PED category:	1

Electrical data

Power supply [V/~ /Hz]:	380-420V/3/50Hz
Locked rotor current [A]:	40
Max. operating current [A]:	7,2
Winding resistance [Ω]:	4,8

Connections

	<u>inches</u>
Suction Rotolock valve connection:	3/4"
Discharge Rotolock valve connection:	1/2"

Model: ZB21KCE-TFD

Capacity

R134a

Cooling capacity [kW]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	2.22	2.82	3.54	4.40	5.40	6.57	7.91	-
35	2.09	2.67	3.37	4.19	5.15	6.27	7.56	-
40	1.96	2.52	3.19	3.98	4.90	5.97	7.19	8.60
45	-	2.37	3.01	3.76	4.63	5.65	6.81	8.15
50	-	2.22	2.83	3.54	4.36	5.32	6.42	7.69
55	-	-	2.64	3.31	4.08	4.98	6.02	7.21
60	-	-	-	3.08	3.80	4.64	5.61	6.72
65	-	-	-	2.84	3.51	4.28	5.18	6.22
70	-	-	-	-	3.21	3.92	4.75	5.70
75	-	-	-	-	2.91	3.56	4.30	5.17

Power input [kW]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	1.06	1.06	1.07	1.07	1.08	1.09	1.11	-
35	1.17	1.18	1.19	1.19	1.20	1.21	1.23	-
40	1.30	1.31	1.32	1.33	1.34	1.35	1.36	1.37
45	-	1.45	1.47	1.48	1.49	1.50	1.51	1.52
50	-	1.61	1.63	1.64	1.66	1.67	1.68	1.69
55	-	-	1.81	1.83	1.84	1.85	1.87	1.88
60	-	-	-	2.03	2.05	2.06	2.08	2.08
65	-	-	-	2.25	2.28	2.29	2.31	2.32
70	-	-	-	-	2.53	2.55	2.56	2.58
75	-	-	-	-	2.80	2.83	2.85	2.86

Model: ZB21KCE-TFD

Capacity

Current [A]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	2.91	2.91	2.90	2.90	2.91	2.92	2.95	-
35	3.03	3.02	3.03	3.03	3.04	3.05	3.07	-
40	3.16	3.16	3.17	3.18	3.19	3.20	3.21	3.23
45	-	3.32	3.34	3.35	3.37	3.38	3.39	3.41
50	-	3.51	3.54	3.56	3.57	3.59	3.60	3.61
55	-	-	3.76	3.79	3.81	3.83	3.84	3.86
60	-	-	-	4.06	4.09	4.11	4.13	4.14
65	-	-	-	4.37	4.41	4.43	4.45	4.46
70	-	-	-	-	4.77	4.80	4.82	4.83
75	-	-	-	-	5.17	5.21	5.24	5.25

Mass flow [kg/h]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	44.48	57.18	72.28	90.23	111.54	136.65	166.07	-
35	44.33	56.93	71.95	89.87	111.18	136.33	165.82	-
40	44.06	56.52	71.45	89.32	110.61	135.78	165.33	199.71
45	-	55.98	70.80	88.59	109.84	135.02	164.59	199.05
50	-	55.30	69.99	87.69	108.88	134.04	163.63	198.14
55	-	-	69.04	86.63	107.74	132.86	162.45	196.99
60	-	-	-	85.40	106.42	131.48	161.05	195.60
65	-	-	-	84.03	104.93	129.91	159.43	193.99
70	-	-	-	-	103.28	128.16	157.62	192.15
75	-	-	-	-	101.47	126.24	155.62	190.10

