

**Typ: Sprężarki hermetyczne spiralne**

**Producent: Copeland**

**Typoszereg: ZR**

## **Model: ZR22K3E-TFD**

### **Dane techniczne**

|   |      |
|---|------|
| Wydajność objętościowa [m <sup>3</sup> /h]: | 5,3  |
| Natężenie hałasu [dBA]:                     | 65   |
| Ciśnienie akustyczne [dB]:                  | 54   |
| Masa netto [kg]:                            | 22   |
| Masa brutto [kg]:                           | 26   |
| Napełnienie olejem [dm <sup>3</sup> ]:      | 1,0  |
| Maksymalne wysokie ciśnienie [bar]:         | 29,5 |
| Maksymalne stałe ciśnienie [bar]:           | 20   |
| Maksymalna temperatura nasycenia TS [°C]:   | 50   |
| Kategoria PED:                              | 1    |

### **Dane elektryczne**

|                         |                |
|-------------------------|----------------|
| Zasilanie [V/~/Hz]:     | 380-420/3/50Hz |
| Prąd zwarcia [A]:       | 24             |
| Max. pobór prądu [A]:   | 4,2            |
| Oporność uzwojenia [Ω]: | 8,6            |

### **Przyłącza**

|   |             |
|---|-------------|
|   | <b>cale</b> |
| Przyłącze rurowe na ssaniu (lutowane):    | 3/4"        |
| Przyłącze rurowe na tłoczeniu (lutowane): | 1/2"        |

R134a

**Wydajność chłodnicza [kW]**

| $t_c \setminus t_e$ | -20  | -15  | -10  | -5   | 0    | 5    | 10   | 15   |
|---------------------|------|------|------|------|------|------|------|------|
| 30                  | 1.23 | 1.59 | 2.05 | 2.60 | 3.26 | 4.02 | 4.90 | -    |
| 35                  | 1.15 | 1.50 | 1.93 | 2.46 | 3.08 | 3.81 | 4.65 | -    |
| 40                  | 1.06 | 1.40 | 1.82 | 2.32 | 2.91 | 3.61 | 4.40 | 5.32 |
| 45                  | -    | 1.29 | 1.69 | 2.17 | 2.74 | 3.40 | 4.16 | 5.02 |
| 50                  | -    | 1.17 | 1.56 | 2.02 | 2.56 | 3.19 | 3.91 | 4.73 |
| 55                  | -    | -    | 1.41 | 1.85 | 2.36 | 2.96 | 3.65 | 4.43 |
| 60                  | -    | -    | -    | 1.66 | 2.16 | 2.73 | 3.38 | 4.12 |
| 65                  | -    | -    | -    | 1.46 | 1.93 | 2.48 | 3.10 | 3.80 |
| 70                  | -    | -    | -    | -    | 1.68 | 2.20 | 2.79 | 3.46 |
| 75                  | -    | -    | -    | -    | 1.41 | 1.91 | 2.47 | 3.10 |

**Pobór mocy [kW]**

| $t_c \setminus t_e$ | -20  | -15  | -10  | -5   | 0    | 5    | 10   | 15   |
|---------------------|------|------|------|------|------|------|------|------|
| 30                  | 0.72 | 0.72 | 0.71 | 0.70 | 0.69 | 0.67 | 0.64 | -    |
| 35                  | 0.81 | 0.81 | 0.80 | 0.79 | 0.78 | 0.76 | 0.74 | -    |
| 40                  | 0.92 | 0.91 | 0.90 | 0.89 | 0.88 | 0.87 | 0.85 | 0.82 |
| 45                  | -    | 1.03 | 1.02 | 1.01 | 0.99 | 0.98 | 0.96 | 0.94 |
| 50                  | -    | 1.18 | 1.16 | 1.14 | 1.12 | 1.11 | 1.09 | 1.07 |
| 55                  | -    | -    | 1.32 | 1.29 | 1.27 | 1.25 | 1.23 | 1.21 |
| 60                  | -    | -    | -    | 1.47 | 1.44 | 1.42 | 1.39 | 1.37 |
| 65                  | -    | -    | -    | 1.67 | 1.63 | 1.60 | 1.57 | 1.54 |
| 70                  | -    | -    | -    | -    | 1.85 | 1.81 | 1.77 | 1.74 |
| 75                  | -    | -    | -    | -    | 2.10 | 2.05 | 2.00 | 1.96 |

