

Model: ZB38KCE-TFD

Data

Type: Hermetic piston compressors

Producer: Copeland

Series: ZB

Model: ZB38KCE-TFD

Technical data

Nominal motor power [HP]:	5
Displacement [m ³ /h]:	14,5
Weight [kg]:	41
Oil charge [dm ³]:	1,2

Electrical data

Power supply [V/~/Hz]:	380-420V/3/50Hz
Locked rotor current [A]:	65,5
Max. operating current [A]:	9,3
Winding resistance [Ω]:	2,65

Connections

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

Model: ZB38KCE-TFD**Capacity**

R22

Cooling capacity [kW]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
15	4.59	5.90	7.54	9.49	11.72	14.21	-	-
20	4.65	5.92	7.53	9.44	11.64	14.10	-	-
25	4.58	5.81	7.37	9.24	11.40	13.81	16.47	-
30	4.42	5.59	7.09	8.91	11.01	13.38	15.98	18.80
35	4.20	5.30	6.74	8.49	10.53	12.83	15.37	18.13
40	3.96	4.98	6.34	8.01	9.97	12.20	14.66	17.35
45	-	4.66	5.92	7.50	9.38	11.52	13.90	16.50
50	-	-	5.53	7.01	8.78	10.82	13.10	15.61
55	-	-	-	6.55	8.21	10.14	12.31	14.71
60	-	-	-	-	7.70	9.51	11.56	13.84
65	-	-	-	-	-	8.96	10.88	13.03

Power input [kW]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
15	1.56	1.63	1.65	1.65	1.65	1.67	-	-
20	1.81	1.89	1.93	1.95	1.96	2.00	-	-
25	2.06	2.15	2.20	2.23	2.26	2.30	2.38	-
30	2.32	2.42	2.47	2.51	2.54	2.59	2.68	2.82
35	2.61	2.70	2.76	2.80	2.83	2.89	2.98	3.12
40	2.93	3.02	3.08	3.12	3.15	3.20	3.29	3.43
45	-	3.40	3.45	3.47	3.50	3.55	3.63	3.76
50	-	-	3.87	3.89	3.90	3.94	4.01	4.13
55	-	-	-	4.37	4.37	4.39	4.44	4.55
60	-	-	-	-	4.92	4.91	4.95	5.04
65	-	-	-	-	-	5.53	5.54	5.61

Model: ZB38KCE-TFD

Capacity

Current [A]

$t_c \setminus t_e$	-25	-20	-15	-10	-5	0	5	10
15	5.52	5.58	5.58	5.55	5.51	5.47	-	-
20	5.65	5.73	5.75	5.75	5.75	5.75	-	-
25	5.81	5.90	5.94	5.96	5.97	6.01	6.08	-
30	6.02	6.10	6.15	6.18	6.21	6.27	6.36	6.52
35	6.29	6.37	6.41	6.44	6.48	6.54	6.65	6.82
40	6.65	6.71	6.74	6.76	6.79	6.85	6.96	7.15
45	-	7.14	7.15	7.15	7.17	7.22	7.32	7.51
50	-	-	7.66	7.63	7.63	7.66	7.75	7.92
55	-	-	-	8.23	8.19	8.20	8.26	8.41
60	-	-	-	-	8.88	8.84	8.88	9.00
65	-	-	-	-	-	9.62	9.61	9.69

Mass flow [kg/s]

$t_c \setminus t_e$	-25	-20	-15	-10	-5	0	5	10
15	79.34	102.85	132.13	166.99	207.26	252.74	-	-
20	83.35	106.81	136.31	171.66	212.69	259.20	-	-
25	84.93	108.14	137.67	173.32	214.91	262.25	315.16	-
30	84.70	107.48	136.83	172.58	214.54	262.52	316.34	375.81
35	83.29	105.43	134.41	170.06	212.19	260.61	315.14	375.59
40	81.31	102.61	131.03	166.39	208.49	257.16	312.20	373.43
45	-	99.65	127.31	162.18	204.06	252.77	308.13	369.95
50	-	-	123.87	158.05	199.51	248.07	303.55	365.77
55	-	-	-	154.61	195.46	243.68	299.09	361.49
60	-	-	-	-	192.54	240.22	295.35	357.75
65	-	-	-	-	-	238.29	292.96	355.16