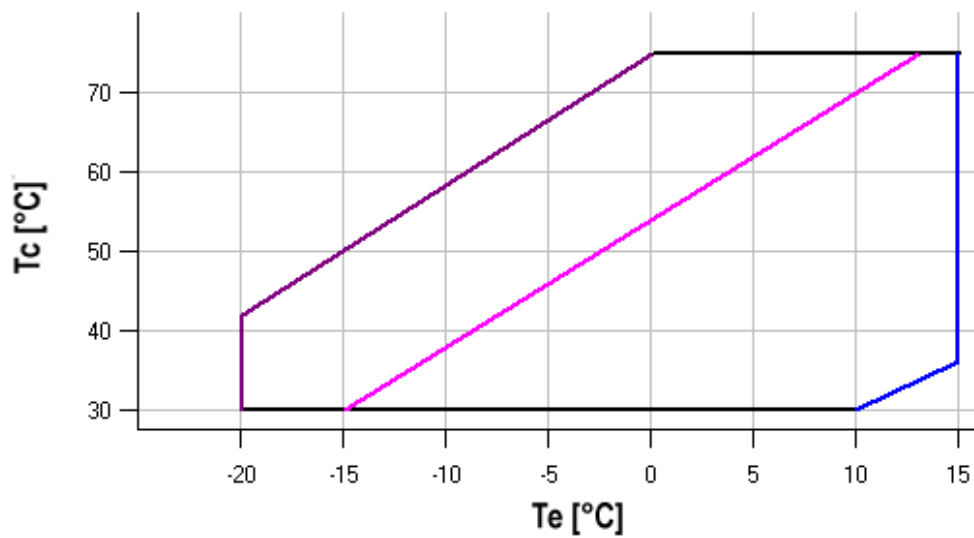
Model: ZB21KCE-TFD

Capacity

C.O.P. [W/W]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	2.09	2.66	3.32	4.10	5.00	6.01	7.14	-
35	1.78	2.26	2.84	3.51	4.28	5.17	6.16	-
40	1.51	1.93	2.42	2.99	3.66	4.42	5.29	6.26
45	-	1.63	2.05	2.54	3.11	3.77	4.51	5.35
50	-	1.38	1.74	2.15	2.63	3.19	3.83	4.55
55	-	-	1.46	1.81	2.22	2.69	3.23	3.84
60	-	-	-	1.52	1.86	2.25	2.70	3.22
65	-	-	-	1.26	1.54	1.87	2.25	2.68
70	-	-	-	-	1.27	1.54	1.85	2.21
75	-	-	-	-	1.04	1.26	1.51	1.81

Application range



- Maximum evaporating temperature
- 25°C suction gas temperature
- 10K gas overheat

Operating conditions: suction gas temperature 20°C, 0K subcooling

t_c - Condensing temperature [°C]

t_e - Evaporating temperature [°C]

Model: ZB21KCE-TFD**Capacity**

R404A/R507

Cooling capacity [kW]

t_c \ t_e	-30	-25	-20	-15	-10	-5	0	5	10
10	3.40	4.22	5.22	6.40	-	-	-	-	-
15	3.26	4.06	5.01	6.14	7.46	-	-	-	-
20	3.11	3.88	4.79	5.86	7.11	8.55	-	-	-
25	2.95	3.68	4.54	5.56	6.75	8.11	9.66	-	-
30	2.77	3.46	4.28	5.24	6.35	7.64	9.10	10.76	12.63
35	2.58	3.24	4.00	4.90	5.94	7.14	8.51	10.06	11.81
40	2.39	3.00	3.71	4.54	5.51	6.62	7.89	9.33	10.96
45	2.18	2.74	3.40	4.16	5.05	6.07	7.24	8.57	10.08
50	-	2.48	3.08	3.77	4.57	5.50	6.57	7.79	9.17
55	-	-	2.74	3.36	4.08	4.91	5.87	6.97	8.23
60	-	-	-	2.93	3.57	4.30	5.15	6.13	7.25

Power input [kW]

t_c \ t_e	-30	-25	-20	-15	-10	-5	0	5	10
10	1.10	1.11	1.11	1.11	-	-	-	-	-
15	1.24	1.24	1.25	1.25	1.25	-	-	-	-
20	1.39	1.40	1.40	1.40	1.40	1.40	-	-	-
25	1.56	1.57	1.57	1.57	1.57	1.57	1.56	-	-
30	1.76	1.77	1.77	1.77	1.76	1.76	1.75	1.75	1.74
35	1.98	1.99	1.99	1.99	1.98	1.98	1.97	1.96	1.95
40	2.22	2.24	2.24	2.24	2.23	2.22	2.21	2.19	2.18
45	2.50	2.52	2.52	2.52	2.51	2.50	2.48	2.46	2.44
50	-	2.83	2.83	2.83	2.82	2.81	2.79	2.77	2.74
55	-	-	3.18	3.18	3.17	3.16	3.13	3.11	3.08
60	-	-	-	3.57	3.56	3.54	3.52	3.49	3.45

