

# Model: ZR19M3E-TWD

## Data

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**Type:** Hermetic piston compressors

**Producer:** Copeland

**Series:** ZR

## Model: ZR19M3E-TWD

### Technical data

Nominal motor power [HP]:	15
Displacement [m <sup>3</sup> /h]:	42,8
Sound pressure level :	69
Gross/Net weight [kg]:	130/119
Oil charge [dm <sup>3</sup> ]:	4,1

### Electrical data

Power supply [V/~/Hz]:	380-420/3/50Hz
Locked rotor current [A]:	198
Max. operating current [A]:	32
Winding resistance [ $\Omega$ ]:	0,72

### Connections

	<u>millimeters</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 1/8"

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# Model: ZR19M3E-TWD

## Capacity

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>10</b>	21.70	26.86	32.99	40.22	-	-	-	-
<b>15</b>	20.69	25.70	31.65	38.64	46.81	-	-	-
<b>20</b>	19.66	24.52	30.27	37.03	44.91	54.03	-	-
<b>25</b>	18.62	23.31	28.85	35.37	42.96	51.75	61.86	-
<b>30</b>	17.55	22.07	27.40	33.66	40.96	49.41	59.14	70.26
<b>35</b>	16.47	20.81	25.91	31.90	38.90	47.00	56.34	67.03
<b>40</b>	15.36	19.51	24.38	30.10	36.78	44.53	53.47	63.72
<b>45</b>	-	18.17	22.81	28.25	34.60	41.99	50.52	60.32
<b>50</b>	-	-	21.19	26.34	32.36	39.37	47.49	56.83
<b>55</b>	-	-	-	24.37	30.05	36.68	44.38	53.26
<b>60</b>	-	-	-	-	27.68	33.92	41.19	49.59
<b>65</b>	-	-	-	-	-	31.08	37.91	45.83

### 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>10</b>	5.13	5.24	5.58	6.26	-	-	-	-
<b>15</b>	5.68	5.68	5.84	6.27	7.06	-	-	-
<b>20</b>	6.33	6.28	6.31	6.53	7.05	7.96	-	-
<b>25</b>	7.06	7.00	6.96	7.03	7.32	7.94	8.98	-
<b>30</b>	7.85	7.84	7.77	7.74	7.86	8.24	8.96	10.15
<b>35</b>	8.68	8.77	8.72	8.65	8.66	8.84	9.31	10.15
<b>40</b>	9.52	9.77	9.81	9.74	9.68	9.73	9.98	10.55
<b>45</b>	-	10.82	10.99	10.99	10.92	10.88	10.98	11.31
<b>50</b>	-	-	12.27	12.38	12.35	12.28	12.27	12.43
<b>55</b>	-	-	-	13.89	13.95	13.90	13.84	13.87
<b>60</b>	-	-	-	-	15.71	15.73	15.67	15.63
<b>65</b>	-	-	-	-	-	17.75	17.74	17.68

# Model: ZR19M3E-TWD

## Capacity

### Current [A]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
10	13.09	13.03	12.91	12.71	-	-	-	-
15	13.84	13.82	13.75	13.62	13.41	-	-	-
20	14.58	14.59	14.57	14.50	14.35	14.11	-	-
25	15.35	15.39	15.41	15.38	15.29	15.12	14.84	-
30	16.20	16.26	16.31	16.32	16.28	16.16	15.95	15.63
35	17.18	17.25	17.32	17.36	17.36	17.30	17.15	16.89
40	18.34	18.42	18.50	18.56	18.59	18.57	18.47	18.28
45	-	19.80	19.88	19.96	20.01	20.02	19.97	19.83
50	-	-	21.52	21.60	21.67	21.71	21.69	21.59
55	-	-	-	23.54	23.62	23.67	23.68	23.62
60	-	-	-	-	25.90	25.96	25.98	25.95
65	-	-	-	-	-	28.62	28.66	28.64

