

Type: Hermetic scroll compressors

Producer: Copeland

Series: ZB

Model: ZB45KCE-TFD

Technical data

Displacement [m ³ /h]:	17,1
Sound power [dBA]:	73
Sound pressure level [dB]:	62
Net Weight [kg]:	39,5
Oil charge [dm ³]:	1,9
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]:	74
Max. operating current [A]:	13,1
Winding resistance [Ω]:	2,3

Connections

	<u>inches</u>
Suction Rotolock valve connection:	1 1/4"
Discharge Rotolock valve connection:	1"
Suction connection with supplied sleeve:	7/8"
Discharge connection with supplied sleeve:	1/2"

R134a

Cooling capacity [kW]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	4.49	5.72	7.20	8.94	10.97	13.31	15.98	-
35	4.18	5.36	6.78	8.46	10.41	12.66	15.22	-
40	3.90	5.02	6.37	7.97	9.83	11.99	14.44	17.23
45	-	4.69	5.97	7.48	9.25	11.29	13.63	16.29
50	-	4.37	5.56	6.98	8.64	10.58	12.79	15.32
55	-	-	5.16	6.48	8.03	9.84	11.93	14.31
60	-	-	-	5.98	7.41	9.09	11.03	13.26
65	-	-	-	5.48	6.78	8.32	10.12	12.19
70	-	-	-	-	6.14	7.54	9.18	11.08
75	-	-	-	-	5.50	6.74	8.21	9.94

Power input [kW]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	2.02	2.01	2.01	2.02	2.04	2.06	2.09	-
35	2.29	2.28	2.28	2.29	2.30	2.32	2.35	-
40	2.59	2.57	2.56	2.57	2.58	2.60	2.62	2.65
45	-	2.90	2.88	2.88	2.89	2.90	2.92	2.94
50	-	3.27	3.24	3.23	3.23	3.24	3.26	3.27
55	-	-	3.66	3.64	3.63	3.63	3.63	3.64
60	-	-	-	4.10	4.08	4.07	4.07	4.07
65	-	-	-	4.64	4.60	4.58	4.57	4.56
70	-	-	-	-	5.20	5.17	5.14	5.12
75	-	-	-	-	5.89	5.84	5.79	5.76

Current [A]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	4.93	4.94	4.94	4.94	4.95	4.97	5.01	-
35	5.20	5.20	5.21	5.21	5.22	5.24	5.28	-
40	5.52	5.52	5.52	5.52	5.53	5.55	5.58	5.64
45	-	5.91	5.90	5.89	5.89	5.91	5.94	5.99
50	-	6.37	6.35	6.34	6.33	6.33	6.35	6.40
55	-	-	6.89	6.87	6.85	6.84	6.85	6.89
60	-	-	-	7.50	7.47	7.44	7.44	7.46
65	-	-	-	8.25	8.19	8.16	8.14	8.14
70	-	-	-	-	9.05	8.99	8.95	8.94
75	-	-	-	-	10.04	9.96	9.90	9.86

