

COMPRESSOR DEFINITION

| | |
|---------------------------|-----------------|
| Designation | EM 2Z70HLP |
| Nominal Voltage/Frequency | 115-127 V 60 Hz |
| Engineering Number | 513304022 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|--------------------------------------------|-----------------------------------|-----------------------------------|--------------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-134a | | |
| 3 Nominal voltage and frequency | 115-127 / 60 | [V / Hz] | |
| 4 Application type | Low Back Pressure | | |
| 4.1 Evaporating temperature range | -35°C to -10°C | (-31°F to 14°F) | |
| 5 Motor type | RSCR | | |
| 6 Starting torque | LST - Low Starting Torque | | |
| 7 Expansion device | Capillary tube | | |
| 8 Compressor cooling | | Operating voltage range | |
| | | 50 Hz | 60 Hz |
| 8.1 LBP (32°C Ambient temperature) | Static | - | 103 to 140 V |
| 8.2 LBP (43°C Ambient temperature) | Static | - | 103 to 140 V |
| 8.3 HBP (32°C Ambient temperature) | - | - | - |
| 8.4 HBP (43°C Ambient temperature) | - | - | - |
| 9 Maximum condensing pressures/temperature | | | |
| 9.1 Operating (gauge) | 16.2 | [kgf/cm ²] (230 psig) | / °C - °F |
| 9.2 Peak (gauge) | 20.6 | [kgf/cm ²] (293 psig) | / °C - °F |
| 10 Maximum winding temperature | 130 | [°C] | |

B - MECHANICAL DATA

| | | |
|-------------------------------|---------------|--------------------------------------------|
| 1 Commercial designation | 1/4 | [hp] |
| 2 Displacement | 6.36 | [cm ³] (0.388 cu.in) |
| 2.1 Bore [mm] | 22.500 | |
| 2.2 Stroke [mm] | 16.000 | |
| 3 Lubricant charge | 150 | [ml] (5.07 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ESTER / ISO10 | |
| 4 Weight (with oil charge) | 8.19 | [kg] (18.06 lb.) |
| 5 Nitrogen charge | 0.2 to 0.3 | [kgf/cm ²] (2.84 to 4.27 psig) |

C - ELETRICAL DATA

| | | |
|----------------------------------------------|---------------------------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 115-127 V 60 Hz 1 ~ (Single phase) | |
| 2 Starting device type | PTC | |
| 2.1 Starting device | 7M4R7MD3/8EA14C3/8EA14E61/8EA14E62/8EA14E63/8M4R7 | |
| 3 Start capacitor | - | [µF(VAC minimum)] |
| 4 Run capacitor | 12(180) | [µF(VAC minimum)] |
| 5 Motor protection | 4TM427LFBYY-53 | |
| 6 Start winding resistance | 6.41 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 4.06 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (60 Hz) | 12.10 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz) | 1.84 | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz) | 2.27 | [A] - Measured according to UL 984 |
| 11 Approval boards certification | TUV | |

D - PERFORMANCE - CHECK POINT DATA

| | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|----------------------------------------------------|---------------------------|----------------------------------------|-------|
| TEST CONDITIONS: @127V60Hz | | | ASHRAELBP32 Static | | Evaporating temperature (Condensing temperature | | -23.3°C (-9.94°F) 54.4°C (129.92°F) | |
| Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | |
| [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| 760 | 192 | 223 | 128 | 1.07 | 4.32 | 5.92 | 1.49 | 1.73 |

E - PERFORMANCE - CURVES

| | | | | | | | | | | |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|---------------------------------------|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @127V60Hz | | ASHRAE32 Static | | | | (Condensing temperature 35°C (+95°F)) | | | | |
| Evaporating temperature | | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 450 | 113 | 132 | 90 | 0.77 | 2.55 | 4.99 | 1.26 | 1.46 |
| -30 | (-22) | 604 | 152 | 177 | 102 | 0.86 | 3.43 | 5.98 | 1.51 | 1.75 |
| -25 | (-13) | 804 | 203 | 236 | 115 | 0.96 | 4.56 | 7.00 | 1.76 | 2.05 |
| -20 | (- 4) | 1048 | 264 | 307 | 130 | 1.08 | 5.97 | 8.07 | 2.03 | 2.37 |
| -15 | (+ 5) | 1338 | 337 | 392 | 146 | 1.20 | 7.64 | 9.20 | 2.32 | 2.70 |
| -10 | (+14) | 1673 | 422 | 490 | 161 | 1.32 | 9.59 | 10.38 | 2.62 | 3.04 |