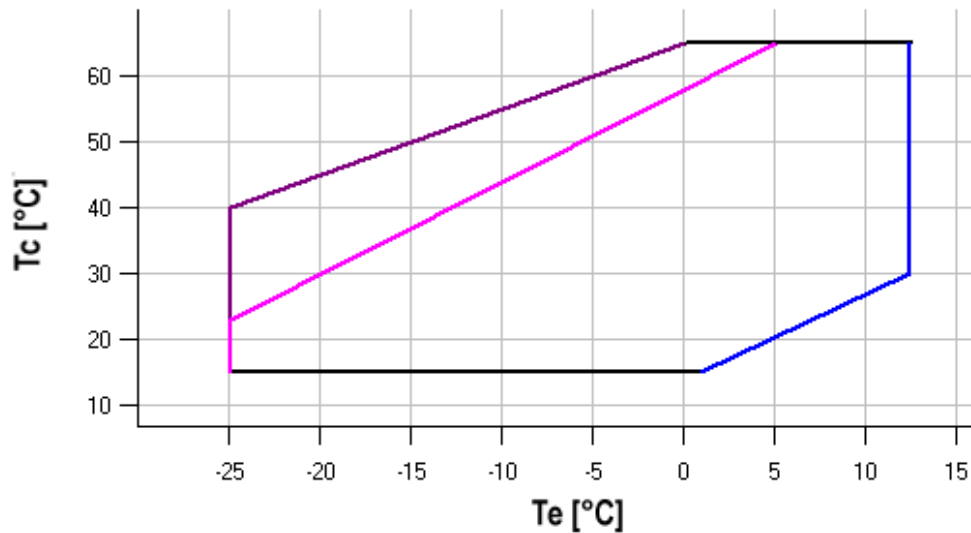
Model: ZB38KCE-TFD

Capacity

C.O.P. [W/W]

$t_c \setminus t_e$	-25	-20	-15	-10	-5	0	5	10
15	2.94	3.63	4.57	5.74	7.10	8.53	-	-
20	2.56	3.13	3.90	4.85	5.93	7.07	-	-
25	2.22	2.70	3.35	4.14	5.05	6.01	6.93	-
30	1.90	2.31	2.87	3.55	4.33	5.16	5.97	6.68
35	1.61	1.96	2.44	3.03	3.71	4.44	5.16	5.81
40	1.35	1.65	2.06	2.57	3.17	3.81	4.46	5.06
45	-	1.37	1.72	2.16	2.68	3.25	3.83	4.38
50	-	-	1.43	1.80	2.25	2.75	3.27	3.78
55	-	-	-	1.50	1.88	2.31	2.77	3.23
60	-	-	-	-	1.57	1.93	2.34	2.75
65	-	-	-	-	-	1.62	1.96	2.32

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: ZB38KCE-TFD**Capacity**

R134a

Cooling capacity [kW]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15
30	3.61	4.70	5.94	7.39	9.08	11.05	13.34	-
35	3.38	4.44	5.65	7.04	8.65	10.53	12.72	-
40	3.17	4.20	5.36	6.69	8.22	10.01	12.09	14.49
45	-	3.95	5.06	6.33	7.79	9.48	11.45	13.73
50	-	3.71	4.77	5.97	7.35	8.94	10.79	12.95
55	-	-	4.47	5.60	6.89	8.39	10.12	12.14
60	-	-	-	5.21	6.42	7.81	9.43	11.32
65	-	-	-	4.82	5.93	7.22	8.72	10.47
70	-	-	-	-	5.42	6.60	7.98	9.59
75	-	-	-	-	4.89	5.96	7.21	8.68

Power input [kW]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15
30	1.67	1.71	1.73	1.75	1.76	1.78	1.80	-
35	1.86	1.90	1.93	1.95	1.96	1.98	2.01	-
40	2.07	2.11	2.14	2.16	2.18	2.20	2.24	2.28
45	-	2.35	2.38	2.40	2.42	2.45	2.48	2.53
50	-	2.62	2.65	2.67	2.69	2.71	2.75	2.79
55	-	-	2.96	2.98	2.99	3.01	3.05	3.09
60	-	-	-	3.32	3.34	3.35	3.38	3.42
65	-	-	-	3.72	3.73	3.74	3.76	3.80
70	-	-	-	-	4.17	4.17	4.19	4.22
75	-	-	-	-	4.67	4.66	4.67	4.70

