

Type: Hermetic piston compressors
Producer: Copeland
Series: ZB

Model: ZB75KCE-TWD

Technical data

Nominal motor power [HP]:	10
Displacement [m ³ /h]:	28,9
Weight [kg]:	101
Oil charge [dm ³]:	4,1

Electrical data

Power supply [V/~/Hz]:	380-420V/3/50Hz
Locked rotor current [A]:	127
Max. operating current [A]:	19,2
Winding resistance [Ω]:	0,26

Connections

	<u>millimeters</u>	<u>inches</u>
Suction line:		1 3/4"
Discharge line:		1 1/4"

R22
Cooling capacity [kW]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
15	11.54	14.20	17.32	20.96	25.20	30.10	-	-
20	11.04	13.64	16.66	20.18	24.27	29.01	-	-
25	10.55	13.08	16.01	19.41	23.35	27.90	33.14	-
30	10.08	12.53	15.36	18.63	22.41	26.78	31.80	37.56
35	9.61	11.99	14.71	17.84	21.46	25.64	30.45	35.96
40	9.15	11.44	14.05	17.04	20.49	24.48	29.06	34.32
45	-	10.89	13.38	16.23	19.51	23.29	27.65	32.65
50	-	-	12.70	15.39	18.50	22.07	26.20	30.94
55	-	-	-	14.54	17.46	20.82	24.71	29.19
60	-	-	-	-	16.39	19.54	23.18	27.39
65	-	-	-	-	-	18.21	21.61	25.54

Power input [kW]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
15	3.28	3.45	3.65	3.94	4.33	4.88	-	-
20	3.67	3.84	4.03	4.27	4.60	5.06	-	-
25	4.09	4.28	4.46	4.68	4.96	5.34	5.85	-
30	4.52	4.75	4.94	5.15	5.39	5.71	6.14	6.72
35	4.96	5.24	5.46	5.67	5.89	6.16	6.52	7.01
40	5.39	5.74	6.00	6.23	6.44	6.68	6.99	7.40
45	-	6.24	6.56	6.82	7.04	7.27	7.53	7.88
50	-	-	7.13	7.43	7.67	7.90	8.14	8.43
55	-	-	-	8.05	8.33	8.57	8.80	9.06
60	-	-	-	-	9.00	9.27	9.50	9.74
65	-	-	-	-	-	9.99	10.24	10.47

Current [A]

$t_c \setminus t_e$	-25	-20	-15	-10	-5	0	5	10
15	9.87	10.00	10.16	10.40	10.77	11.31	-	-
20	10.17	10.32	10.49	10.70	11.02	11.48	-	-
25	10.51	10.71	10.89	11.10	11.38	11.77	12.34	-
30	10.90	11.16	11.37	11.58	11.83	12.18	12.66	13.33
35	11.32	11.65	11.91	12.14	12.38	12.69	13.11	13.68
40	11.76	12.19	12.51	12.77	13.01	13.30	13.66	14.16
45	-	12.76	13.15	13.46	13.72	14.00	14.33	14.76
50	-	-	13.83	14.20	14.50	14.78	15.09	15.47
55	-	-	-	14.99	15.34	15.64	15.94	16.28
60	-	-	-	-	16.23	16.56	16.87	17.19
65	-	-	-	-	-	17.55	17.88	18.19

