

Model: ZR40K3E-TFD

Data

Type: Hermetic piston compressors

Producer: Copeland

Series: ZR

Model: ZR40K3E-TFD

Technical data

| | |
|-----------------------------------|-------|
| Nominal motor power [HP]: | 3,5 |
| Displacement [m ³ /h]: | 9,4 |
| Sound pressure level : | 57 |
| Gross/Net weight [kg]: | 31/27 |
| Oil charge [dm ³]: | 1,1 |

Electrical data

| | |
|----------------------------------|----------------|
| Power supply [V/~ /Hz]: | 380-420/3/50Hz |
| Locked rotor current [A]: | 46 |
| Max. operating current [A]: | 7 |
| Winding resistance [Ω]: | 4,03 |

Connections

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

Model: ZR40K3E-TFD

Capacity

R22

Cooling capacity [kW]

| $t_c \setminus t_e$ | -20 | -15 | -10 | -5 | 0 | 5 | 10 |
|---------------------|------|------|------|------|------|-------|-------|
| 30 | 3.97 | 4.98 | 6.15 | 7.50 | 9.04 | 10.79 | 12.78 |
| 35 | 3.76 | 4.73 | 5.85 | 7.15 | 8.63 | 10.33 | 12.24 |
| 40 | 3.55 | 4.47 | 5.55 | 6.79 | 8.22 | 9.85 | 11.70 |
| 45 | - | 4.21 | 5.23 | 6.42 | 7.79 | 9.35 | 11.13 |
| 50 | - | - | 4.91 | 6.04 | 7.35 | 8.84 | 10.55 |
| 55 | - | - | - | 5.65 | 6.89 | 8.32 | 9.96 |
| 60 | - | - | - | - | 6.42 | 7.78 | 9.34 |
| 65 | - | - | - | - | 5.94 | 7.22 | 8.70 |

Power input [kW]

| $t_c \setminus t_e$ | -20 | -15 | -10 | -5 | 0 | 5 | 10 |
|---------------------|------|------|------|------|------|------|------|
| 30 | 1.79 | 1.78 | 1.77 | 1.75 | 1.72 | 1.70 | 1.67 |
| 35 | 2.00 | 2.00 | 1.99 | 1.97 | 1.95 | 1.92 | 1.89 |
| 40 | 2.24 | 2.24 | 2.23 | 2.21 | 2.19 | 2.16 | 2.13 |
| 45 | - | 2.51 | 2.50 | 2.48 | 2.46 | 2.43 | 2.40 |
| 50 | - | - | 2.80 | 2.78 | 2.76 | 2.73 | 2.69 |
| 55 | - | - | - | 3.12 | 3.09 | 3.06 | 3.02 |
| 60 | - | - | - | - | 3.47 | 3.43 | 3.38 |
| 65 | - | - | - | - | 3.88 | 3.84 | 3.79 |

Model: ZR40K3E-TFD

Capacity

Current [A]

| $t_c \setminus t_e$ | -20 | -15 | -10 | -5 | 0 | 5 | 10 |
|---------------------|------|------|------|------|------|------|------|
| 30 | 3.82 | 3.81 | 3.79 | 3.76 | 3.73 | 3.70 | 3.68 |
| 35 | 4.06 | 4.06 | 4.04 | 4.01 | 3.98 | 3.94 | 3.91 |
| 40 | 4.33 | 4.34 | 4.33 | 4.30 | 4.27 | 4.23 | 4.19 |
| 45 | - | 4.66 | 4.65 | 4.64 | 4.60 | 4.56 | 4.51 |
| 50 | - | - | 5.03 | 5.01 | 4.98 | 4.94 | 4.89 |
| 55 | - | - | - | 5.45 | 5.42 | 5.38 | 5.33 |
| 60 | - | - | - | - | 5.92 | 5.88 | 5.83 |
| 65 | - | - | - | - | 6.48 | 6.45 | 6.40 |

