



Minimum Evaporating Temp. With:

- 20 °C Suction Gas Return
- 0 °C Suction Gas Return
- Maximum Evaporating Temperature

Suction Return Temperature 20.0°C

Liquid Subcooling 0.0K

Evaporating Temperature, °C

| Cond<br>°C | Cooling Capacity, kW |       |       |       |       |       |       |       |       |  |
|------------|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
|            | -25.0                | -20.0 | -15.0 | -10.0 | -5.0  | 0.0   | 5.0   | 7.0   | 10.0  |  |
| 10.0       | 24.60                | 31.10 | 39.00 | 48.40 | 59.50 |       |       |       |       |  |
| 15.0       | 23.20                | 29.60 | 37.20 | 46.20 | 56.80 |       |       |       |       |  |
| 20.0       | 21.90                | 28.00 | 35.30 | 43.90 | 54.10 | 65.90 |       |       |       |  |
| 25.0       | 20.50                | 26.40 | 33.40 | 41.60 | 51.30 | 62.50 | 75.50 | 81.30 |       |  |
| 30.0       |                      | 24.80 | 31.40 | 39.20 | 48.40 | 59.10 | 71.50 | 76.90 | 85.60 |  |
| 35.0       |                      |       | 29.40 | 36.80 | 45.50 | 55.60 | 67.30 | 72.50 | 80.80 |  |
| 40.0       |                      |       | 27.50 | 34.40 | 42.60 | 52.10 | 63.10 | 68.00 | 75.80 |  |
| 45.0       |                      |       |       | 32.00 | 39.60 | 48.50 | 58.90 | 63.40 | 70.80 |  |
| 50.0       |                      |       |       | 29.60 | 36.70 | 44.90 | 54.60 | 58.80 | 65.70 |  |
| 55.0       |                      |       |       |       | 33.70 | 41.30 | 50.20 | 54.20 | 60.60 |  |
| 60.0       |                      |       |       |       |       | 37.70 | 45.90 | 49.50 |       |  |

50 Hz

4MAD-22X 100% Loaded

R407F Dew Point

| Cond<br>°C | Power, kW |       |       |       |       |       |       |       |       |
|------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|
|            | -25.0     | -20.0 | -15.0 | -10.0 | -5.0  | 0.0   | 5.0   | 7.0   | 10.0  |
| 10.0       | 6.34      | 6.66  | 6.78  | 6.67  | 6.28  |       |       |       |       |
| 15.0       | 6.89      | 7.36  | 7.67  | 7.77  | 7.60  |       |       |       |       |
| 20.0       | 7.40      | 8.02  | 8.50  | 8.79  | 8.85  | 8.62  |       |       |       |
| 25.0       | 7.87      | 8.63  | 9.28  | 9.76  | 10.05 | 10.05 | 9.75  | 9.54  |       |
| 30.0       |           | 9.19  | 10.00 | 10.65 | 11.15 | 11.40 | 11.35 | 11.25 | 11.00 |
| 35.0       |           |       | 10.65 | 11.50 | 12.20 | 12.70 | 12.90 | 12.90 | 12.80 |
| 40.0       |           |       | 11.30 | 12.35 | 13.20 | 13.90 | 14.40 | 14.50 | 14.55 |
| 45.0       |           |       |       | 13.10 | 14.15 | 15.05 | 15.80 | 16.00 | 16.25 |
| 50.0       |           |       |       | 13.80 | 15.05 | 16.20 | 17.10 | 17.45 | 17.85 |
| 55.0       |           |       |       |       | 15.90 | 17.25 | 18.40 | 18.80 | 19.35 |
| 60.0       |           |       |       |       |       | 18.25 | 19.65 | 20.10 |       |

| Cond<br>°C | Current at 400 V, A |       |       |       |       |       |       |       |       |
|------------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|
|            | -25.0               | -20.0 | -15.0 | -10.0 | -5.0  | 0.0   | 5.0   | 7.0   | 10.0  |
| 10.0       | 16.17               | 16.47 | 16.61 | 16.50 | 16.07 |       |       |       |       |
| 15.0       | 16.68               | 17.14 | 17.47 | 17.58 | 17.40 |       |       |       |       |
| 20.0       | 17.19               | 17.81 | 18.33 | 18.67 | 18.76 | 18.49 |       |       |       |
| 25.0       | 17.68               | 18.47 | 19.20 | 19.77 | 20.11 | 20.15 | 19.79 | 19.51 |       |
| 30.0       |                     | 19.12 | 20.05 | 20.86 | 21.47 | 21.80 | 21.77 | 21.64 | 21.30 |
| 35.0       |                     |       | 20.88 | 21.93 | 22.82 | 23.45 | 23.75 | 23.76 | 23.65 |
| 40.0       |                     |       | 21.68 | 22.98 | 24.14 | 25.08 | 25.72 | 25.88 | 25.99 |
| 45.0       |                     |       |       | 23.98 | 25.43 | 26.68 | 27.67 | 27.97 | 28.31 |
| 50.0       |                     |       |       | 24.94 | 26.68 | 28.25 | 29.59 | 30.04 | 30.60 |
| 55.0       |                     |       |       |       | 27.87 | 29.77 | 31.46 | 32.06 | 32.86 |
| 60.0       |                     |       |       |       |       | 31.23 | 33.28 | 34.03 |       |

