



Minimum Evaporating Temp. With:

■ 20 °C Suction Gas Return

■ Maximum Evaporating Temperature

50 Hz

4MF-13

R134a

Suction Return Temperature 18.3°C

Liquid Subcooling 0.0K

Evaporating Temperature, °C

| Cond °C | Cooling Capacity, kW | | | | | | | |
|------------|----------------------|-------|-------|-------|-------|-------|-------|-------|
| | -20.0 | -15.0 | -10.0 | -5.0 | 0.0 | 5.0 | 7.0 | 10.0 |
| 10.0 | 17.95 | 22.70 | 28.60 | | | | | |
| 15.0 | 17.10 | 21.70 | 27.30 | 34.10 | | | | |
| 20.0 | 16.15 | 20.60 | 26.00 | 32.50 | 40.10 | | | |
| 25.0 | 15.20 | 19.45 | 24.60 | 30.80 | 38.10 | 46.50 | 50.20 | |
| 30.0 | 14.20 | 18.25 | 23.20 | 29.10 | 36.00 | 44.00 | 47.50 | 53.20 |
| 35.0 | 13.20 | 17.05 | 21.70 | 27.30 | 33.80 | 41.40 | 44.70 | 50.10 |
| 40.0 | 12.20 | 15.85 | 20.30 | 25.50 | 31.60 | 38.80 | 41.90 | 47.00 |
| 45.0 | 11.25 | 14.65 | 18.80 | 23.70 | 29.40 | 36.10 | 39.10 | 43.80 |
| 50.0 | 10.25 | 13.50 | 17.35 | 21.90 | 27.20 | 33.40 | 36.20 | 40.60 |
| 55.0 | 9.35 | 12.35 | 15.90 | 20.10 | 25.00 | 30.70 | 33.30 | 37.30 |
| 60.0 | | 11.20 | 14.45 | 18.30 | 22.80 | 28.00 | 30.40 | 34.10 |
| 65.0 | | | 13.10 | 16.55 | 20.60 | 25.40 | 27.50 | 30.90 |
| 70.0 | | | 11.75 | 14.80 | 18.45 | 22.70 | 24.60 | 27.60 |
| 75.0 | | | | 13.15 | 16.35 | 20.10 | 21.70 | 24.40 |
| 80.0 | | | | 11.55 | 14.25 | 17.50 | 18.90 | 21.30 |

| Cond °C | Power, kW | | | | | | | |
|------------|-----------|-------|-------|-------|-------|-------|-------|-------|
| | -20.0 | -15.0 | -10.0 | -5.0 | 0.0 | 5.0 | 7.0 | 10.0 |
| 10.0 | 4.16 | 4.40 | 4.48 | | | | | |
| 15.0 | 4.49 | 4.81 | 4.99 | 5.00 | | | | |
| 20.0 | 4.79 | 5.21 | 5.48 | 5.61 | 5.58 | | | |
| 25.0 | 5.08 | 5.58 | 5.95 | 6.19 | 6.29 | 6.23 | 6.17 | |
| 30.0 | 5.34 | 5.93 | 6.40 | 6.76 | 6.98 | 7.07 | 7.06 | 7.01 |
| 35.0 | 5.58 | 6.25 | 6.83 | 7.30 | 7.65 | 7.88 | 7.93 | 7.97 |
| 40.0 | 5.80 | 6.55 | 7.23 | 7.81 | 8.29 | 8.66 | 8.78 | 8.91 |
| 45.0 | 5.99 | 6.83 | 7.60 | 8.30 | 8.90 | 9.42 | 9.59 | 9.82 |
| 50.0 | 6.15 | 7.08 | 7.95 | 8.76 | 9.49 | 10.15 | 10.40 | 10.70 |
| 55.0 | 6.29 | 7.30 | 8.27 | 9.19 | 10.05 | 10.85 | 11.15 | 11.55 |
| 60.0 | | 7.49 | 8.56 | 9.59 | 10.60 | 11.50 | 11.85 | 12.40 |
| 65.0 | | | 8.82 | 9.96 | 11.10 | 12.15 | 12.55 | 13.20 |
| 70.0 | | | 9.05 | 10.30 | 11.55 | 12.75 | 13.25 | 13.95 |
| 75.0 | | | | 10.60 | 12.00 | 13.35 | 13.85 | 14.65 |
| 80.0 | | | | 10.90 | 12.40 | 13.85 | 14.45 | 15.35 |

