

Type: Hermetic scroll compressors

Producer: Copeland

Series: ZB

Model: ZB50KCE-TFD

Technical data

Displacement [m ³ /h]:	19,8
Sound power [dBA]:	75
Sound power with sound shell [dBA]:	65
Sound pressure level [dB]:	64
Net Weight [kg]:	59
Oil charge [dm ³]:	2,5
Maximum high pressure [bar]:	32
Maximum standstill pressure [bar]:	22,6
Minimal lowside temperature [°C]:	-35
Maximum lowside temperature [°C]:	50
PED category:	2

Electrical data

Power supply [V/~/Hz]:	380-420V/3/50Hz
Locked rotor current [A]:	100
Max. operating current [A]:	14,6
Winding resistance [Ω]:	1,8

Connections

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

R134a

Cooling capacity [kW]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
25	5.38	6.86	8.59	10.62	12.96	15.64	-	-
30	5.09	6.51	8.18	10.13	12.38	14.97	17.91	-
35	4.81	6.17	7.77	9.64	11.80	14.27	17.10	20.29
40	4.54	5.84	7.36	9.14	11.20	13.56	16.26	19.32
45	-	5.50	6.95	8.63	10.58	12.83	15.41	18.33
50	-	5.17	6.53	8.11	9.96	12.08	14.52	17.30
55	-	-	6.11	7.59	9.31	11.31	13.61	16.23
60	-	-	-	7.05	8.65	10.52	12.67	15.14
65	-	-	-	6.50	7.97	9.70	11.70	14.00
70	-	-	-	-	7.27	8.85	10.70	12.83
75	-	-	-	-	-	7.98	9.66	11.62

Power input [kW]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
25	2.16	2.14	2.16	2.22	2.28	2.34	-	-
30	2.42	2.40	2.42	2.47	2.52	2.57	2.59	-
35	2.70	2.69	2.71	2.75	2.80	2.84	2.84	2.81
40	3.00	2.99	3.02	3.06	3.11	3.14	3.13	3.08
45	-	3.32	3.35	3.40	3.44	3.47	3.46	3.40
50	-	3.66	3.71	3.76	3.81	3.84	3.83	3.75
55	-	-	4.09	4.15	4.21	4.24	4.23	4.15
60	-	-	-	4.57	4.64	4.68	4.67	4.60
65	-	-	-	5.02	5.10	5.15	5.15	5.08
70	-	-	-	-	5.59	5.66	5.67	5.60
75	-	-	-	-	-	6.20	6.22	6.17

Current [A]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
25	7.42	7.44	7.49	7.55	7.60	7.61	-	-
30	7.62	7.63	7.67	7.73	7.78	7.79	7.74	-
35	7.84	7.84	7.88	7.94	7.98	7.99	7.94	7.81
40	8.08	8.08	8.12	8.18	8.22	8.24	8.20	8.07
45	-	8.36	8.40	8.46	8.51	8.53	8.50	8.38
50	-	8.68	8.73	8.79	8.86	8.89	8.86	8.76
55	-	-	9.11	9.18	9.26	9.30	9.29	9.20
60	-	-	-	9.64	9.73	9.79	9.79	9.72
65	-	-	-	10.17	10.27	10.35	10.38	10.33
70	-	-	-	-	10.90	11.00	11.05	11.03
75	-	-	-	-	-	11.75	11.83	11.83