| | | | | | | | | | | |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|----------------------------------------|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @127V60Hz | | ASHRAE32 Static | | | | (Condensing temperature 45°C (+113°F)) | | | | |
| Evaporating temperature | | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 395 | 100 | 116 | 89 | 0.76 | 2.23 | 4.45 | 1.12 | 1.30 |
| -30 | (-22) | 549 | 138 | 161 | 103 | 0.87 | 3.11 | 5.32 | 1.34 | 1.56 |
| -25 | (-13) | 748 | 189 | 219 | 120 | 1.00 | 4.25 | 6.20 | 1.56 | 1.82 |
| -20 | (- 4) | 991 | 250 | 290 | 139 | 1.15 | 5.64 | 7.10 | 1.79 | 2.08 |
| -15 | (+ 5) | 1278 | 322 | 374 | 159 | 1.31 | 7.30 | 8.02 | 2.02 | 2.35 |
| -10 | (+14) | 1609 | 406 | 472 | 180 | 1.47 | 9.22 | 8.97 | 2.26 | 2.63 |

| | | | | | | | | | | |
|-------------------------------|-------|----------------------------|----------|-----|--------------------------------|----------------------------------------|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @127V60Hz | | ASHRAE32 Static | | | | (Condensing temperature 55°C (+131°F)) | | | | |
| Evaporating temperature | | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 342 | 86 | 100 | 87 | 0.74 | 1.94 | 3.96 | 1.00 | 1.16 |
| -30 | (-22) | 491 | 124 | 144 | 103 | 0.87 | 2.78 | 4.79 | 1.21 | 1.40 |
| -25 | (-13) | 683 | 172 | 200 | 122 | 1.02 | 3.88 | 5.59 | 1.41 | 1.64 |
| -20 | (- 4) | 918 | 231 | 269 | 143 | 1.19 | 5.23 | 6.39 | 1.61 | 1.87 |
| -15 | (+ 5) | 1197 | 302 | 351 | 166 | 1.37 | 6.83 | 7.18 | 1.81 | 2.10 |
| -10 | (+14) | 1519 | 383 | 445 | 190 | 1.56 | 8.70 | 7.97 | 2.01 | 2.33 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @127V60Hz | | ASHRAE32 Static | | | (Condensing temperature 65°C (+149°F)) | | | | | |
|-------------------------------|-------|----------------------------|----------|-----|-----------------------------------------|-------------------------------|-------------------------|---------------------------|-----------|-------|
| Evaporating temperature | | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 293 | 74 | 86 | 84 | 0.73 | 1.66 | 3.46 | 0.87 | 1.01 |
| -30 | (-22) | 430 | 108 | 126 | 100 | 0.85 | 2.44 | 4.30 | 1.08 | 1.26 |
| -25 | (-13) | 609 | 154 | 178 | 120 | 1.01 | 3.46 | 5.10 | 1.28 | 1.49 |
| -20 | (- 4) | 831 | 209 | 243 | 142 | 1.19 | 4.73 | 5.85 | 1.48 | 1.72 |
| -15 | (+ 5) | 1095 | 276 | 321 | 167 | 1.38 | 6.25 | 6.57 | 1.66 | 1.93 |
| -10 | (+14) | 1402 | 353 | 411 | 193 | 1.58 | 8.03 | 7.27 | 1.83 | 2.13 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|--------------------------------|------|--------------------------|
| 1 Base plate | New Base Plate EUEM | | |
| 2 Tray holder | Yes | | |
| 3 Connectors | | | |
| 3.1 SUCTION | 6.5 +0.12/-0.08 | [mm] | (0.256" +0.005"/-0.003") |
| 3.1.1 Material | Copper | | |
| 3.1.2 Shape | Slanted 42° up + 45° to Back | | |
| 3.2 DISCHARGE | 4.94 +0.08/-0.08 | [mm] | (0.194" +0.003"/-0.003") |
| 3.2.1 Material | Copper | | |
| 3.2.2 Shape | Slanted parallel BP+24°to Back | | |
| 3.3 PROCESS | 6.5 +0.12/-0.08 | [mm] | (0.256" +0.005"/-0.003") |
| 3.3.1 Material | Copper | | |
| 3.3.2 Shape | Slanted 45° up + 45° to Back | | |
| 3.4 Oil cooler (Copper) | No | [mm] | |
| 3.5 Connector sealing | Rubber Plugs | | |