50 Hz 4MF-13 R134a

| Cond °C | Current at 400 V, A | | | | | | | |
|------------|---------------------|-------|-------|-------|-------|-------|-------|-------|
| | -20.0 | -15.0 | -10.0 | -5.0 | 0.0 | 5.0 | 7.0 | 10.0 |
| 10.0 | 9.54 | 9.78 | 9.82 | | | | | |
| 15.0 | 9.86 | 10.21 | 10.40 | 10.39 | | | | |
| 20.0 | 10.18 | 10.65 | 10.98 | 11.12 | 11.07 | | | |
| 25.0 | 10.50 | 11.09 | 11.55 | 11.86 | 11.99 | 11.90 | 11.79 | |
| 30.0 | 10.80 | 11.51 | 12.12 | 12.59 | 12.90 | 13.02 | 13.01 | 12.91 |
| 35.0 | 11.09 | 11.92 | 12.67 | 13.31 | 13.81 | 14.13 | 14.21 | 14.26 |
| 40.0 | 11.36 | 12.31 | 13.21 | 14.01 | 14.70 | 15.23 | 15.40 | 15.59 |
| 45.0 | 11.60 | 12.68 | 13.72 | 14.69 | 15.57 | 16.32 | 16.57 | 16.90 |
| 50.0 | 11.81 | 13.02 | 14.20 | 15.35 | 16.41 | 17.37 | 17.72 | 18.19 |
| 55.0 | 11.99 | 13.32 | 14.66 | 15.97 | 17.23 | 18.40 | 18.84 | 19.46 |
| 60.0 | | 13.59 | 15.07 | 16.56 | 18.01 | 19.40 | 19.93 | 20.69 |
| 65.0 | | | 15.45 | 17.11 | 18.75 | 20.36 | 20.98 | 21.89 |
| 70.0 | | | 15.78 | 17.61 | 19.45 | 21.27 | 21.99 | 23.04 |
| 75.0 | | | | 18.06 | 20.10 | 22.14 | 22.95 | 24.15 |
| 80.0 | | | | 18.46 | 20.69 | 22.95 | 23.86 | 25.21 |

| Cond °C | Suction Mass Flow, g/s | | | | | | | |
|------------|------------------------|--------|--------|--------|--------|--------|--------|--------|
| | -20.0 | -15.0 | -10.0 | -5.0 | 0.0 | 5.0 | 7.0 | 10.0 |
| 10.0 | 87.80 | 111.50 | 140.50 | | | | | |
| 15.0 | 86.40 | 110.00 | 139.00 | 174.50 | | | | |
| 20.0 | 84.70 | 108.50 | 137.50 | 172.50 | 214.00 | | | |
| 25.0 | 82.80 | 106.50 | 135.00 | 170.00 | 211.00 | 260.00 | 282.00 | |
| 30.0 | 80.60 | 104.00 | 132.50 | 167.00 | 208.00 | 256.00 | 278.00 | 313.00 |
| 35.0 | 78.20 | 101.50 | 130.00 | 164.00 | 205.00 | 252.00 | 274.00 | 308.00 |
| 40.0 | 75.70 | 98.70 | 127.00 | 160.50 | 200.00 | 248.00 | 269.00 | 303.00 |
| 45.0 | 73.10 | 95.80 | 123.50 | 156.50 | 196.00 | 242.00 | 263.00 | 297.00 |
| 50.0 | 70.40 | 92.80 | 120.00 | 152.50 | 191.00 | 237.00 | 257.00 | 290.00 |
| 55.0 | 67.70 | 89.70 | 116.00 | 148.00 | 185.50 | 230.00 | 250.00 | 283.00 |
| 60.0 | | 86.60 | 112.50 | 143.00 | 180.00 | 224.00 | 243.00 | 275.00 |
| 65.0 | | | 108.50 | 138.50 | 174.00 | 217.00 | 236.00 | 267.00 |
| 70.0 | | | 105.00 | 133.50 | 168.00 | 209.00 | 228.00 | 258.00 |
| 75.0 | | | | 129.00 | 162.00 | 201.00 | 219.00 | 249.00 |
| 80.0 | | | | 124.50 | 156.00 | 193.50 | 211.00 | 240.00 |

