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

Model: D8DH-500 X

Technical data

Cylinder count:	8
Displacement [m³/h]:	151
Weight [kg]:	351
Oil charge [dm³]:	7,7
Max. operating current [A]:	88
Locked rotor current [A]:	444
Power supply [V/~/Hz]:	380-420V/3/50Hz

Connections

	milimeters	inches
Suction line:		2 5/8"
Discharge line:		1 5/8"

R22

Cooling capacity [kW]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
30	43.51	56.33	71.48	89.17	109.64	133.11	159.82	189.99
35	40.02	52.33	66.84	83.76	103.35	125.82	151.40	180.33
40	36.65	48.42	62.27	78.42	97.11	118.56	143.00	170.66
45	33.40	44.62	57.80	73.16	90.92	111.33	134.61	160.99
50	-	40.94	53.43	67.97	84.81	104.16	126.27	151.35
55	-	-	49.17	62.88	78.77	97.05	117.96	141.73
60	-	-	-	57.90	72.82	90.02	109.72	132.15

Power input [kW]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
30	20.14	21.97	23.60	24.96	25.96	26.53	26.59	26.05
35	21.23	23.32	25.26	26.96	28.36	29.36	29.90	29.88
40	22.29	24.63	26.85	28.89	30.66	32.08	33.08	33.57
45	23.34	25.91	28.40	30.75	32.88	34.70	36.14	37.11
50	-	27.17	29.92	32.57	35.03	37.23	39.10	40.54
55	-	-	31.41	34.34	37.13	39.69	41.96	43.86
60	-	-	-	36.09	39.18	42.09	44.75	47.08

Current [A]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
30	49.97	51.81	53.59	55.16	56.38	57.11	57.21	56.52
35	51.04	53.28	55.50	57.58	59.35	60.68	61.43	61.44
40	52.16	54.80	57.48	60.05	62.38	64.32	65.72	66.43
45	53.31	56.35	59.48	62.56	65.45	67.99	70.04	71.47
50	-	57.90	61.49	65.08	68.52	71.67	74.38	76.51
55	-	-	63.47	67.57	71.56	75.32	78.69	81.54
60	-	-	-	70.00	74.56	78.93	82.96	86.52

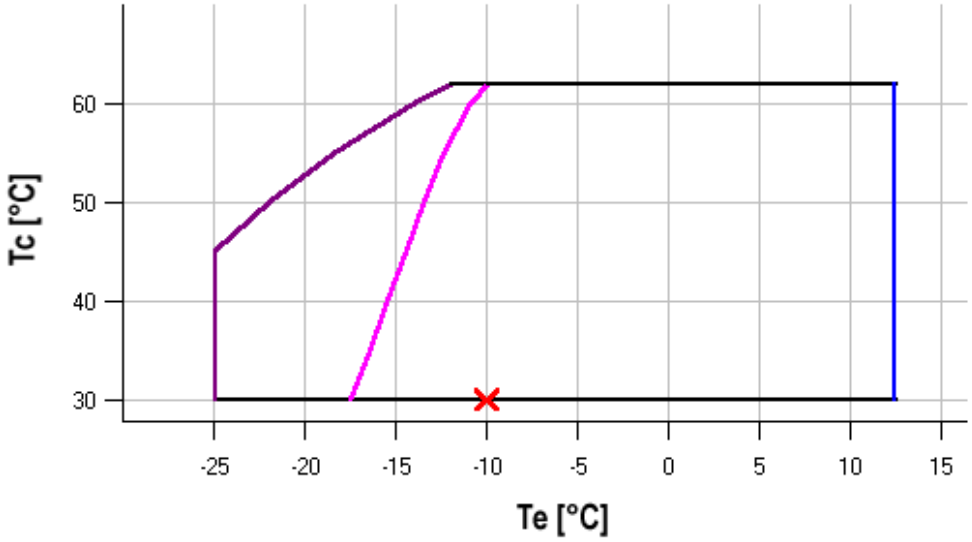
Mass flow [kg/s]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
30	945.63	1 210.34	1 516.16	1 866.94	2 266.53	2 718.80	3 227.58	3 796.74
35	905.73	1 168.96	1 472.85	1 821.25	2 218.00	2 666.96	3 171.99	3 736.93
40	865.86	1 127.30	1 428.93	1 774.62	2 168.20	2 613.54	3 114.48	3 674.88
45	826.45	1 085.77	1 384.82	1 727.47	2 117.56	2 558.95	3 055.48	3 611.02
50	-	1 044.78	1 340.94	1 680.22	2 066.50	2 503.61	2 995.41	3 545.75
55	-	-	1 297.69	1 633.29	2 015.42	2 447.94	2 934.68	3 479.51
60	-	-	-	1 587.10	1 964.76	2 392.35	2 873.71	3 412.71

