



Model: D2DD-50 X

Data

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

Model: D2DD-50 X

Technical data

Cylinder count:	2
Displacement [m ³ /h]:	19,3
Weight [kg]:	141
Oil charge [dm ³]:	2,3
Max. operating current [A]:	10,3
Locked rotor current [A]:	55
Power supply [V/~/Hz]:	380-420V/3/50Hz

Connections

	<u>milimeters</u>	<u>inches</u>
Suction line:		1 3/8"
Discharge line:		7/8"

R22

Cooling capacity [kW]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
30	5.00	6.78	8.85	11.23	13.97	17.11	20.68	24.73
35	4.41	6.15	8.14	10.44	13.08	16.10	19.55	23.45
40	3.82	5.51	7.44	9.65	12.19	15.09	18.40	22.15
45	-	4.87	6.73	8.86	11.29	14.07	17.24	20.84
50	-	4.25	6.03	8.07	10.39	13.05	16.08	19.52
55	-	-	5.35	7.29	9.50	12.03	14.92	18.20
60	-	-	4.67	6.52	8.62	11.02	13.76	16.88

Power input [kW]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
30	2.33	2.58	2.81	2.98	3.09	3.14	3.10	2.97
35	2.38	2.68	2.96	3.19	3.36	3.48	3.51	3.46
40	2.42	2.76	3.09	3.37	3.62	3.80	3.91	3.94
45	-	2.82	3.20	3.54	3.84	4.10	4.28	4.39
50	-	2.87	3.29	3.69	4.05	4.37	4.63	4.82
55	-	-	3.36	3.82	4.24	4.63	4.96	5.23
60	-	-	3.42	3.93	4.42	4.87	5.28	5.62

Current [A]

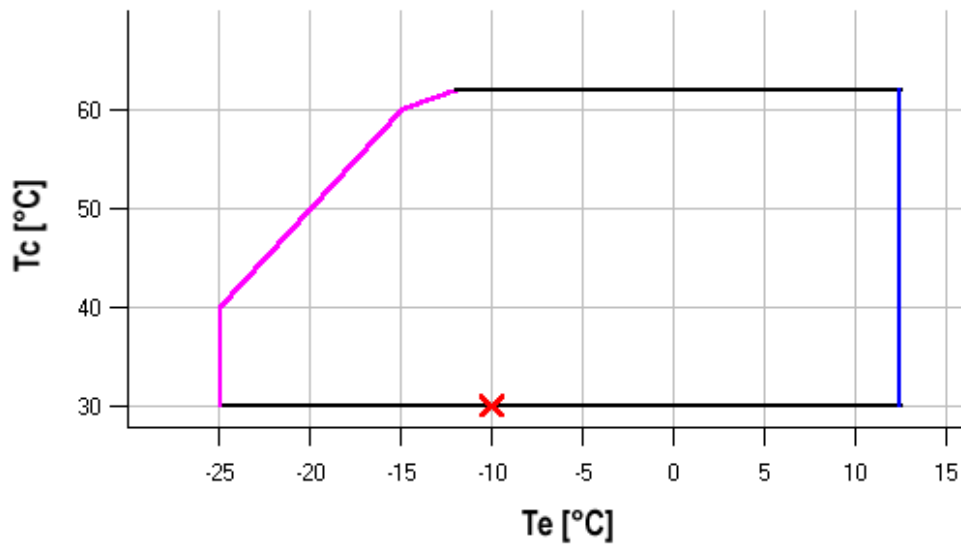
t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
30	5.47	5.78	6.05	6.27	6.42	6.47	6.42	6.25
35	5.54	5.90	6.24	6.53	6.76	6.91	6.96	6.89
40	5.58	6.00	6.40	6.77	7.09	7.33	7.48	7.52
45	-	6.08	6.55	6.99	7.39	7.72	7.98	8.13
50	-	6.12	6.67	7.19	7.67	8.10	8.45	8.72
55	-	-	6.76	7.36	7.93	8.45	8.91	9.28
60	-	-	6.82	7.50	8.16	8.78	9.34	9.83

Mass flow [kg/s]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
30	108.53	145.74	187.73	235.21	288.89	349.49	417.71	494.25
35	99.79	137.27	179.46	227.07	280.81	341.38	409.49	485.86
40	90.47	128.23	170.61	218.34	272.13	332.67	400.68	476.86
45	-	118.65	161.23	209.08	262.90	323.41	391.32	467.32
50	-	108.58	151.36	199.32	253.19	313.67	381.46	457.28
55	-	-	141.06	189.14	243.04	303.48	371.16	446.80
60	-	-	130.38	178.57	232.51	292.91	360.48	435.92

