

**Type: Hermetic piston compressors**

**Producer: Copeland**

**Series: ZR**

## **Model: ZR380KCE-TWD**

### **Technical data**

Nominal motor power [HP]:	30
Displacement [m <sup>3</sup> /h]:	84,2
Sound pressure level :	75
Gross/Net weight [kg]:	210/195
Oil charge [dm <sup>3</sup> ]:	5,9

### **Electrical data**

Power supply [V/~/Hz]:	380-420/3/50Hz
Locked rotor current [A]:	310
Max. operating current [A]:	62
Winding resistance [Ω]:	0,37

### **Connections**

	<u>milimeters</u>	<u>inches</u>
Suction Rotolock valve connection:		2 1/4"
Discharge Rotolock valve connection:		1 3/4"
Suction connection with supplied sleeve:		1 5/8"
Discharge connection with supplied sleeve:		1 3/8"

R134a

**Cooling capacity [kW]**

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
<b>30</b>	29.07	36.61	45.47	55.73	67.48	80.78	95.72
<b>35</b>	27.54	34.80	43.37	53.33	64.76	77.73	92.33
<b>40</b>	25.98	32.91	41.14	50.75	61.82	74.41	88.62
<b>45</b>	24.43	30.98	38.82	48.03	58.69	70.86	84.63
<b>50</b>	-	29.05	36.46	45.22	55.41	67.11	80.40
<b>55</b>	-	-	34.07	42.34	52.02	63.20	75.95
<b>60</b>	-	-	31.71	39.43	48.55	59.16	71.33
<b>65</b>	-	-	-	36.53	45.05	55.04	66.58
<b>70</b>	-	-	-	-	41.54	50.87	61.73

**Power input [kW]**

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
<b>30</b>	10.60	10.81	10.97	11.08	11.13	11.13	11.08
<b>35</b>	11.75	11.99	12.20	12.37	12.49	12.57	12.60
<b>40</b>	12.99	13.27	13.51	13.73	13.91	14.06	14.17
<b>45</b>	14.37	14.66	14.94	15.19	15.43	15.63	15.81
<b>50</b>	-	16.21	16.51	16.80	17.07	17.32	17.56
<b>55</b>	-	-	18.26	18.57	18.87	19.16	19.45
<b>60</b>	-	-	20.23	20.54	20.87	21.19	21.51
<b>65</b>	-	-	-	22.76	23.09	23.44	23.79
<b>70</b>	-	-	-	-	25.58	25.93	26.31

**Current [A]**

$t_c \setminus t_e$	<b>-15</b>	<b>-10</b>	<b>-5</b>	<b>0</b>	<b>5</b>	<b>10</b>	<b>15</b>
<b>30</b>	26.28	26.50	26.64	26.71	26.70	26.62	26.47
<b>35</b>	27.42	27.68	27.89	28.04	28.14	28.17	28.15
<b>40</b>	28.73	29.03	29.29	29.51	29.70	29.84	29.93
<b>45</b>	30.27	30.59	30.89	31.17	31.43	31.66	31.87
<b>50</b>	-	32.41	32.74	33.07	33.39	33.71	34.01
<b>55</b>	-	-	34.90	35.26	35.63	36.01	36.40
<b>60</b>	-	-	37.41	37.79	38.20	38.64	39.10
<b>65</b>	-	-	-	40.71	41.15	41.63	42.15
<b>70</b>	-	-	-	-	44.53	45.04	45.60