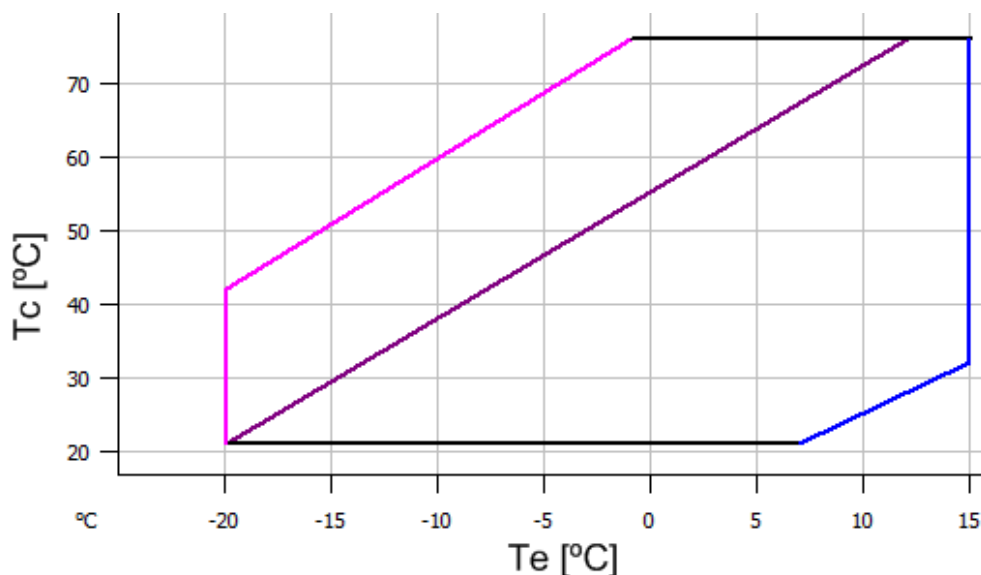
Mass flow [kg/h]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
25	105.46	134.36	168.69	209.26	256.88	312.33	-	-
30	105.11	133.51	167.54	207.98	255.64	311.31	375.81	-
35	104.80	132.66	166.32	206.58	254.23	310.08	374.93	449.57
40	104.46	131.73	164.98	205.00	252.59	308.56	373.71	448.83
45	-	130.64	163.42	203.16	250.64	306.68	372.07	447.62
50	-	129.32	161.59	200.98	248.31	304.36	369.95	445.87
55	-	-	159.39	198.40	245.51	301.53	367.27	443.51
60	-	-	-	195.33	242.18	298.12	363.94	440.46
65	-	-	-	191.70	238.24	294.04	359.91	436.64
70	-	-	-	-	233.62	289.23	355.09	431.99
75	-	-	-	-	-	283.61	349.41	426.43

C.O.P. [W/W]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
25	2.49	3.20	3.97	4.79	5.68	6.68	-	-
30	2.10	2.71	3.37	4.10	4.90	5.82	6.91	-
35	1.78	2.30	2.87	3.50	4.21	5.03	6.01	7.23
40	1.51	1.95	2.44	2.98	3.60	4.33	5.19	6.27
45	-	1.66	2.07	2.54	3.07	3.70	4.45	5.40
50	-	1.41	1.76	2.16	2.61	3.15	3.80	4.61
55	-	-	1.49	1.83	2.21	2.67	3.22	3.91
60	-	-	-	1.54	1.86	2.25	2.71	3.29
65	-	-	-	1.29	1.56	1.88	2.27	2.76
70	-	-	-	-	1.30	1.56	1.89	2.29
75	-	-	-	-	-	1.29	1.55	1.88

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]

$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
10	8.15	10.09	12.36	15.03	18.18	-	-	-	-
15	7.66	9.64	11.88	14.48	17.50	21.04	-	-	-
20	7.08	9.09	11.33	13.85	16.76	20.12	24.01	-	-
25	6.39	8.46	10.68	13.15	15.94	19.14	22.81	27.05	-
30	5.59	7.72	9.95	12.37	15.05	18.09	21.55	25.51	30.07
35	4.69	6.88	9.12	11.49	14.08	16.97	20.22	23.93	28.16
40	3.66	5.92	8.19	10.53	13.03	15.77	18.82	22.28	26.21
45	-	4.85	7.15	9.46	11.88	14.48	17.35	20.56	24.19
50	-	-	5.99	8.29	10.64	13.11	15.80	18.77	22.11
55	-	-	4.72	7.01	9.29	11.65	14.16	16.90	19.96
60	-	-	-	5.61	7.84	10.08	12.43	14.95	17.74

Power input [kW]