Mass flow [kg/s]

| $t_c \setminus t_e$ | -20 | -15 | -10 | -5 | 0 | 5 | 10 |
|---------------------|-------|--------|--------|--------|--------|--------|--------|
| 30 | 85.28 | 105.65 | 128.79 | 155.01 | 184.63 | 217.96 | 255.30 |
| 35 | 84.06 | 104.25 | 127.26 | 153.40 | 182.98 | 216.31 | 253.71 |
| 40 | 82.68 | 102.68 | 125.55 | 151.59 | 181.11 | 214.43 | 251.87 |
| 45 | - | 100.89 | 123.60 | 149.52 | 178.98 | 212.28 | 249.73 |
| 50 | - | - | 121.38 | 147.18 | 176.55 | 209.81 | 247.27 |
| 55 | - | - | - | 144.51 | 173.78 | 206.99 | 244.44 |
| 60 | - | - | - | - | 170.65 | 203.78 | 241.21 |
| 65 | - | - | - | - | 167.10 | 200.15 | 237.54 |

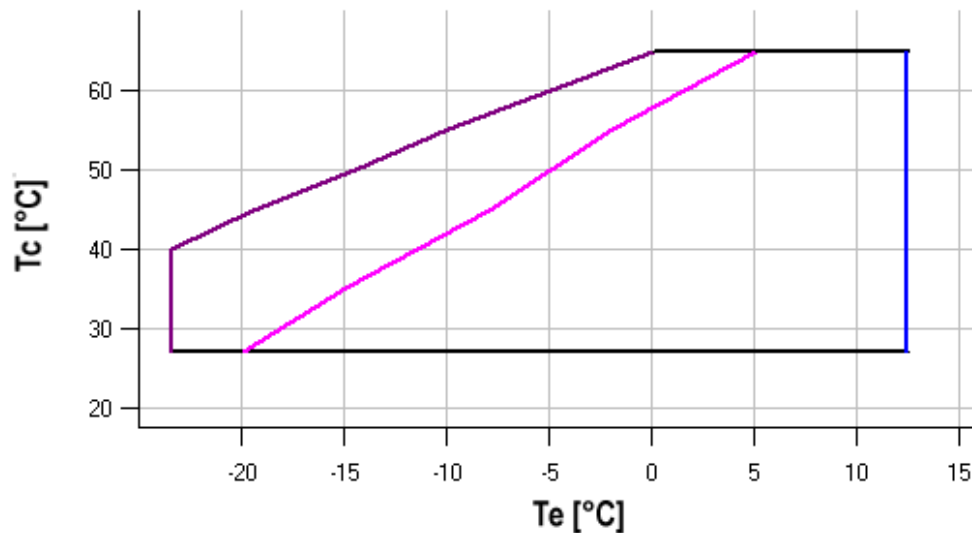
Model: ZR40K3E-TFD

Capacity

C.O.P. [W/W]

| $t_c \setminus t_e$ | -20 | -15 | -10 | -5 | 0 | 5 | 10 |
|---------------------|------|------|------|------|------|------|------|
| 30 | 2.22 | 2.80 | 3.48 | 4.29 | 5.25 | 6.36 | 7.65 |
| 35 | 1.88 | 2.37 | 2.95 | 3.63 | 4.44 | 5.38 | 6.47 |
| 40 | 1.58 | 2.00 | 2.49 | 3.07 | 3.75 | 4.56 | 5.49 |
| 45 | - | 1.68 | 2.09 | 2.59 | 3.17 | 3.85 | 4.64 |
| 50 | - | - | 1.75 | 2.17 | 2.66 | 3.24 | 3.92 |
| 55 | - | - | - | 1.81 | 2.23 | 2.72 | 3.30 |
| 60 | - | - | - | - | 1.85 | 2.27 | 2.76 |
| 65 | - | - | - | - | 1.53 | 1.88 | 2.29 |