C.O.P. [W/W]

t_c \ t_e	-25	-20	-15	-10	-5	0	5	10
30	2.16	2.56	3.03	3.57	4.22	5.02	6.01	7.29
35	1.89	2.24	2.65	3.11	3.64	4.29	5.06	6.03
40	1.64	1.97	2.32	2.71	3.17	3.70	4.32	5.08
45	1.43	1.72	2.03	2.38	2.77	3.21	3.72	4.34
50	-	1.51	1.79	2.09	2.42	2.80	3.23	3.73
55	-	-	1.57	1.83	2.12	2.45	2.81	3.23
60	-	-	-	1.60	1.86	2.14	2.45	2.81

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]

R134a

Cooling capacity [kW]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15	20	25
40	30.48	38.53	48.38	60.25	74.40	91.06	110.48	132.89	158.55	187.68
45	27.48	35.35	44.83	56.16	69.59	85.35	103.69	124.85	149.07	176.59
50	24.69	32.33	41.41	52.16	64.82	79.65	96.87	116.74	139.49	165.37
55	22.11	29.49	38.12	48.25	60.11	73.96	90.03	108.57	129.81	154.00
60	19.73	26.80	34.96	44.43	55.46	68.29	83.17	100.34	120.03	142.50
65	17.56	24.29	31.92	40.69	50.85	62.64	76.29	92.05	110.16	130.86
70	15.59	21.94	29.02	37.05	46.30	56.99	69.37	83.69	100.18	119.08
75	-	19.76	26.24	33.50	41.80	51.36	62.44	75.27	90.10	107.16
80	-	-	23.59	30.04	37.34	45.74	55.47	66.78	79.91	95.10

Power input [kW]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15	20	25
40	14.51	16.26	17.94	19.47	20.82	21.91	22.70	23.12	23.14	22.68
45	14.81	16.76	18.67	20.47	22.12	23.55	24.71	25.55	26.00	26.02
50	15.08	17.22	19.35	21.41	23.35	25.10	26.62	27.86	28.75	29.23
55	15.31	17.63	19.97	22.27	24.49	26.56	28.43	30.05	31.36	32.30
60	15.49	17.98	20.52	23.06	25.54	27.92	30.13	32.12	33.84	35.23
65	15.62	18.26	20.99	23.75	26.49	29.16	31.70	34.06	36.17	37.99
70	15.69	18.47	21.37	24.35	27.34	30.29	33.14	35.85	38.35	40.59
75	-	18.60	21.67	24.84	28.07	31.29	34.45	37.49	40.37	43.02
80	-	-	21.86	25.22	28.67	32.15	35.61	38.98	42.22	45.27

Current [A]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15	20	25
40	37.73	39.67	41.64	43.53	45.25	46.68	47.72	48.26	48.21	47.45
45	38.16	40.32	42.58	44.83	46.97	48.88	50.48	51.64	52.27	52.27
50	38.53	40.91	43.45	46.05	48.60	51.00	53.14	54.92	56.23	56.97
55	38.82	41.41	44.23	47.17	50.13	53.01	55.69	58.08	60.07	61.55
60	39.03	41.83	44.92	48.20	51.56	54.91	58.13	61.12	63.78	66.00
65	39.15	42.15	45.51	49.12	52.88	56.69	60.44	64.03	67.35	70.30
70	39.18	42.37	45.99	49.93	54.08	58.35	62.63	66.81	70.79	74.46
75	-	42.47	46.35	50.61	55.15	59.87	64.67	69.44	74.07	78.46
80	-	-	46.58	51.16	56.09	61.26	66.57	71.91	77.19	82.30