Model: ZB38KCE-TFD

Capacity

Current [A]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	5.05	5.10	5.12	5.13	5.12	5.12	5.13	-
35	5.08	5.15	5.19	5.20	5.21	5.21	5.22	-
40	5.18	5.27	5.33	5.36	5.37	5.38	5.39	5.43
45	-	5.48	5.55	5.59	5.61	5.62	5.64	5.67
50	-	5.75	5.84	5.89	5.92	5.94	5.96	5.99
55	-	-	6.20	6.26	6.30	6.33	6.35	6.38
60	-	-	-	6.70	6.75	6.78	6.81	6.84
65	-	-	-	7.21	7.27	7.30	7.33	7.36
70	-	-	-	-	7.84	7.89	7.92	7.95
75	-	-	-	-	8.48	8.53	8.56	8.59

Mass flow [kg/s]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	72.25	95.33	121.45	151.78	187.52	229.87	280.01	-
35	71.84	94.77	120.75	150.95	186.57	228.81	278.85	-
40	71.44	94.23	120.06	150.13	185.64	227.76	277.71	336.66
45	-	93.59	119.28	149.22	184.61	226.62	276.47	335.33
50	-	92.75	118.30	148.11	183.37	225.27	275.01	333.79
55	-	-	116.99	146.67	181.81	223.60	273.24	331.92
60	-	-	-	144.81	179.82	221.50	271.04	329.63
65	-	-	-	142.40	177.29	218.86	268.29	326.78
70	-	-	-	-	174.11	215.56	264.89	323.29
75	-	-	-	-	170.17	211.50	260.73	319.03

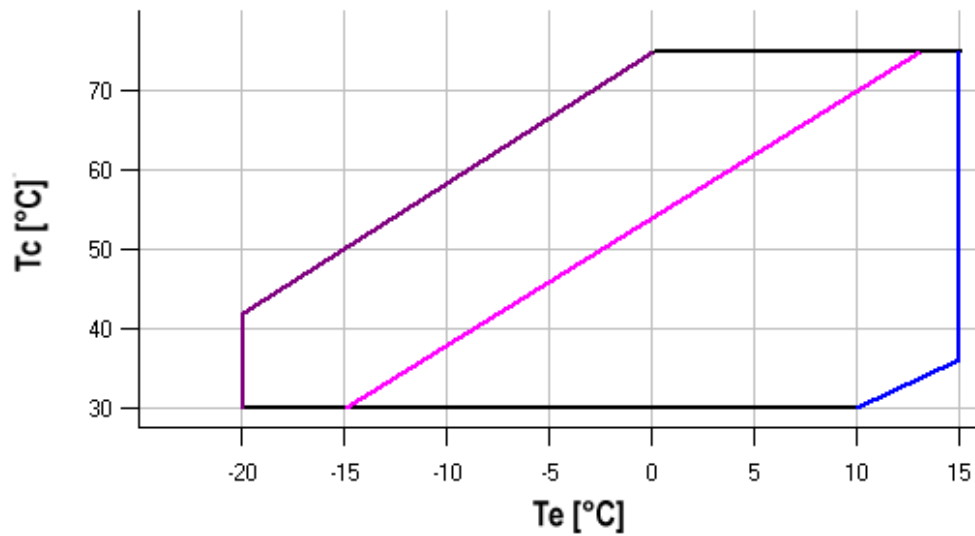
Model: ZB38KCE-TFD

Capacity

C.O.P. [W/W]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
30	2.16	2.75	3.43	4.23	5.15	6.21	7.39	-
35	1.82	2.34	2.93	3.61	4.40	5.31	6.31	-
40	1.53	1.99	2.50	3.09	3.77	4.54	5.40	6.35
45	-	1.68	2.13	2.64	3.22	3.88	4.62	5.43
50	-	1.41	1.80	2.23	2.73	3.29	3.93	4.63
55	-	-	1.51	1.88	2.30	2.78	3.32	3.93
60	-	-	-	1.57	1.92	2.33	2.79	3.31
65	-	-	-	1.30	1.59	1.93	2.32	2.76
70	-	-	-	-	1.30	1.58	1.91	2.27
75	-	-	-	-	1.05	1.28	1.54	1.85