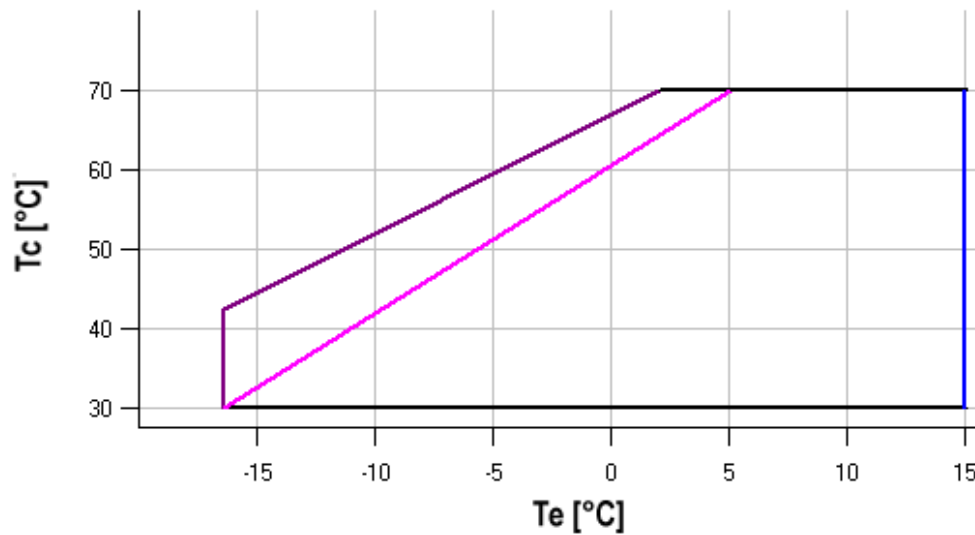
**Mass flow [kg/s]**

$t_c \setminus t_e$	<b>-15</b>	<b>-10</b>	<b>-5</b>	<b>0</b>	<b>5</b>	<b>10</b>	<b>15</b>
<b>30</b>	671.80	829.74	1 010.46	1 214.54	1 442.56	1 695.10	1 972.72
<b>35</b>	669.39	827.72	1 009.85	1 216.35	1 447.80	1 704.78	1 987.85
<b>40</b>	665.65	823.70	1 006.56	1 214.80	1 449.00	1 709.73	1 997.57
<b>45</b>	661.44	818.52	1 001.42	1 210.72	1 446.99	1 710.80	2 002.73
<b>50</b>	-	813.03	995.30	1 204.97	1 442.63	1 708.84	2 004.18
<b>55</b>	-	-	989.02	1 198.39	1 436.75	1 704.68	2 002.74
<b>60</b>	-	-	983.45	1 191.83	1 430.21	1 699.17	1 999.28
<b>65</b>	-	-	-	1 186.12	1 423.85	1 693.16	1 994.64
<b>70</b>	-	-	-	-	1 418.51	1 687.49	1 989.65

**C.O.P. [W/W]**

$t_c \setminus t_e$	-15	-10	-5	0	5	10	15
<b>30</b>	2.74	3.39	4.15	5.03	6.06	7.25	8.64
<b>35</b>	2.34	2.90	3.55	4.31	5.18	6.18	7.33
<b>40</b>	2.00	2.48	3.04	3.70	4.44	5.29	6.26
<b>45</b>	1.70	2.11	2.60	3.16	3.80	4.53	5.35
<b>50</b>	-	1.79	2.21	2.69	3.25	3.87	4.58
<b>55</b>	-	-	1.87	2.28	2.76	3.30	3.91
<b>60</b>	-	-	1.57	1.92	2.33	2.79	3.32
<b>65</b>	-	-	-	1.61	1.95	2.35	2.80
<b>70</b>	-	-	-	-	1.62	1.96	2.35

**Application range**



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

Operating conditions: 10K suction superheat, 0K subcooling

$t_c$  - Condensing temperature [°C]

$t_e$  - Evaporating temperature [°C]

**R407C**
**Cooling capacity [kW]**

<b>t<sub>c</sub> \ t<sub>e</sub></b>	<b>-20</b>	<b>-15</b>	<b>-10</b>	<b>-5</b>	<b>0</b>	<b>5</b>	<b>10</b>	<b>15</b>
<b>25</b>	36.75	46.93	58.79	72.82	89.52	109.39	132.92	-
<b>30</b>	34.18	44.25	55.76	69.22	85.11	103.94	126.20	152.39
<b>35</b>	31.30	41.34	52.58	65.54	80.70	98.56	119.63	144.40
<b>40</b>	28.00	38.07	49.13	61.66	76.16	93.15	113.10	136.52
<b>45</b>	-	34.33	45.27	57.46	71.39	87.56	106.48	128.63
<b>50</b>	-	-	40.89	52.81	66.24	81.69	99.64	120.60
<b>55</b>	-	-	-	47.59	60.60	75.40	92.47	112.32
<b>60</b>	-	-	-	-	54.35	68.57	84.83	103.64
<b>65</b>	-	-	-	-	-	61.08	76.61	94.47