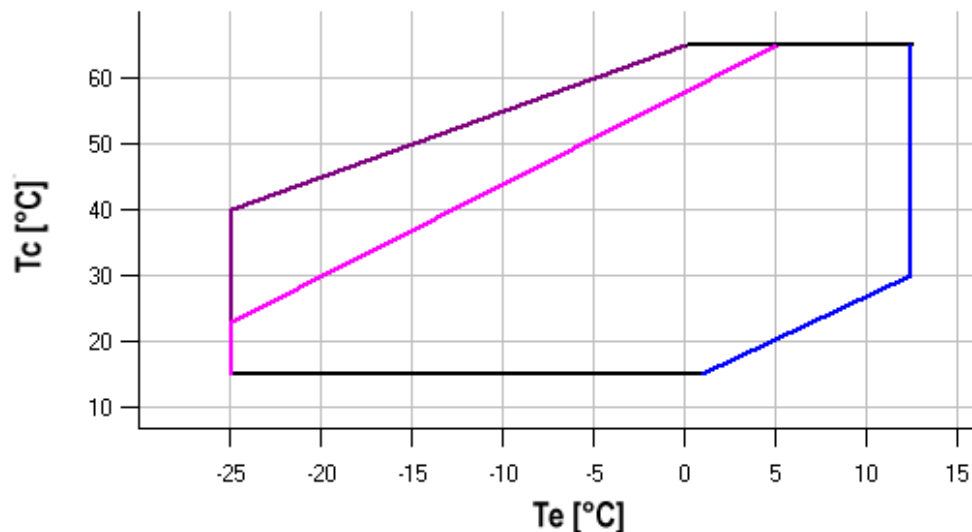
Mass flow [kg/s]

$t_c \setminus t_e$	-25	-20	-15	-10	-5	0	5	10
15	199.74	248.07	303.88	369.19	446.01	536.33	-	-
20	197.36	245.59	301.23	366.29	442.76	532.67	-	-
25	195.25	243.33	298.75	363.49	439.57	528.99	633.77	-
30	193.28	241.17	296.29	360.67	436.30	525.18	629.34	750.77
35	191.33	238.96	293.75	357.69	432.81	521.11	624.59	745.26
40	189.27	236.58	290.97	354.44	429.00	516.65	619.40	739.25
45	-	233.90	287.84	350.77	424.71	511.66	613.62	732.60
50	-	-	284.22	346.56	419.82	506.01	607.13	725.19
55	-	-	-	341.68	414.21	499.58	599.81	716.88
60	-	-	-	-	407.74	492.24	591.51	707.55
65	-	-	-	-	-	483.86	582.12	697.06

C.O.P. [W/W]

$t_c \setminus t_e$	-25	-20	-15	-10	-5	0	5	10
15	3.51	4.12	4.74	5.32	5.82	6.17	-	-
20	3.01	3.55	4.13	4.72	5.28	5.74	-	-
25	2.58	3.06	3.59	4.15	4.71	5.23	5.66	-
30	2.23	2.64	3.11	3.62	4.16	4.69	5.18	5.59
35	1.94	2.29	2.69	3.15	3.65	4.16	4.67	5.13
40	1.70	1.99	2.34	2.74	3.18	3.66	4.16	4.64
45	-	1.75	2.04	2.38	2.77	3.21	3.67	4.15
50	-	-	1.78	2.07	2.41	2.79	3.22	3.67
55	-	-	-	1.81	2.10	2.43	2.81	3.22
60	-	-	-	-	1.82	2.11	2.44	2.81
65	-	-	-	-	-	1.82	2.11	2.44

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]

R134a

Cooling capacity [kW]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	7.47	9.43	11.72	14.40	17.54	21.22	25.50	-
35	6.97	8.89	11.10	13.67	16.67	20.17	24.25	-
40	6.50	8.37	10.50	12.95	15.80	19.12	22.98	27.45
45	-	7.86	9.90	12.23	14.93	18.06	21.71	25.93
50	-	7.35	9.30	11.51	14.05	16.99	20.41	24.38
55	-	-	8.70	10.78	13.16	15.91	19.10	22.80
60	-	-	-	10.04	12.25	14.80	17.76	21.20
65	-	-	-	9.29	11.33	13.67	16.40	19.57
70	-	-	-	-	10.38	12.52	15.01	17.90
75	-	-	-	-	9.42	11.34	13.58	16.20

Power input [kW]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	2.86	3.00	3.14	3.28	3.46	3.70	4.02	-
35	3.19	3.37	3.52	3.67	3.83	4.04	4.31	-
40	3.54	3.76	3.93	4.09	4.25	4.44	4.67	4.98
45	-	4.16	4.38	4.55	4.72	4.89	5.10	5.37
50	-	4.58	4.84	5.05	5.22	5.40	5.59	5.82
55	-	-	5.32	5.56	5.76	5.94	6.13	6.33
60	-	-	-	6.10	6.33	6.53	6.71	6.91
65	-	-	-	6.65	6.92	7.15	7.34	7.53
70	-	-	-	-	7.53	7.79	8.01	8.20
75	-	-	-	-	8.15	8.46	8.70	8.91