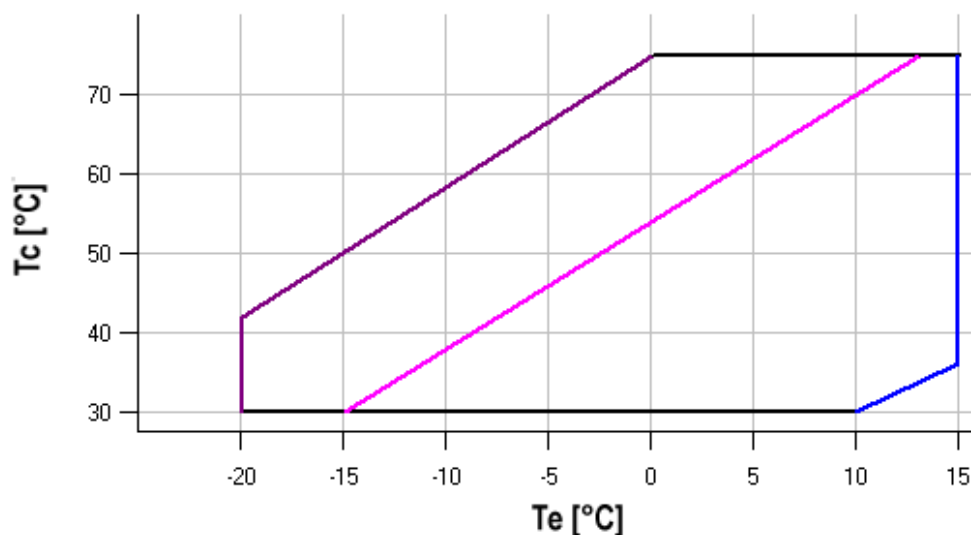
Mass flow [kg/h]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	90.09	116.11	147.02	183.60	226.65	276.96	335.32	-
35	88.77	114.31	144.91	181.38	224.50	275.07	333.88	-
40	87.60	112.53	142.72	178.95	222.03	272.74	331.87	400.22
45	-	110.72	140.37	176.25	219.16	269.90	329.24	397.98
50	-	108.82	137.81	173.22	215.85	266.48	325.92	394.94
55	-	-	134.97	169.79	212.02	262.44	321.84	391.02
60	-	-	-	165.92	207.62	257.70	316.96	386.18
65	-	-	-	161.52	202.59	252.22	311.21	380.34
70	-	-	-	-	196.86	245.92	304.52	373.46
75	-	-	-	-	190.37	238.74	296.84	365.46

C.O.P. [W/W]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	2.22	2.84	3.58	4.42	5.37	6.45	7.64	-
35	1.82	2.35	2.98	3.70	4.52	5.45	6.48	-
40	1.50	1.95	2.49	3.10	3.81	4.61	5.51	6.51
45	-	1.62	2.07	2.60	3.20	3.89	4.67	5.53
50	-	1.34	1.71	2.16	2.67	3.26	3.93	4.68
55	-	-	1.41	1.78	2.21	2.71	3.28	3.93
60	-	-	-	1.46	1.82	2.23	2.71	3.26
65	-	-	-	1.18	1.47	1.82	2.22	2.67
70	-	-	-	-	1.18	1.46	1.79	2.17
75	-	-	-	-	0.93	1.15	1.42	1.73

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]

R404A/R507

Cooling capacity [kW]

$t_c \setminus t_e$	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
10	4.35	5.55	7.02	8.79	10.89	13.34	16.17	-	-	-	-
15	4.12	5.27	6.67	8.35	10.34	12.65	15.34	18.41	-	-	-
20	3.88	4.98	6.31	7.90	9.77	11.96	14.49	17.39	20.70	-	-
25	3.64	4.68	5.94	7.43	9.19	11.25	13.63	16.36	19.47	22.99	-
30	3.39	4.38	5.56	6.96	8.60	10.53	12.75	15.31	18.23	21.54	25.27
35	3.14	4.07	5.17	6.47	8.00	9.79	11.87	14.25	16.98	20.07	23.57
40	2.88	3.75	4.77	5.98	7.39	9.05	10.96	13.17	15.71	18.59	21.85
45	-	-	4.37	5.48	6.77	8.29	10.05	12.08	14.42	17.08	20.11
50	-	-	-	4.97	6.14	7.52	9.12	10.97	13.11	15.56	18.35
55	-	-	-	-	5.50	6.74	8.18	9.85	11.79	14.02	16.57
60	-	-	-	-	-	5.94	7.22	8.72	10.46	12.47	14.77

Power input [kW]