| Cond<br>°C | Suction Mass Flow, g/s |        |        |        |        |        |        |        |        |
|------------|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
|            | -25.0                  | -20.0  | -15.0  | -10.0  | -5.0   | 0.0    | 5.0    | 7.0    | 10.0   |
| 10.0       | 104.50                 | 133.00 | 167.50 | 209.00 | 259.00 |        |        |        |        |
| 15.0       | 102.50                 | 130.50 | 165.00 | 207.00 | 256.00 |        |        |        |        |
| 20.0       | 99.70                  | 128.00 | 162.00 | 203.00 | 252.00 | 310.00 |        |        |        |
| 25.0       | 96.90                  | 125.00 | 159.00 | 199.50 | 248.00 | 306.00 | 373.00 | 404.00 |        |
| 30.0       |                        | 122.00 | 155.50 | 196.00 | 244.00 | 300.00 | 368.00 | 398.00 | 447.00 |
| 35.0       |                        |        | 152.00 | 191.50 | 239.00 | 295.00 | 361.00 | 391.00 | 440.00 |
| 40.0       |                        |        | 148.00 | 187.00 | 233.00 | 289.00 | 355.00 | 384.00 | 433.00 |
| 45.0       |                        |        |        | 182.00 | 228.00 | 282.00 | 347.00 | 377.00 | 425.00 |
| 50.0       |                        |        |        | 177.00 | 222.00 | 275.00 | 339.00 | 368.00 | 416.00 |
| 55.0       |                        |        |        |        | 216.00 | 268.00 | 331.00 | 360.00 | 407.00 |
| 60.0       |                        |        |        |        |        | 261.00 | 324.00 | 352.00 |        |

### COMPRESSOR MECHANICAL AND PHYSICAL DATA

|  |  |
|--|--|
| Number of cylinders  | 4  |
| Displacement @ 50 Hz, m³/h   | 61.7   |
| Bore/Stroke, mm  | 63.5/56.0                                    |
| Length/Width, mm   | 638/501                                      |
| Height, mm   | 452  |
| Net Weight, kg   | 183  |
| 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<br>EAL Arctic 22 CC |
| Base mounting (hole dia), mm   | 381 x 305 (18)                               |
| Sound Pressure @ 1m (MT), dBA  | 68   |
| Sound Power (MT), dBA  | 79   |
| Sound Conditions (MT, Temperatures:<br>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   |
| Digital Modulation   | 50-100%                                      |
| Refrigerant's GWP  | 1825   |
| Refrigerant's classification   | A1   |

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

|                              |                |
|------------------------------|----------------|
| Maximum Operating Current, A | 36.3           |
| Locked Rotor Current, A      | 175            |
| Default Enclosure Class      | IP 54 (IEC 34) |

### **ACCESSORIES INCLUDED**

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

### **ACCESSORIES OPTIONAL**

|                                       |                              |
|---------------------------------------|------------------------------|
| Check Valve                           | For unloaded start operation |
| Mounting Parts                        | Rubber                       |
| Adapter Kit                           | For Parallel Operation       |
| Digital Driver                        | EC3-D23                      |
| Additional Cooling                    | 70 W Vertical Air Flow Fan   |
| Crankcase Heater                      | 100 W Internal               |
| Sound Attenuation                     | Sound Shell                  |
| Oil Pressure Switch                   | OPS2 Electronic Switch       |
| Digital Modulation                    | 50-100 %                     |
| Copeland Compressor Electronic module | Modbus extension module      |

## MOTOR OPTIONS

| <b>Motor Code</b> | <b>Power Supply</b>    | <b>Nominal Voltage, V</b> | <b>Start Connection</b> | <b>DOL Connection</b> | <b>Amps Factor</b> |
|-------------------|------------------------|---------------------------|-------------------------|-----------------------|--------------------|
| 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               |