Current [A]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15
30	9.52	9.65	9.75	9.86	10.00	10.20	10.49	-
35	9.74	9.91	10.05	10.17	10.31	10.49	10.74	-
40	10.00	10.22	10.40	10.54	10.69	10.86	11.09	11.40
45	-	10.58	10.80	10.98	11.14	11.32	11.53	11.81
50	-	10.97	11.25	11.47	11.66	11.84	12.05	12.30
55	-	-	11.75	12.02	12.24	12.44	12.65	12.89
60	-	-	-	12.63	12.89	13.11	13.33	13.56
65	-	-	-	13.28	13.59	13.85	14.09	14.32
70	-	-	-	-	14.35	14.66	14.92	15.16
75	-	-	-	-	15.17	15.52	15.82	16.09

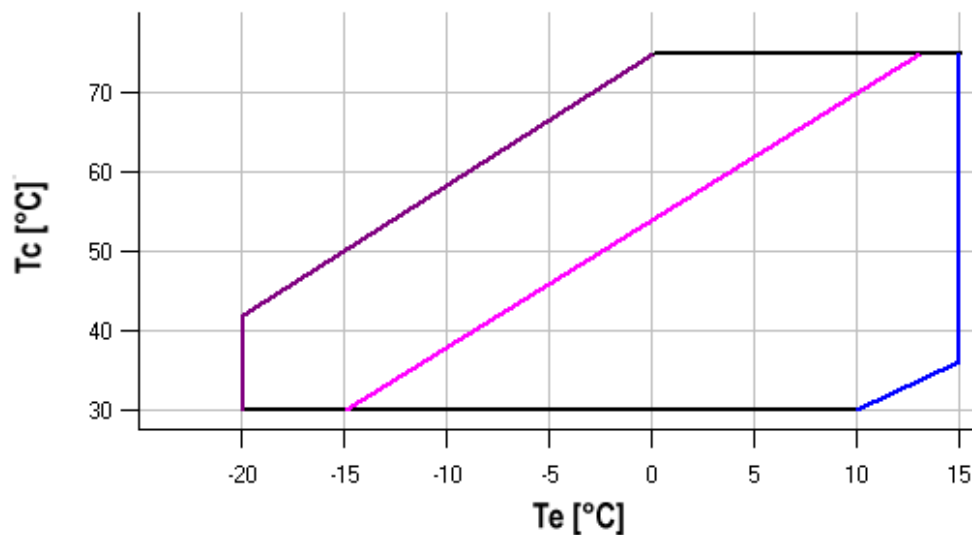
Mass flow [kg/s]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15
30	149.74	191.56	239.52	295.76	362.38	441.52	535.30	-
35	147.84	189.48	237.24	293.22	359.56	438.38	531.79	-
40	146.20	187.60	235.08	290.75	356.73	435.16	528.14	637.81
45	-	185.82	232.95	288.24	353.80	431.76	524.25	633.37
50	-	184.06	230.78	285.61	350.68	428.11	520.02	628.54
55	-	-	228.46	282.76	347.27	424.10	515.38	623.23
60	-	-	-	279.62	343.49	419.66	510.23	617.33
65	-	-	-	276.08	339.26	414.68	504.48	610.76
70	-	-	-	-	334.47	409.09	498.04	603.44
75	-	-	-	-	329.04	402.78	490.82	595.27

