Type: Semi-hermetic piston compressors
Producer: Copeland
Series: DISCUS

Model: D3DC-100 X

Technical data

Cylinder count:	3
Displacement [m³/h]:	38
Weight [kg]:	175
Oil charge [dm³]:	3,4
Max. operating current [A]:	20,5
Locked rotor current [A]:	121
Power supply [V/~/Hz]:	380-420V/3/50Hz

Connections

	milimeters	inches
Suction line:		1 3/8"
Discharge line:		1 1/8"

R404A/R507

Cooling capacity [kW]

t_c \ t_e	-40	-35	-30	-25	-20	-15	-10	-5	0	5
20	7.09	9.39	12.20	15.58	19.59	24.29	29.74	36.01	43.15	51.23
25	6.58	8.79	11.47	14.66	18.44	22.86	27.98	33.87	40.58	48.18
30	5.98	8.10	10.63	13.63	17.17	21.29	26.07	31.57	37.85	44.97
35	5.34	7.35	9.73	12.53	15.81	19.63	24.06	29.16	34.99	41.61
40	4.69	6.59	8.80	11.38	14.40	17.92	21.99	26.68	32.05	38.17
45	-	5.84	7.88	10.24	12.99	16.18	19.88	24.16	29.06	34.66
50	-	5.15	7.00	9.13	11.60	14.46	17.79	21.63	26.06	31.13
55	-	-	6.21	8.10	10.27	12.80	15.73	19.14	23.09	27.62

Power input [kW]

t_c \ t_e	-40	-35	-30	-25	-20	-15	-10	-5	0	5
20	3.54	4.04	4.50	4.91	5.26	5.51	5.65	5.65	5.51	5.20
25	3.70	4.25	4.78	5.26	5.69	6.04	6.29	6.42	6.41	6.24
30	3.80	4.40	4.99	5.55	6.06	6.50	6.86	7.11	7.22	7.19
35	3.87	4.51	5.15	5.78	6.37	6.91	7.36	7.72	7.97	8.07
40	3.91	4.59	5.29	5.98	6.64	7.26	7.82	8.29	8.65	8.89
45	-	4.66	5.41	6.16	6.89	7.60	8.24	8.82	9.30	9.66
50	-	4.74	5.53	6.33	7.14	7.92	8.65	9.33	9.92	10.41
55	-	-	5.67	6.52	7.39	8.24	9.07	9.84	10.54	11.14

Current [A]

t_c \ t_e	-40	-35	-30	-25	-20	-15	-10	-5	0	5
20	9.02	9.61	10.18	10.69	11.11	11.41	11.55	11.49	11.20	10.65
25	9.12	9.76	10.41	11.03	11.57	12.02	12.33	12.47	12.41	12.10
30	9.20	9.89	10.61	11.32	11.99	12.58	13.06	13.40	13.55	13.49
35	9.26	10.00	10.79	11.59	12.38	13.11	13.75	14.28	14.64	14.81
40	9.33	10.10	10.95	11.84	12.74	13.61	14.41	15.11	15.68	16.09
45	-	10.21	11.11	12.09	13.09	14.08	15.04	15.92	16.69	17.32
50	-	10.32	11.28	12.32	13.42	14.54	15.65	16.70	17.67	18.52
55	-	-	11.45	12.57	13.76	15.00	16.25	17.47	18.63	19.69