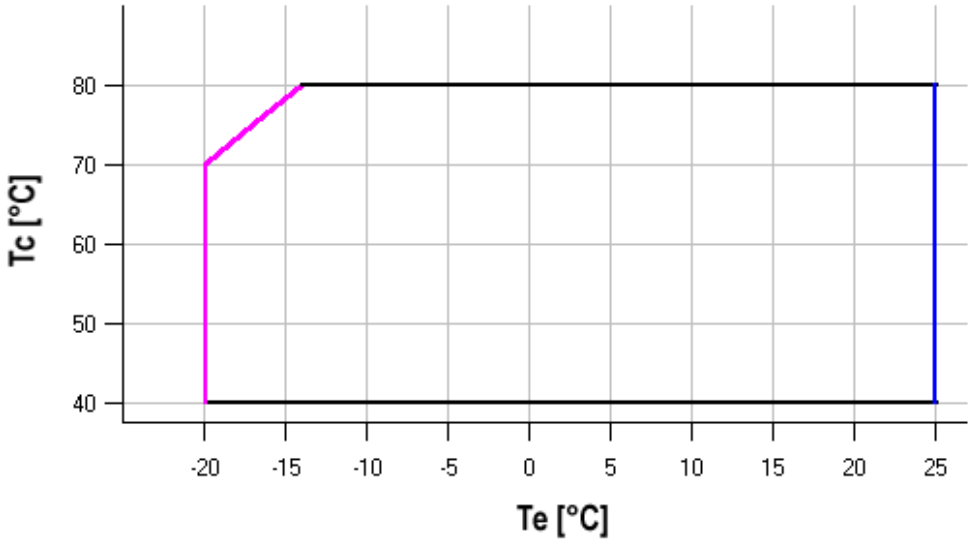
Mass flow [kg/s]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15	20	25
40	549.13	792.91	1 053.46	1 344.47	1 679.63	2 072.64	2 537.20	3 087.01	3 735.75	4 497.13
45	524.32	767.34	1 026.83	1 316.49	1 650.02	2 041.11	2 503.46	3 050.77	3 696.72	4 455.02
50	502.56	743.80	1 001.23	1 288.54	1 619.42	2 007.58	2 466.71	3 010.51	3 652.66	4 406.88
55	484.37	722.83	977.18	1 261.13	1 588.36	1 972.58	2 427.48	2 966.76	3 604.10	4 353.22
60	470.30	704.96	955.23	1 234.81	1 557.38	1 936.65	2 386.30	2 920.05	3 551.58	4 294.59
65	460.86	690.73	935.90	1 210.09	1 527.00	1 900.30	2 343.71	2 870.92	3 495.62	4 231.51
70	456.61	680.65	919.73	1 187.53	1 497.75	1 864.09	2 300.24	2 819.89	3 436.76	4 164.52
75	-	675.28	907.24	1 167.64	1 470.17	1 828.53	2 256.41	2 767.51	3 375.53	4 094.15
80	-	-	898.97	1 150.96	1 444.79	1 794.16	2 212.76	2 714.30	3 312.46	4 020.94

C.O.P. [W/W]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15	20	25
40	2.10	2.37	2.70	3.09	3.57	4.16	4.87	5.75	6.85	8.27
45	1.86	2.11	2.40	2.74	3.15	3.62	4.20	4.89	5.73	6.79
50	1.64	1.88	2.14	2.44	2.78	3.17	3.64	4.19	4.85	5.66
55	1.44	1.67	1.91	2.17	2.45	2.78	3.17	3.61	4.14	4.77
60	1.27	1.49	1.70	1.93	2.17	2.45	2.76	3.12	3.55	4.05
65	1.12	1.33	1.52	1.71	1.92	2.15	2.41	2.70	3.05	3.44
70	0.99	1.19	1.36	1.52	1.69	1.88	2.09	2.33	2.61	2.93
75	-	1.06	1.21	1.35	1.49	1.64	1.81	2.01	2.23	2.49
80	-	-	1.08	1.19	1.30	1.42	1.56	1.71	1.89	2.10

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]