$t_c \setminus t_e$	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
10	2.10	2.11	2.10	2.09	2.08	2.06	2.04	-	-	-	-
15	2.38	2.39	2.39	2.39	2.37	2.35	2.33	2.31	-	-	-
20	2.68	2.70	2.71	2.70	2.69	2.68	2.65	2.63	2.60	-	-
25	3.00	3.03	3.05	3.05	3.05	3.03	3.01	2.98	2.96	2.93	-
30	3.36	3.40	3.42	3.44	3.43	3.42	3.40	3.38	3.34	3.31	3.28
35	3.75	3.80	3.83	3.85	3.86	3.85	3.83	3.81	3.77	3.74	3.70
40	4.17	4.23	4.28	4.30	4.31	4.31	4.30	4.28	4.24	4.21	4.16
45	-	-	4.76	4.79	4.81	4.82	4.81	4.79	4.76	4.72	4.67
50	-	-	-	5.32	5.35	5.36	5.36	5.34	5.31	5.28	5.23
55	-	-	-	-	5.93	5.95	5.95	5.94	5.92	5.88	5.83
60	-	-	-	-	-	6.58	6.59	6.59	6.57	6.53	6.49

Current [A]

t_c \ t_e	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
10	6.49	6.48	6.48	6.48	6.47	6.47	6.47	-	-	-	-
15	6.69	6.70	6.71	6.72	6.72	6.72	6.72	6.72	-	-	-
20	6.93	6.96	6.98	7.00	7.01	7.01	7.01	7.01	7.01	-	-
25	7.24	7.28	7.31	7.33	7.35	7.35	7.35	7.35	7.35	7.34	-
30	7.61	7.67	7.71	7.74	7.76	7.76	7.76	7.76	7.75	7.73	7.72
35	8.06	8.13	8.19	8.22	8.25	8.25	8.25	8.24	8.22	8.20	8.17
40	8.62	8.70	8.76	8.80	8.83	8.84	8.84	8.82	8.79	8.76	8.72
45	-	-	9.44	9.49	9.52	9.53	9.53	9.51	9.47	9.42	9.36
50	-	-	-	10.31	10.34	10.35	10.34	10.31	10.27	10.21	10.13
55	-	-	-	-	11.29	11.30	11.28	11.25	11.19	11.12	11.03
60	-	-	-	-	-	12.40	12.38	12.33	12.27	12.18	12.08

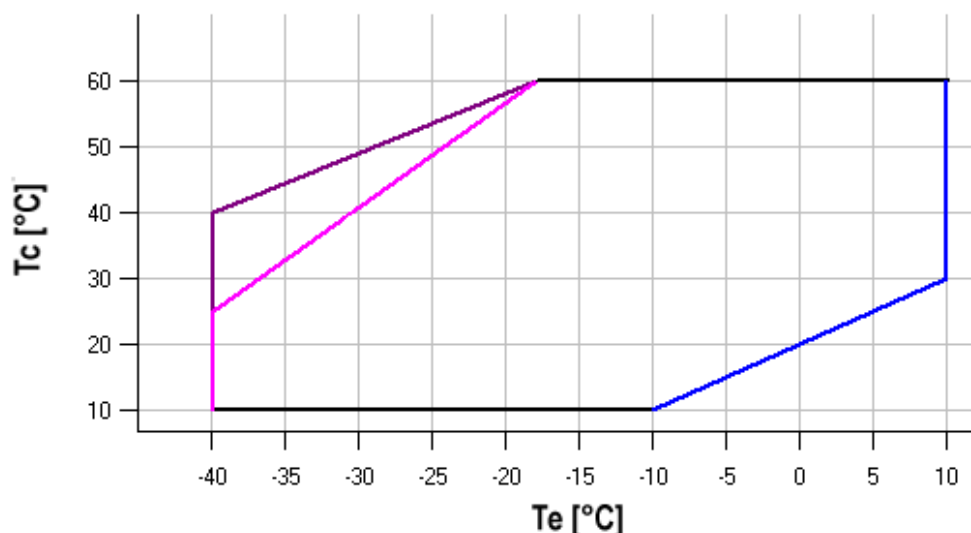
Mass flow [kg/h]