Model: ZB21KCE-TFD

Capacity

Current [A]

$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
10	3.40	3.40	3.39	3.39	-	-	-	-	-
15	3.52	3.52	3.52	3.52	3.52	-	-	-	-
20	3.66	3.67	3.67	3.68	3.68	3.68	-	-	-
25	3.83	3.85	3.85	3.86	3.86	3.85	3.85	-	-
30	4.04	4.06	4.07	4.07	4.07	4.07	4.06	4.05	4.04
35	4.29	4.31	4.32	4.33	4.33	4.32	4.31	4.30	4.28
40	4.59	4.62	4.63	4.64	4.63	4.63	4.61	4.59	4.57
45	4.95	4.98	4.99	5.00	5.00	4.98	4.97	4.94	4.91
50	-	5.40	5.42	5.43	5.42	5.41	5.38	5.35	5.32
55	-	-	5.92	5.92	5.92	5.90	5.87	5.84	5.79
60	-	-	-	6.50	6.49	6.47	6.44	6.39	6.34

Mass flow [kg/h]

$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
10	67.64	85.94	107.02	131.64	-	-	-	-	-
15	68.19	86.39	107.39	131.96	160.88	-	-	-	-
20	68.34	86.39	107.27	131.75	160.61	194.61	-	-	-
25	68.11	85.97	106.68	131.03	159.78	193.71	233.60	-	-
30	67.52	85.15	105.66	129.83	158.43	192.25	232.04	278.59	332.68
35	66.62	83.97	104.24	128.19	156.60	190.25	229.91	276.35	330.36
40	65.42	82.46	102.44	126.13	154.31	187.75	227.23	273.53	327.42
45	63.96	80.64	100.29	123.68	151.58	184.78	224.05	270.15	323.88
50	-	78.55	97.83	120.87	148.46	181.37	220.37	266.25	319.76
55	-	-	95.08	117.74	144.97	177.55	216.25	261.84	315.12
60	-	-	-	114.31	141.13	173.34	211.69	256.98	309.96

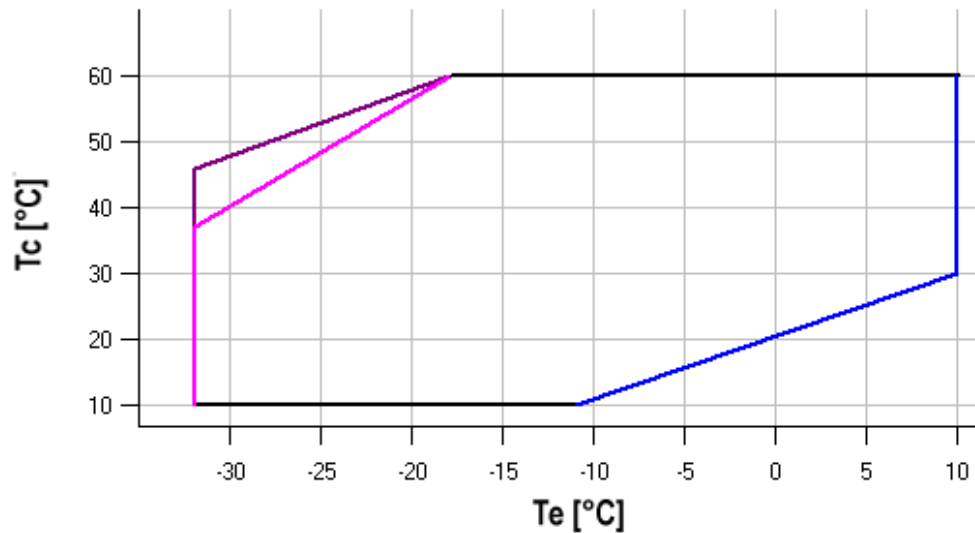
Model: ZB21KCE-TFD

Capacity

C.O.P. [W/W]