### Prad [A]

| $t_c \setminus t_e$ | -20  | -15  | -10  | -5   | 0    | 5    | 10   | 15   |
|---------------------|------|------|------|------|------|------|------|------|
| <b>30</b>           | 1.81 | 1.79 | 1.79 | 1.79 | 1.79 | 1.77 | 1.74 | -    |
| <b>35</b>           | 1.91 | 1.89 | 1.88 | 1.88 | 1.88 | 1.87 | 1.84 | -    |
| <b>40</b>           | 2.03 | 2.00 | 1.99 | 1.98 | 1.98 | 1.98 | 1.96 | 1.92 |
| <b>45</b>           | -    | 2.15 | 2.12 | 2.11 | 2.11 | 2.10 | 2.08 | 2.05 |
| <b>50</b>           | -    | 2.33 | 2.29 | 2.27 | 2.26 | 2.25 | 2.23 | 2.20 |
| <b>55</b>           | -    | -    | 2.49 | 2.46 | 2.44 | 2.42 | 2.40 | 2.37 |
| <b>60</b>           | -    | -    | -    | 2.69 | 2.66 | 2.63 | 2.61 | 2.57 |
| <b>65</b>           | -    | -    | -    | 2.97 | 2.92 | 2.88 | 2.85 | 2.81 |
| <b>70</b>           | -    | -    | -    | -    | 3.23 | 3.18 | 3.13 | 3.08 |
| <b>75</b>           | -    | -    | -    | -    | 3.59 | 3.52 | 3.46 | 3.40 |

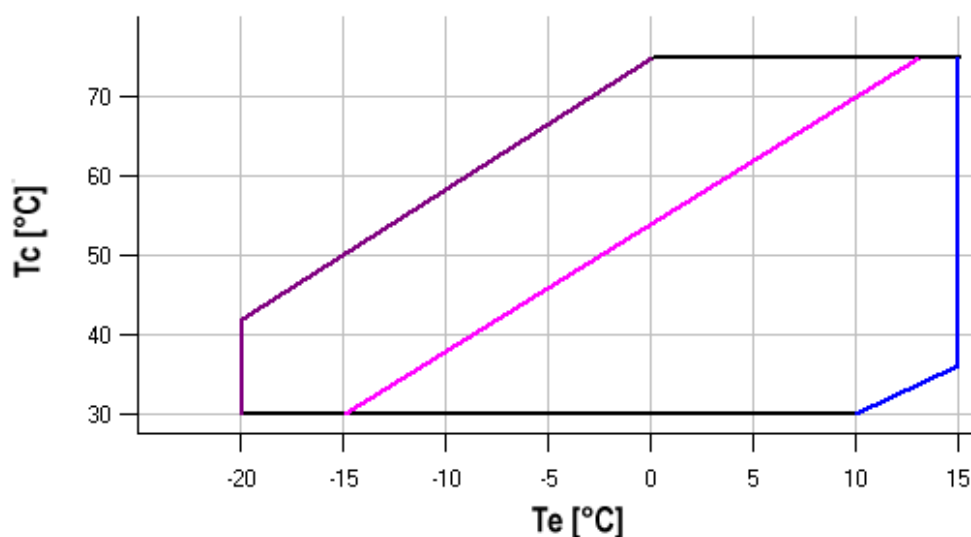
### Przepływ masowy [kg/h]

| $t_c \setminus t_e$ | -20   | -15   | -10   | -5    | 0     | 5     | 10     | 15     |
|---------------------|-------|-------|-------|-------|-------|-------|--------|--------|
| <b>30</b>           | 28.92 | 36.85 | 46.42 | 57.74 | 70.90 | 86.00 | 103.14 | -      |
| <b>35</b>           | 28.49 | 36.47 | 46.02 | 57.25 | 70.26 | 85.13 | 101.97 | -      |
| <b>40</b>           | 27.77 | 35.89 | 45.53 | 56.76 | 69.71 | 84.45 | 101.09 | 119.73 |
| <b>45</b>           | -     | 34.96 | 44.77 | 56.11 | 69.08 | 83.79 | 100.34 | 118.80 |
| <b>50</b>           | -     | 33.51 | 43.58 | 55.12 | 68.23 | 83.00 | 99.53  | 117.92 |
| <b>55</b>           | -     | -     | 41.81 | 53.64 | 66.97 | 81.90 | 98.52  | 116.93 |
| <b>60</b>           | -     | -     | -     | 51.50 | 65.16 | 80.34 | 97.14  | 115.67 |
| <b>65</b>           | -     | -     | -     | 48.55 | 62.61 | 78.14 | 95.23  | 113.96 |
| <b>70</b>           | -     | -     | -     | -     | 59.18 | 75.15 | 92.61  | 111.66 |
| <b>75</b>           | -     | -     | -     | -     | 54.70 | 71.21 | 89.14  | 108.59 |