R404A/R507

Cooling capacity [kW]

t_c \ t_e	-40	-35	-30	-25	-20	-15	-10	-5	0	5
20	30.19	38.73	49.25	62.01	77.26	95.28	116.31	140.64	168.51	200.20
25	27.04	35.36	45.43	57.53	71.91	88.85	108.60	131.42	157.58	187.33
30	24.07	32.12	41.72	53.13	66.62	82.44	100.87	122.15	146.57	174.36
35	-	29.00	38.09	48.79	61.35	76.03	93.10	112.83	135.46	161.27
40	-	25.98	34.54	44.49	56.09	69.60	85.29	103.42	124.25	148.04
45	-	23.05	31.05	40.22	50.83	63.14	77.41	93.91	112.90	134.64
50	-	20.19	27.58	35.94	45.53	56.61	69.44	84.28	101.40	121.06
55	-	-	24.14	31.66	40.20	50.01	61.36	74.52	89.74	107.29

Power input [kW]

t_c \ t_e	-40	-35	-30	-25	-20	-15	-10	-5	0	5
20	14.41	16.37	18.24	19.96	21.45	22.64	23.46	23.83	23.67	22.92
25	14.76	16.93	19.06	21.08	22.91	24.49	25.73	26.57	26.93	26.74
30	15.05	17.41	19.78	22.08	24.24	26.18	27.84	29.13	29.98	30.33
35	-	17.84	20.43	22.98	25.45	27.73	29.78	31.50	32.83	33.69
40	-	18.23	21.01	23.81	26.55	29.16	31.57	33.70	35.49	36.84
45	-	18.59	21.54	24.56	27.56	30.47	33.23	35.75	37.97	39.80
50	-	18.93	22.04	25.25	28.49	31.69	34.77	37.67	40.29	42.58
55	-	-	22.52	25.90	29.36	32.82	36.21	39.45	42.47	45.20

Current [A]

t_c \ t_e	-40	-35	-30	-25	-20	-15	-10	-5	0	5
20	37.59	40.22	42.79	45.19	47.28	48.95	50.07	50.52	50.16	48.88
25	38.24	41.11	44.01	46.82	49.41	51.66	53.43	54.62	55.09	54.72
30	38.75	41.85	45.06	48.26	51.32	54.13	56.55	58.45	59.73	60.25
35	-	42.47	45.97	49.54	53.06	56.40	59.43	62.05	64.11	65.50
40	-	43.00	46.77	50.69	54.64	58.50	62.14	65.43	68.26	70.49
45	-	43.47	47.49	51.74	56.11	60.46	64.68	68.64	72.21	75.28
50	-	43.92	48.17	52.73	57.49	62.33	67.11	71.71	76.01	79.88
55	-	-	48.84	53.69	58.83	64.12	69.44	74.66	79.67	84.33

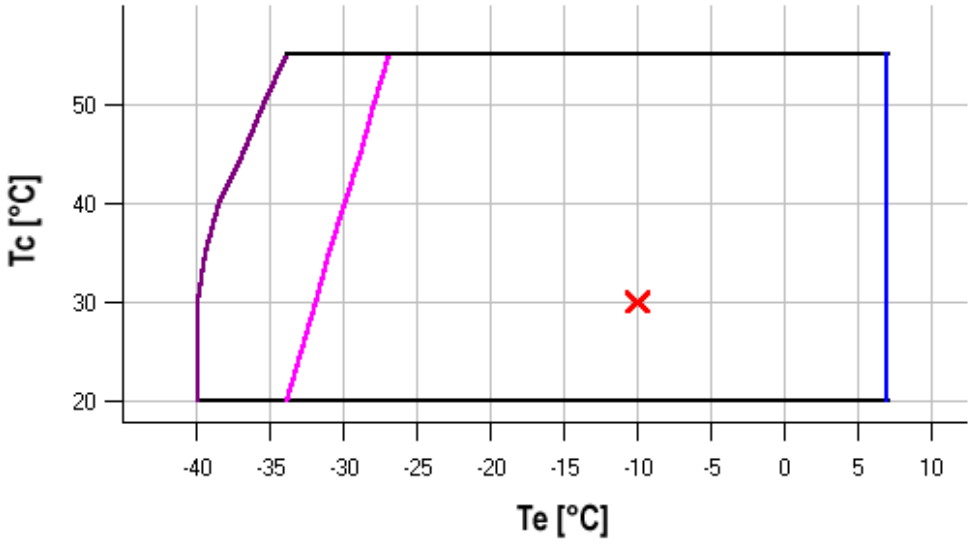
Mass flow [kg/s]