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: ZB38KCE-TFD**Capacity**

R404A/R507

Cooling capacity [kW]

t_c \ t_e	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
10	3.72	4.71	5.92	7.38	9.11	11.14	13.49	-	-	-	-
15	3.53	4.49	5.65	7.04	8.69	10.62	12.85	15.41	-	-	-
20	3.34	4.25	5.36	6.68	8.24	10.07	12.19	14.62	17.39	-	-
25	3.14	4.01	5.05	6.30	7.78	9.50	11.50	13.80	16.42	19.39	-
30	2.92	3.75	4.73	5.91	7.29	8.91	10.79	12.96	15.43	18.23	21.39
35	2.70	3.48	4.40	5.50	6.79	8.30	10.06	12.09	14.40	17.04	20.01
40	2.47	3.20	4.06	5.08	6.27	7.68	9.31	11.19	13.35	15.82	18.60
45	-	-	3.70	4.64	5.74	7.03	8.53	10.27	12.28	14.57	17.17
50	-	-	-	4.19	5.19	6.36	7.74	9.33	11.18	13.29	15.70
55	-	-	-	-	4.62	5.68	6.92	8.37	10.05	11.99	14.21
60	-	-	-	-	-	4.98	6.09	7.39	8.90	10.66	12.68

Power input [kW]

t_c \ t_e	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
10	1.85	1.86	1.86	1.85	1.84	1.82	1.79	-	-	-	-
15	2.09	2.10	2.10	2.10	2.09	2.08	2.06	2.03	-	-	-
20	2.35	2.36	2.37	2.37	2.37	2.36	2.34	2.32	2.28	-	-
25	2.63	2.65	2.66	2.67	2.67	2.66	2.65	2.63	2.60	2.56	-
30	2.95	2.97	2.98	2.99	3.00	3.00	2.99	2.97	2.95	2.92	2.87
35	3.30	3.32	3.34	3.35	3.36	3.36	3.36	3.35	3.33	3.30	3.26
40	3.68	3.71	3.73	3.75	3.76	3.76	3.76	3.76	3.74	3.71	3.68
45	-	-	4.16	4.18	4.19	4.20	4.20	4.20	4.19	4.16	4.13
50	-	-	-	4.65	4.67	4.68	4.68	4.68	4.67	4.65	4.63
55	-	-	-	-	5.18	5.20	5.20	5.20	5.20	5.18	5.16
60	-	-	-	-	-	5.76	5.77	5.77	5.77	5.76	5.74

Model: ZB38KCE-TFD

Capacity

Current [A]

$t_c \setminus t_e$	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
10	6.38	6.38	6.37	6.37	6.36	6.35	6.35	-	-	-	-
15	6.58	6.59	6.60	6.60	6.60	6.60	6.60	6.60	-	-	-
20	6.82	6.85	6.87	6.88	6.89	6.89	6.89	6.89	6.89	-	-
25	7.11	7.16	7.19	7.21	7.22	7.23	7.23	7.23	7.22	7.21	-
30	7.48	7.54	7.58	7.60	7.62	7.63	7.63	7.62	7.61	7.60	7.58
35	7.93	8.00	8.05	8.08	8.10	8.11	8.11	8.10	8.08	8.06	8.03
40	8.48	8.55	8.61	8.65	8.68	8.69	8.68	8.67	8.64	8.61	8.57
45	-	-	9.29	9.33	9.36	9.37	9.36	9.34	9.31	9.26	9.21
50	-	-	-	10.13	10.16	10.17	10.16	10.13	10.09	10.03	9.96
55	-	-	-	-	11.10	11.10	11.09	11.06	11.00	10.93	10.85
60	-	-	-	-	-	12.19	12.17	12.12	12.06	11.98	11.87

Mass flow [kg/s]