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: ZR40K3E-TFD

Capacity

R134a

Cooling capacity [kW]

| $t_c \setminus t_e$ | -20 | -15 | -10 | -5 | 0 | 5 | 10 | 15 |
|---------------------|------|------|------|------|------|------|------|------|
| 30 | 2.22 | 2.92 | 3.76 | 4.73 | 5.84 | 7.09 | 8.51 | - |
| 35 | 2.01 | 2.69 | 3.50 | 4.44 | 5.52 | 6.75 | 8.14 | - |
| 40 | 1.83 | 2.47 | 3.25 | 4.16 | 5.21 | 6.41 | 7.76 | 9.27 |
| 45 | - | 2.27 | 3.01 | 3.89 | 4.90 | 6.06 | 7.37 | 8.85 |
| 50 | - | 2.08 | 2.78 | 3.61 | 4.58 | 5.70 | 6.97 | 8.40 |
| 55 | - | - | 2.55 | 3.33 | 4.26 | 5.33 | 6.55 | 7.93 |
| 60 | - | - | - | 3.04 | 3.91 | 4.93 | 6.10 | 7.43 |
| 65 | - | - | - | 2.74 | 3.55 | 4.51 | 5.62 | 6.89 |
| 70 | - | - | - | - | 3.16 | 4.06 | 5.10 | 6.31 |
| 75 | - | - | - | - | 2.74 | 3.57 | 4.55 | 5.68 |

Power input [kW]

| $t_c \setminus t_e$ | -20 | -15 | -10 | -5 | 0 | 5 | 10 | 15 |
|---------------------|------|------|------|------|------|------|------|------|
| 30 | 1.20 | 1.17 | 1.15 | 1.15 | 1.14 | 1.14 | 1.12 | - |
| 35 | 1.40 | 1.36 | 1.34 | 1.33 | 1.32 | 1.32 | 1.31 | - |
| 40 | 1.61 | 1.56 | 1.53 | 1.51 | 1.50 | 1.50 | 1.49 | 1.48 |
| 45 | - | 1.77 | 1.73 | 1.71 | 1.69 | 1.69 | 1.68 | 1.67 |
| 50 | - | 2.01 | 1.95 | 1.92 | 1.90 | 1.89 | 1.89 | 1.88 |
| 55 | - | - | 2.21 | 2.16 | 2.13 | 2.12 | 2.11 | 2.11 |
| 60 | - | - | - | 2.44 | 2.40 | 2.38 | 2.37 | 2.37 |
| 65 | - | - | - | 2.76 | 2.71 | 2.68 | 2.67 | 2.66 |
| 70 | - | - | - | - | 3.07 | 3.03 | 3.01 | 3.00 |
| 75 | - | - | - | - | 3.48 | 3.44 | 3.41 | 3.39 |

Model: ZR40K3E-TFD

Capacity

Current [A]

| $t_c \setminus t_e$ | -20 | -15 | -10 | -5 | 0 | 5 | 10 | 15 |
|---------------------|------|------|------|------|------|------|------|------|
| 30 | 3.19 | 3.15 | 3.10 | 3.05 | 3.01 | 2.98 | 2.99 | - |
| 35 | 3.44 | 3.41 | 3.35 | 3.30 | 3.24 | 3.19 | 3.16 | - |
| 40 | 3.66 | 3.63 | 3.59 | 3.53 | 3.46 | 3.39 | 3.34 | 3.30 |
| 45 | - | 3.85 | 3.81 | 3.75 | 3.68 | 3.61 | 3.53 | 3.47 |
| 50 | - | 4.06 | 4.04 | 4.00 | 3.93 | 3.85 | 3.76 | 3.68 |
| 55 | - | - | 4.30 | 4.27 | 4.21 | 4.13 | 4.04 | 3.94 |
| 60 | - | - | - | 4.59 | 4.55 | 4.47 | 4.38 | 4.28 |
| 65 | - | - | - | 4.98 | 4.96 | 4.90 | 4.81 | 4.71 |
| 70 | - | - | - | - | 5.45 | 5.41 | 5.34 | 5.24 |
| 75 | - | - | - | - | 6.06 | 6.04 | 5.99 | 5.90 |