C.O.P. [W/W]

$t_c \setminus t_e$	-25	-20	-15	-10	-5	0	5	10
30	2.15	2.63	3.15	3.77	4.52	5.45	6.67	8.34
35	1.85	2.29	2.76	3.28	3.89	4.63	5.56	6.77
40	1.58	1.99	2.41	2.86	3.37	3.97	4.71	5.62
45	-	1.73	2.11	2.50	2.94	3.44	4.03	4.74
50	-	1.48	1.83	2.19	2.56	2.98	3.47	4.05
55	-	-	1.59	1.91	2.24	2.60	3.01	3.48
60	-	-	1.37	1.66	1.95	2.26	2.61	3.00

Application range


- Maximum evaporating temperature
- 25°C suction gas return

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

R404A/R507

Cooling capacity [kW]

t_c \ t_e	-40	-35	-30	-25	-20	-15	-10	-5	0	5
20	2.94	4.10	5.52	7.24	9.31	11.74	14.58	17.87	21.63	25.91
25	2.44	3.57	4.94	6.58	8.54	10.83	13.51	16.61	20.15	24.18
30	1.96	3.06	4.37	5.93	7.77	9.92	12.43	15.33	18.65	22.43
35	1.50	2.57	3.81	5.28	7.00	9.01	11.35	14.04	17.14	20.66
40	-	2.09	3.27	4.64	6.24	8.10	10.26	12.75	15.61	18.87
45	-	1.64	2.75	4.02	5.49	7.20	9.17	11.45	14.08	17.07
50	-	-	2.25	3.41	4.75	6.30	8.09	10.15	12.53	15.26
55	-	-	1.76	2.82	4.02	5.41	7.01	8.85	10.99	13.44

Power input [kW]

t_c \ t_e	-40	-35	-30	-25	-20	-15	-10	-5	0	5
20	1.67	1.94	2.19	2.41	2.59	2.71	2.78	2.76	2.66	2.47
25	1.65	1.96	2.25	2.52	2.75	2.94	3.06	3.13	3.11	3.00
30	1.61	1.95	2.29	2.60	2.89	3.14	3.33	3.46	3.52	3.50
35	1.56	1.93	2.31	2.67	3.01	3.31	3.57	3.78	3.92	3.98
40	-	1.90	2.31	2.72	3.11	3.47	3.79	4.07	4.28	4.43
45	-	1.85	2.30	2.75	3.19	3.61	3.99	4.34	4.63	4.85
50	-	-	2.27	2.76	3.25	3.72	4.17	4.58	4.95	5.26
55	-	-	2.23	2.76	3.30	3.83	4.33	4.81	5.25	5.64

Current [A]

t_c \ t_e	-40	-35	-30	-25	-20	-15	-10	-5	0	5
20	4.63	4.97	5.29	5.57	5.79	5.95	6.02	5.99	5.86	5.59
25	4.63	5.00	5.37	5.70	5.99	6.22	6.39	6.46	6.43	6.28
30	4.60	5.01	5.42	5.81	6.16	6.47	6.72	6.89	6.97	6.94
35	4.55	4.99	5.44	5.89	6.31	6.69	7.03	7.29	7.48	7.57
40	-	4.95	5.44	5.94	6.43	6.89	7.31	7.67	7.96	8.17
45	-	4.89	5.43	5.98	6.53	7.06	7.57	8.03	8.43	8.75
50	-	-	5.39	6.00	6.61	7.22	7.81	8.36	8.87	9.31
55	-	-	5.35	6.01	6.68	7.36	8.04	8.69	9.30	9.85

