



Model: D3DC-75 X

Data

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

Model: D3DC-75 X

Technical data

| | |
|-----------------------------------|-----------------|
| Cylinder count: | 3 |
| Displacement [m ³ /h]: | 38 |
| Weight [kg]: | 161 |
| Oil charge [dm ³]: | 3,4 |
| Max. operating current [A]: | 14 |
| Locked rotor current [A]: | 70 |
| Power supply [V/~/Hz]: | 380-420V/3/50Hz |

Connections

| | <u>milimeters</u> | <u>inches</u> |
|-----------------|-------------------|---------------|
| Suction line: | | 1 3/8" |
| Discharge line: | | 1 1/8" |

R134a

Cooling capacity [kW]

| t_c \ t_e | -20 | -15 | -10 | -5 | 0 | 5 | 10 |
|--------------------------------------|------------|------------|------------|-----------|----------|----------|-----------|
| 30 | 8.19 | 10.79 | 13.88 | 17.55 | 21.87 | 26.92 | 32.76 |
| 35 | 7.45 | 9.94 | 12.89 | 16.39 | 20.50 | 25.31 | 30.89 |
| 40 | 6.75 | 9.12 | 11.92 | 15.24 | 19.14 | 23.70 | 29.00 |
| 45 | 6.09 | 8.33 | 10.97 | 14.10 | 17.78 | 22.09 | 27.10 |
| 50 | 5.47 | 7.57 | 10.04 | 12.97 | 16.42 | 20.47 | 25.19 |
| 55 | 4.88 | 6.84 | 9.14 | 11.86 | 15.07 | 18.84 | 23.26 |
| 60 | 4.34 | 6.15 | 8.26 | 10.76 | 13.72 | 17.22 | 21.33 |

Power input [kW]

| t_c \ t_e | -20 | -15 | -10 | -5 | 0 | 5 | 10 |
|--------------------------------------|------------|------------|------------|-----------|----------|----------|-----------|
| 30 | 3.34 | 3.66 | 3.93 | 4.14 | 4.25 | 4.26 | 4.15 |
| 35 | 3.48 | 3.87 | 4.21 | 4.49 | 4.70 | 4.81 | 4.80 |
| 40 | 3.62 | 4.06 | 4.47 | 4.83 | 5.12 | 5.32 | 5.42 |
| 45 | 3.74 | 4.24 | 4.71 | 5.14 | 5.51 | 5.80 | 6.00 |
| 50 | 3.86 | 4.40 | 4.93 | 5.42 | 5.87 | 6.25 | 6.54 |
| 55 | 3.96 | 4.54 | 5.12 | 5.68 | 6.20 | 6.65 | 7.03 |
| 60 | 4.05 | 4.67 | 5.29 | 5.90 | 6.48 | 7.02 | 7.48 |

Current [A]

| t_c \ t_e | -20 | -15 | -10 | -5 | 0 | 5 | 10 |
|--------------------------------------|------------|------------|------------|-----------|----------|----------|-----------|
| 30 | 7.11 | 7.50 | 7.85 | 8.12 | 8.27 | 8.28 | 8.12 |
| 35 | 7.28 | 7.76 | 8.21 | 8.59 | 8.88 | 9.04 | 9.03 |
| 40 | 7.45 | 8.01 | 8.56 | 9.05 | 9.46 | 9.76 | 9.91 |
| 45 | 7.60 | 8.24 | 8.88 | 9.48 | 10.02 | 10.45 | 10.75 |
| 50 | 7.74 | 8.46 | 9.18 | 9.89 | 10.54 | 11.10 | 11.55 |
| 55 | 7.87 | 8.65 | 9.46 | 10.26 | 11.02 | 11.71 | 12.30 |
| 60 | 7.98 | 8.82 | 9.71 | 10.60 | 11.47 | 12.28 | 13.00 |