Mass flow [kg/s]

| $t_c \setminus t_e$ | -20 | -15 | -10 | -5 | 0 | 5 | 10 | 15 |
|---------------------|-------|-------|-------|--------|--------|--------|--------|--------|
| 30 | 52.31 | 67.66 | 85.25 | 105.11 | 127.27 | 151.76 | 178.61 | - |
| 35 | 49.95 | 65.35 | 83.10 | 103.24 | 125.80 | 150.81 | 178.29 | - |
| 40 | 48.03 | 63.43 | 81.31 | 101.69 | 124.61 | 150.09 | 178.16 | 208.86 |
| 45 | - | 61.71 | 79.67 | 100.25 | 123.48 | 149.39 | 178.01 | 209.38 |
| 50 | - | 59.96 | 77.96 | 98.69 | 122.19 | 148.49 | 177.62 | 209.60 |
| 55 | - | - | 75.96 | 96.80 | 120.53 | 147.17 | 176.76 | 209.33 |
| 60 | - | - | - | 94.37 | 118.28 | 145.23 | 175.24 | 208.34 |
| 65 | - | - | - | 91.18 | 115.23 | 142.44 | 172.82 | 206.42 |
| 70 | - | - | - | - | 111.17 | 138.59 | 169.30 | 203.35 |
| 75 | - | - | - | - | 105.87 | 133.46 | 164.46 | 198.92 |

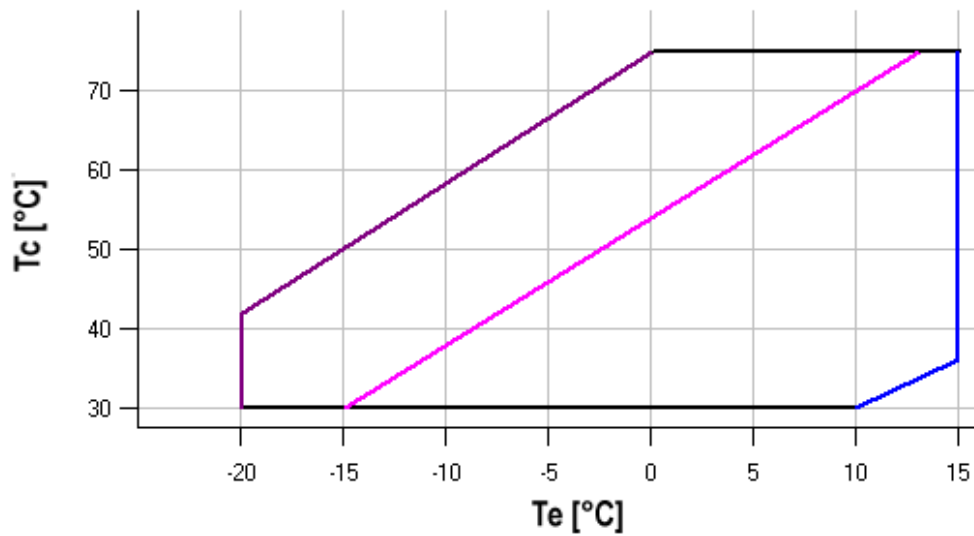
Model: ZR40K3E-TFD

Capacity

C.O.P. [W/W]