t_c \ t_e	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
10	82.89	111.05	143.00	180.03	223.44	274.50	334.52	-	-	-	-
15	84.04	111.24	142.29	178.50	221.14	271.50	330.88	400.56	-	-	-
20	84.47	110.74	140.93	176.34	218.24	267.93	326.69	395.83	476.62	-	-
25	84.30	109.67	139.03	173.65	214.85	263.89	322.08	390.70	471.04	564.39	-
30	83.64	108.13	136.68	170.56	211.08	259.50	317.14	385.27	465.18	558.17	665.52
35	82.59	106.24	134.01	167.17	207.03	254.87	311.98	379.65	459.16	551.82	658.90
40	81.26	104.10	131.11	163.59	202.83	250.10	306.72	373.95	453.10	545.45	652.29
45	-	-	128.11	159.93	198.57	245.31	301.45	368.28	447.09	539.16	645.79
50	-	-	-	156.29	194.36	240.60	296.30	362.76	441.25	533.07	639.52
55	-	-	-	-	190.32	236.08	291.37	357.48	435.69	527.29	633.57
60	-	-	-	-	-	231.86	286.77	352.55	430.51	521.92	628.07

C.O.P. [W/W]

$t_c \setminus t_e$	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
10	2.07	2.64	3.34	4.20	5.24	6.47	7.92	-	-	-	-
15	1.73	2.21	2.79	3.50	4.36	5.38	6.58	7.97	-	-	-
20	1.45	1.85	2.33	2.92	3.63	4.47	5.46	6.61	7.95	-	-
25	1.21	1.54	1.95	2.43	3.02	3.71	4.53	5.48	6.59	7.86	-
30	1.01	1.29	1.62	2.02	2.51	3.08	3.75	4.54	5.45	6.51	7.71
35	0.84	1.07	1.35	1.68	2.08	2.54	3.10	3.75	4.50	5.37	6.37
40	0.69	0.89	1.12	1.39	1.71	2.10	2.55	3.08	3.70	4.42	5.25
45	-	-	0.92	1.14	1.41	1.72	2.09	2.52	3.03	3.62	4.30
50	-	-	-	0.93	1.15	1.40	1.70	2.05	2.47	2.95	3.51
55	-	-	-	-	0.93	1.13	1.37	1.66	1.99	2.38	2.84
60	-	-	-	-	-	0.90	1.10	1.32	1.59	1.91	2.28

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]

R407C

Cooling capacity [kW]

$t_c \setminus t_e$	-25	-20	-15	-10	-5	0	5	10
15	5.37	6.71	8.49	10.75	13.55	16.94	-	-
20	5.49	6.85	8.59	10.76	13.41	16.60	20.39	-
25	5.39	6.78	8.49	10.58	13.11	16.12	19.67	-
30	5.09	6.52	8.22	10.25	12.66	15.51	18.84	22.72
35	4.62	6.10	7.81	9.79	12.10	14.79	17.92	21.54
40	3.99	5.54	7.27	9.22	11.44	14.00	16.94	20.31
45	-	4.87	6.63	8.56	10.71	13.15	15.91	19.06
50	-	-	5.91	7.84	9.94	12.26	14.87	17.81
55	-	-	-	7.08	9.14	11.37	13.83	16.57
60	-	-	-	-	8.33	10.49	12.82	15.38
65	-	-	-	-	-	9.65	11.86	14.25

Power input [kW]

$t_c \setminus t_e$	-25	-20	-15	-10	-5	0	5	10
15	1.88	1.92	1.96	2.00	2.05	2.12	-	-
20	2.16	2.20	2.23	2.26	2.30	2.35	2.42	-
25	2.45	2.50	2.53	2.56	2.58	2.61	2.66	-
30	2.76	2.82	2.86	2.89	2.90	2.92	2.95	3.01
35	3.09	3.17	3.22	3.25	3.27	3.28	3.30	3.33
40	3.44	3.55	3.62	3.65	3.67	3.68	3.69	3.71
45	-	3.96	4.05	4.10	4.13	4.14	4.15	4.15
50	-	-	4.51	4.59	4.63	4.65	4.66	4.66
55	-	-	-	5.12	5.18	5.22	5.23	5.23
60	-	-	-	-	5.79	5.84	5.86	5.87
65	-	-	-	-	-	6.52	6.56	6.58