### Mass flow [kg/s]

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
10	385.13	472.96	574.23	690.85	-	-	-	-
15	383.00	470.67	571.80	688.30	822.10	-	-	-
20	379.84	467.40	568.43	684.85	818.58	971.53	-	-
25	375.68	463.16	564.13	680.52	814.22	967.17	1 141.28	-
30	370.55	457.99	558.95	675.33	809.05	962.04	1 136.20	1 333.45
35	364.46	451.91	552.89	669.31	803.10	956.16	1 130.41	1 327.77
40	357.45	444.94	545.99	662.49	796.38	949.55	1 123.94	1 321.45
45	-	437.12	538.27	654.90	788.92	942.25	1 116.82	1 314.52
50	-	-	529.76	646.55	780.75	934.28	1 109.06	1 307.00
55	-	-	-	637.47	771.90	925.67	1 100.70	1 298.92
60	-	-	-	-	762.38	916.43	1 091.76	1 290.29
65	-	-	-	-	-	906.60	1 082.27	1 281.15

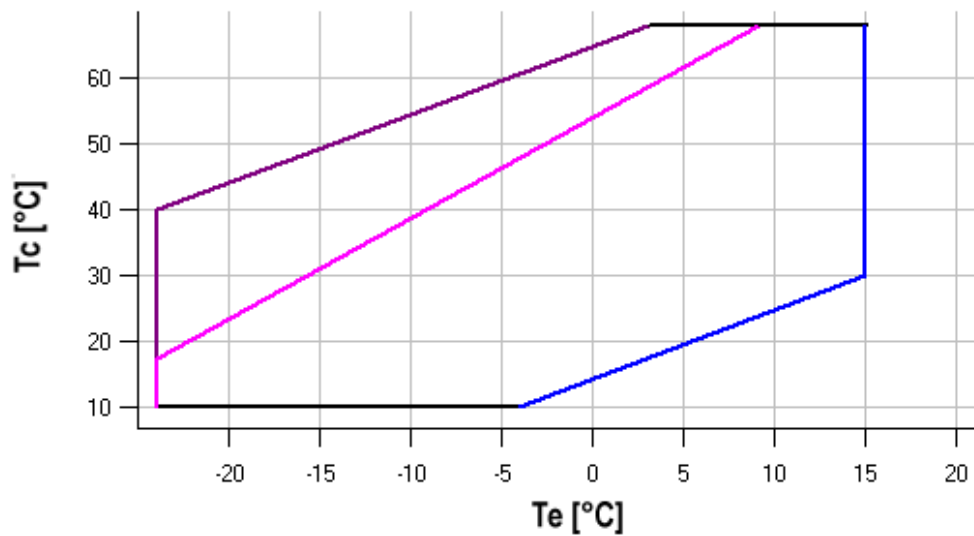
# Model: ZR19M3E-TWD

Capacity

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

$t_c \setminus t_e$	-20	-15	-10	-5	0	5	10	15
10	4.23	5.13	5.91	6.42	-	-	-	-
15	3.64	4.52	5.42	6.16	6.63	-	-	-
20	3.11	3.91	4.80	5.67	6.37	6.79	-	-
25	2.64	3.33	4.15	5.03	5.87	6.52	6.89	-
30	2.24	2.82	3.53	4.35	5.21	6.00	6.60	6.92
35	1.90	2.37	2.97	3.69	4.49	5.32	6.05	6.60
40	1.61	2.00	2.49	3.09	3.80	4.58	5.36	6.04
45	-	1.68	2.07	2.57	3.17	3.86	4.60	5.33
50	-	-	1.73	2.13	2.62	3.21	3.87	4.57
55	-	-	-	1.75	2.15	2.64	3.21	3.84
60	-	-	-	-	1.76	2.16	2.63	3.17
65	-	-	-	-	-	1.75	2.14	2.59

## 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]

# Model: ZR190KCE-TFD

## Data

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**Type: Hermetic scroll compressors**