**Power input [kW]**

<b>t<sub>c</sub> \ t<sub>e</sub></b>	<b>-20</b>	<b>-15</b>	<b>-10</b>	<b>-5</b>	<b>0</b>	<b>5</b>	<b>10</b>	<b>15</b>
<b>25</b>	12.90	13.09	13.31	13.61	14.04	14.64	15.48	-
<b>30</b>	14.56	14.76	14.95	15.18	15.51	15.98	16.64	17.54
<b>35</b>	16.34	16.56	16.75	16.94	17.19	17.55	18.06	18.78
<b>40</b>	18.28	18.55	18.75	18.93	19.13	19.39	19.78	20.34
<b>45</b>	-	20.76	21.00	21.18	21.35	21.55	21.84	22.26
<b>50</b>	-	-	23.53	23.73	23.89	24.05	24.26	24.57
<b>55</b>	-	-	-	26.63	26.80	26.94	27.09	27.31
<b>60</b>	-	-	-	-	30.11	30.25	30.37	30.52
<b>65</b>	-	-	-	-	-	34.01	34.13	34.23



**Current [A]**

<b>t<sub>c</sub> \ t<sub>e</sub></b>	<b>-20</b>	<b>-15</b>	<b>-10</b>	<b>-5</b>	<b>0</b>	<b>5</b>	<b>10</b>	<b>15</b>
<b>25</b>	27.33	27.53	27.79	28.15	28.65	29.35	30.29	-
<b>30</b>	29.28	29.50	29.73	30.03	30.43	30.99	31.75	32.76
<b>35</b>	31.47	31.72	31.95	32.21	32.54	32.98	33.59	34.41
<b>40</b>	33.96	34.28	34.53	34.77	35.04	35.40	35.87	36.52
<b>45</b>	-	37.24	37.54	37.78	38.02	38.30	38.67	39.17
<b>50</b>	-	-	41.03	41.30	41.53	41.77	42.05	42.42
<b>55</b>	-	-	-	45.41	45.65	45.86	46.08	46.35
<b>60</b>	-	-	-	-	50.45	50.65	50.83	51.02
<b>65</b>	-	-	-	-	-	56.21	56.37	56.51

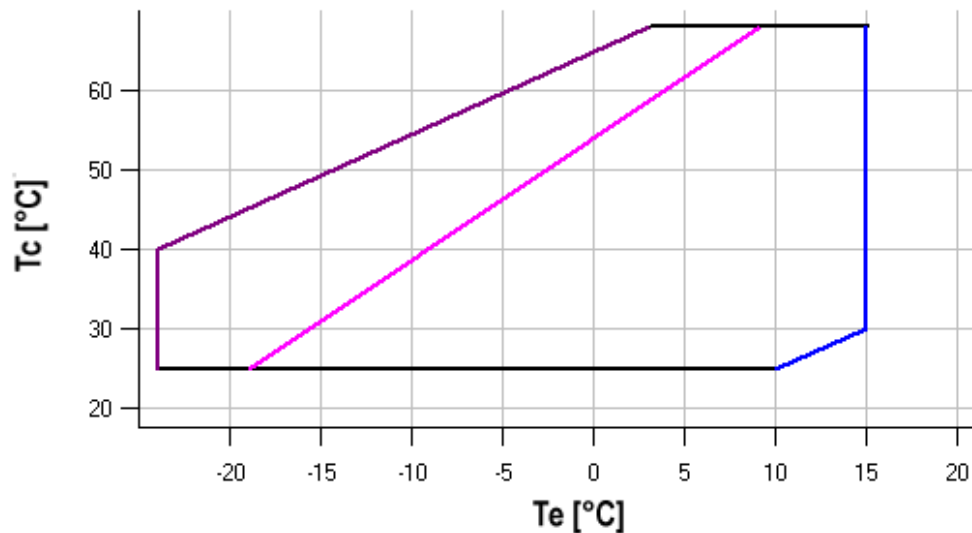
**Mass flow [kg/s]**

<b>t<sub>c</sub> \ t<sub>e</sub></b>	<b>-20</b>	<b>-15</b>	<b>-10</b>	<b>-5</b>	<b>0</b>	<b>5</b>	<b>10</b>	<b>15</b>
<b>25</b>	735.12	929.73	1 148.61	1 401.20	1 696.95	2 045.28	2 455.65	-
<b>30</b>	718.11	917.39	1 138.10	1 389.68	1 681.57	2 023.22	2 424.05	2 893.50
<b>35</b>	692.14	898.69	1 123.82	1 376.98	1 667.61	2 005.14	2 399.02	2 858.69
<b>40</b>	653.64	870.03	1 102.17	1 359.50	1 651.45	1 987.47	2 376.99	2 829.45
<b>45</b>	-	827.84	1 069.58	1 333.66	1 629.53	1 966.62	2 354.36	2 802.21
<b>50</b>	-	-	1 022.45	1 295.88	1 598.25	1 938.99	2 327.56	2 773.38
<b>55</b>	-	-	-	1 242.56	1 554.02	1 901.01	2 292.98	2 739.37
<b>60</b>	-	-	-	-	1 493.26	1 849.09	2 247.05	2 696.59
<b>65</b>	-	-	-	-	-	1 779.63	2 186.18	2 641.45