Current [A]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
15	4.51	4.57	4.61	4.66	4.72	4.81	-	-
20	4.90	4.95	4.99	5.03	5.07	5.13	5.23	-
25	5.29	5.35	5.40	5.43	5.46	5.50	5.56	-
30	5.69	5.78	5.83	5.86	5.88	5.91	5.95	6.02
35	6.13	6.24	6.31	6.35	6.37	6.39	6.41	6.46
40	6.61	6.75	6.85	6.90	6.93	6.94	6.95	6.98
45	-	7.33	7.45	7.52	7.56	7.58	7.59	7.60
50	-	-	8.13	8.23	8.29	8.32	8.33	8.33
55	-	-	-	9.04	9.12	9.16	9.18	9.19
60	-	-	-	-	10.07	10.13	10.17	10.18
65	-	-	-	-	-	11.24	11.29	11.32

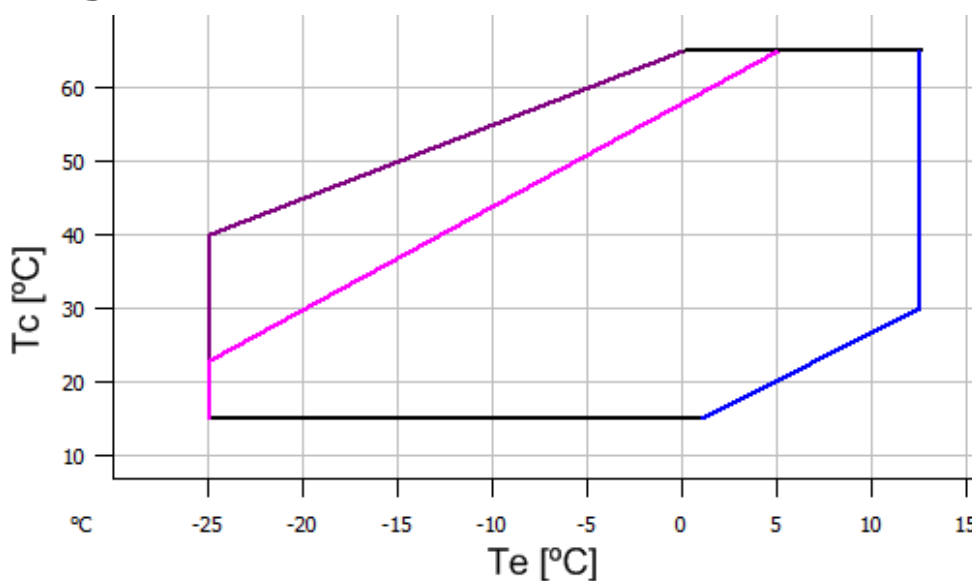
Mass flow [kg/h]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
15	84.46	108.62	139.02	177.24	224.84	283.40	-	-
20	91.20	116.25	146.99	184.98	231.80	289.03	358.24	-
25	93.60	119.81	151.15	189.20	235.51	291.68	359.26	-
30	92.19	119.84	152.05	190.41	236.49	291.86	358.10	436.78
35	87.51	116.85	150.21	189.16	235.27	290.12	355.28	432.32
40	80.08	111.39	146.16	185.97	232.38	286.98	351.33	427.01
45	-	103.98	140.44	181.37	228.36	282.97	346.78	421.36
50	-	-	133.56	175.89	223.72	278.61	342.15	415.91
55	-	-	-	170.06	219.00	274.45	337.99	411.19
60	-	-	-	-	214.72	271.00	334.81	407.73
65	-	-	-	-	-	268.80	333.15	406.05

C.O.P. [W/W]