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

| $t_c \setminus t_e$ | -20  | -15  | -10  | -5   | 0    | 5    | 10   | 15   |
|---------------------|------|------|------|------|------|------|------|------|
| <b>30</b>           | 1.70 | 2.23 | 2.89 | 3.72 | 4.74 | 6.01 | 7.64 | -    |
| <b>35</b>           | 1.41 | 1.86 | 2.43 | 3.12 | 3.96 | 4.99 | 6.28 | -    |
| <b>40</b>           | 1.15 | 1.54 | 2.02 | 2.60 | 3.31 | 4.16 | 5.20 | 6.48 |
| <b>45</b>           | -    | 1.25 | 1.66 | 2.16 | 2.75 | 3.46 | 4.32 | 5.35 |
| <b>50</b>           | -    | 0.99 | 1.35 | 1.77 | 2.27 | 2.87 | 3.58 | 4.43 |
| <b>55</b>           | -    | -    | 1.07 | 1.43 | 1.86 | 2.36 | 2.96 | 3.67 |
| <b>60</b>           | -    | -    | -    | 1.13 | 1.50 | 1.93 | 2.43 | 3.02 |
| <b>65</b>           | -    | -    | -    | 0.87 | 1.18 | 1.55 | 1.97 | 2.47 |
| <b>70</b>           | -    | -    | -    | -    | 0.91 | 1.22 | 1.58 | 1.99 |
| <b>75</b>           | -    | -    | -    | -    | 0.67 | 0.93 | 1.23 | 1.59 |

## Zakres zastosowania



- Maksymalna temperatura parowania
- Temperatura gazu zasysanego 25°C
- Przegrzanie gazu 10K

Warunki robocze: przegrzanie na ssaniu 10K, dochłodzenie 0K

$t_c$  - Temperatura skraplania [°C]

$t_e$  - Temperatura odparowania [°C]

R407C

**Wydajność chłodnicza [kW]**

| $t_c \setminus t_e$ | -20  | -15  | -10  | -5   | 0    | 5    | 10   | 15   |
|---------------------|------|------|------|------|------|------|------|------|
| 30                  | 1.88 | 2.39 | 3.02 | 3.77 | 4.66 | 5.67 | 6.81 | 8.08 |
| 35                  | 1.74 | 2.23 | 2.85 | 3.59 | 4.45 | 5.43 | 6.55 | -    |
| 40                  | 1.61 | 2.08 | 2.67 | 3.38 | 4.21 | 5.17 | 6.25 | -    |
| 45                  | -    | 1.91 | 2.47 | 3.15 | 3.95 | 4.87 | 5.91 | -    |
| 50                  | -    | -    | 2.28 | 2.91 | 3.67 | 4.54 | 5.53 | -    |
| 55                  | -    | -    | -    | 2.67 | 3.37 | 4.19 | 5.13 | -    |
| 60                  | -    | -    | -    | -    | 3.06 | 3.82 | 4.70 | -    |
| 65                  | -    | -    | -    | -    | -    | 3.44 | 4.25 | -    |

**Pobór mocy [kW]**

| $t_c \setminus t_e$ | -20  | -15  | -10  | -5   | 0    | 5    | 10   | 15   |
|---------------------|------|------|------|------|------|------|------|------|
| 30                  | 0.95 | 0.94 | 0.94 | 0.94 | 0.93 | 0.92 | 0.91 | 0.88 |
| 35                  | 1.07 | 1.07 | 1.07 | 1.07 | 1.06 | 1.05 | 1.03 | -    |
| 40                  | 1.21 | 1.21 | 1.21 | 1.21 | 1.20 | 1.19 | 1.17 | -    |
| 45                  | -    | 1.37 | 1.37 | 1.37 | 1.37 | 1.35 | 1.32 | -    |
| 50                  | -    | -    | 1.56 | 1.56 | 1.55 | 1.53 | 1.50 | -    |
| 55                  | -    | -    | -    | 1.76 | 1.75 | 1.73 | 1.70 | -    |
| 60                  | -    | -    | -    | -    | 1.98 | 1.96 | 1.92 | -    |
| 65                  | -    | -    | -    | -    | -    | 2.22 | 2.18 | -    |