**C.O.P. [W/W]**

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
<b>25</b>	2.85	3.58	4.42	5.35	6.38	7.47	8.59	-
<b>30</b>	2.35	3.00	3.73	4.56	5.49	6.50	7.58	8.69
<b>35</b>	1.92	2.50	3.14	3.87	4.69	5.62	6.62	7.69
<b>40</b>	1.53	2.05	2.62	3.26	3.98	4.80	5.72	6.71
<b>45</b>	-	1.65	2.16	2.71	3.34	4.06	4.88	5.78
<b>50</b>	-	-	1.74	2.22	2.77	3.40	4.11	4.91
<b>55</b>	-	-	-	1.79	2.26	2.80	3.41	4.11
<b>60</b>	-	-	-	-	1.81	2.27	2.79	3.40
<b>65</b>	-	-	-	-	-	1.80	2.25	2.76

**Application range**

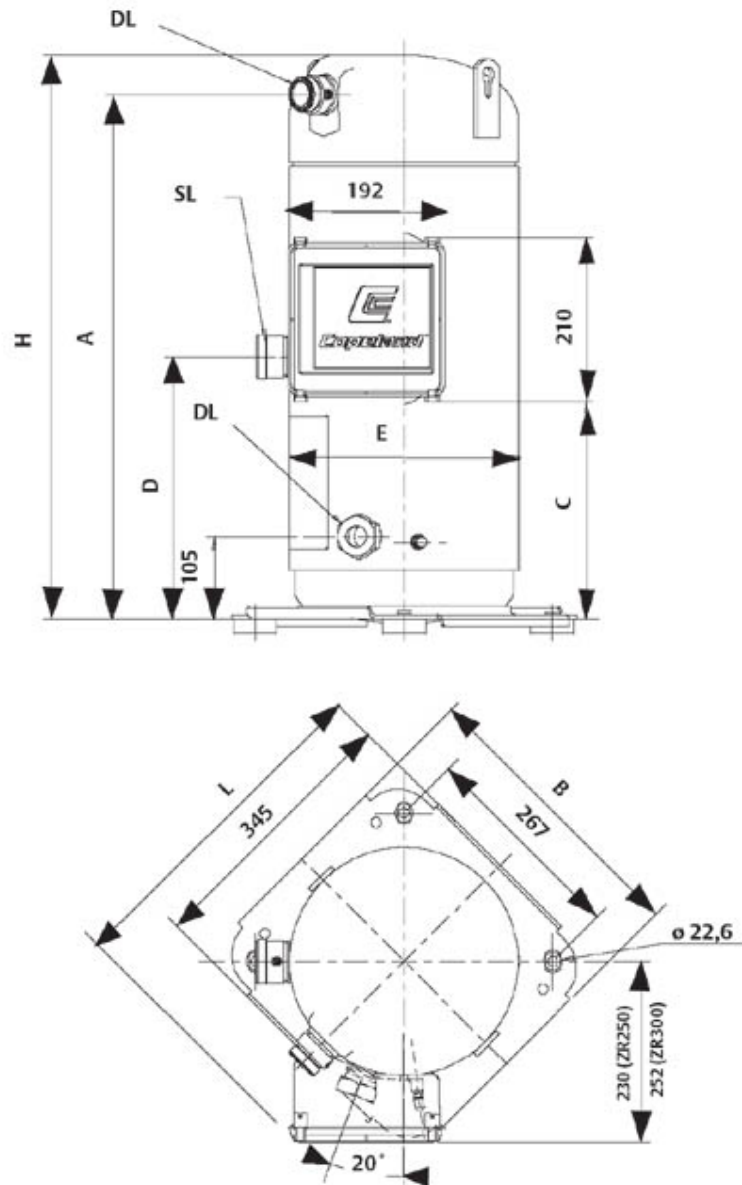


- Maximum evaporating temperature
- 25°C suction gas temperature
- 10K gas overheat

Operating conditions: 10K suction superheat, 0K subcooling

$t_c$  - Condensing temperature [°C]

$t_e$  - Evaporating temperature [°C]



A	660 mm
B	368 mm
C	275 mm
D	375 mm
E	334 mm
H	716 mm
L	449 mm