$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
10	3.08	3.82	4.71	5.77	-	-	-	-	-
15	2.63	3.26	4.02	4.93	5.98	-	-	-	-
20	2.24	2.77	3.42	4.19	5.09	6.12	-	-	-
25	1.88	2.34	2.89	3.54	4.30	5.17	6.18	-	-
30	1.58	1.96	2.42	2.96	3.60	4.34	5.19	6.16	7.24
35	1.31	1.63	2.01	2.46	2.99	3.61	4.33	5.14	6.06
40	1.07	1.34	1.66	2.03	2.47	2.98	3.57	4.25	5.03
45	0.87	1.09	1.35	1.65	2.01	2.43	2.92	3.48	4.12
50	-	0.88	1.09	1.33	1.62	1.96	2.35	2.81	3.34
55	-	-	0.86	1.06	1.29	1.56	1.87	2.24	2.67
60	-	-	-	0.82	1.00	1.21	1.46	1.76	2.10

Application range



- Maximum evaporating temperature
- 25°C suction gas temperature
- 10K gas overheat

Operating conditions: suction gas temperature 20°C, 0K subcooling

t_c - Condensing temperature [°C]

t_e - Evaporating temperature [°C]

Model: ZB21KCE-TFD**Capacity**

R407C

Cooling capacity [kW]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
15	3.07	3.89	4.87	6.02	7.38	8.96	-	-
20	2.88	3.69	4.65	5.77	7.08	8.61	10.39	-
25	2.71	3.50	4.43	5.51	6.78	8.25	9.96	-
30	2.54	3.32	4.21	5.25	6.47	7.88	9.52	11.41
35	2.38	3.13	3.99	4.99	6.15	7.50	9.07	10.87
40	2.21	2.94	3.77	4.72	5.82	7.11	8.59	10.31
45	-	2.75	3.53	4.44	5.48	6.69	8.10	9.73
50	-	-	3.29	4.14	5.12	6.26	7.58	9.12
55	-	-	-	3.83	4.74	5.80	7.04	8.48
60	-	-	-	-	4.34	5.33	6.47	7.80
65	-	-	-	-	-	4.82	5.87	7.10

Power input [kW]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
15	1.08	1.09	1.09	1.09	1.08	1.07	-	-
20	1.23	1.24	1.24	1.24	1.23	1.21	1.20	-
25	1.40	1.41	1.41	1.40	1.39	1.37	1.35	-
30	1.57	1.58	1.58	1.58	1.56	1.54	1.52	1.49
35	1.75	1.77	1.77	1.77	1.76	1.73	1.71	1.67
40	1.95	1.97	1.98	1.98	1.97	1.95	1.92	1.89
45	-	2.19	2.21	2.22	2.21	2.19	2.17	2.13
50	-	-	2.47	2.48	2.48	2.46	2.44	2.41
55	-	-	-	2.76	2.77	2.76	2.74	2.71
60	-	-	-	-	3.10	3.10	3.09	3.06
65	-	-	-	-	-	3.47	3.47	3.45

Model: ZB21KCE-TFD

Capacity

Current [A]

$t_c \setminus t_e$	-25	-20	-15	-10	-5	0	5	10
15	2.78	2.79	2.79	2.79	2.78	2.77	-	-
20	2.98	2.99	2.99	2.98	2.97	2.95	2.93	-
25	3.19	3.20	3.20	3.19	3.17	3.15	3.12	-
30	3.40	3.42	3.42	3.41	3.39	3.37	3.34	3.30
35	3.63	3.65	3.66	3.66	3.64	3.61	3.57	3.53
40	3.87	3.91	3.92	3.92	3.91	3.88	3.84	3.80
45	-	4.18	4.21	4.22	4.21	4.18	4.15	4.10
50	-	-	4.52	4.54	4.54	4.52	4.49	4.45
55	-	-	-	4.90	4.91	4.90	4.87	4.84
60	-	-	-	-	5.32	5.32	5.30	5.27
65	-	-	-	-	-	5.79	5.78	5.76