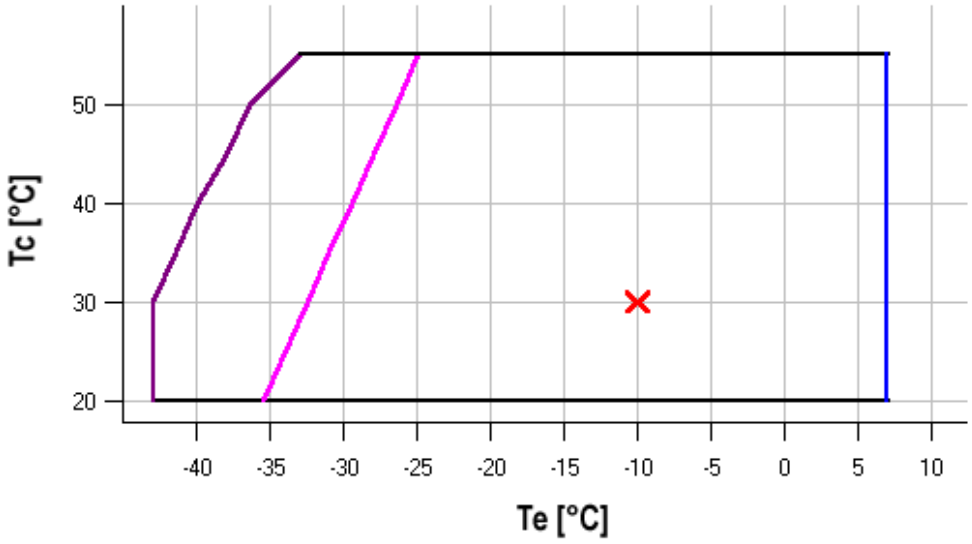
Mass flow [kg/s]

t_c \ t_e	-40	-35	-30	-25	-20	-15	-10	-5	0	5
20	152.10	207.40	271.49	347.09	436.95	543.81	670.39	819.45	993.70	1 195.90
25	148.61	203.69	267.34	342.31	431.34	537.17	662.52	810.15	982.78	1 183.15
30	142.69	197.24	260.17	334.21	422.12	526.62	650.45	796.35	967.05	1 165.30
35	135.30	189.03	250.93	323.76	410.24	513.12	635.13	779.01	947.50	1 143.33
40	127.40	180.01	240.60	311.91	396.68	497.64	617.54	759.10	925.08	1 118.19
45	-	171.16	230.14	299.64	382.39	481.15	598.63	737.59	900.75	1 090.86
50	-	163.44	220.51	287.90	368.35	464.60	579.38	715.43	875.49	1 062.30
55	-	-	212.68	277.67	355.52	448.96	560.75	693.60	850.26	1 033.47

C.O.P. [W/W]

t_c \ t_e	-40	-35	-30	-25	-20	-15	-10	-5	0	5
20	2.00	2.33	2.71	3.17	3.73	4.41	5.27	6.37	7.83	9.86
25	1.78	2.07	2.40	2.79	3.24	3.78	4.45	5.27	6.33	7.72
30	1.57	1.84	2.13	2.46	2.83	3.27	3.80	4.44	5.24	6.25
35	1.38	1.63	1.89	2.17	2.48	2.84	3.27	3.78	4.39	5.16
40	1.20	1.43	1.66	1.90	2.17	2.47	2.81	3.22	3.70	4.29
45	-	1.25	1.46	1.66	1.88	2.13	2.41	2.74	3.13	3.59
50	-	1.09	1.27	1.44	1.62	1.83	2.05	2.32	2.63	2.99
55	-	-	1.10	1.24	1.39	1.55	1.74	1.95	2.19	2.48

Application range



Maximum evaporating temperature
25ºC suction gas return
25ºC suction gas return + additional cooling

Operating conditions: ISO; subcooling: 0 K, suction superheat: - K, return gas temperature: 20
t_c - Condensing temperature [ºC]
t_e - Evaporating temperature [ºC]

R407C

Cooling capacity [kW]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15
35	11.63	15.19	19.56	24.78	30.90	37.96	46.00	-
40	10.56	13.84	17.89	22.76	28.49	35.12	42.70	-
45	9.57	12.57	16.30	20.82	26.17	32.38	39.50	-
50	-	11.37	14.80	18.97	23.93	29.73	36.40	-
55	-	10.24	13.37	17.20	21.79	27.17	33.39	-
60	-	-	12.02	15.51	19.72	24.69	30.47	-

Power input [kW]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15
35	5.08	5.57	6.03	6.42	6.70	6.84	6.80	-
40	5.33	5.88	6.42	6.91	7.32	7.61	7.73	-
45	5.58	6.18	6.79	7.38	7.90	8.32	8.61	-
50	-	6.46	7.14	7.81	8.45	9.00	9.44	-
55	-	6.75	7.48	8.23	8.97	9.64	10.22	-
60	-	-	7.82	8.64	9.46	10.25	10.97	-