$t_c \setminus t_e$	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
10	70.54	94.01	120.53	151.21	187.14	229.43	279.20	-	-	-	-
15	71.96	94.63	120.44	150.50	185.91	227.78	277.22	335.32	-	-	-
20	72.70	94.58	119.71	149.17	184.09	225.56	274.70	332.60	400.37	-	-
25	72.80	93.93	118.39	147.30	181.74	222.84	271.70	329.41	397.10	475.86	-
30	72.33	92.72	116.55	144.91	178.92	219.67	268.27	325.83	393.46	472.25	563.32
35	71.33	91.02	114.24	142.09	175.67	216.10	264.48	321.91	389.49	468.35	559.57
40	69.86	88.87	111.51	138.87	172.06	212.19	260.36	317.69	385.27	464.21	555.61
45	-	-	108.41	135.31	168.13	207.99	255.99	313.23	380.83	459.88	551.49
50	-	-	-	131.47	163.95	203.56	251.41	308.60	376.24	455.42	547.27
55	-	-	-	-	159.57	198.96	246.68	303.84	371.54	450.89	542.99
60	-	-	-	-	-	194.23	241.86	299.01	366.80	446.34	538.72

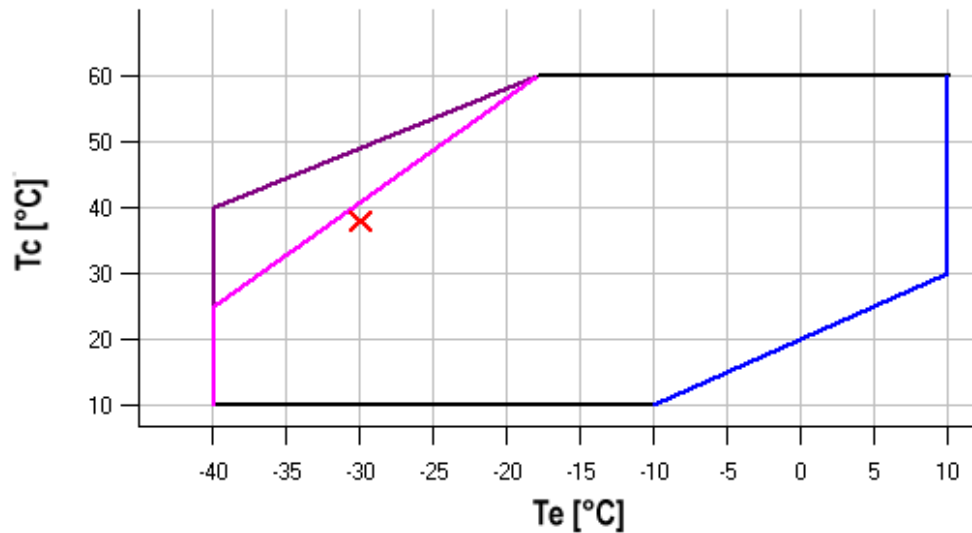
Model: ZB38KCE-TFD

Capacity

C.O.P. [W/W]

$t_c \setminus t_e$	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
10	2.01	2.54	3.19	3.99	4.95	6.12	7.52	-	-	-	-
15	1.69	2.14	2.69	3.35	4.15	5.11	6.25	7.61	-	-	-
20	1.42	1.80	2.26	2.82	3.48	4.27	5.21	6.31	7.62	-	-
25	1.19	1.51	1.90	2.36	2.91	3.57	4.34	5.24	6.31	7.56	-
30	0.99	1.26	1.59	1.97	2.43	2.97	3.61	4.36	5.23	6.25	7.44
35	0.82	1.05	1.32	1.64	2.02	2.47	2.99	3.61	4.33	5.16	6.14
40	0.67	0.86	1.09	1.35	1.67	2.04	2.47	2.98	3.57	4.26	5.06
45	-	-	0.89	1.11	1.37	1.67	2.03	2.45	2.93	3.50	4.15
50	-	-	-	0.90	1.11	1.36	1.65	1.99	2.39	2.86	3.39
55	-	-	-	-	0.89	1.09	1.33	1.61	1.93	2.31	2.75
60	-	-	-	-	-	0.86	1.06	1.28	1.54	1.85	2.21