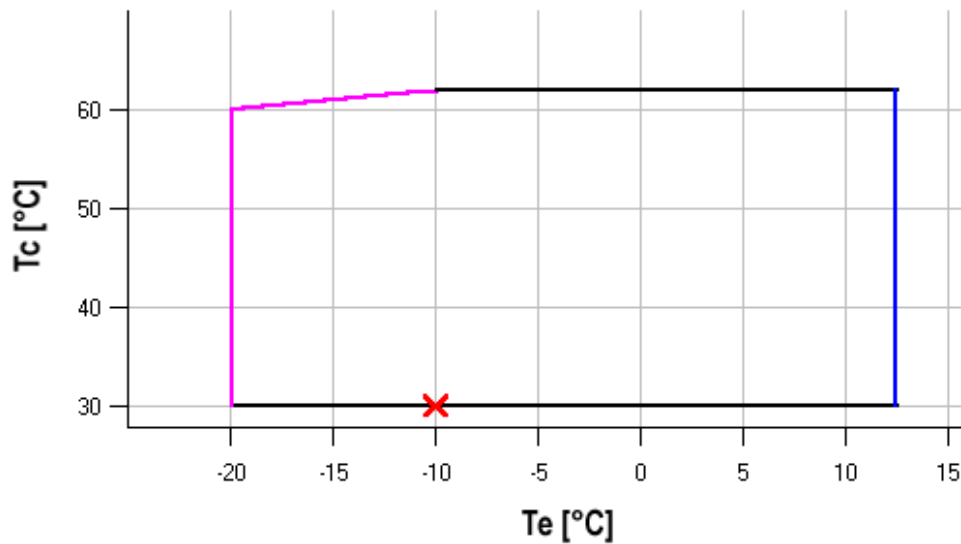
Mass flow [kg/s]

| t_c \ t_e | -20 | -15 | -10 | -5 | 0 | 5 | 10 |
|--------------------------------------|------------|------------|------------|-----------|----------|----------|-----------|
| 30 | 193.47 | 250.01 | 315.11 | 390.09 | 476.26 | 574.93 | 687.44 |
| 35 | 184.92 | 241.65 | 306.77 | 381.60 | 467.44 | 565.62 | 677.46 |
| 40 | 176.75 | 233.44 | 298.35 | 372.79 | 458.08 | 555.53 | 666.47 |
| 45 | 168.95 | 225.37 | 289.83 | 363.66 | 448.16 | 544.66 | 654.47 |
| 50 | 161.51 | 217.43 | 281.22 | 354.20 | 437.69 | 533.00 | 641.45 |
| 55 | 154.43 | 209.62 | 272.51 | 344.42 | 426.66 | 520.56 | 627.42 |
| 60 | 147.72 | 201.95 | 263.70 | 334.31 | 415.07 | 507.32 | 612.36 |

C.O.P. [W/W]

| $t_c \setminus t_e$ | -20 | -15 | -10 | -5 | 0 | 5 | 10 |
|---------------------|------|------|------|------|------|------|------|
| 30 | 2.45 | 2.94 | 3.53 | 4.24 | 5.15 | 6.32 | 7.90 |
| 35 | 2.14 | 2.57 | 3.06 | 3.65 | 4.36 | 5.27 | 6.43 |
| 40 | 1.87 | 2.25 | 2.67 | 3.16 | 3.74 | 4.45 | 5.35 |
| 45 | 1.63 | 1.97 | 2.33 | 2.74 | 3.23 | 3.81 | 4.52 |
| 50 | 1.42 | 1.72 | 2.04 | 2.39 | 2.80 | 3.28 | 3.85 |
| 55 | 1.23 | 1.51 | 1.78 | 2.09 | 2.43 | 2.83 | 3.31 |
| 60 | 1.07 | 1.32 | 1.56 | 1.82 | 2.12 | 2.45 | 2.85 |

Application range



- Maximum evaporating temperature
- 25°C suction gas return

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

R404A/R507

Cooling capacity [kW]

| t_c \ t_e | -50 | -45 | -40 | -35 | -30 | -25 | -20 |
|--------------------------------------|------------|------------|------------|------------|------------|------------|------------|
| 20 | 3.86 | 5.35 | 7.19 | 9.41 | 12.06 | 15.17 | 18.79 |
| 25 | 3.41 | 4.83 | 6.57 | 8.67 | 11.16 | 14.09 | 17.51 |
| 30 | 2.96 | 4.31 | 5.95 | 7.92 | 10.26 | 13.01 | 16.22 |
| 35 | 2.52 | 3.79 | 5.32 | 7.16 | 9.35 | 11.92 | 14.92 |
| 40 | - | 3.27 | 4.70 | 6.41 | 8.44 | 10.83 | 13.63 |
| 45 | - | 2.76 | 4.08 | 5.66 | 7.54 | 9.75 | 12.33 |
| 50 | - | - | 3.47 | 4.92 | 6.64 | 8.67 | 11.04 |
| 55 | - | - | 2.87 | 4.19 | 5.75 | 7.59 | 9.76 |