| $t_c \setminus t_e$ | -20 | -15 | -10 | -5 | 0 | 5 | 10 | 15 |
|---------------------|------|------|------|------|------|------|------|------|
| 30 | 1.85 | 2.50 | 3.26 | 4.12 | 5.11 | 6.24 | 7.57 | - |
| 35 | 1.43 | 1.97 | 2.61 | 3.34 | 4.18 | 5.13 | 6.22 | - |
| 40 | 1.13 | 1.58 | 2.12 | 2.75 | 3.47 | 4.28 | 5.20 | 6.26 |
| 45 | - | 1.28 | 1.74 | 2.28 | 2.90 | 3.59 | 4.38 | 5.28 |
| 50 | - | 1.04 | 1.42 | 1.88 | 2.41 | 3.02 | 3.70 | 4.47 |
| 55 | - | - | 1.16 | 1.54 | 2.00 | 2.51 | 3.10 | 3.76 |
| 60 | - | - | - | 1.25 | 1.63 | 2.07 | 2.58 | 3.14 |
| 65 | - | - | - | 0.99 | 1.31 | 1.68 | 2.11 | 2.59 |
| 70 | - | - | - | - | 1.03 | 1.34 | 1.70 | 2.10 |
| 75 | - | - | - | - | 0.79 | 1.04 | 1.33 | 1.68 |

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: ZR40K3E-TFD

Capacity

R407C

Cooling capacity [kW]

| t_c \ t_e | -20 | -15 | -10 | -5 | 0 | 5 | 10 | 15 |
|--------------------------------------|------------|------------|------------|-----------|----------|----------|-----------|-----------|
| 30 | 3.42 | 4.33 | 5.47 | 6.84 | 8.43 | 10.26 | 12.32 | 14.62 |
| 35 | 3.17 | 4.06 | 5.17 | 6.50 | 8.05 | 9.84 | 11.85 | - |
| 40 | 2.92 | 3.77 | 4.84 | 6.12 | 7.62 | 9.35 | 11.30 | - |
| 45 | - | 3.48 | 4.49 | 5.71 | 7.15 | 8.81 | 10.69 | - |
| 50 | - | - | 4.13 | 5.28 | 6.65 | 8.22 | 10.01 | - |
| 55 | - | - | - | 4.83 | 6.11 | 7.59 | 9.28 | - |
| 60 | - | - | - | - | 5.55 | 6.92 | 8.51 | - |
| 65 | - | - | - | - | - | 6.23 | 7.69 | - |

Power input [kW]

| t_c \ t_e | -20 | -15 | -10 | -5 | 0 | 5 | 10 | 15 |
|--------------------------------------|------------|------------|------------|-----------|----------|----------|-----------|-----------|
| 30 | 1.68 | 1.67 | 1.67 | 1.66 | 1.65 | 1.64 | 1.61 | 1.56 |
| 35 | 1.90 | 1.90 | 1.90 | 1.89 | 1.88 | 1.86 | 1.82 | - |
| 40 | 2.15 | 2.15 | 2.15 | 2.15 | 2.14 | 2.11 | 2.07 | - |
| 45 | - | 2.43 | 2.44 | 2.44 | 2.42 | 2.39 | 2.35 | - |
| 50 | - | - | 2.76 | 2.76 | 2.75 | 2.71 | 2.66 | - |
| 55 | - | - | - | 3.12 | 3.11 | 3.07 | 3.01 | - |
| 60 | - | - | - | - | 3.52 | 3.48 | 3.41 | - |
| 65 | - | - | - | - | - | 3.94 | 3.86 | - |

Model: ZR40K3E-TFD

Capacity

Current [A]

| $t_c \setminus t_e$ | -20 | -15 | -10 | -5 | 0 | 5 | 10 | 15 |
|---------------------|------|------|------|------|------|------|------|------|
| 30 | 3.84 | 3.82 | 3.81 | 3.81 | 3.80 | 3.78 | 3.74 | 3.67 |
| 35 | 4.05 | 4.04 | 4.04 | 4.04 | 4.04 | 4.01 | 3.96 | - |
| 40 | 4.32 | 4.32 | 4.33 | 4.33 | 4.32 | 4.29 | 4.24 | - |
| 45 | - | 4.66 | 4.67 | 4.67 | 4.66 | 4.63 | 4.56 | - |
| 50 | - | - | 5.08 | 5.08 | 5.07 | 5.03 | 4.95 | - |
| 55 | - | - | - | 5.56 | 5.54 | 5.50 | 5.41 | - |
| 60 | - | - | - | - | 6.09 | 6.04 | 5.94 | - |
| 65 | - | - | - | - | - | 6.67 | 6.56 | - |