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: ZB38KCE-TFD**Capacity**

R407C

Cooling capacity [kW]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15
20	5.55	7.14	9.05	11.28	13.85	-	-	-
25	5.31	6.87	8.74	10.93	13.46	16.34	-	-
30	5.02	6.53	8.35	10.48	12.95	15.76	18.93	-
35	4.71	6.16	7.90	9.96	12.34	15.06	18.14	-
40	4.40	5.76	7.41	9.37	11.66	14.27	17.24	-
45	4.12	5.37	6.92	8.76	10.92	13.41	16.25	-
50	-	5.01	6.43	8.14	10.16	12.51	15.20	-
55	-	-	5.97	7.53	9.39	11.57	14.10	-
60	-	-	-	6.95	8.64	10.64	12.98	-
65	-	-	-	-	7.93	9.73	11.86	-

Power input [kW]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15
20	1.89	1.92	1.96	2.03	2.11	-	-	-
25	2.15	2.18	2.21	2.25	2.31	2.39	-	-
30	2.43	2.46	2.48	2.51	2.55	2.61	2.69	-
35	2.72	2.76	2.80	2.82	2.85	2.88	2.93	-
40	3.03	3.09	3.14	3.17	3.19	3.21	3.24	-
45	3.34	3.44	3.51	3.55	3.58	3.60	3.61	-
50	-	3.80	3.90	3.96	4.00	4.03	4.04	-
55	-	-	4.31	4.41	4.47	4.51	4.52	-
60	-	-	-	4.88	4.97	5.03	5.06	-
65	-	-	-	-	5.50	5.59	5.64	-

Model: ZB38KCE-TFD

Capacity

Current [A]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
20	5.62	5.64	5.68	5.74	5.82	-	-	-
25	5.87	5.89	5.91	5.95	6.01	6.09	-	-
30	6.13	6.16	6.18	6.21	6.25	6.30	6.38	-
35	6.41	6.45	6.48	6.51	6.53	6.57	6.62	-
40	6.71	6.77	6.82	6.85	6.88	6.90	6.93	-
45	7.03	7.13	7.20	7.25	7.28	7.30	7.32	-
50	-	7.52	7.63	7.70	7.75	7.77	7.79	-
55	-	-	8.10	8.21	8.28	8.33	8.35	-
60	-	-	-	8.78	8.89	8.96	9.00	-
65	-	-	-	-	9.57	9.68	9.74	-

Mass flow [kg/s]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
20	94.05	122.19	155.61	195.02	241.10	-	-	-
25	93.74	122.10	156.02	196.21	243.37	298.19	-	-
30	92.54	120.81	154.94	195.61	243.54	299.43	363.97	-
35	90.84	118.72	152.74	193.60	242.00	298.64	364.23	-
40	89.02	116.20	149.81	190.55	239.12	296.22	362.55	-
45	87.46	113.64	146.54	186.85	235.28	292.53	359.30	-
50	-	111.41	143.29	182.88	230.87	287.97	354.87	-
55	-	-	140.46	179.02	226.26	282.90	349.64	-
60	-	-	-	175.64	221.84	277.72	343.98	-
65	-	-	-	-	217.98	272.80	338.28	-