## Prad [A]

| $t_c \setminus t_e$ | -20  | -15  | -10  | -5   | 0    | 5    | 10   | 15   |
|---------------------|------|------|------|------|------|------|------|------|
| <b>30</b>           | 2.13 | 2.12 | 2.12 | 2.11 | 2.11 | 2.10 | 2.08 | 2.04 |
| <b>35</b>           | 2.27 | 2.26 | 2.26 | 2.26 | 2.25 | 2.24 | 2.21 | -    |
| <b>40</b>           | 2.43 | 2.43 | 2.43 | 2.43 | 2.42 | 2.41 | 2.37 | -    |
| <b>45</b>           | -    | 2.62 | 2.63 | 2.63 | 2.63 | 2.61 | 2.57 | -    |
| <b>50</b>           | -    | -    | 2.87 | 2.88 | 2.87 | 2.85 | 2.80 | -    |
| <b>55</b>           | -    | -    | -    | 3.16 | 3.15 | 3.12 | 3.07 | -    |
| <b>60</b>           | -    | -    | -    | -    | 3.47 | 3.44 | 3.39 | -    |
| <b>65</b>           | -    | -    | -    | -    | -    | 3.82 | 3.75 | -    |

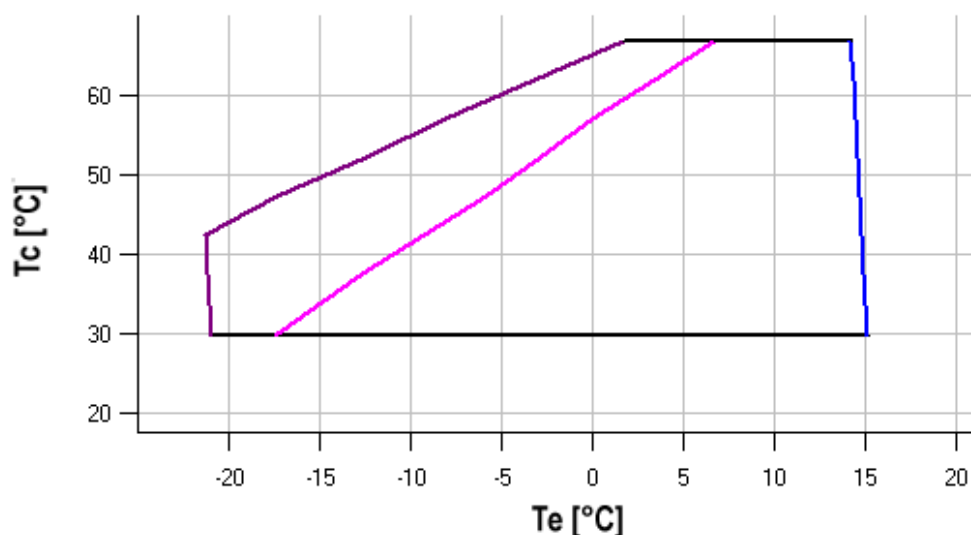
## Przepływ masowy [kg/h]




| $t_c \setminus t_e$ | -20   | -15   | -10   | -5    | 0     | 5      | 10     | 15     |
|---------------------|-------|-------|-------|-------|-------|--------|--------|--------|
| <b>30</b>           | 39.58 | 49.44 | 61.50 | 75.70 | 92.03 | 110.42 | 130.84 | 153.25 |
| <b>35</b>           | 38.47 | 48.50 | 60.76 | 75.23 | 91.86 | 110.61 | 131.43 | -      |
| <b>40</b>           | 37.32 | 47.40 | 59.77 | 74.39 | 91.22 | 110.21 | 131.33 | -      |
| <b>45</b>           | -     | 46.17 | 58.53 | 73.20 | 90.12 | 109.25 | 130.56 | -      |
| <b>50</b>           | -     | -     | 57.07 | 71.67 | 88.58 | 107.75 | 129.14 | -      |
| <b>55</b>           | -     | -     | -     | 69.84 | 86.62 | 105.71 | 127.08 | -      |
| <b>60</b>           | -     | -     | -     | -     | 84.26 | 103.17 | 124.40 | -      |
| <b>65</b>           | -     | -     | -     | -     | -     | 100.14 | 121.13 | -      |