Mass flow [kg/s]

| $t_c \setminus t_e$ | -20 | -15 | -10 | -5 | 0 | 5 | 10 | 15 |
|---------------------|-------|-------|--------|--------|--------|--------|--------|--------|
| 30 | 71.91 | 89.73 | 111.50 | 137.17 | 166.67 | 199.91 | 236.83 | 277.37 |
| 35 | 69.93 | 88.03 | 110.19 | 136.33 | 166.37 | 200.25 | 237.90 | - |
| 40 | 67.86 | 86.07 | 108.41 | 134.82 | 165.22 | 199.54 | 237.72 | - |
| 45 | - | 83.86 | 106.20 | 132.68 | 163.25 | 197.82 | 236.33 | - |
| 50 | - | - | 103.58 | 129.95 | 160.48 | 195.11 | 233.76 | - |
| 55 | - | - | - | 126.66 | 156.97 | 191.45 | 230.05 | - |
| 60 | - | - | - | - | 152.73 | 186.88 | 225.22 | - |
| 65 | - | - | - | - | - | 181.42 | 219.33 | - |

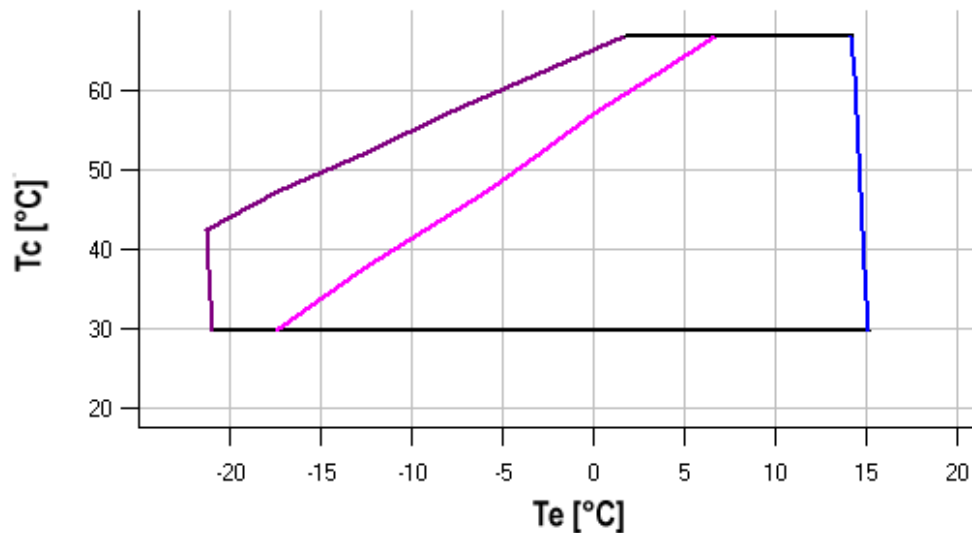
Model: ZR40K3E-TFD

Capacity

C.O.P. [W/W]

| $t_c \setminus t_e$ | -20 | -15 | -10 | -5 | 0 | 5 | 10 | 15 |
|---------------------|------|------|------|------|------|------|------|------|
| 30 | 2.03 | 2.59 | 3.28 | 4.11 | 5.10 | 6.27 | 7.67 | 9.37 |
| 35 | 1.67 | 2.14 | 2.72 | 3.43 | 4.28 | 5.29 | 6.50 | - |
| 40 | 1.36 | 1.75 | 2.25 | 2.85 | 3.57 | 4.43 | 5.46 | - |
| 45 | - | 1.43 | 1.84 | 2.35 | 2.95 | 3.68 | 4.56 | - |
| 50 | - | - | 1.50 | 1.91 | 2.42 | 3.03 | 3.77 | - |
| 55 | - | - | - | 1.55 | 1.96 | 2.47 | 3.08 | - |
| 60 | - | - | - | - | 1.58 | 1.99 | 2.49 | - |
| 65 | - | - | - | - | - | 1.58 | 1.99 | - |