C.O.P. [W/W]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	2.61	3.14	3.74	4.39	5.07	5.74	6.34	-
35	2.19	2.64	3.15	3.73	4.35	5.00	5.63	-
40	1.84	2.23	2.67	3.17	3.72	4.31	4.92	5.51
45	-	1.89	2.26	2.69	3.16	3.69	4.26	4.83
50	-	1.60	1.92	2.28	2.69	3.15	3.65	4.19
55	-	-	1.64	1.94	2.28	2.68	3.12	3.60
60	-	-	-	1.65	1.93	2.27	2.65	3.07
65	-	-	-	1.40	1.64	1.91	2.23	2.60
70	-	-	-	-	1.38	1.61	1.87	2.18
75	-	-	-	-	1.16	1.34	1.56	1.82

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	7.62	9.55	11.90	14.74	18.12	22.11	26.78	-	-	-	-
15	7.18	9.07	11.34	14.06	17.29	21.08	25.51	30.62	-	-	-
20	6.73	8.58	10.77	13.36	16.42	20.02	24.20	29.03	34.58	-	-
25	6.27	8.07	10.17	12.64	15.54	18.92	22.85	27.40	32.62	38.58	-
30	-	7.55	9.56	11.90	14.62	17.79	21.48	25.73	30.62	36.20	42.54
35	-	-	8.93	11.13	13.68	16.64	20.06	24.02	28.57	33.78	39.70
40	-	-	8.28	10.34	12.71	15.45	18.61	22.27	26.48	31.31	36.81
45	-	-	-	9.53	11.71	14.23	17.13	20.48	24.35	28.79	33.87
50	-	-	-	-	10.69	12.98	15.61	18.65	22.17	26.23	30.88
55	-	-	-	-	9.64	11.69	14.05	16.79	19.95	23.61	27.83
60	-	-	-	-	-	10.38	12.46	14.88	17.69	20.95	24.73

Power input [kW]

$t_c \setminus t_e$	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
10	3.10	3.25	3.38	3.53	3.71	3.94	4.26	-	-	-	-
15	3.50	3.67	3.82	3.97	4.14	4.35	4.62	4.99	-	-	-
20	3.91	4.13	4.30	4.46	4.62	4.81	5.05	5.36	5.78	-	-
25	4.34	4.60	4.81	4.98	5.15	5.32	5.54	5.81	6.17	6.63	-
30	-	5.10	5.34	5.54	5.72	5.89	6.08	6.32	6.63	7.03	7.54
35	-	-	5.90	6.13	6.33	6.50	6.69	6.90	7.16	7.51	7.95
40	-	-	6.48	6.75	6.97	7.16	7.34	7.53	7.77	8.06	8.44
45	-	-	-	7.40	7.65	7.85	8.04	8.22	8.43	8.68	9.01
50	-	-	-	-	8.35	8.59	8.78	8.96	9.15	9.37	9.65
55	-	-	-	-	9.08	9.35	9.56	9.75	9.93	10.12	10.36
60	-	-	-	-	-	10.14	10.38	10.57	10.75	10.93	11.14

Current [A]

$t_c \setminus t_e$	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
10	10.40	10.30	10.23	10.21	10.25	10.35	10.53	-	-	-	-
15	10.63	10.60	10.60	10.64	10.72	10.87	11.07	11.35	-	-	-
20	10.87	10.90	10.96	11.05	11.18	11.36	11.59	11.89	12.26	-	-
25	11.15	11.24	11.35	11.49	11.65	11.86	12.11	12.42	12.79	13.24	-
30	-	11.65	11.80	11.97	12.17	12.39	12.66	12.97	13.35	13.78	14.30
35	-	-	12.35	12.55	12.76	13.00	13.27	13.59	13.95	14.37	14.86
40	-	-	13.01	13.23	13.46	13.71	13.98	14.29	14.63	15.03	15.48
45	-	-	-	14.06	14.30	14.55	14.81	15.10	15.43	15.79	16.21
50	-	-	-	-	15.31	15.55	15.80	16.07	16.36	16.69	17.06
55	-	-	-	-	16.52	16.75	16.98	17.21	17.47	17.75	18.07
60	-	-	-	-	-	18.17	18.37	18.57	18.78	19.01	19.27