Current [A]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15
35	10.71	11.43	12.11	12.70	13.13	13.34	13.27	-
40	11.08	11.89	12.70	13.44	14.06	14.50	14.69	-
45	11.44	12.33	13.25	14.14	14.94	15.59	16.03	-
50	-	12.77	13.79	14.82	15.78	16.63	17.31	-
55	-	13.20	14.31	15.46	16.58	17.62	18.52	-
60	-	-	14.82	16.08	17.35	18.57	19.68	-

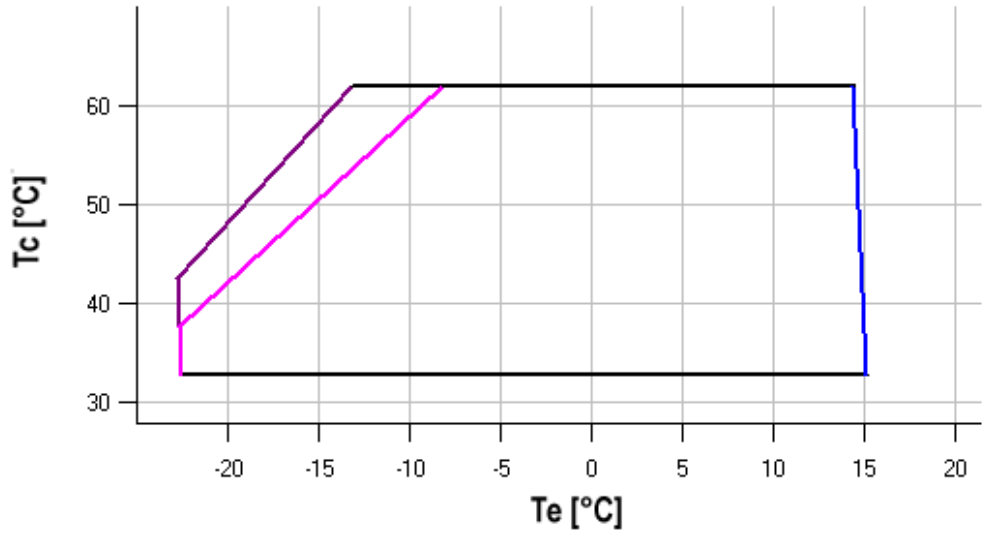
Mass flow [kg/s]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15
35	256.76	329.71	417.39	520.19	638.51	772.74	923.27	-
40	245.64	315.96	401.10	501.47	617.46	749.46	897.86	-
45	235.18	302.88	385.52	483.49	597.18	726.98	873.29	-
50	-	290.69	370.86	466.45	577.87	705.50	849.75	-
55	-	279.57	357.30	450.55	559.73	685.22	827.43	-
60	-	-	345.03	435.98	542.94	666.33	806.53	-

C.O.P. [W/W]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15
35	2.29	2.73	3.24	3.86	4.61	5.55	6.77	-
40	1.98	2.35	2.79	3.29	3.89	4.62	5.52	-
45	1.71	2.03	2.40	2.82	3.31	3.89	4.59	-
50	-	1.76	2.07	2.43	2.83	3.30	3.86	-
55	-	1.52	1.79	2.09	2.43	2.82	3.27	-
60	-	-	1.54	1.80	2.08	2.41	2.78	-

Application range



Maximum evaporating temperature
25ºC suction gas return
20K suction superheat

Operating conditions: ISO; subcooling: 0 K, suction superheat: 10 K, return gas temperature: -
t_c - Condensing temperature [ºC]
t_e - Evaporating temperature [ºC]

R22

Cooling capacity [kW]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
30	11.32	14.78	18.79	23.43	28.78	34.91	41.90	49.83
35	10.29	13.63	17.47	21.91	27.02	32.88	39.56	47.15
40	9.30	12.50	16.18	20.41	25.28	30.86	37.22	44.45
45	-	11.41	14.92	18.94	23.56	28.85	34.89	41.77
50	-	10.38	13.70	17.51	21.87	26.87	32.59	39.10
55	-	-	12.55	16.13	20.23	24.94	30.32	36.46
60	-	-	11.47	14.82	18.66	23.06	28.10	33.87