Application range



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

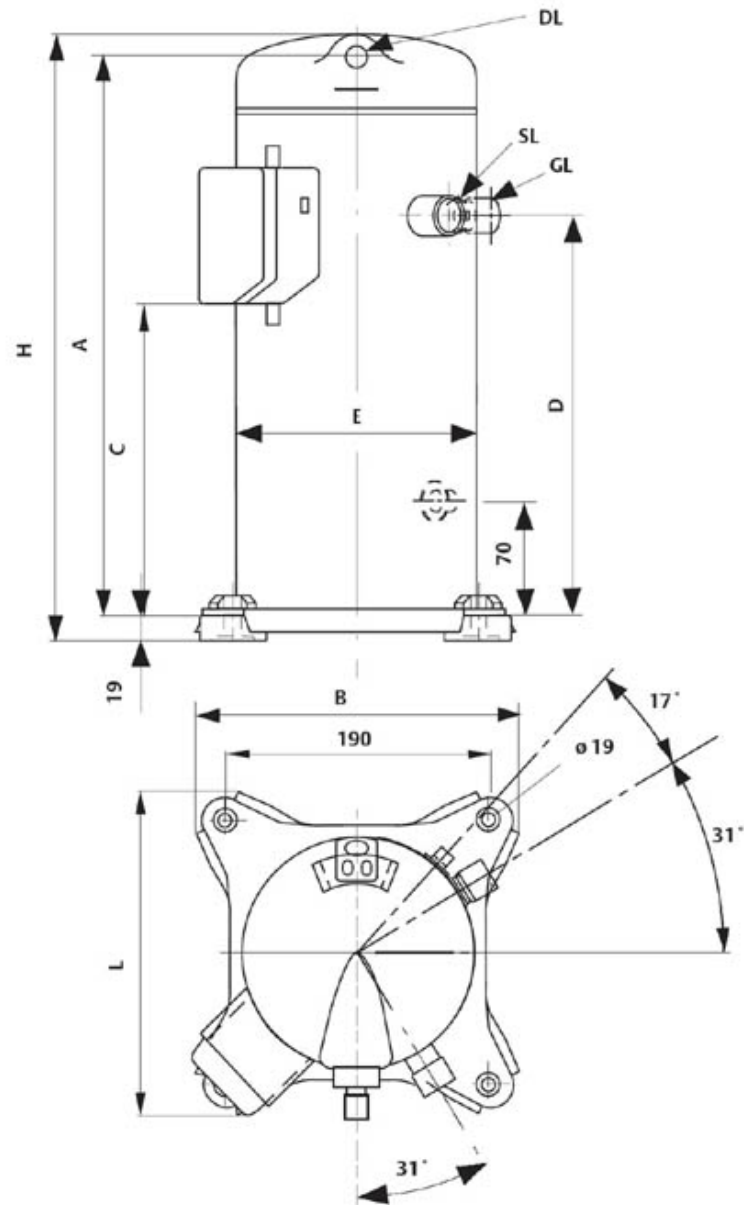
Operating conditions: 10K suction superheat, 0K subcooling

t_c - Condensing temperature [°C]

t_e - Evaporating temperature [°C]

Model: ZR40K3E-TFD

Dimensions



| | |
|---|--------|
| A | 375 mm |
| B | 240 mm |
| C | 235 mm |
| D | 277 mm |
| E | 165 mm |
| H | 419 mm |
| L | 231 mm |

Model: ZR40K3E-TFD

Image