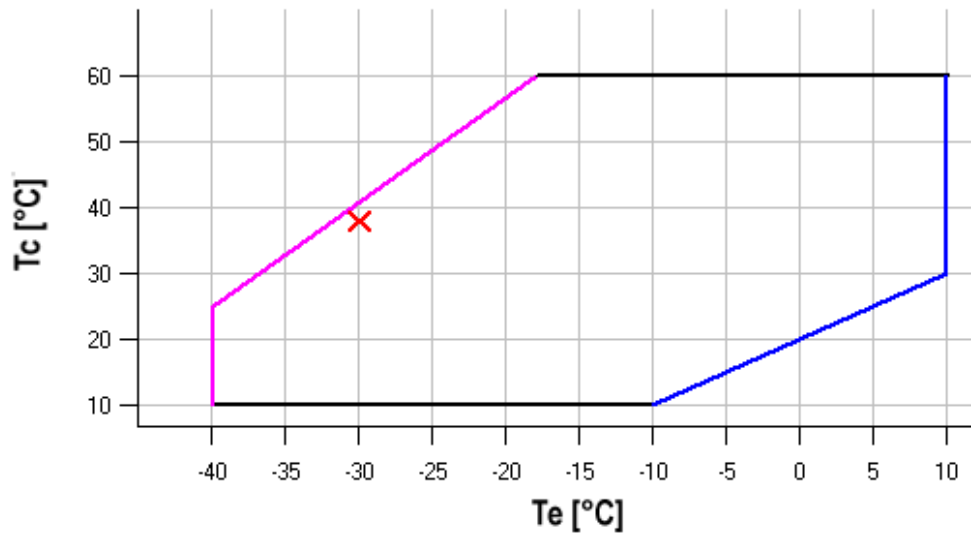
Mass flow [kg/s]



$t_c \setminus t_e$	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
10	146.53	191.74	242.68	301.84	371.70	454.77	553.54	-	-	-	-
15	146.66	191.42	241.85	300.43	369.66	452.03	550.03	666.16	-	-	-
20	146.00	190.28	240.16	298.14	366.69	448.32	545.53	660.79	796.62	-	-
25	144.72	188.49	237.79	295.12	362.97	443.83	540.20	654.57	789.44	947.28	-
30	-	186.21	234.90	291.55	358.66	438.72	534.22	647.66	781.53	938.32	1 120.52
35	-	-	231.65	287.59	353.93	433.15	527.75	640.22	773.06	928.75	1 109.80
40	-	-	228.22	283.42	348.94	427.29	520.95	632.42	764.19	918.76	1 098.62
45	-	-	-	279.18	343.86	421.30	513.99	624.43	755.10	908.51	1 087.14
50	-	-	-	-	338.86	415.36	507.05	616.41	745.95	898.17	1 075.54
55	-	-	-	-	334.11	409.63	500.27	608.54	736.91	887.89	1 063.97
60	-	-	-	-	-	404.28	493.85	600.97	728.15	877.86	1 052.61

C.O.P. [W/W]

$t_c \setminus t_e$	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
10	2.46	2.94	3.52	4.18	4.89	5.61	6.28	-	-	-	-
15	2.05	2.47	2.97	3.54	4.18	4.85	5.52	6.14	-	-	-
20	1.72	2.08	2.50	3.00	3.56	4.16	4.79	5.41	5.99	-	-
25	1.45	1.75	2.12	2.54	3.02	3.55	4.13	4.72	5.29	5.82	-
30	-	1.48	1.79	2.15	2.56	3.02	3.53	4.07	4.62	5.15	5.64
35	-	-	1.51	1.81	2.16	2.56	3.00	3.48	3.99	4.50	4.99
40	-	-	1.28	1.53	1.82	2.16	2.54	2.96	3.41	3.88	4.36
45	-	-	-	1.29	1.53	1.81	2.13	2.49	2.89	3.32	3.76
50	-	-	-	-	1.28	1.51	1.78	2.08	2.42	2.80	3.20
55	-	-	-	-	1.06	1.25	1.47	1.72	2.01	2.33	2.69
60	-	-	-	-	-	1.02	1.20	1.41	1.65	1.92	2.22