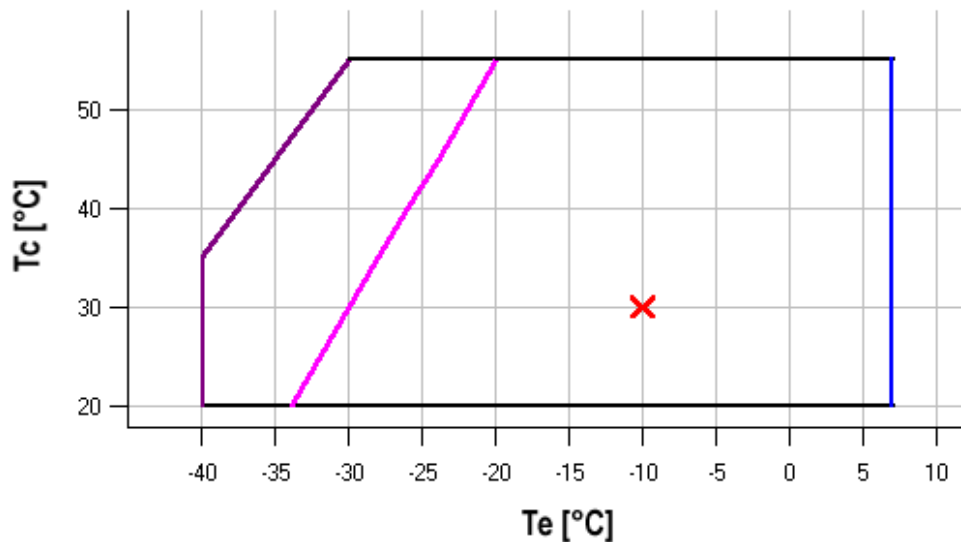
Mass flow [kg/s]

t_c \ t_e	-40	-35	-30	-25	-20	-15	-10	-5	0	5
20	62.72	90.53	122.96	161.50	207.66	262.92	328.79	406.74	498.29	604.92
25	54.72	82.71	115.19	153.65	199.58	254.48	319.84	397.15	487.92	593.64
30	46.55	74.63	107.05	145.31	190.91	245.34	310.09	386.66	476.54	581.24
35	38.22	66.27	98.53	136.50	181.66	235.51	299.55	375.27	464.16	567.73
40	-	57.67	89.66	127.22	171.84	225.01	288.23	362.99	450.80	553.13
45	-	48.82	80.44	117.49	161.46	213.85	276.15	349.85	436.45	537.45
50	-	-	70.88	107.32	150.54	202.04	263.31	335.84	421.14	520.70
55	-	-	61.00	96.72	139.08	189.58	249.72	320.99	404.88	502.89

C.O.P. [W/W]

$t_c \setminus t_e$	-40	-35	-30	-25	-20	-15	-10	-5	0	5
20	1.76	2.11	2.52	3.00	3.59	4.33	5.25	6.47	8.12	10.49
25	1.48	1.83	2.20	2.61	3.10	3.69	4.41	5.31	6.48	8.06
30	1.22	1.57	1.91	2.28	2.69	3.16	3.73	4.43	5.29	6.40
35	0.96	1.33	1.65	1.98	2.33	2.72	3.18	3.72	4.38	5.19
40	-	1.10	1.42	1.71	2.01	2.34	2.71	3.14	3.65	4.26
45	-	0.89	1.20	1.46	1.72	2.00	2.30	2.64	3.04	3.52
50	-	-	0.99	1.23	1.46	1.69	1.94	2.21	2.53	2.90
55	-	-	0.79	1.02	1.22	1.41	1.62	1.84	2.09	2.38

Application range



- Maximum evaporating temperature
- 25°C suction gas return
- 25°C suction gas return + additional cooling

Operating conditions: ISO; subcooling: 0 K, suction superheat: - K, return gas temperature: 20

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
35	5.11	6.99	9.27	11.96	15.11	18.74	22.88	-
40	4.48	6.24	8.38	10.92	13.90	17.35	21.29	-
45	3.87	5.51	7.51	9.90	12.71	15.97	19.71	-
50	-	4.80	6.67	8.90	11.55	14.62	18.16	-
55	-	4.11	5.84	7.93	10.40	13.29	16.63	-
60	-	-	5.04	6.97	9.28	11.98	15.12	-

Power input [kW]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15
35	2.41	2.69	2.95	3.17	3.33	3.42	3.41	-
40	2.48	2.80	3.11	3.39	3.62	3.79	3.87	-
45	2.53	2.88	3.24	3.58	3.88	4.13	4.30	-
50	-	2.95	3.36	3.75	4.12	4.44	4.70	-
55	-	3.00	3.45	3.90	4.33	4.73	5.07	-
60	-	-	3.52	4.02	4.51	4.98	5.41	-

Current [A]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15
35	5.57	5.91	6.23	6.51	6.72	6.84	6.83	-
40	5.65	6.04	6.43	6.79	7.09	7.32	7.43	-
45	5.71	6.15	6.60	7.04	7.44	7.77	8.00	-
50	-	6.23	6.75	7.27	7.76	8.19	8.55	-
55	-	6.29	6.87	7.47	8.04	8.58	9.06	-
60	-	-	6.97	7.63	8.30	8.94	9.53	-