t_c \ t_e	-40	-35	-30	-25	-20	-15	-10	-5	0	5
20	585.36	819.97	1 079.91	1 377.85	1 726.46	2 138.39	2 626.31	3 202.90	3 880.80	4 672.68
25	555.80	788.50	1 045.74	1 340.20	1 684.55	2 091.43	2 573.53	3 143.50	3 814.01	4 597.72
30	528.59	758.49	1 012.15	1 302.25	1 641.44	2 042.40	2 517.78	3 080.26	3 742.48	4 517.13
35	-	729.56	978.76	1 263.61	1 596.77	1 990.91	2 458.70	3 012.79	3 665.85	4 430.54
40	-	701.35	945.20	1 223.91	1 550.16	1 936.59	2 395.89	2 940.72	3 583.73	4 337.59
45	-	673.48	911.09	1 182.78	1 501.22	1 879.07	2 329.00	2 863.67	3 495.75	4 237.89
50	-	645.58	876.06	1 139.85	1 449.60	1 817.98	2 257.65	2 781.28	3 401.53	4 131.07
55	-	-	839.74	1 094.73	1 394.91	1 752.93	2 181.46	2 693.17	3 300.71	4 016.75

C.O.P. [W/W]

t_c \ t_e	-40	-35	-30	-25	-20	-15	-10	-5	0	5
20	2.09	2.37	2.70	3.11	3.60	4.21	4.96	5.90	7.12	8.74
25	1.83	2.09	2.38	2.73	3.14	3.63	4.22	4.95	5.85	7.01
30	1.60	1.84	2.11	2.41	2.75	3.15	3.62	4.19	4.89	5.75
35	-	1.63	1.86	2.12	2.41	2.74	3.13	3.58	4.13	4.79
40	-	1.43	1.64	1.87	2.11	2.39	2.70	3.07	3.50	4.02
45	-	1.24	1.44	1.64	1.84	2.07	2.33	2.63	2.97	3.38
50	-	1.07	1.25	1.42	1.60	1.79	2.00	2.24	2.52	2.84
55	-	-	1.07	1.22	1.37	1.52	1.69	1.89	2.11	2.37

Application range



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

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	43.75	57.42	74.18	94.14	117.45	144.23	174.62	-
40	39.93	52.63	68.30	87.07	109.07	134.43	163.28	-
45	36.14	47.87	62.46	80.04	100.73	124.67	151.98	-
50	32.48	43.24	56.75	73.13	92.52	115.04	140.82	-
55	-	38.82	51.25	66.44	84.52	105.62	129.88	-
60	-	-	46.05	60.05	76.83	96.52	119.24	-

Power input [kW]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15
35	20.70	22.80	24.80	26.56	27.94	28.78	28.95	-
40	21.98	24.30	26.58	28.69	30.48	31.80	32.51	-
45	23.22	25.72	28.26	30.69	32.87	34.64	35.87	-
50	24.36	27.03	29.79	32.52	35.05	37.25	38.98	-
55	-	28.17	31.13	34.13	36.99	39.59	41.78	-
60	-	-	32.24	35.47	38.64	41.62	44.24	-

Current [A]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15
35	49.94	52.47	54.97	57.21	58.99	60.08	60.29	-
40	51.50	54.33	57.22	59.95	62.31	64.08	65.06	-
45	52.99	56.09	59.35	62.54	65.46	67.88	69.60	-
50	54.36	57.72	61.32	64.95	68.39	71.45	73.89	-
55	-	59.17	63.09	67.13	71.09	74.74	77.88	-
60	-	-	64.62	69.06	73.50	77.73	81.55	-