**Producer: Copeland**

**Series: ZR**

## Model: ZR190KCE-TFD

### Technical data

Displacement [m <sup>3</sup> /h]:	43,3
Sound power [dBA]:	82
Sound pressure level [dB]:	71
Net Weight [kg]:	66
Oil charge [dm <sup>3</sup> ]:	3,3
Maximum high pressure [bar]:	32
Maximum standstill pressure [bar]:	20
Minimal lowside temperature [°C]:	-35
Maximum lowside temperature [°C]:	52
PED category:	2

### Electrical data

Power supply [V/~ /Hz]:	380-420/3/50Hz
Locked rotor current [A]:	174
Max. operating current [A]:	34,0
Winding resistance [Ω]:	0,8

### Connections

	<u>inches</u>
Suction connection with supplied sleeve:	1 3/8"
Discharge connection with supplied sleeve:	7/8"

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# Model: ZR190KCE-TFD

## Capacity

R407C

### Cooling capacity [kW]

<b>t<sub>c</sub> \ t<sub>e</sub></b>	<b>-25</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>20</b>
<b>25</b>	13.68	17.72	22.43	27.93	34.36	41.84	50.50	60.45	-	-
<b>30</b>	12.53	16.62	21.33	26.79	33.11	40.44	48.89	58.59	69.66	-
<b>35</b>	11.20	15.32	20.01	25.39	31.59	38.73	46.95	56.37	67.11	79.30
<b>40</b>	-	13.83	18.47	23.75	29.80	36.74	44.70	53.81	64.19	75.96
<b>45</b>	-	-	16.74	21.89	27.76	34.47	42.15	50.93	60.92	72.26
<b>50</b>	-	-	-	19.83	25.50	31.95	39.33	47.74	57.33	68.20
<b>55</b>	-	-	-	-	23.02	29.20	36.24	44.27	53.42	63.81
<b>60</b>	-	-	-	-	-	26.22	32.90	40.53	49.22	59.09
<b>65</b>	-	-	-	-	-	-	29.34	36.53	44.73	54.07

### Power input [kW]

<b>t<sub>c</sub> \ t<sub>e</sub></b>	<b>-25</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>20</b>
<b>25</b>	6.77	6.86	6.93	7.02	7.16	7.37	7.68	8.13	-	-
<b>30</b>	7.57	7.67	7.74	7.80	7.89	8.03	8.26	8.60	9.08	-
<b>35</b>	8.44	8.57	8.65	8.70	8.76	8.85	9.00	9.25	9.62	10.15
<b>40</b>	-	9.57	9.67	9.73	9.77	9.83	9.92	10.10	10.37	10.78
<b>45</b>	-	-	10.82	10.89	10.93	10.97	11.03	11.14	11.33	11.64
<b>50</b>	-	-	-	12.20	12.25	12.28	12.32	12.38	12.51	12.73
<b>55</b>	-	-	-	-	13.73	13.77	13.80	13.84	13.91	14.06
<b>60</b>	-	-	-	-	-	15.44	15.48	15.50	15.55	15.64
<b>65</b>	-	-	-	-	-	-	17.36	17.38	17.41	17.47

# Model: ZR190KCE-TFD

## Capacity

### Current [A]

$t_c \setminus t_e$	-25	-20	-15	-10	-5	0	5	10	15	20
25	19.54	19.58	19.62	19.68	19.80	19.99	20.29	20.72	-	-
30	20.14	20.20	20.24	20.28	20.34	20.47	20.67	20.98	21.43	-
35	20.87	20.98	21.03	21.07	21.11	21.18	21.31	21.53	21.85	22.32
40	-	21.91	22.01	22.07	22.10	22.14	22.22	22.36	22.59	22.93
45	-	-	23.18	23.27	23.33	23.36	23.41	23.50	23.65	23.89
50	-	-	-	24.70	24.79	24.84	24.88	24.94	25.03	25.20
55	-	-	-	-	26.51	26.59	26.65	26.69	26.75	26.86
60	-	-	-	-	-	28.62	28.71	28.76	28.81	28.88
65	-	-	-	-	-	-	31.08	31.16	31.22	31.28