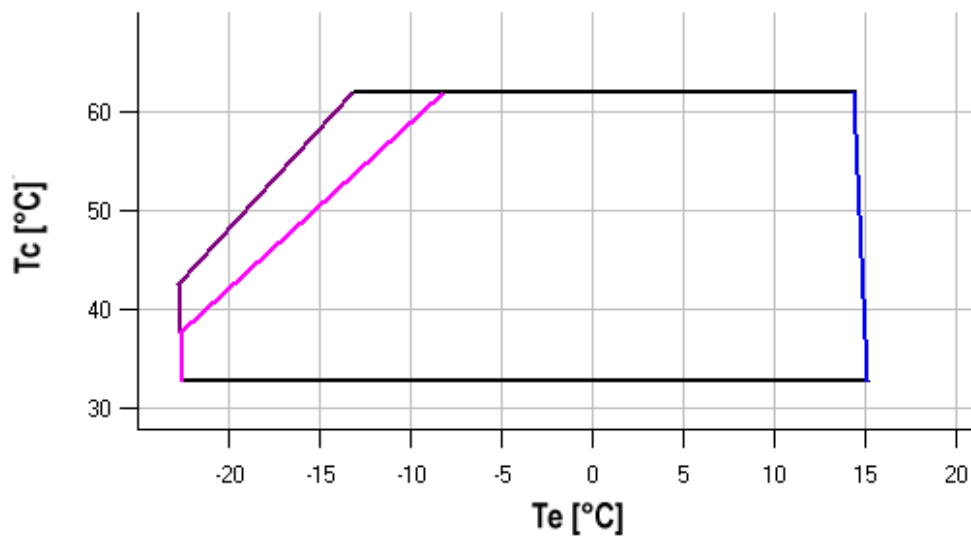
Mass flow [kg/s]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15
35	112.85	151.79	197.76	251.11	312.24	381.50	459.28	-
40	104.26	142.50	187.83	240.63	301.27	370.13	447.57	-
45	95.20	132.81	177.58	229.90	290.13	358.65	435.83	-
50	-	122.70	166.99	218.89	278.78	347.03	424.02	-
55	-	112.15	156.02	207.58	267.20	335.26	412.12	-
60	-	-	144.66	195.94	255.37	323.30	400.12	-

C.O.P. [W/W]

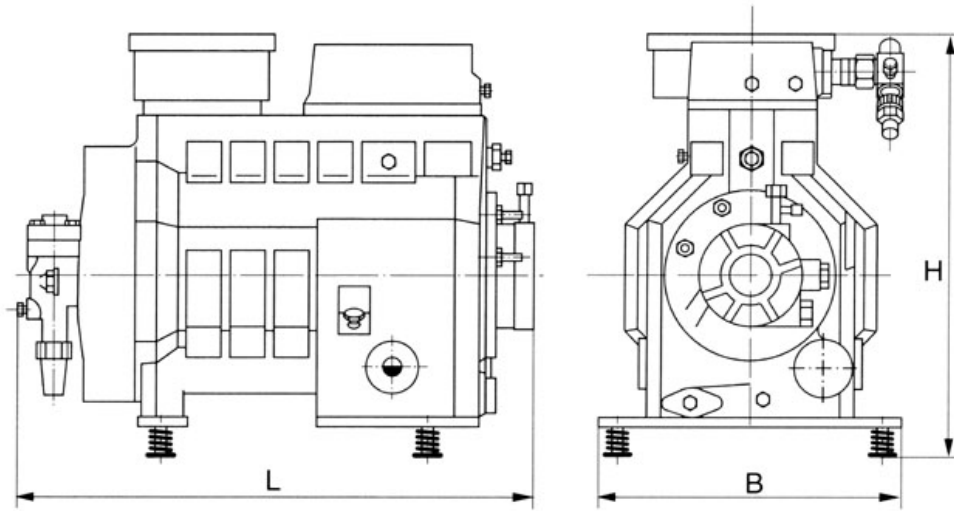
$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
35	2.12	2.60	3.14	3.77	4.53	5.48	6.70	-
40	1.81	2.23	2.70	3.22	3.84	4.58	5.50	-
45	1.53	1.91	2.32	2.76	3.27	3.87	4.58	-
50	-	1.63	1.99	2.37	2.80	3.29	3.87	-
55	-	1.37	1.69	2.03	2.40	2.81	3.28	-
60	-	-	1.43	1.73	2.05	2.40	2.80	-

Application range



- Maximum evaporating temperature
- 25°C suction gas return
- 20K suction superheat

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



L	590 mm
B	330 mm
H	470 mm