COMPRESSOR MECHANICAL AND PHYSICAL DATA

| | |
|--|--|
| Number of cylinders | 4 |
| Displacement @ 50 Hz, m ³ /h | 61.7 |
| Bore/Stroke, mm | 63.5/56.0 |
| Length/Width, mm | 638/501 |
| Height, mm | 452 |
| Net Weight, kg | 177 |
| Suction, inch | 1 5/8 |
| Discharge, inch | 1 1/8 |
| Oil Quantity, l | 3.3 |
| Oil type (original charge) | POE RL32-3MAF |
| Oil type (approved oils) | POE RL32-3MAF, POE MOBIL EAL Arctic 22 CC |
| Base mounting (hole dia), mm | 381 x 305 (18) |
| Sound Pressure @ 1m (MT), dBA | 67 |
| Sound Power (MT), dBA | 78 |
| Sound Power with Sound Shell (MT), dBA | 64 |
| Sound Conditions (MT, Temperatures: Evap./Cond./Suction at freq./speed) | -10 / 45 / 20 °C at 50 Hz |
| High Side PS gauge, bar | 32.5 |
| Low Side PS gauge, bar | 22.5 |
| Refrigerant's GWP | 1430 |
| Refrigerant's classification | A1 |

COMPRESSOR ELECTRICAL DATA (380-420 V / 3~ / 50 Hz)

| | |
|------------------------------|----------------|
| Maximum Operating Current, A | 30.8 |
| Locked Rotor Current, A | 105 |
| Default Enclosure Class | IP 54 (IEC 34) |

ACCESSORIES INCLUDED

| | |
|-------------------------------------|---|
| Mounting Parts | Spring |
| CoreSense Protection (-P) | Motor protection |
| Oil Pressure Switch (-P) | OPS2 Sensor |
| Copeland Compressor Electronic (-N) | Oil pressure, motor and discharge line temperature protection; advanced diagnostics features and power measurement |

ACCESSORIES OPTIONAL

| | |
|---------------------------------------|------------------------------|
| Additional Cooling | 70 W Vertical Air Flow Fan |
| Capacity Control | Capacity Steps 50% |
| Crankcase Heater | 100 W Internal |
| Oil Pressure Switch | OPS2 Electronic Switch |
| Adapter Kit | For Parallel Operation |
| Check Valve | For unloaded start operation |
| Sound Attenuation | Sound Shell |
| Mounting Parts | Rubber |
| Copeland Compressor Electronic module | Modbus extension module |

MOTOR OPTIONS

| <i>Motor Code</i> | <i>Power Supply</i> | <i>Nominal Voltage, V</i> | <i>Start Connection</i> | <i>DOL Connection</i> | <i>Amps Factor</i> |
|-------------------|------------------------|---------------------------|-------------------------|-----------------------|--------------------|
| AWM | 380-420 V / 3~ / 50 Hz | 400 | YYY | Y | 1.00 |
| EWL | 220-240 V / 3~ / 50 Hz | 230 | Y/DELTA | DELTA | 1.73 |
| EWL | 380-420 V / 3~ / 50 Hz | 400 | | Y | 1.00 |
| EWM | 380-420 V / 3~ / 50 Hz | 400 | Y/DELTA | DELTA | 1.00 |
| AWR | 220-240 V / 3~ / 50 Hz | 230 | YYY | Y | 1.73 |
| AWY | 500-550 V / 3~ / 50 Hz | 525 | YYY | Y | 0.76 |
| EWK | 220-240 V / 3~ / 60 Hz | 230 | Y/DELTA | DELTA | 2.10 |
| EWK | 380-420 V / 3~ / 60 Hz | 380 | | Y | 1.20 |
| EWD | 440-480 V / 3~ / 60 Hz | 460 | Y/DELTA | DELTA | 1.00 |
| AWC | 208-230 V / 3~ / 60 Hz | 230 | YYY | Y | 2.19 |
| AWX | 380 V / 3~ / 60 Hz | 380 | YYY | Y | 1.20 |
| AWD | 440-480 V / 3~ / 60 Hz | 460 | YYY | Y | 1.00 |