Power input [kW]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
30	4.86	5.32	5.72	6.02	6.21	6.27	6.17	5.89
35	5.05	5.59	6.08	6.49	6.80	6.98	7.03	6.90
40	5.24	5.85	6.42	6.93	7.35	7.66	7.84	7.87
45	-	6.09	6.74	7.34	7.87	8.30	8.61	8.79
50	-	6.33	7.06	7.74	8.37	8.92	9.36	9.67
55	-	-	7.37	8.13	8.86	9.51	10.08	10.53
60	-	-	7.67	8.52	9.33	10.09	10.77	11.35

Current [A]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
30	10.39	11.06	11.64	12.09	12.38	12.47	12.31	11.89
35	10.67	11.46	12.18	12.79	13.25	13.53	13.60	13.41
40	10.94	11.84	12.68	13.44	14.08	14.56	14.83	14.88
45	-	12.20	13.17	14.08	14.88	15.54	16.02	16.29
50	-	12.56	13.65	14.69	15.65	16.49	17.17	17.66
55	-	-	14.11	15.29	16.40	17.41	18.28	18.99
60	-	-	14.58	15.88	17.14	18.31	19.37	20.28

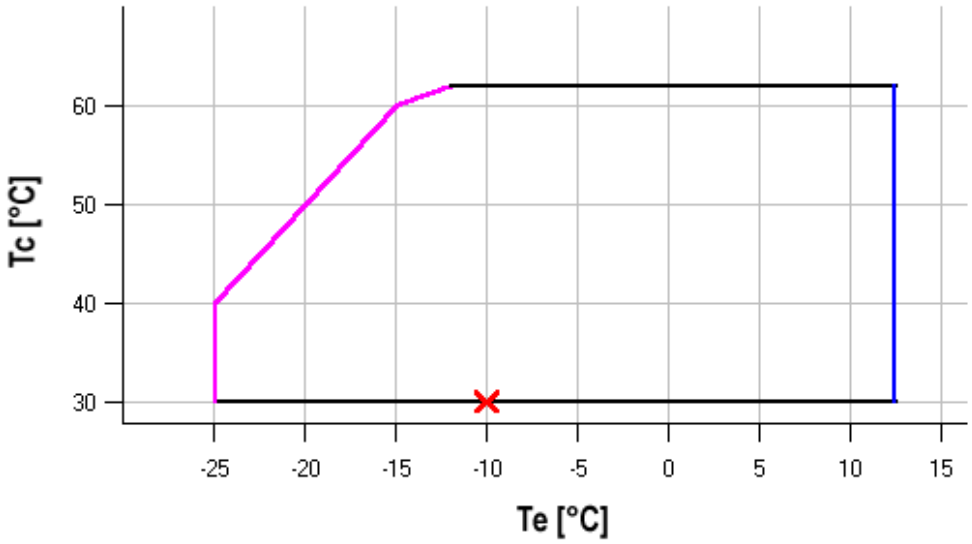
Mass flow [kg/s]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
30	246.06	317.53	398.58	490.60	594.96	713.03	846.19	995.81
35	232.97	304.30	385.00	476.44	580.00	697.04	828.94	977.07
40	219.89	290.94	371.14	461.84	564.44	680.29	810.78	957.28
45	-	277.80	357.33	447.16	548.64	663.15	792.08	936.78
50	-	265.22	343.94	432.73	532.94	645.97	773.17	915.94
55	-	-	331.32	418.90	517.70	629.08	754.42	895.09
60	-	-	319.80	406.04	503.27	612.86	736.17	874.59

C.O.P. [W/W]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
30	2.33	2.78	3.29	3.89	4.63	5.57	6.79	8.47
35	2.04	2.44	2.87	3.38	3.98	4.71	5.63	6.83
40	1.78	2.14	2.52	2.95	3.44	4.03	4.75	5.65
45	-	1.87	2.21	2.58	2.99	3.48	4.05	4.75
50	-	1.64	1.94	2.26	2.61	3.01	3.48	4.04
55	-	-	1.70	1.98	2.28	2.62	3.01	3.46
60	-	-	1.49	1.74	2.00	2.28	2.61	2.98

Application range



Maximum evaporating temperature
25ºC suction gas return

Operating conditions: ISO; subcooling: 0 K, suction superheat: 10 K, return gas temperature: -
t_c - Condensing temperature [ºC]
t_e - Evaporating temperature [ºC]