### Mass flow [kg/h]

$t_c \setminus t_e$	-25	-20	-15	-10	-5	0	5	10	15	20
25	277.68	356.27	445.00	546.01	661.46	793.46	944.17	1 115.72	-	-
30	267.80	350.10	442.25	546.39	664.65	799.18	952.11	1 125.59	1 321.75	-
35	253.00	339.06	434.67	541.97	663.09	800.18	955.38	1 130.83	1 328.66	1 551.03
40	-	322.74	421.86	532.36	656.39	796.09	953.60	1 131.06	1 330.60	1 554.38
45	-	-	403.41	517.16	644.14	786.49	946.36	1 125.87	1 327.17	1 552.41
50	-	-	-	495.98	625.96	771.00	933.26	1 114.87	1 317.98	1 544.72
55	-	-	-	-	601.43	749.22	913.92	1 097.67	1 302.62	1 530.90
60	-	-	-	-	-	720.75	887.93	1 073.87	1 280.71	1 510.58
65	-	-	-	-	-	-	854.90	1 043.07	1 251.84	1 483.34

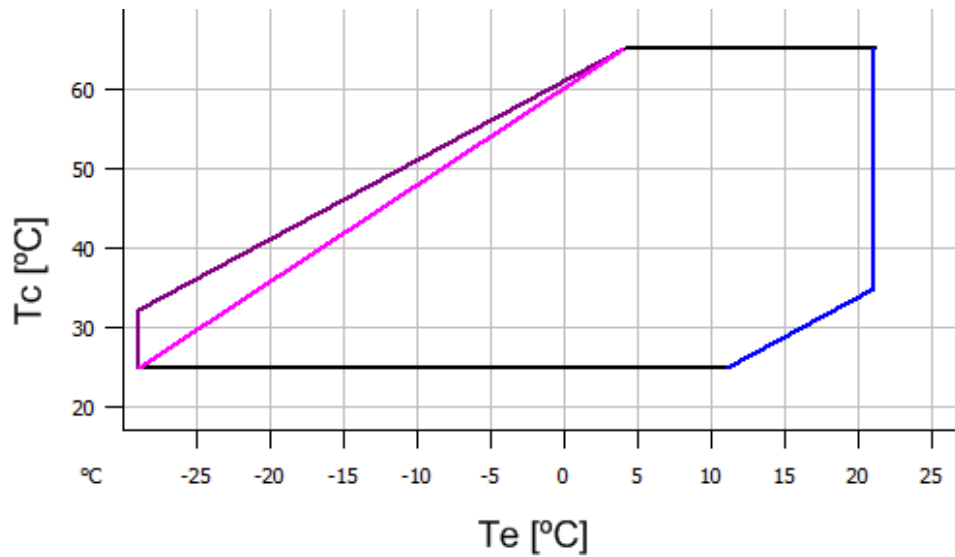
# Model: ZR190KCE-TFD

Capacity

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

$t_c \setminus t_e$	-25	-20	-15	-10	-5	0	5	10	15	20
25	2.02	2.58	3.23	3.98	4.80	5.68	6.57	7.43	-	-
30	1.65	2.17	2.76	3.43	4.20	5.04	5.92	6.81	7.67	-
35	1.33	1.79	2.31	2.92	3.61	4.38	5.22	6.09	6.97	7.82
40	-	1.44	1.91	2.44	3.05	3.74	4.50	5.33	6.19	7.05
45	-	-	1.55	2.01	2.54	3.14	3.82	4.57	5.38	6.21
50	-	-	-	1.63	2.08	2.60	3.19	3.86	4.58	5.36
55	-	-	-	-	1.68	2.12	2.63	3.20	3.84	4.54
60	-	-	-	-	-	1.70	2.13	2.61	3.17	3.78
65	-	-	-	-	-	-	1.69	2.10	2.57	3.10

## 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]