Power input [kW]

| t_c \ t_e | -50 | -45 | -40 | -35 | -30 | -25 | -20 |
|--------------------------------------|------------|------------|------------|------------|------------|------------|------------|
| 20 | 2.59 | 3.10 | 3.60 | 4.08 | 4.54 | 4.96 | 5.33 |
| 25 | 2.58 | 3.14 | 3.70 | 4.24 | 4.76 | 5.24 | 5.69 |
| 30 | 2.55 | 3.16 | 3.77 | 4.37 | 4.95 | 5.51 | 6.03 |
| 35 | 2.49 | 3.15 | 3.81 | 4.47 | 5.12 | 5.74 | 6.34 |
| 40 | - | 3.11 | 3.83 | 4.54 | 5.25 | 5.95 | 6.62 |
| 45 | - | 3.05 | 3.81 | 4.59 | 5.36 | 6.13 | 6.87 |
| 50 | - | - | 3.77 | 4.61 | 5.44 | 6.28 | 7.10 |
| 55 | - | - | 3.70 | 4.59 | 5.49 | 6.40 | 7.29 |

Current [A]

| $t_c \setminus t_e$ | -50 | -45 | -40 | -35 | -30 | -25 | -20 |
|---------------------|------------|------------|------------|------------|------------|------------|------------|
| 20 | 6.38 | 7.03 | 7.68 | 8.34 | 8.96 | 9.54 | 10.04 |
| 25 | 6.37 | 7.06 | 7.79 | 8.53 | 9.26 | 9.96 | 10.60 |
| 30 | 6.33 | 7.08 | 7.88 | 8.71 | 9.54 | 10.36 | 11.14 |
| 35 | 6.27 | 7.07 | 7.94 | 8.85 | 9.79 | 10.72 | 11.64 |
| 40 | - | 7.03 | 7.96 | 8.96 | 9.99 | 11.05 | 12.10 |
| 45 | - | 6.94 | 7.94 | 9.02 | 10.16 | 11.33 | 12.51 |
| 50 | - | - | 7.87 | 9.03 | 10.26 | 11.55 | 12.86 |
| 55 | - | - | 7.75 | 8.98 | 10.31 | 11.71 | 13.15 |

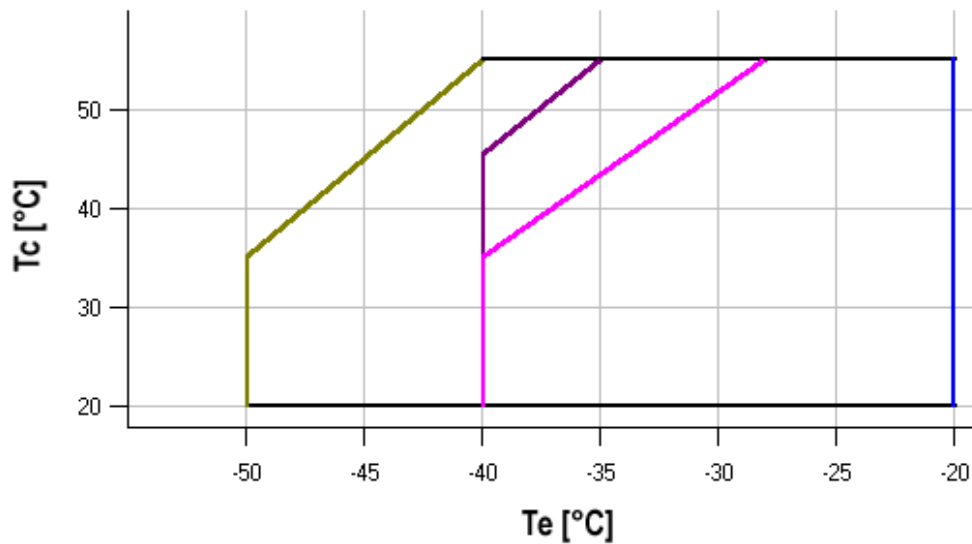
Mass flow [kg/s]