R134a

Cooling capacity [kW]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15	20	25
40	6.50	8.86	11.67	15.01	18.95	23.58	28.98	35.22	-	-
45	5.70	7.98	10.67	13.85	17.61	22.02	27.16	33.12	39.97	47.80
50	4.93	7.12	9.69	12.71	16.27	20.46	25.34	31.00	37.53	45.00
55	4.20	6.29	8.73	11.58	14.95	18.89	23.51	28.87	35.07	42.17
60	-	5.50	7.79	10.47	13.63	17.34	21.68	26.73	32.58	39.31
65	-	4.74	6.88	9.38	12.32	15.78	19.84	24.58	30.08	36.43
70	-	-	6.00	8.32	11.03	14.24	18.01	22.42	27.57	33.52
75	-	-	-	7.27	9.76	12.70	16.17	20.25	25.03	30.59
80	-	-	-	6.25	8.50	11.17	14.33	18.08	22.49	27.64

Power input [kW]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15	20	25
40	3.56	3.99	4.39	4.74	5.04	5.25	5.36	5.35	-	-
45	3.61	4.09	4.55	4.98	5.36	5.66	5.87	5.98	5.96	5.79
50	3.66	4.18	4.71	5.21	5.66	6.05	6.36	6.58	6.67	6.63
55	3.69	4.26	4.84	5.41	5.94	6.42	6.83	7.15	7.36	7.44
60	-	4.33	4.96	5.59	6.20	6.76	7.26	7.69	8.01	8.22
65	-	4.38	5.06	5.75	6.43	7.08	7.67	8.19	8.63	8.96
70	-	-	5.14	5.89	6.64	7.36	8.04	8.66	9.21	9.65
75	-	-	-	6.00	6.81	7.61	8.38	9.10	9.75	10.31
80	-	-	-	6.08	6.96	7.83	8.68	9.49	10.24	10.92

Current [A]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15	20	25
40	8.98	9.48	9.97	10.41	10.79	11.06	11.20	11.17	-	-
45	9.08	9.62	10.18	10.71	11.20	11.60	11.88	12.01	11.96	11.70
50	9.15	9.74	10.37	10.99	11.59	12.11	12.54	12.84	12.98	12.92
55	9.20	9.84	10.54	11.25	11.95	12.61	13.18	13.65	13.97	14.12
60	-	9.91	10.68	11.49	12.30	13.08	13.81	14.44	14.95	15.31
65	-	9.96	10.80	11.69	12.62	13.53	14.40	15.21	15.91	16.48
70	-	-	10.88	11.87	12.91	13.95	14.98	15.95	16.84	17.62
75	-	-	-	12.02	13.17	14.35	15.52	16.67	17.75	18.74
80	-	-	-	12.13	13.39	14.71	16.04	17.36	18.63	19.83