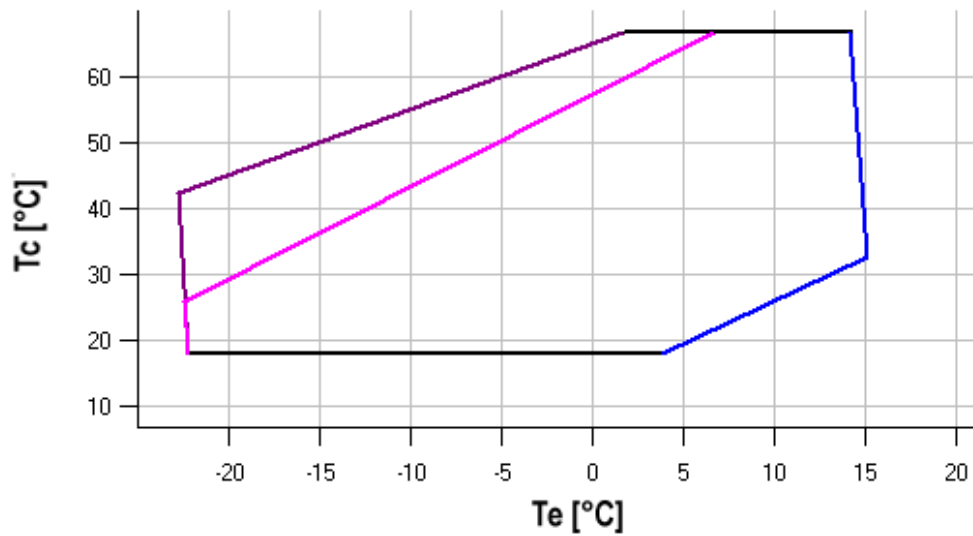
Model: ZB38KCE-TFD

Capacity

C.O.P. [W/W]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
20	2.93	3.72	4.61	5.57	6.55	-	-	-
25	2.47	3.16	3.96	4.87	5.84	6.83	-	-
30	2.07	2.66	3.36	4.17	5.07	6.04	7.04	-
35	1.73	2.23	2.83	3.53	4.33	5.22	6.18	-
40	1.45	1.86	2.36	2.96	3.65	4.44	5.32	-
45	1.23	1.56	1.97	2.47	3.05	3.73	4.50	-
50	-	1.32	1.65	2.05	2.54	3.10	3.76	-
55	-	-	1.38	1.71	2.10	2.57	3.12	-
60	-	-	-	1.43	1.74	2.12	2.56	-
65	-	-	-	-	1.44	1.74	2.10	-

Application range



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

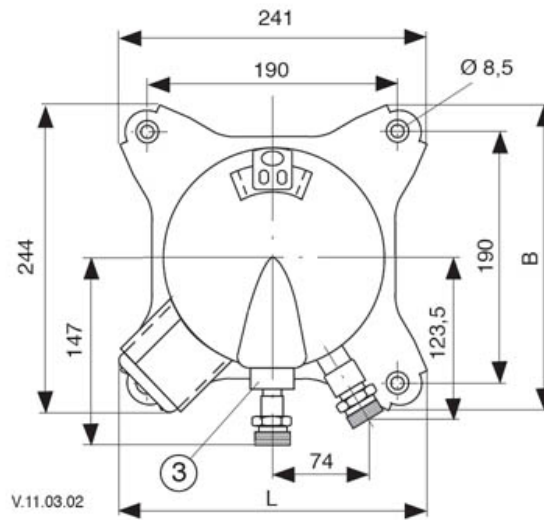
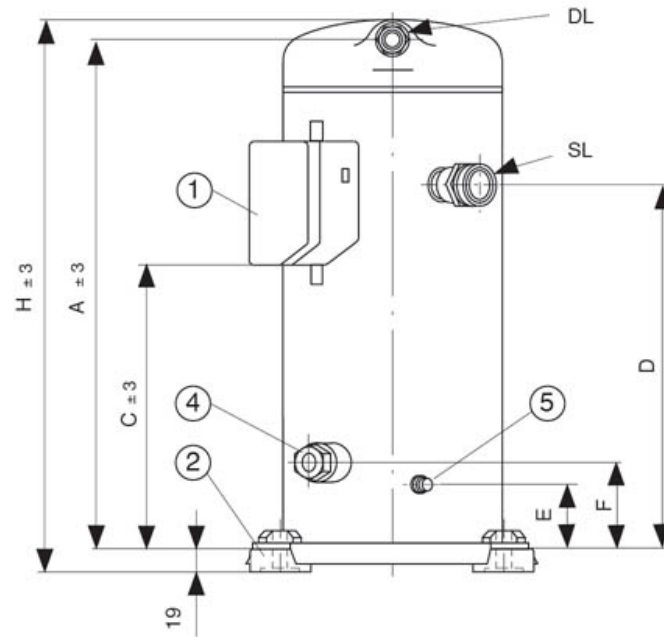
Operating conditions: suction gas temperature 20°C, 0K subcooling

t_c - Condensing temperature [°C]

t_e - Evaporating temperature [°C]

Model: ZB38KCE-TFD

Dimensions



A	409,8 mm
C	233,4 mm
C1	- mm
D	296,9 mm
E	47,5 mm
F	81,3 mm
G	- mm

Model: ZB38KCE-TFD

Image