$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
10	2.54	2.58	2.62	2.65	2.67	-	-	-	-
15	2.83	2.87	2.91	2.94	2.97	2.99	-	-	-
20	3.16	3.20	3.24	3.27	3.29	3.31	3.33	-	-
25	3.55	3.58	3.61	3.63	3.66	3.67	3.68	3.69	-
30	4.01	4.03	4.04	4.06	4.07	4.08	4.08	4.08	4.08
35	4.55	4.55	4.55	4.55	4.54	4.54	4.53	4.52	4.51
40	5.17	5.15	5.13	5.11	5.09	5.07	5.05	5.02	4.99
45	-	5.84	5.80	5.76	5.72	5.68	5.64	5.59	5.55
50	-	-	6.58	6.51	6.44	6.38	6.31	6.25	6.18
55	-	-	7.46	7.37	7.27	7.18	7.09	7.00	6.91
60	-	-	-	8.34	8.22	8.09	7.97	7.85	7.73

Current [A]

$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
10	7.71	7.74	7.77	7.79	7.80	-	-	-	-
15	7.92	7.96	7.99	8.02	8.04	8.05	-	-	-
20	8.19	8.22	8.26	8.29	8.31	8.33	8.34	-	-
25	8.53	8.56	8.59	8.61	8.63	8.65	8.66	8.67	-
30	8.97	8.99	9.00	9.02	9.03	9.04	9.05	9.05	9.04
35	9.53	9.53	9.53	9.52	9.52	9.52	9.51	9.50	9.48
40	10.22	10.20	10.17	10.15	10.13	10.10	10.08	10.05	10.01
45	-	11.02	10.97	10.91	10.86	10.81	10.76	10.71	10.66
50	-	-	11.93	11.84	11.76	11.67	11.59	11.51	11.43
55	-	-	13.07	12.95	12.82	12.70	12.58	12.46	12.35
60	-	-	-	14.26	14.09	13.92	13.76	13.60	13.44

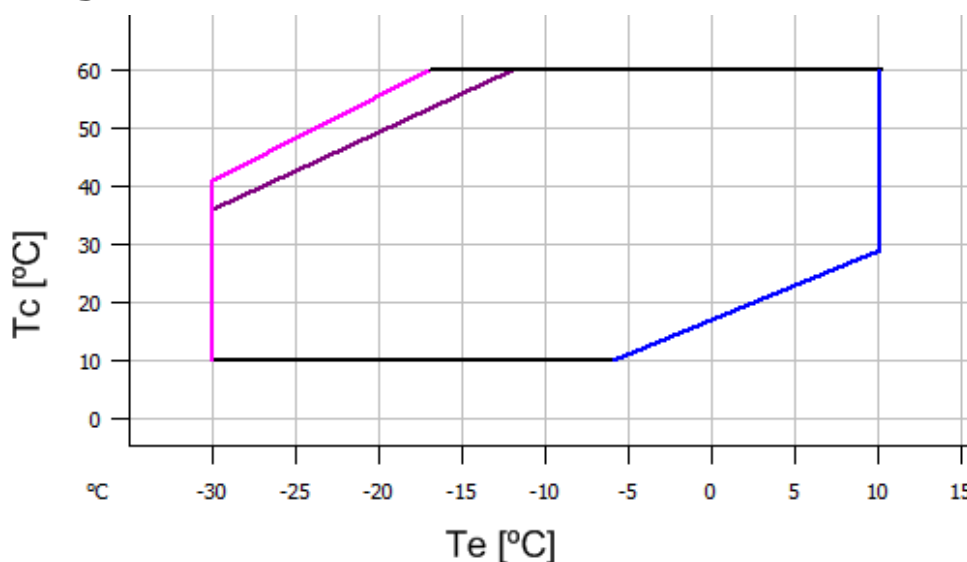
Mass flow [kg/h]

$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
10	161.81	204.73	252.83	309.20	376.90	-	-	-	-
15	160.43	205.17	254.27	310.82	377.88	458.52	-	-	-
20	155.97	203.12	253.83	311.15	378.17	457.96	553.59	-	-
25	148.06	198.22	251.12	309.83	377.41	456.95	551.50	664.14	-
30	136.32	190.10	245.80	306.48	375.23	455.10	549.18	660.53	792.22
35	120.39	178.38	237.47	300.74	371.24	452.06	546.26	656.92	787.10
40	99.89	162.69	225.78	292.22	365.09	447.45	542.38	652.95	782.22
45	-	142.67	210.36	280.58	356.40	440.91	537.16	648.23	777.20
50	-	-	190.82	265.42	344.81	432.05	530.23	642.41	771.66
55	-	-	166.82	246.39	329.94	420.52	521.23	635.11	765.25
60	-	-	-	223.11	311.42	405.95	509.77	625.96	757.59