Mass flow [kg/h]

$t_c \setminus t_e$	-25	-20	-15	-10	-5	0	5	10
15	48.77	63.57	80.41	100.04	123.23	150.74	-	-
20	47.84	62.64	79.48	99.13	122.35	149.91	182.56	-
25	47.05	61.83	78.66	98.30	121.52	149.09	181.76	-
30	46.34	61.06	77.84	97.45	120.65	148.20	180.87	219.42
35	45.60	60.25	76.96	96.51	119.65	147.16	179.79	218.32
40	44.77	59.31	75.92	95.38	118.45	145.88	178.45	216.93
45	-	58.15	74.64	93.98	116.94	144.28	176.76	215.16
50	-	-	73.03	92.23	115.06	142.27	174.64	212.92
55	-	-	-	90.04	112.71	139.77	171.99	210.14
60	-	-	-	-	109.81	136.69	168.74	206.73
65	-	-	-	-	-	132.94	164.80	202.60

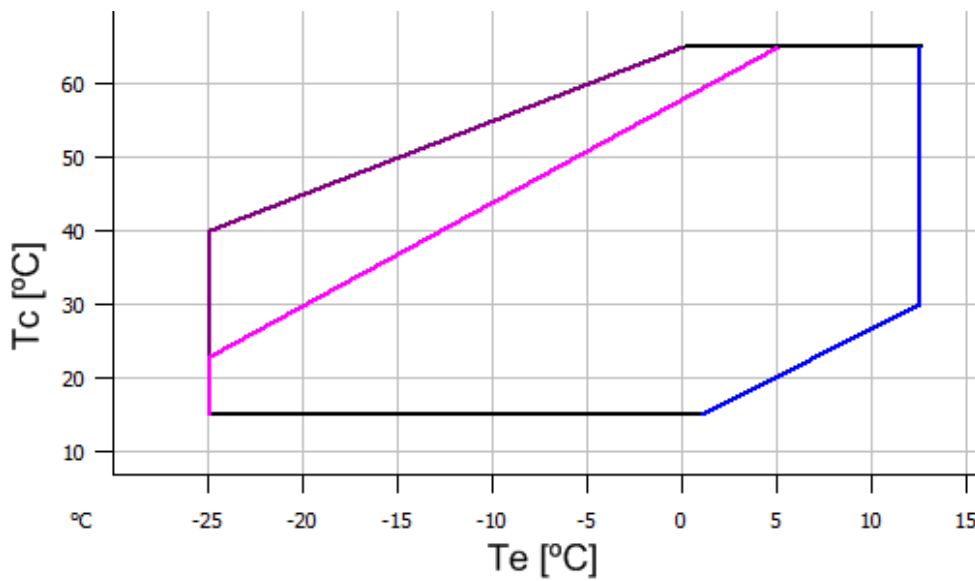
Model: ZB21KCE-TFD

Capacity

C.O.P. [W/W]

$t_c \setminus t_e$	-25	-20	-15	-10	-5	0	5	10
15	2.85	3.58	4.47	5.54	6.82	8.35	-	-
20	2.34	2.97	3.74	4.66	5.77	7.09	8.67	-
25	1.94	2.49	3.15	3.94	4.89	6.03	7.39	-
30	1.62	2.10	2.66	3.33	4.14	5.11	6.28	7.67
35	1.36	1.77	2.25	2.82	3.50	4.32	5.31	6.49
40	1.14	1.49	1.90	2.38	2.95	3.64	4.47	5.46
45	-	1.25	1.60	2.00	2.48	3.05	3.74	4.57
50	-	-	1.34	1.67	2.07	2.54	3.11	3.79
55	-	-	-	1.39	1.71	2.10	2.56	3.12
60	-	-	-	-	1.40	1.72	2.10	2.55
65	-	-	-	-	-	1.39	1.69	2.06

Application range



- Maximum evaporating temperature
- 25°C suction gas temperature
- 10K gas overheat

Operating conditions: suction gas temperature 20°C, 0K subcooling

t_c - Condensing temperature [°C]

t_e - Evaporating temperature [°C]