| $t_c \setminus t_e$ | -50 | -45 | -40 | -35 | -30 | -25 | -20 |
|---------------------|------------|------------|------------|------------|------------|------------|------------|
| 20 | 81.03 | 115.87 | 157.36 | 206.94 | 266.05 | 336.13 | 418.60 |
| 25 | 75.86 | 110.07 | 150.90 | 199.78 | 258.14 | 327.44 | 409.09 |
| 30 | 69.90 | 103.51 | 143.69 | 191.89 | 249.53 | 318.07 | 398.92 |
| 35 | 63.18 | 96.20 | 135.77 | 183.31 | 240.26 | 308.05 | 388.13 |
| 40 | - | 88.18 | 127.15 | 174.05 | 230.33 | 297.41 | 376.74 |
| 45 | - | 79.48 | 117.87 | 164.16 | 219.79 | 286.18 | 364.78 |
| 50 | - | - | 107.95 | 153.65 | 208.65 | 274.38 | 352.27 |
| 55 | - | - | 97.42 | 142.56 | 196.95 | 262.03 | 339.24 |

C.O.P. [W/W]

| $t_c \setminus t_e$ | -50 | -45 | -40 | -35 | -30 | -25 | -20 |
|---------------------|------|------|------|------|------|------|------|
| 20 | 1.49 | 1.73 | 2.00 | 2.31 | 2.66 | 3.06 | 3.53 |
| 25 | 1.32 | 1.54 | 1.78 | 2.04 | 2.35 | 2.69 | 3.08 |
| 30 | 1.16 | 1.36 | 1.58 | 1.81 | 2.07 | 2.36 | 2.69 |
| 35 | 1.01 | 1.20 | 1.40 | 1.60 | 1.83 | 2.08 | 2.35 |
| 40 | - | 1.05 | 1.23 | 1.41 | 1.61 | 1.82 | 2.06 |
| 45 | - | 0.90 | 1.07 | 1.23 | 1.41 | 1.59 | 1.79 |
| 50 | - | - | 0.92 | 1.07 | 1.22 | 1.38 | 1.56 |
| 55 | - | - | 0.78 | 0.91 | 1.05 | 1.19 | 1.34 |

Application range

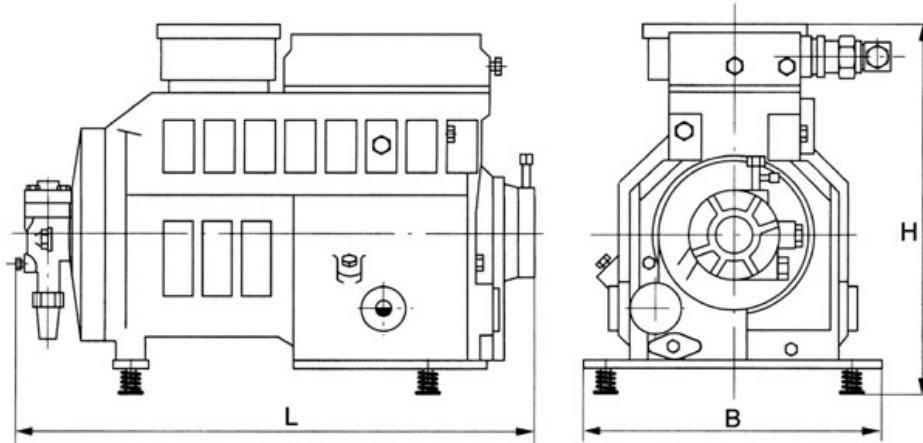


- Maximum evaporating temperature
- 25°C suction gas return
- 0°C suction gas return + additional cooling
- 0°C suction gas return

Operating conditions: ISO; subcooling: 0 K, suction superheat: 20 K, return gas temperature: -

t_c - Condensing temperature [°C]

t_e - Evaporating temperature [°C]



| | |
|---|--------|
| L | 655 mm |
| B | 370 mm |
| H | 480 mm |