Application range



 Maximum evaporating temperature
 25°C suction gas temperature

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 \ t_e	-20	-15	-10	-5	0	5	10	15
20	12.61	15.64	19.21	23.41	28.35	-	-	-
25	11.98	14.92	18.35	22.39	27.10	32.60	-	-
30	11.37	14.20	17.50	21.35	25.84	31.08	37.15	-
35	10.76	13.48	16.63	20.30	24.56	29.53	35.29	-
40	10.14	12.76	15.75	19.22	23.26	27.95	33.39	-
45	9.52	12.02	14.85	18.12	21.91	26.32	31.44	-
50	-	11.25	13.92	16.98	20.52	24.64	29.44	-
55	-	-	12.95	15.79	19.08	22.91	27.37	-
60	-	-	-	14.56	17.58	21.11	25.22	-
65	-	-	-	-	16.02	19.24	23.00	-

Power input [kW]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15
20	3.56	3.72	3.92	4.18	4.55	-	-	-
25	4.01	4.18	4.36	4.58	4.89	5.31	-	-
30	4.48	4.68	4.86	5.06	5.32	5.67	6.15	-
35	4.98	5.22	5.42	5.61	5.84	6.13	6.52	-
40	5.49	5.79	6.02	6.22	6.42	6.67	7.00	-
45	6.00	6.37	6.65	6.87	7.07	7.29	7.57	-
50	-	6.95	7.29	7.55	7.77	7.98	8.22	-
55	-	-	7.95	8.26	8.51	8.72	8.94	-
60	-	-	-	8.98	9.27	9.51	9.72	-
65	-	-	-	-	10.05	10.32	10.54	-

Current [A]

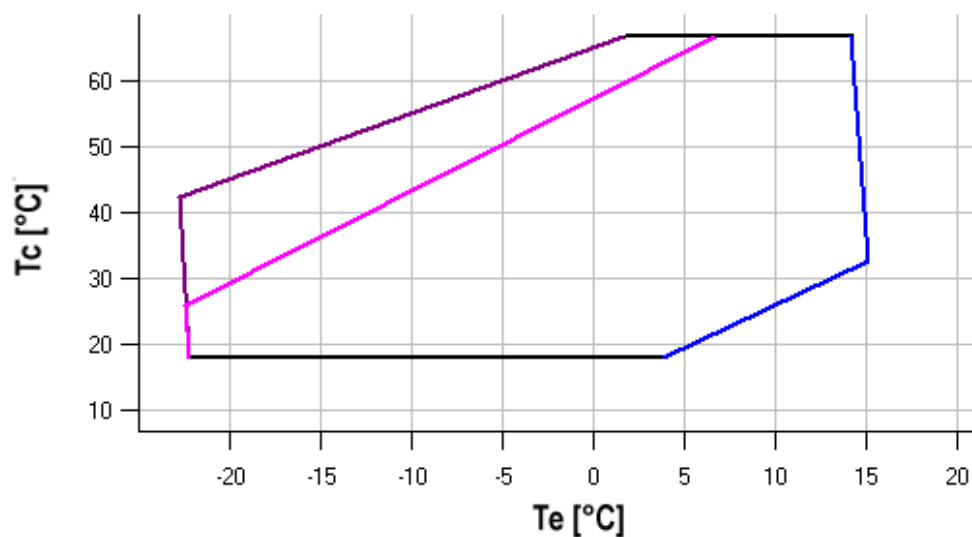
$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
20	10.09	10.22	10.38	10.62	10.98	-	-	-
25	10.46	10.62	10.79	11.00	11.31	11.75	-	-
30	10.89	11.10	11.29	11.49	11.76	12.14	12.67	-
35	11.38	11.65	11.87	12.08	12.32	12.65	13.11	-
40	11.91	12.26	12.53	12.76	12.99	13.28	13.68	-
45	12.48	12.93	13.26	13.52	13.76	14.03	14.37	-
50	-	13.63	14.04	14.36	14.62	14.88	15.19	-
55	-	-	14.88	15.26	15.56	15.83	16.12	-
60	-	-	-	16.23	16.58	16.87	17.15	-
65	-	-	-	-	17.66	17.99	18.29	-