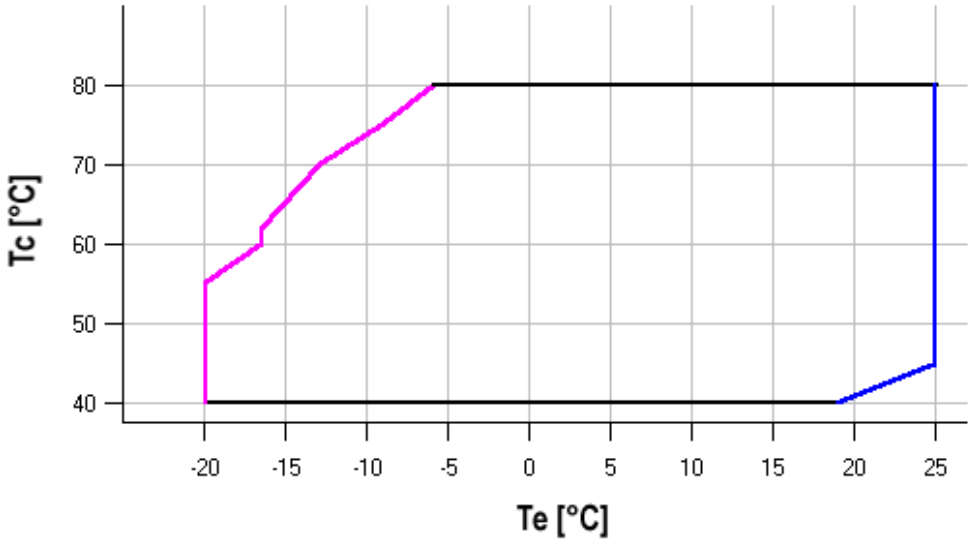
Mass flow [kg/s]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15	20	25
40	168.18	226.55	292.75	368.26	454.55	553.10	665.38	792.88	-	-
45	157.24	216.00	282.52	358.27	444.72	543.36	655.66	783.09	927.12	1 089.25
50	145.77	204.87	271.65	347.59	434.16	532.83	645.08	772.40	916.24	1 078.09
55	133.95	193.33	260.32	336.39	423.01	521.67	633.83	760.97	904.56	1 066.09
60	-	181.55	248.70	324.84	411.47	510.05	622.06	748.97	892.26	1 053.41
65	-	169.69	236.94	313.11	399.68	498.13	609.93	736.56	879.50	1 040.21
70	-	-	225.21	301.35	387.81	486.08	597.62	723.92	866.44	1 026.67
75	-	-	-	289.73	376.03	474.06	585.29	711.19	853.25	1 012.94
80	-	-	-	278.42	364.51	462.24	573.10	698.56	840.10	999.18

C.O.P. [W/W]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15	20	25
40	1.83	2.22	2.66	3.16	3.76	4.49	5.41	6.58	-	-
45	1.58	1.95	2.34	2.78	3.29	3.89	4.62	5.54	6.71	8.26
50	1.35	1.70	2.06	2.44	2.88	3.38	3.98	4.71	5.62	6.78
55	1.14	1.48	1.80	2.14	2.52	2.94	3.44	4.04	4.77	5.67
60	-	1.27	1.57	1.87	2.20	2.56	2.98	3.48	4.07	4.78
65	-	1.08	1.36	1.63	1.92	2.23	2.59	3.00	3.49	4.07
70	-	-	1.17	1.41	1.66	1.93	2.24	2.59	2.99	3.47
75	-	-	-	1.21	1.43	1.67	1.93	2.23	2.57	2.97
80	-	-	-	1.03	1.22	1.43	1.65	1.91	2.20	2.53

Application range



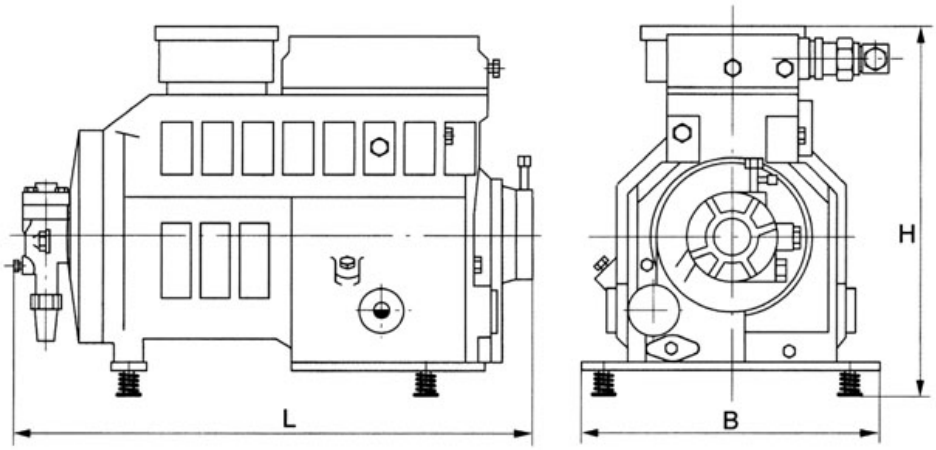
Maximum evaporating temperature

20K suction superheat

Operating conditions: ISO; subcooling: 0 K, suction superheat: 10 K, return gas temperature: -
t_c - Condensing temperature [ºC]
t_e - Evaporating temperature [ºC]

Model: D3DC-100 X

Dimensions



L	680 mm
B	370 mm
H	480 mm