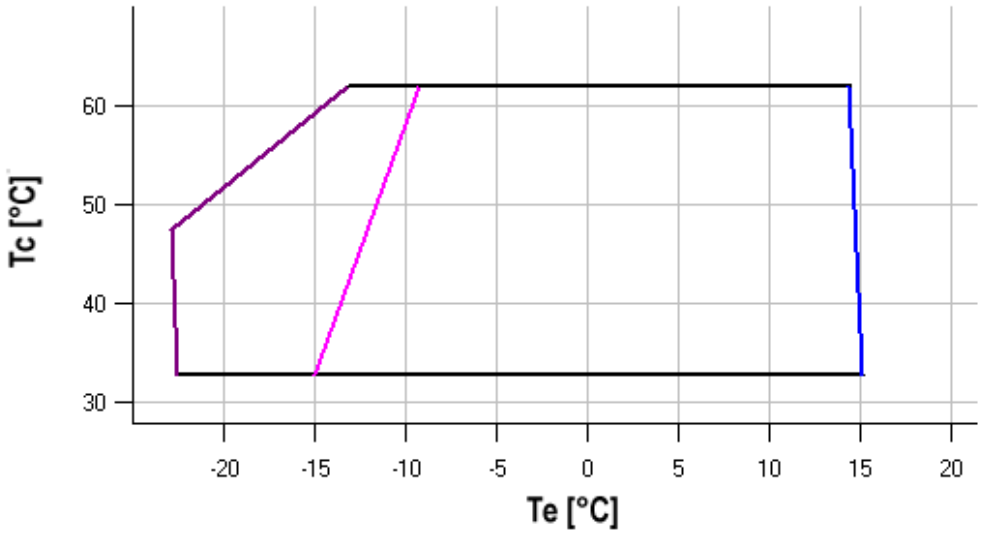
Mass flow [kg/s]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15
35	965.74	1 246.33	1 582.93	1 976.32	2 427.28	2 936.59	3 505.03	-
40	928.84	1 201.68	1 531.30	1 918.49	2 364.02	2 868.67	3 433.23	-
45	888.51	1 153.92	1 476.89	1 858.20	2 298.61	2 798.92	3 359.91	-
50	847.31	1 105.61	1 422.24	1 797.98	2 233.60	2 729.88	3 287.62	-
55	-	1 059.29	1 369.90	1 740.38	2 171.52	2 664.10	3 218.90	-
60	-	-	1 322.41	1 687.96	2 114.94	2 604.13	3 156.31	-

C.O.P. [W/W]

t_c \ t_e	-20	-15	-10	-5	0	5	10	15
35	2.11	2.52	2.99	3.54	4.20	5.01	6.03	-
40	1.82	2.17	2.57	3.03	3.58	4.23	5.02	-
45	1.56	1.86	2.21	2.61	3.06	3.60	4.24	-
50	1.33	1.60	1.90	2.25	2.64	3.09	3.61	-
55	-	1.38	1.65	1.95	2.28	2.67	3.11	-
60	-	-	1.43	1.69	1.99	2.32	2.70	-

Application range

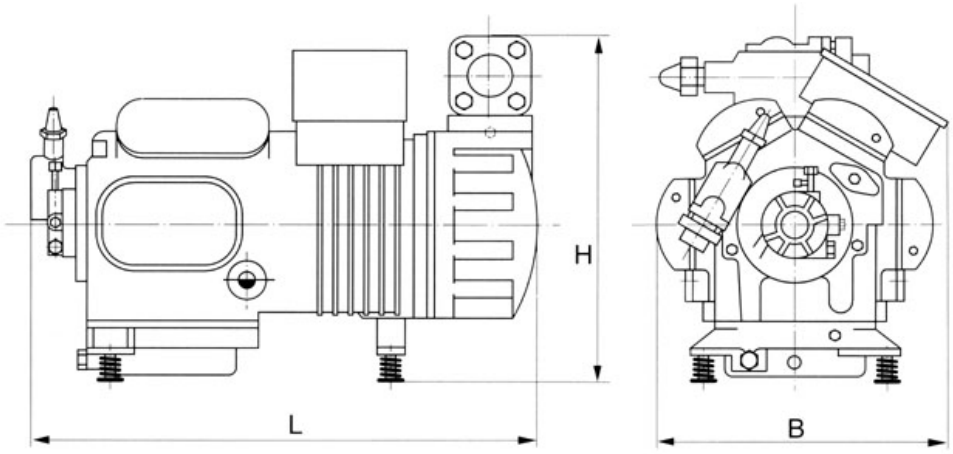


Maximum evaporating temperature
25ºC suction gas return
20K suction superheat

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

Model: D8DH-500 X

Dimensions



L	835	mm
B	590	mm
H	670	mm

Model: D8DH-500 X

Image