Mass flow [kg/s]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
20	213.94	267.53	330.24	404.68	493.45	-	-	-
25	211.41	264.86	327.32	401.40	489.69	594.81	-	-
30	209.13	262.36	324.50	398.14	485.89	590.36	714.14	-
35	206.91	259.85	321.59	394.73	481.86	585.60	708.55	-
40	204.56	257.14	318.40	390.96	477.41	580.35	702.39	-
45	201.88	254.03	314.75	386.65	472.33	574.41	695.47	-
50	-	250.33	310.43	381.61	466.46	567.59	687.59	-
55	-	-	305.27	375.64	459.58	559.69	678.58	-
60	-	-	-	368.56	451.52	550.54	668.23	-
65	-	-	-	-	442.08	539.94	656.35	-

C.O.P. [W/W]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
20	3.54	4.20	4.91	5.60	6.23	-	-	-
25	2.99	3.57	4.21	4.88	5.54	6.13	-	-
30	2.53	3.03	3.60	4.21	4.86	5.48	6.04	-
35	2.16	2.58	3.07	3.62	4.21	4.82	5.41	-
40	1.85	2.20	2.62	3.09	3.62	4.19	4.77	-
45	1.59	1.89	2.23	2.64	3.10	3.61	4.16	-
50	-	1.62	1.91	2.25	2.64	3.09	3.58	-
55	-	-	1.63	1.91	2.24	2.63	3.06	-
60	-	-	-	1.62	1.90	2.22	2.60	-
65	-	-	-	-	1.59	1.86	2.18	-

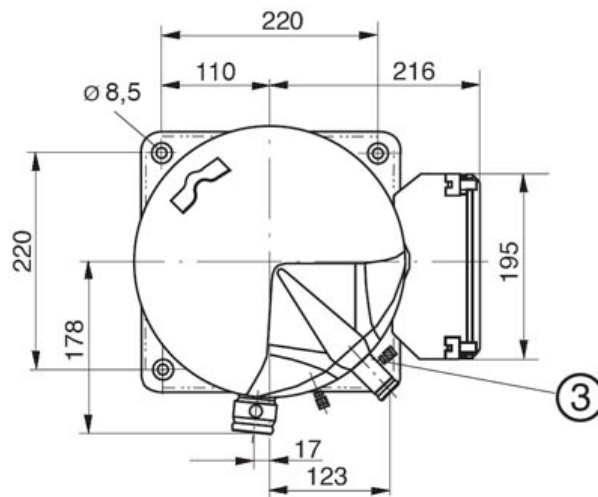
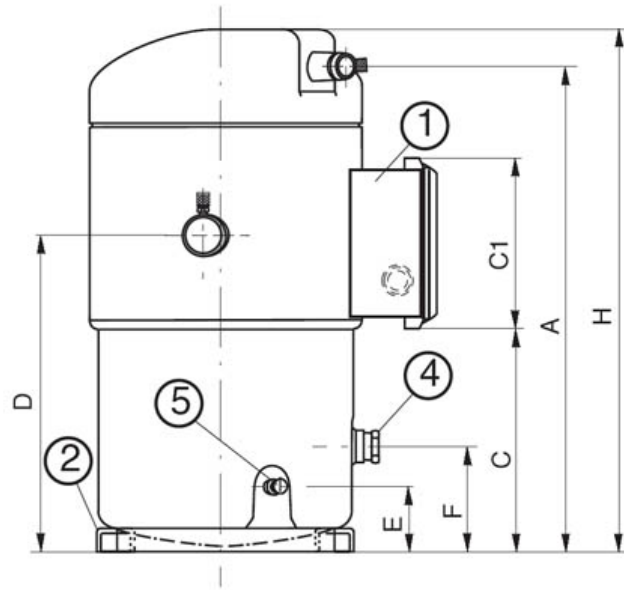
Application range


- 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	497,34 mm
C	221,59 mm
C1	175,7 mm
D	314,82 mm
E	63,52 mm
F	97,79 mm
G	- mm