$t_c \setminus t_e$	-25	-20	-15	-10	-5	0	5	10
15	2.85	3.49	4.33	5.38	6.61	7.98	-	-
20	2.54	3.11	3.85	4.76	5.84	7.08	8.42	-
25	2.20	2.71	3.35	4.14	5.08	6.17	7.38	-
30	1.85	2.31	2.87	3.55	4.36	5.31	6.38	7.55
35	1.49	1.92	2.42	3.01	3.70	4.51	5.43	6.47
40	1.16	1.56	2.01	2.52	3.11	3.80	4.59	5.47
45	-	1.23	1.64	2.09	2.60	3.17	3.84	4.59
50	-	-	1.31	1.71	2.15	2.64	3.19	3.82
55	-	-	-	1.38	1.76	2.18	2.65	3.17
60	-	-	-	-	1.44	1.80	2.19	2.62
65	-	-	-	-	-	1.48	1.81	2.17

Application range

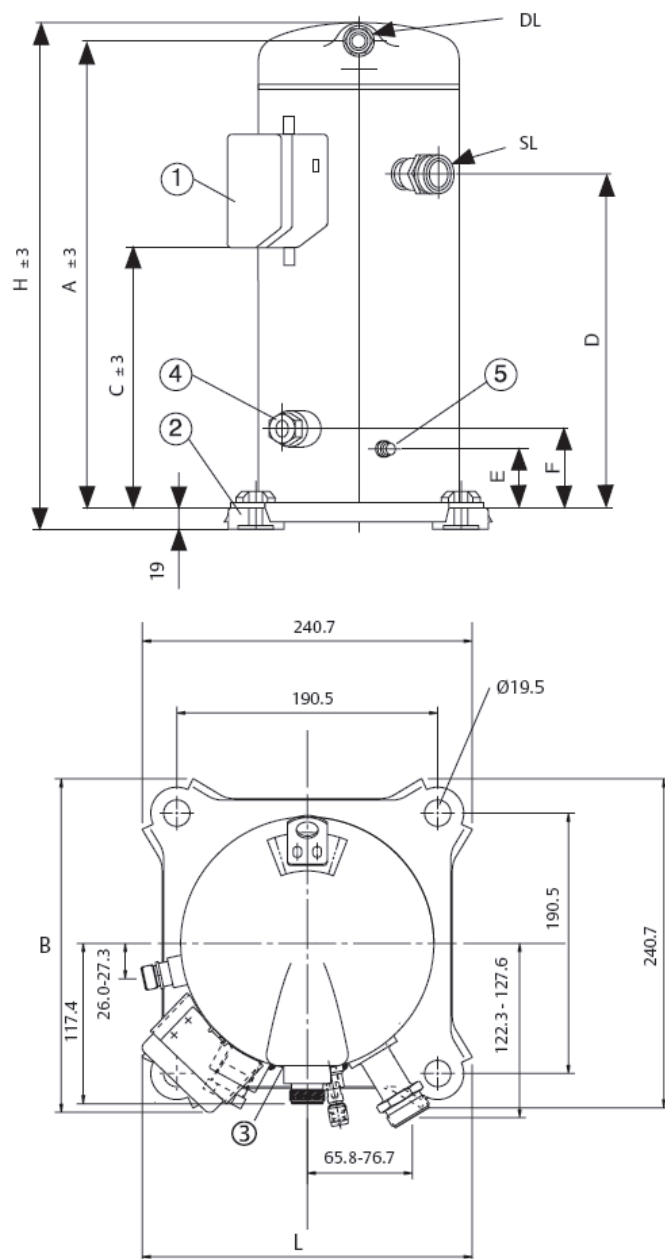


- Maximum evaporating temperature
- 25°C suction gas temperature
- 10K gas overheat

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

t_c - Condensing temperature [°C]

t_e - Evaporating temperature [°C]



A	410 mm
B	242 mm
C	233 mm
D	297 mm
E	48 mm
F	81 mm
H	458 mm
L	242 mm