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

| $t_c \setminus t_e$ | -20  | -15  | -10  | -5   | 0    | 5    | 10   | 15   |
|---------------------|------|------|------|------|------|------|------|------|
| <b>30</b>           | 1.98 | 2.53 | 3.21 | 4.02 | 4.99 | 6.14 | 7.51 | 9.18 |
| <b>35</b>           | 1.63 | 2.09 | 2.66 | 3.36 | 4.19 | 5.18 | 6.36 | -    |
| <b>40</b>           | 1.33 | 1.71 | 2.20 | 2.79 | 3.50 | 4.34 | 5.35 | -    |
| <b>45</b>           | -    | 1.40 | 1.80 | 2.30 | 2.89 | 3.61 | 4.47 | -    |
| <b>50</b>           | -    | -    | 1.46 | 1.87 | 2.37 | 2.97 | 3.69 | -    |
| <b>55</b>           | -    | -    | -    | 1.51 | 1.92 | 2.42 | 3.02 | -    |
| <b>60</b>           | -    | -    | -    | -    | 1.54 | 1.95 | 2.44 | -    |
| <b>65</b>           | -    | -    | -    | -    | -    | 1.55 | 1.95 | -    |

## Zakres zastosowania

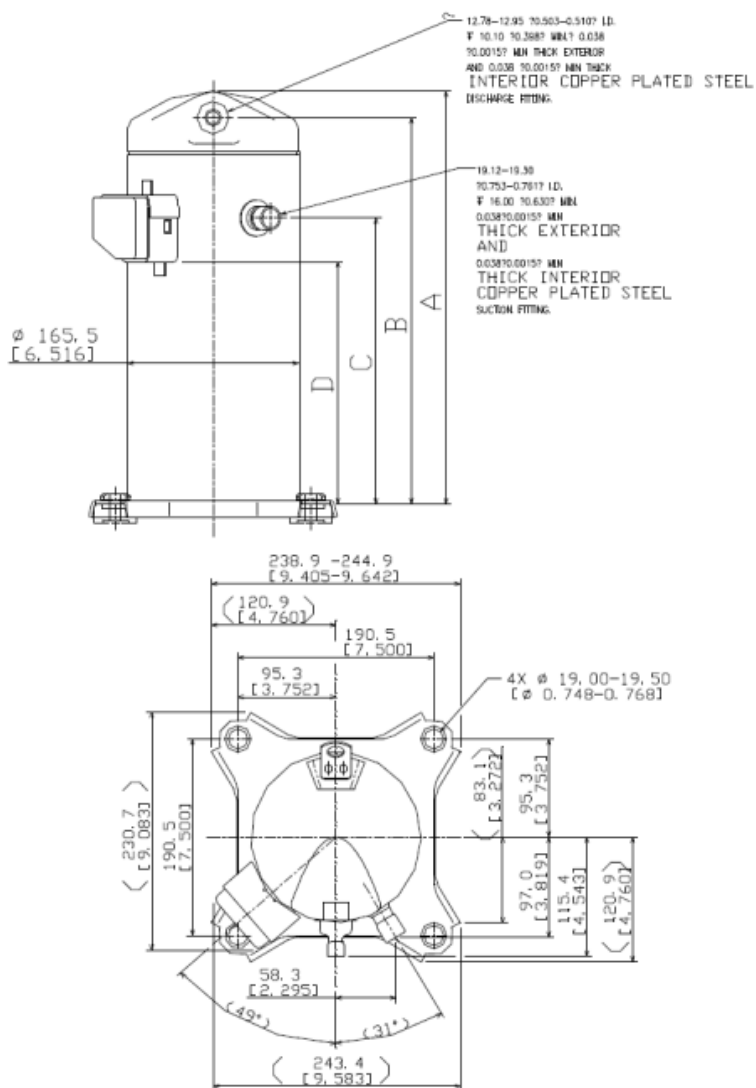


-  Maksymalna temperatura parowania
-  Temperatura gazu zasysanego 25°C
-  Przegrzanie gazu 10K

Warunki robocze: przegrzanie na ssaniu 10K, dochłodzenie 0K

$t_c$  - Temperatura skraplania [°C]

$t_e$  - Temperatura odparowania [°C]



|   |        |
|---|--------|
| A | 363 mm |
| B | 338 mm |
| C | 245 mm |
| D | 202 mm |