C.O.P. [W/W]

$t_c \setminus t_e$	-30	-25	-20	-15	-10	-5	0	5	10
10	3.21	3.91	4.72	5.67	6.80	-	-	-	-
15	2.71	3.36	4.08	4.92	5.89	7.04	-	-	-
20	2.24	2.84	3.50	4.24	5.09	6.07	7.22	-	-
25	1.80	2.36	2.96	3.62	4.36	5.21	6.19	7.33	-
30	1.39	1.92	2.46	3.05	3.70	4.44	5.28	6.25	7.38
35	1.03	1.51	2.01	2.53	3.10	3.74	4.46	5.29	6.25
40	0.71	1.15	1.60	2.06	2.56	3.11	3.73	4.44	5.25
45	-	0.83	1.23	1.64	2.08	2.55	3.08	3.67	4.36
50	-	-	0.91	1.27	1.65	2.06	2.50	3.00	3.58
55	-	-	0.63	0.95	1.28	1.62	2.00	2.42	2.89
60	-	-	-	0.67	0.95	1.25	1.56	1.91	2.30

Application range

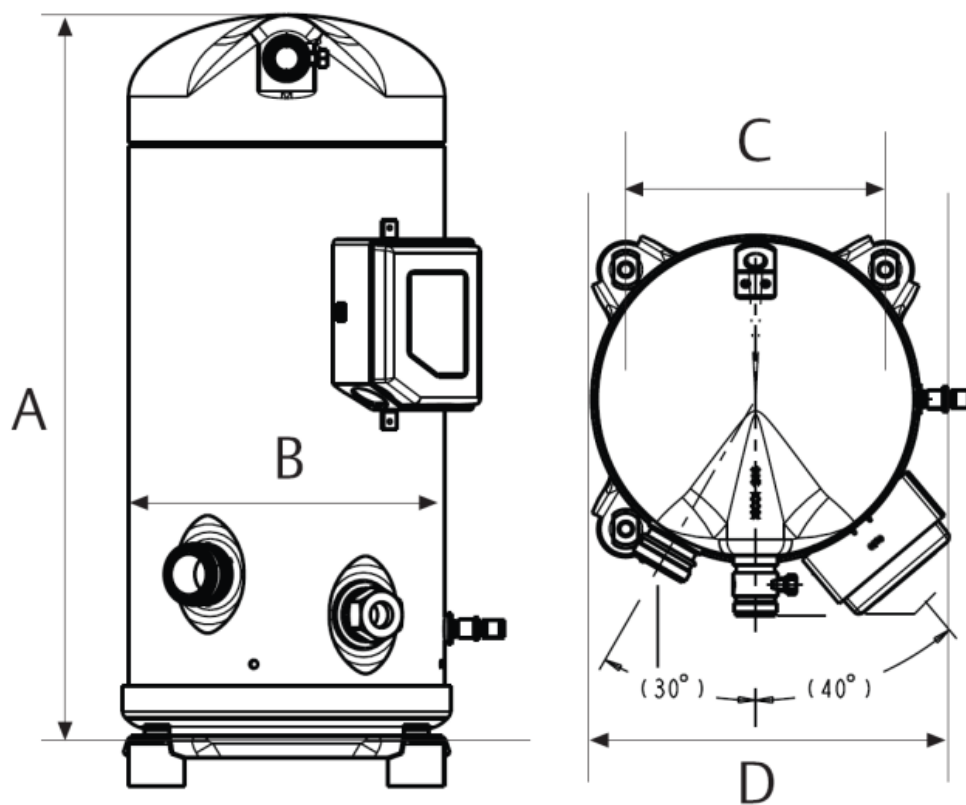


- Maximum evaporating temperature
- 20°C suction gas temperature
- 10K gas overheat

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

t_c - Condensing temperature [°C]

t_e - Evaporating temperature [°C]



A	476 mm
B	232 mm
C	190 mm
D	263 mm

